HP Asset Manager

Software version: 5.12

Service Asset and Configuration Management

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Introduction

Overview of this guide

This guide outlines the purpose of the integration between HP Discovery and Dependency Mapping - Inventory Asset Manager, HP Universal CMDB AND HP Service Manager. It explains how to install and configure components of the integration, as well as outlining how functionality of the integrated applications is enhanced.

Who is this guide intended for?

The integration is intended for IT organizations that want to better manage all their assets from procurement until after they have been decommissioned, all the while supplying both operational as well as IT Financial Management data.

Content of this guide

Chapter Overview of the SACM Integration

This chapter gives an overview of the SACM integration.

Chapter Installing and Configuring Components

This chapter explains the installation and configuration needed to deploy the integration.

Chapter Technical Reference

This chapter explains, for each database, which data objects are sourced and mapped by which scenario or adapter, as well as the reconciliation keys used and any special requirements needed for data transfers to work properly.

Related documentation

For details of the complete set of guides and other support documentation provided with Asset Manager, see the latest version of the Asset Manager *Release Notes*.

The following guides form part of the product documentation for other related HP Software products, and are particularly relevant for implementers of the integration:

- *HP Universal CMDB to HP Service Manager Integration Guide*
- *uCMDB 7.0 integration with ED 2.20*

1 Overview of the SACM Integration

Understanding IT Asset Lifecycle Management

The key goal of the SACM integration is to establish Asset Manager as the reference source for actively managed IT assets - from the point they are acquired and recorded, to the time they are retired or written off.

The first step in managing IT assets is to record details of any newly acquired hardware or software in Asset Manager, regardless of the means by which it is acquired, (purchased, leased or otherwise), and of the means by which the details are recorded (manually, or automatically scanned...).

HP Universal CMDB federation allows Asset Manager data to be viewed and leveraged by other HP Software solutions, such as HP Service Manager. This data is represented as operational Configuration Items (CIs).

Even when the operational CI is withdrawn from HP Universal CMDB, Asset Manager continues to manage the CI until it is physically retired.

Benefits of the SACM Integration

The main benefits of the integration are as follows:

- *Asset Tracking*: provides full-lifecycle management for physical and logical CIs.

- *Real time access to actual state of IT assets* : enables comparison to the desired state.
- *IT Governance & Compliance*: enriches physical and discovery data with business data (contracts, warranties, cost centers, pricing, etc) to assist in change management and other processes.
- *Centralization*: gathers cost information from hardware, software and services for centralized roll-up of TCO.
- *Consolidation*: eliminates redundancy, enforces standards, leverages virtualization.
- *Business Services*: relates services to contracts/warranties and enables service-based chargeback.

Having Asset Manager in the picture allows organizations to:

- Manage Assets from their initial stage in the organization through procurement.
- Have an authoritative reference source for all Asset data throughout the Service Lifecycle.
- Track and log Service downtime.
- Track and log TCO (Total Cost of Ownership) of Services:
  - Procurement costs.
  - Operational costs.
  - Loss of productivity costs.
- Maintain records for Services even after they have been decommissioned for both financial and review purposes.

ITIL-compliant processes

In order to comply with industry-standards, the SACM integration has been aligned with the following ITIL Processes:

- Service Portfolio Management (Service Strategy)
- IT Financial Management (Service Strategy)
- Service Level Management (Service Design)
- Incident Management (Service Operations)
- Problem Management (Service Operations)
- Request Management (Service Operations)
- Configuration Management (Service Transition)
- Change Management (Service Transition)

Reference source and data ownership

Any IT discovery tool (HP Discovery and Dependency Mapping - Inventory, Microsoft SCCM, home-grown tool...) that collects hardware and software details, configuration related or not, should be considered an IT inventory source for Asset Manager.

It is the responsibility of Asset Manager to receive, interrogate, and accept the presented discovery details as the 'Reviewed Authorized State' of the IT Asset. When accepted, the updated IT Asset will be accessible to HP Universal CMDB from the related CI using a combination of federation and replication.

Through HP Universal CMDB federation, the CI relationship allows CMS or ITSM processes to query, and if appropriate, update the attributes in the Asset Manager repository. The Asset detail does not need to be moved or replicated to another repository, such as HP Service Manager. However, performance may be a reason to choose replication for commonly accessed attributes.

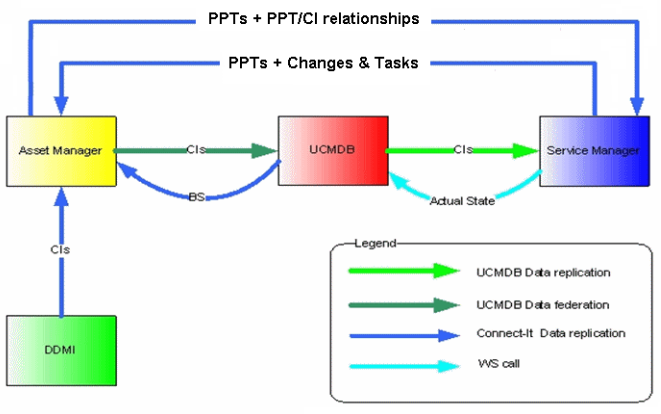
An Asset record will typically be created in Asset Manager before a related CI is created in HP Universal CMDB - for example, when a Data Center Server is leased or purchased but before it is configured and installed.

Once the CI is put into operation an Asset:CI relationship is established - most of the configuration attributes already exist in the Asset Manager repository.

Proper user rights management and business process rules will allow to update the Asset record in HP Universal CMDB as appropriate through federation.

The Asset record will continue to exist when the related CI is removed from operational service in HP Universal CMDB, such as when the related IT Asset is returned to stock for potential re-use.

The following diagram shows in detail the main data flows once the integration is in place:



Federating IT Asset Management with Configuration Management

Inventory data is stored in Asset Manager for the purpose of asset tracking.

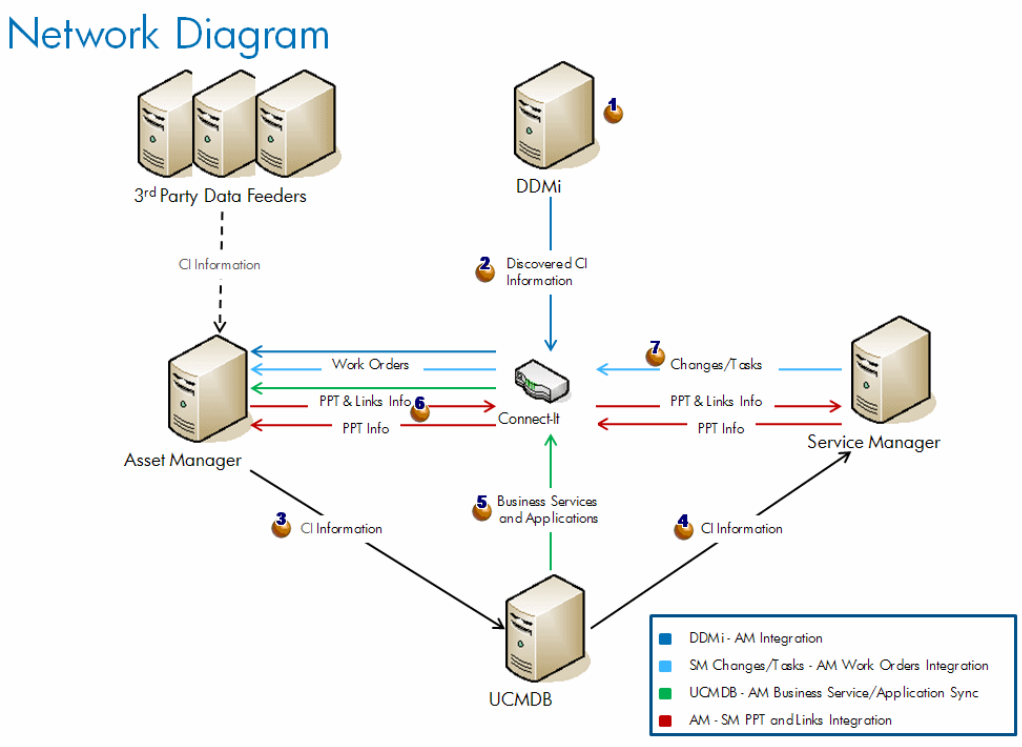
Asset Manager serves as the reference inventory source for HP Universal CMDB.

- HP Universal CMDB is the Configuration Management System (CMS) access hub for federating data throughout HP's Service Portfolio Management suite.
- HP Universal CMDB relies on Asset Manager for accurate inventory and asset tracking detail.

The following schema summarizes the ways in which data is replicated and federated between the databases of these products.

- Data from discovery tools (such as HP Discovery and Dependency Mapping - Inventory) is replicated in Asset Manager.
- Replicated and reconciled Asset Manager data from multiple sources is presented to HP Universal CMDB, where it is related with its corresponding Configuration Item (CI) data.
- The federated CI information is now available for use by other business processes and BTO solutions, such as HP Service Manager.

The main data flows within this application network are highlighted in the next schematic:



1 CI Information is discovered by HP Discovery and Dependency Mapping - Inventory (and possibly other 3rd party tools).

2 CI Information is replicated from HP Discovery and Dependency Mapping - Inventory to Asset Manager.

3 CI Information is replicated or federated from Asset Manager to UCMDB.

4 CI Information is replicated or federated from HP Universal CMDB to HP Service Manager.

5 Business Service Information is replicated from HP Universal CMDB to Asset Manager.

6 PPT (People, Places, Things) information is replicated between Asset Manager and HP Service Manager (can be implemented in either direction AM->SM or SM->AM).

7 HP Service Manager changes and tasks are replicated to Asset Manager generating Asset Manager work orders.

Managing unplanned changes

In the event of an unplanned change discovered by any trusted source (HP Discovery and Dependency Mapping - Inventory, ERP, LDAP, Vendor, etc), Asset Manager replication can trap the update, forward it to HP Universal CMDB, that forwards it to HP Service Manager.

This initiates an incident process in HP Service Manager.

HP Service Manager Incident Management determines if the proposed change is authorized.

If the change is authorized, the managed state is updated in HP Service Manager

If the change is not authorized, a change is requested for the CI.

2 Installing and Configuring Components

Supported versions

The following product versions are supported by the SACM integration:

- Asset Manager version 5.1x
- HP Universal CMDB version 8.02

> **Warning:**
>
> HP DDMa for UCMDB 8.02 requires Content Pack 3, otherwise HP DDMa (when running the Host Connection WMI discovery pattern) will overwrite the Asset Tag of CIs for which it does not find any value.

- HP Service Manager 7.10
- HP Discovery and Dependency Mapping - Inventory 7.50 and 7.51
- HP Connect-It 3.91

Prerequisites

Install SACM products

Before you can install and configure the integration, the SACM products must be installed and accessible by the integration components via the network:

- Asset Manager
- HP Universal CMDB
- HP Service Manager
- HP Discovery and Dependency Mapping - Inventory
- HP Connect-It
- HP Service Manager <-> HP Universal CMDB integration (we will reuse the CI Types that are mapped from HP Universal CMDB to HP Service Manager)

Refer to the installation guides provided with each of the SACM products.

Note:

The guide to the HP Service Manager <-> HP Universal CMDB integration is provided with HP Service Manager.

It's name is *HP Universal CMDB to HP Service Manager Integration Guide*.

You can access the guide through the HP Service Manager Help Server.

In the December 2008 Release Date of this guide, please note that there is an error in the *Add the UCMDB connection information* section:

The format of the URL to the HP Universal CMDB web service API should be:

```
http://<UCMDB server name>:<port>/axis2/services/ucmdbSMService
```

http:// is required.

Retrieve the integration distribution packages

The files that are required to install and configure the SACM integration are all provided as part of the installation of Asset Manager.

Tip:

The SACM installation files are systematically installed with Asset Manager. You do not need to customize the default Asset Manager setup. If you do a custom setup the SACM files will be installed even if you unselect all features.

The SACM installation files are located in the `<Asset Manager installation folder>\integrations\sacm` folder (by default: `C:\Program Files\HP\Asset Manager 5.12 xx\integrations\sacm`).

The following table explains the content of the `<Asset Manager installation folder>\integrations\sacm` folder:

Table 2.1. Content of the `<Asset Manager installation folder>\integrations\sacm` folder

What part of the integration	Which folder or file	Purpose
■ HP Discovery and Dependency Mapping - Inventory -> Asset Manager ■ HP Universal CMDB -> Asset Manager ■ Asset Manager <-> HP Service Manager	`\integrations\sacm\Connect-It\`	Installing the HP Connect-It scenarios ▸ Installing the HP Connect-It scenarios [page 17]
Asset Manager -> HP Universal CMDB	`\integrations\sacm\AMDBUpdate\`	Creating new Asset Manager SQL views and fields ▸ Creating the Asset Manager SQL views [page 23]
Asset Manager -> HP Universal CMDB	`\integrations\sacm\AMDBAdapter.zip`	Deploying the Asset Manager adapter in HP Universal CMDB ▸ Deploy the Asset Manager adapter [page 28]
Asset Manager -> HP Universal CMDB	`\integrations\sacm\AMDAdapter\`	Deploying the Asset Manager adapter components in Asset Manager ■ ▸ Add the Asset Manager wadapter [page 28] ■ ▸ Adding the dtSACMCreate field [page 25]
Asset Manager -> HP Universal CMDB	`\integrations\sacm\AM Business Services integration.zip`	Deploying the business services TQL in HP Universal CMDB ▸ Deploying the business services TQL; [page 39]

Installing the HP Connect-It scenarios

HP Connect-It mediates data replication for the following integrations:

- HP Discovery and Dependency Mapping - Inventory-> Asset Manager
- HP Universal CMDB -> Asset Manager
- Asset Manager <-> HP Service Manager

For each of these, it uses scenarios which are provided as part of the Asset Manager distribution.

The SACM scenarios need to be copied from the Asset Manager installation folder to the HP Connect-It installation folder:

1 Backup the following HP Connect-It folders:
   - `<HP Connect-It installation folder>\scenario\ed\ddmi75`
   - `<HP Connect-It installation folder>\config\ed\ddmi75`

   The customizations you may have done to files in these folders will be lost when you copy the SACM installation files.
2 Copy the following subdirectories of the `<Asset Manager installation folder>\integrations\sacm\Connect-It` folder:
   - `config`
   - `datakit`
   - `scenario`
3 Paste them in the `<HP Connect-It installation folder>` folder.

   This:
   - Replaces the HP Connect-It scenarios found in `<HP Connect-It installation folder>\scenario\ed\ddmi75\ddmi75am51` and their associated files.

     Important:

     These HP Connect-It scenarios replace the standard scenarios with the same names delivered with HP Connect-It.

     If you customized those scenarios, you will need to redo the customization on the scenarios delivered with Asset Manager 5.12.
   - Creates a HP Connect-It scenario in `<HP Connect-It installation folder>\scenario\ac\ac51\sacm\ucmdb8am51` and its associated files.
   - Creates HP Connect-It scenarios in `<HP Connect-It installation folder>\scenario\ac\ac51\sacm\sm71am51` and their associated files.

Integrating Asset Manager with HP Discovery and Dependency Mapping - Inventory

Overview

Integration direction	From HP Discovery and Dependency Mapping - Inventory to Asset Manager
Integration technology	HP Connect-It
Replicated data	CIs inventoried by HP Discovery and Dependency Mapping - Inventory are replicated in Asset Manager HP Discovery and Dependency Mapping - Inventory computers (scanned or unscanned) and network devices including network printers are replicated to Asset Manager in the **amPortfolio** table with a link to the **amComputer** and **amAsset** overflow tables.
HP Connect-It scenarios	■ `ddmiac.scn` ■ `ddmiac-hpovcmse.scn` ■ `ddmiac-reconc.scn` ■ `ddmiac-swnorm.scn` ■ `ddmiac-mobiledevices.scn`

Details on the HP Connect-It scenarios:

- `ddmiac.scn`

  This scenario replicates CIs of all types except mobile devices.

  It does not retrieve any information from HP Client Automation (as `ddmiac-hpovcmse.scn` does).

  It makes changes to Asset Manager records directly without using reconciliation proposals (as `ddmiac-reconc.scn` does).

  It links software installations directly to a definitive model (unlike `ddmiac-swnorm.scn`).

  ▸ For more information, refer to the HP Connect-It guide called *Connectors*, chapter *Out-of-the-box scenarios*, section *HP Enterprise Discovery scenarios* / *ed\ed21\ed21ac44\edac.scn*.

- `ddmiac-hpovcmse.scn`

  This scenario does the same as the `ddmiac.scn` scenario and in addition replicates some information from HP Client Automation to Asset Manager.

  ▸ For more information, refer to the HP Connect-It guide called *Connectors*, chapter *Out-of-the-box scenarios*, section *HP Enterprise Discovery scenarios* / *ed\ed20\ed2ac44\edac-hpovcmse.scn*.

- `ddmiac-reconc.scn`

  This scenario does the same as the `ddmiac.scn` and in addition creates reconciliation proposals for changes to the **amComputer:IMemorySizeMb** field.

  ▶ For more information, refer to the HP Connect-It guide called *Connectors*, chapter *Out-of-the-box scenarios*, section *HP Enterprise Discovery scenarios / ed\ed20\ed2ac50\edac-reconc.scn*.
- `ddmiac-swnorm.scn`

  This scenario does the same as the `ddmiac.scn` but uses the **amInventModel** records to assign a model to the software installations.
- `ddmiac-mobiledevices.scn`

  This scenario replicates mobile devices from HP Discovery and Dependency Mapping - Inventory to Asset Manager.

  It does not retrieve any information from HP Client Automation (as `ddmiac-hpovcmse.scn` does).

  It makes changes to Asset Manager records directly without using reconciliation proposals (as `ddmiac-reconc.scn` does).

Note:

You are not supposed to use all the scenarios:

Use either `ddmiac.scn`, `ddmiac-hpovcmse.scn`, `ddmiac-reconc.scn` or `ddmiac-swnorm.scn` to replicate CIs of all types except mobile devices.

Use `ddmiac-mobiledevices.scn` to replicate mobile devices.

Preparing the Asset Manager database

Some data is required in your Asset Manager database before the HP Connect-It scenarios can run properly.

Follow the instructions below, except if you already imported the following line-of-business data:

- Portfolio - Line-of-business data
- Catalog - UNSPSC product classification
- Virtualization - Line-of-business data

1. Execute Asset Manager Application Designer.
2. Select the **File/ Open** menu item.
3. Select the **Open database description file - create new database** option.

4 Select the `gbbase.xml` file which is located in the `config` sub-folder of the Asset Manager installation folder.

5 Start the database creation wizard (**Action/ Create database** menu).

6 Populate the pages of the wizard as follows (navigate through the wizard pages using the **Next** and **Previous** buttons):

Generate SQL script / Create database page:

Fields	Value
Database	Select the connection to the database into which you wish to import the line-of-business data.
Creation	Import line-of-business data.
Use advanced creation options	Do not select this option.

Creation parameters page:

Fields	Value
Password	Enter the administrator's password. Note: The Asset Manager database administrator is the record in the **Departments and employees** (amEmplDept) table for which the **Name** (Name) field is set to *Admin*. The database connection login is stored in the **User name** (UserLogin) field. The administration name is *Admin*. The password is stored in the **Password** field (LoginPassword).

Data to import page:

Fields	Value
Available data	Select the following options: ■ Portfolio - Line-of-business data ■ Catalog - UNSPSC product classification ■ Virtualization - Line-of-business data
Stop import if error	Select this option for the import to stop if a problem is encountered.
Log file	Full name of the file to which all import operations, including errors and warnings, are logged.

7 Execute the options defined using the wizard (**Finish** button).

Note:

- Portfolio - Line-of-business data: this is needed to create natures and models required by HP Connect-It scenarios
- Catalog - UNSPSC product classification: UNSPSC classifications are used to assign the right parent model to the CI models created in Asset Manager
- Virtualization - Line-of-business data: this is required to import a Virtual Machine model

Copying `libmysql.dll`

HP Discovery and Dependency Mapping - Inventory stores its data in a MySQL DBMS.

HP Connect-It uses the MySQL `libmysql.dll` library, but cannot find it in its default MySQL installation folder.

You need to copy `libmysql.dll` to a folder recognized by HP Connect-It:

1. Copy the `<MySQL installation folder>\bin\libmysql.dll` file.
2. Paste it in the `<HP Connect-It installation folder>\bin` folder or the `<OS installation folder>\system32` folder.

Configuring HP Connect-It scenarios

The following connectors are used by the scenarios and need to be configured in the scenarios you will be using:

- Asset Manager (all scenarios)
- HP Discovery and Dependency Mapping - Inventory (all scenarios)
- CM Service Events (`ddmiac-hpovcmse.scn`)

For information on how to configure connectors, refer to the HP Connect-It *Connectors* guide, chapter *Hewlett-Packard connectors*.

Scheduling the execution of the scenarios

Execution of the scenarios can be scheduled by defining a scheduler in HP Connect-It.

▸ HP Connect-It *User's guide*, chapter *Implementing an integration scenario*.

Integrating Asset Manager with HP Universal CMDB

Overview

Table 2.2. Overview of the Asset Manager - HP Universal CMDB integration

Integration direction	From Asset Manager to HP Universal CMDB
Integration technology	HP Universal CMDB eneric database adapter
Replicated data	CIs stored in Asset Manager are replicated or federated (this depends on the type of data) in HP Universal CMDB
HP Universal CMDB adapter	Asset Manager Adapter

Creating the Asset Manager SQL views

Why create Asset Manager SQL views

The Asset Manager adapter uses SQL views to access the Asset Manager database.

Creating the views

1 Execute `<Asset Manager installation folder>\integrations\sacm\AMDBUpdate\CreateViews.bat`.

> **Warning:**
>
> This batch file can only be used under the Windows environment, not under UNIX.
>
> Running this batch file alters the Asset Manager database structure.
>
> Administrative privileges are required at the DBMS level to create the SQL views.

Usage:

- `CreateViews.bat [MSSQL2000|MSSQL2005] <Server> <Database> <Username> <Password>`

If your Asset Manager database uses Microsoft SQL Server:

Property	Value
Server	Microsoft SQL Server service that contains the Asset Manager database.
Database	Asset Manager database name at the Microsoft SQL Server level.
Username	Microsoft SQL Server user associated to the Asset Manager database.

Property	Value
Password	Microsoft SQL Server password associated to the user associated to the Asset Manager database.

Example:

```
CreateViews.bat MSSQL2000 mylogin\AssetManager AMDB am password
```

- If your Asset Manager database uses Oracle:

```
CreateViews.bat Oracle <Oracle SID> <Username> <Password>
```

Property	Value
Oracle SID	Asset Manager database identifier at the Oracle level.
Username	Oracle user associated to the Asset Manager database.
Password	Oracle password associated to the user associated to the Asset Manager database.

Important:

Prerequisite:

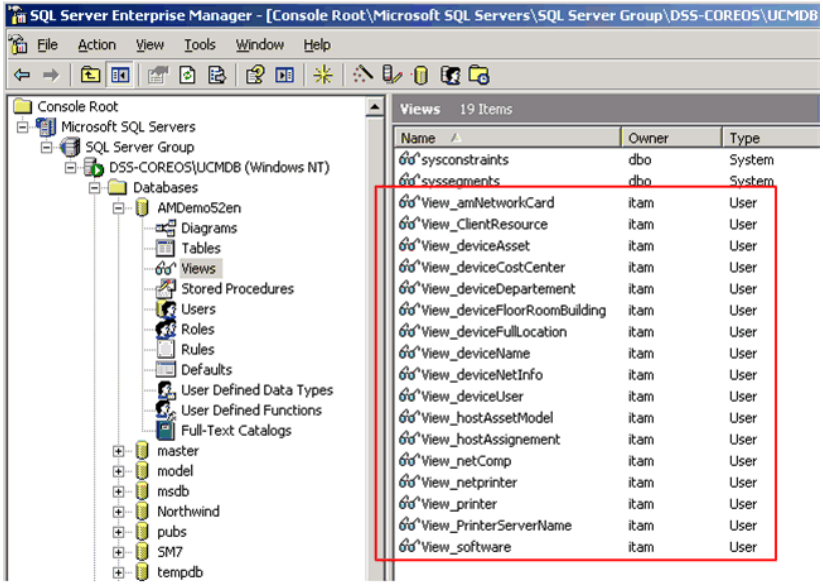
The *ORACLE_HOME* environment variable must be set.

GRANT privileges must be assigned to <*Username*> for creating SQL views in the Oracle database as follows:

```
SQL> GRANT create ANY VIEW to <Username>;
SQL> GRANT SELECT ANY TABLE to <Username>;
SQL> GRANT create MATERIALIZED VIEW to <Username>;
```

2 Using a database browser, check that the following 17 views (Owner= <*Username*>, Name prefixed with *View_*) have been successfully created.

Example in Microsoft SQL Server:



Adding the **dtSACMCreate** field

The **dtSACMCreate** field is used by the Asset Manager adapter to populate the **root_createtime** field of the CI created in the HP Universal CMDB database.

To add the **dtSACMCreate** field to the Asset Manager **Portfolio items** (amPortfolio) table, follow these steps:

1. Start Asset Manager Application Designer
2. Connect to the Asset Manager database (**File/ Open** menu).
3. Use the **Database/Add a field...** menu option to create a field called **dtSACMCreate** on the **Portfolio items** (amPortfolio) table, with the following attributes:

Attribute	Value
General *tab*	
SQL Name	dtSACMCreate
Label	Record Creation
Description	Date the record was created

Attribute	Value
Type	Date and time
Scripts *tab*	
Default	RetVal=Now()
Read Only	Yes
Mandatory	No

> **Warning:**
>
> You must use the field SQL name and type strictly as indicated in the table.

4 Click **Save** to save the new field.

5 Close Asset Manager Application Designer.

6 Populate the **dtSACMCreate** field on existing **Portfolio item** records:

Execute the `<Asset Manager installation folder>\integrations\sacm\AMDBUpdate\PopulateDtSACMCreate.bat`.

> **Warning:**
>
> This needs to be done only once, since the field will be automatically populated for any new record that is created after the **dtSACMCreate** field was added to the database structure.
>
> This batch file can only be used under the Windows environment, not under UNIX.
>
> Running this batch file alters the Asset Manager database records.

Usage:

- If your Asset Manager database uses Microsoft SQL Server:

```
PopulateDtSACMCreate.bat [MSQL2000|MSSQL2005] <Server> <Database> <Username> <Password>
```

Property	Value
Server	Microsoft SQL Server service that contains the Asset Manager database.
Database	Asset Manager name at the Microsoft SQL Server level.
Username	Microsoft SQL Server user associated to the Asset Manager database.
Password	Microsoft SQL Server password associated to the user associated to the Asset Manager database.

```
PopulateDtSACMCreate.bat MSSQL2000 mylogin\AssetManager AMDB am password
```

Example:

- If your Asset Manager database uses Oracle:

```
PopulateDtSACMCreate.bat Oracle <Oracle SID> <Username> <Password>
```

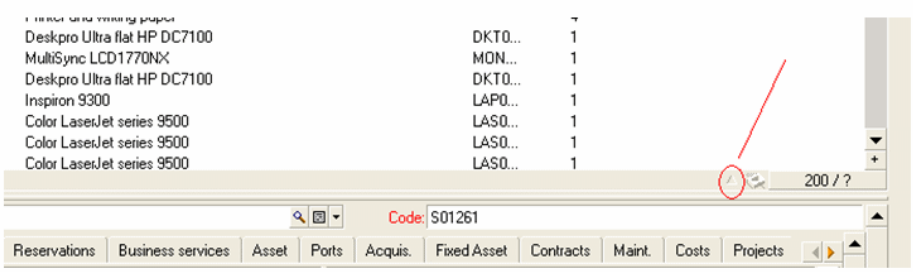
Property	Value
Oracle SID	Asset Manager database identifier at the Oracle level.
Username	Oracle user associated to the Asset Manager database.
Password	Oracle password associated to the user associated to the Asset Manager database.

7 Check in Asset Manager that all your **Portfolio item** records have the **dtSACMCreate** field populated.

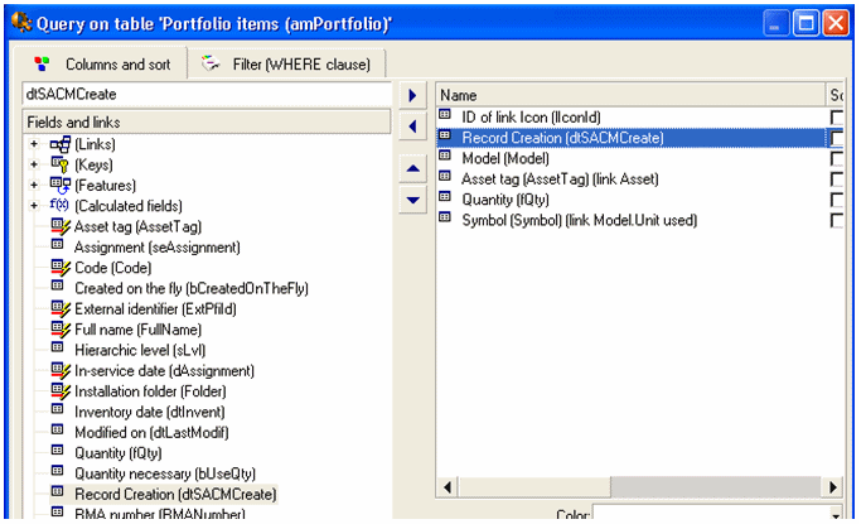
1 Start the Asset Manager Windows client.

2 Open the **Portfolio Management/ Portfolio items** navigation bar link.

3 Open the **Query on table** window (accessible by clicking on the triangle icon)



4 Add the field **dtSACMCreate** on the **Portfolio items** screen



The **dtSACMCreate** field should be visible and its value should be the date you ran `PopulateDtSACMCreate.bat`.

Creating the Asset Manager adapter

Why create the Asset Manager adapter

The Asset Manager adapter is used by HP Universal CMDB to replicate or federate data from Asset Manager to HP Universal CMDB.

Add the Asset Manager wadapter

1 Copy the `<Asset Manager installation folder>\integrations\sacm\AMDBAdapter` folder.
2 Paste it in the `<HP Universal CMDB installation folder>\j2f\fcmdb\CodeBase\` folder.

Deploy the Asset Manager adapter

1 Copy the `<Asset Manager installation folder>\integrations\sacm\AMDBAdapter.zip` file.
2 Paste it in the `<HP Universal CMDB installation folder>\root\lib\customer_packages` folder.

3 Start UCMDB Server.
4 Open an internet browser and connect to UCMDB Server.
5 Display the **Settings** tab.
6 Select *Package Manager* in the **Settings** menu.
7 Select the entry which Package name is *AMDBAdapter*.
8 Deploy the adapter (right click the entry and select **Deploy Packages to Server (from local disk)**).

   The deployment overrides the TQLs that were installed with the HP Universal CMDB->HP Service Manager integration (Example: *hostData*).
9 Click **+** and select the `AMDBAdapter.zip` file located in the `<HP Universal CMDB installation folder>\root\lib\customer_packages` folder.
10 Click **Open** then **OK**.
11 Verify that the adapter has been deployed: select your package in the list, right-click and select **View package resources**.

   You should see the `AMDBAdapter.xml` as well as TQL `.xml` files in the list.
12 Disconnect from UCMDB Server (logout).

Creating the Asset Manager adapter data store

1 Open an internet browser and connect to the UCMDB Server.
2 Select **Settings/ Federated CMDB**.
3 Display the **Data stores** tab.
4 Select **Data Store Definition** in the **View** field and click *****.

   The **New Data Store** wizard displays.

   Create the Asset Manager adapter data store, with the following properties:

Property	Value
Adapter	AMDBAdapter
Name	Name of your choice
Host	Computer hosting the Asset Manager database. It can be the full DNS computer name (example: *machinename.emea.company*) or the IP address of the host.
Port	Port to access the Asset Manager database.
User	DBMS user associated to the Asset Manager database. Important: Since the User and its associated Password are exposed to anybody who is entitled to edit data stores, you should not use a User with administrative rights.
Password	DBMS password for the user associated to the Asset Manager database.

Property	Value

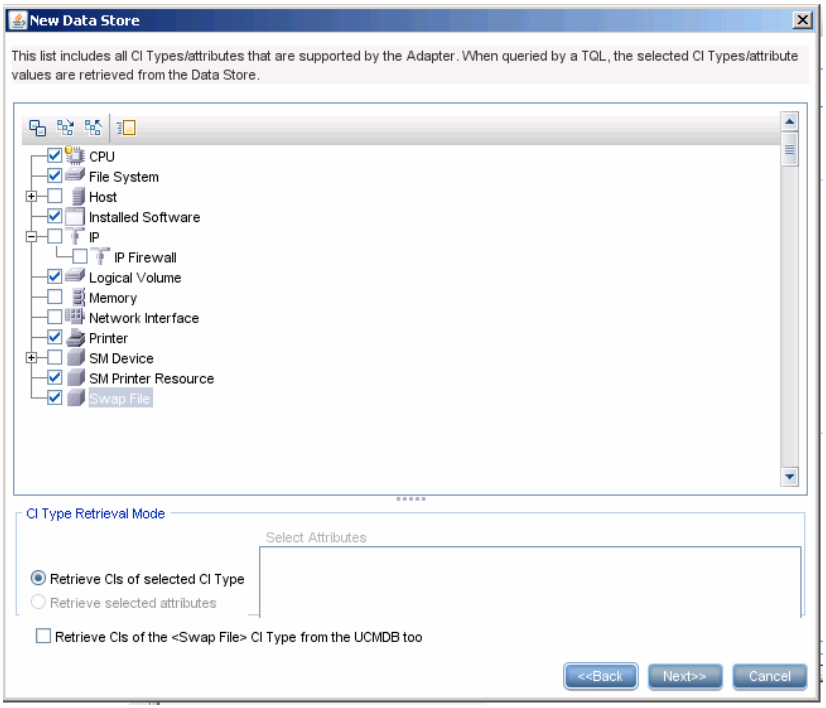
URL	■ Microsoft SQL Server
	`dbname=<Asset Manager database name at the DBMS level>;dbtype=sqlserver`
	Example:
	`dbname=amsqldb;dbtype=sqlserver`
	■ Oracle:
	`dbname=<Asset Manager database name at the DBMS level>;dbtype=oracle;sid=<database sid>`
	Example:
	`dbname=amoradb;dbtype=oracle;sid=amordasid`

5 Click **Test connection**.

A message confirms whether the connection has been successfully created.

6 Click **Next**.

7 Check the boxes as shown in the following screenshot:



Note:

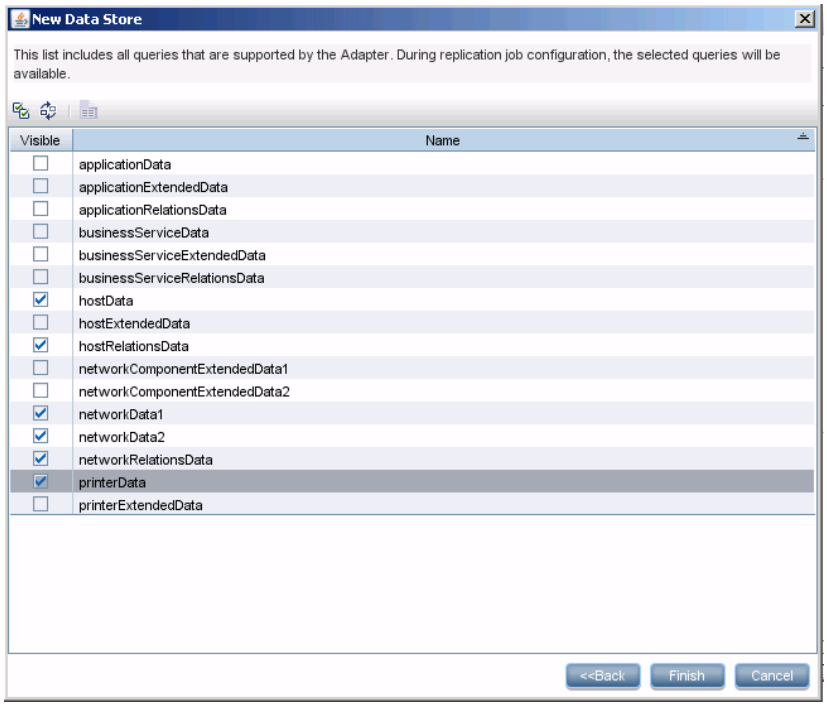
The unchecked CI Types are replicated (*Host* for instance). The checked CI Types are federated.

Warning:

You should comply with the selection of CI Types as indicated in the screen shot. Changing the selection is not supported.

8 Click **Next**.

9 Check the boxes as shown in the following screenshot:



10 Click **Finish**.

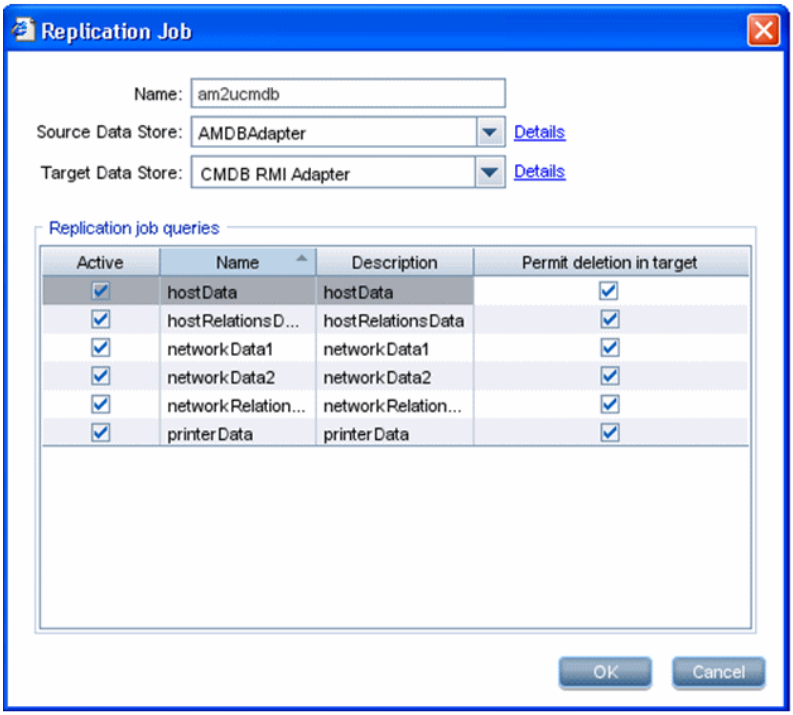
Creating the Asset Manager replication job

1 Open an internet browser and connect to the UCMDB Server.

2 Select **Settings/ Federated CMDB**.

3 In the **Replication Jobs** tab, click * (New Replication Job).

4 Populate the screen with the following information:



Tip:

The *CMDB RMI Adapter* has been created with the HP Service Manager-HP Universal CMDB integration.

▸ Install SACM products [page 15]

5 Click **OK**.

6 On the **Schedule** tab, click **+** to create a new Schedule job for am2ucmdb.

7 Complete the Job Definition details, specifying the job scheduler frequency.

8 Click **OK**.

Configuring the IP CI Type

By default the **IP Is DHCP** (IP_isdhcp) attribute of the **IP** CI Type is not visible. It needs to be set to visible so that it can be used by the TQLs. To do this:

1 Open an internet browser and connect to the UCMDB Server.
2 Select **Settings/ CI Type Manager**.
3 Select the IP CI Type: **IT Universe/ System/ Network Resource/ IP** from the navigation tree.
4 On the **Attributes** tab, select the **IP is DHCP** attribute and check the **Visible** field.

Integrating HP Universal CMDB with HP Service Manager

Overview

Table 2.3. Overview of the HP Universal CMDB - HP Service Manager integration

Integration direction	From HP Universal CMDB to HP Service Manager	From HP Service Manager to HP Universal CMDB
Integration technology	HP UCMDB ServiceDesk Adapter	Web Services Call + HP UCMDB AM generic database adapter
Integration operation	Replicate CIs	Get the actual state
HP Universal CMDB adapter	*ServiceDeskAdapter*	*AMDBAdapter*

Prerequisites

You must have installed and configured the HP Service Manager <-> HP Universal CMDB integration as explained in the *HP Universal CMDB to HP Service Manager Integration Guide* guide provided with HP Service Manager.

Updating the mapping file

In order to correctly reconcile CIs at all levels, the **amPortfolio:AssetTag** must be propagated from Asset Manager to HP Service Manager through HP Universal CMDB.

As the reconciliation in HP Service Manager is done by default on the HP Service Manager **logical.name** field, this field needs to be used to store the Asset Manager **amPortfolio:AssetTag** field.

To achieve this, perform these steps:

1 Log on to the HP Service Manager Client as an administrator

2 Select the **Tailoring/ Web Services/ WSDL Configuration** link in the system navigator

3 In the **Search** page, enter a value of **ucmdbComputer** for the **Object Name** parameter

4 Click on **Search**

5 One record should be found

6 Select the **Fields** tab

7 Click the first empty line after the end of the list to add a new field with the following attributes:

- Field: **logical.name**
- Caption: **LogicalName**

8 Click on **Save**

9 Select the **Tailoring/ Web Services/ DEM Reconciliation Rules** link in the system navigator

10 Add a new record with the following parameters:

- Table Name: *joincomputer*
- Field Name: *UCMDB Id*
- Sequence: *1*

11 Click **New**

12 On the HP Universal CMDB server, edit the file

`<HP Universal CMDB installation folder>\UCMDBServer\j2f\fcmdb\CodeBase\ServiceDeskAdapter\host_data.xslt`

13 Modify the **file.device** part by adding a mapping between the **UCMDB host_systemassettag** field and the HP Service Manager **LogicalName** field.

Add the following text to the **file.device** tag:

```
<xsl:for-each select="@host_systemassettag">
<LogicalName><xsl:value-of select="."/></LogicalName>
</xsl:for-each>
```

The *<file.device>* tag should look like this after your change:

```
...
<file.device>
<!--import:cmdb_root_attributes.xslt-->
<xsl:choose>
<xsl:when test="@host_isdesktop='true'">
<Subtype>Desktop</Subtype>
</xsl:when>
<xsl:otherwise>
<xsl:for-each select="@friendlyType">
<Subtype><xsl:value-of select="."/></Subtype>
</xsl:for-each>
```

```
</xsl:otherwise>
</xsl:choose>
<xsl:for-each select="//sm_host">
<!--import:sm_device_attributes.xslt-->
</xsl:for-each>
<xsl:for-each select="@host_os">
<OS><xsl:value-of select="."/></OS>
</xsl:for-each>
<xsl:for-each select="@host_dnsname">
<DNSName><xsl:value-of select="."/></DNSName>
</xsl:for-each>
<xsl:for-each select="@host_systemassettag">
<LogicalName><xsl:value-of select="."/></LogicalName>
</xsl:for-each>
</file.device>
...
```

14 Reload the data store that uses the *ServiceDeskAdapter* to take these modifications into account:
   1 Open an internet browser on the UCMDB Server and connect to the UCMDB Server.
   2 Select **Settings/ Federated CMDB**.
   3 Select the *ServiceDeskAdapter* adapter you are using for the HP Universal CMDB -> HP Service Manager integration.
   4 Right click the adapter in the list and select **Reload adapter**.

Configuring the *ucmdbIntegration* Web service

The HP Universal CMDB adapter depends on the *ucmdbIntegration* Web Service. You need to configure this Web service:

1 Start the HP Service Manager client and select **Menu navigation/ Tailoring/ Web Services/ WSDL Configuration** from the navigation bar.
2 Populate the `Service Name` field with *ucmdbIntegration*.
3 Populate the `Object Name` field with *ucmdbComputer*.
4 Click **Search**.
5 Select the **Fields** tab.
6 Click the first empty line at the end of the list to add a new field:

Field	Caption
logical.name	LogicalName

7 Click **Save**.

Configuring retrieval of Actual State

Overview

The actual state shows details on a CI as found in Asset Manager. It is displayed in HP Service Manager on the **Actual State** tab of the CI.

The actual state of a CI can be compared to the managed state information represented in HP Service Manager on the **Managed State** and other tabs of the CI.

By default HP Universal CMDB is configured to retrieve the actual state of CIs through HP Discovery and Dependency Mapping - Inventory.

When the SACM integration is implemented, the actual state should be retrieved from Asset Manager instead of HP Discovery and Dependency Mapping - Inventory.

Pre-requisites

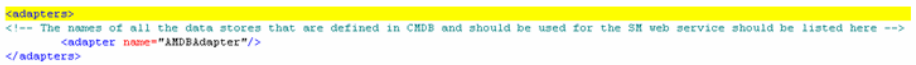
You need to deploy actual state as described in the *HP Universal CMDB to HP Service Manager Integration Guide* provided with HP Service Manager.

Configuring retrieval of Actual State

In order to have the HP Service Manager actual state pointing to the Asset Manager database rather than HP Discovery and Dependency Mapping - Inventory, update the `<UCMDB path>\UCMDBServer\j2f\fcmdb\CodeBase\ServiceDeskAdapter\webserviceAdapters.xml` file.

Replace: <*adapter name*="*EDDBAdapter*"> With: <*adapter name*="*AMDBAdapter*">

As a result, you should have the following entry in the adapter list in the file:



Note:

The name of the adapter in this file must be the name of the Asset Manager adapter you created in a previous step.

▸ Creating the Asset Manager adapter [page 28]

The Actual State information is made or both federated and replicated data.

By default HP Service Manager retrieves the replicated Actual State data from Asset Manager directly (not from HP Universal CMDB).

This default behavior can be changed by adding or changing the **owner** attribute of the <*adapter name*="*AMAdapter*"/> tag:

- If *owner=yes*, then HP Service Manager will get the Actual State from Asset Manager
- If *owner=no*, then HP Service Manager will get the Actual State from HP Universal CMDB

Example:

```
<adapters>
<adapter name="AMAdapter" owner=no/>
</adapters>
```

Customizing attributes retrieved for Actual State

Data is retrieved from HP Universal CMDB via Web Services using TQLs stored in **Root\ Integration\ SM Query**.

The list of retrieved attributes can be customized:

1. Open an internet browser and connect to the UCMDB Server.
2. Display the **Modeling** tab.
3. Select **Query Manager** in the **Modeling** menu.
4. Expand the **Root\ Integration\ SM Query** menu.
5. Select the TQL corresponding to the CI Type to customize (*hostExtendedData* for instance).
6. Right click the CI Type to customize and select the **Node Properties** entry.
7. Click **Advanced layout settings**.
8. The **Layout Settings** window lists attributes that can be retrieved in the Actual State.

   Attributes that are retrieved are checked.
9. You may check and uncheck attributes to change the selection of displayed attributes, provided the checked attributes are also present in the `<HP Universal CMDB installation folder>\j2f\fcmdb\CodeBase\AMDBAdapter\META-INF\orm.xml` file.

   You can change the `orm.xml` file to meet this requirement.

   Please refer to the HP Universal CMDB documentation to understand how this is done.

Integrating HP Universal CMDB with Asset Manager

Overview

Table 2.4. Overview of the HP Universal CMDB - Asset Manager integration

Integration direction	From HP Universal CMDB to Asset Manager
Integration technology	HP Connect-It
Replicated data	Business Services
HP Connect-It scenario	`ucmdbam-bc.scn`

Create a business services nature and model

This is required for the HP Connect-It scenario to replicate business services from HP Universal CMDB to Asset Manager.

1. Start a Asset Manager client.
2. Connect to your Asset Manager database.
3. Display the natures (**Portfolio management/ Natures** link on the navigation bar).
4. Create a new nature with the following values:

Field label	Field SQL name	Value
Code	Code	BIZSVC
bSystem	Business service	Check this box

5. Display the models (**Portfolio management/ Models** link on the navigation bar).
6. Create a new model with the following values:

Field label	Field SQL name	Value
Name	Name	The name of your choice. For instance: *Business service*
Bar code	BarCode	SER000022

Field label	Field SQL name	Value
Nature	Nature	Select the nature for which **amNature:Code** = *BIZSVC*

Deploying the business services TQL;

1. Copy the `<Asset Manager installation folder>\integrations\sacm\AM Business Services integration.zip` file.
2. Paste it in the `<HP Universal CMDB installation folder>\root\lib\customer_packages` folder.
3. Open an internet browser on the UCMDB Server and connect to the UCMDB Server.
4. Display the **Settings** tab.
5. Select *Package Manager* in the **Settings** menu.
6. Select the entry which Package name is *AM Business Services integration*.
7. Deploy the adapter (right click the entry and select **Deploy Packages to Server (from local disk)**).
8. Click + and select the `<HP Universal CMDB installation folder>\root\lib\customer_packages\AM Business Services integration.zip` file.
9. Click **Open** then **OK**.

   The deployment adds the *BusinessServices* TQL.
10. Verify that the TQL has been deployed:
    a. Select **Modeling/ Query Manager**.
    b. Select **Root/ Integration/ AM Sync**.

    You should see the `BusinessServices` TQL in the list.

Configuring the HP Connect-It scenarios

The following connectors are used by the scenarios and need to be configured:

- Asset Manager
- HP Universal CMDB (Java)

Note:

When you configure this connector, you may need to know how to populate the **Configuration file** field in the **Universal CMDB business model definition** page:

This is the location of `BusinessServices.xml` that can be found in the `<HP Connect-It installation folder\datakit\ucmdb\ucmdb8` folder.

For information on how to configure connectors, refer to the HP Connect-It *Connectors* guide.

Scheduling the execution of the scenarios

Execution of the scenarios can be scheduled in one of two ways by defining a scheduler in HP Connect-It.

- HP Connect-It *User's guide*, chapter *Implementing an integration scenario*.

Integrating Asset Manager with HP Service Manager

Overview

Table 2.5. Overview of the Asset Manager - HP Service Manager integration

Integration direction	From Asset Manager to HP Service Manager	From HP Service Manager to Asset Manager
Integration technology	HP Connect-It	HP Connect-It

Replicated data	▪ amsm-ppt.scn: ▪ Companies ▪ Vendors ▪ Locations ▪ Departments ▪ Contacts ▪ Models ▪ Stock rooms ▪ Links between CIs and Contact, Model, Vendor, Location, Department ▪ amsm-ci-ppt-link.scn ◆ Links between CIs and Contact, Model, Vendor, Location, Department	▪ smam-ppt.scn: ▪ Companies ▪ Vendors ▪ Locations ▪ Departments ▪ Contacts ▪ Models ▪ Stock rooms ▪ smam-wo.scn: ◆ Changes and tasks
HP Connect-It scenarios	▪ amsm-ppt.scn ▪ amsm-ci-ppt-link.scn	▪ smam-ppt.scn ▪ smam-wo.scn

Important:

These scenarios do not create CIs. CIs are created in Asset Manager directly or created in HP Discovery and Dependency Mapping - Inventory and replicated in Asset Manager.

Asset Manager CIs are replicated/federated to HP Universal CMDB.

HP Universal CMDB CIs are replicated to HP Service Manager.

Adding the *SACMIntegration* Web service

The HP Connect-It scenarios depend on the *SACMIntegration* Web Service. You need to add this Web service to HP Service Manager:

1. Start the HP Service Manager client and select **Menu Navigation/ Tailoring/ Database Manager/** from the System Navigator.
2. Right click the **Database Manager** screen and select the **Import/Load** menu entry.
3. Populate **File Name** with `<HP Connect-It installation folder>\datakit\sc\sm71\SACMintegration.unl`.
4. Click **Load FG**.

5 Select **Menu navigation/ Tailoring/ Web Services/ WSDL Configuration** from the System Navigator.

Populate **Service Name** with *SACMIntegration*.

Click **Search**.

Check that you see a list of entries prefixed with *SACM*.

Defining the reference database for each PPT type

By default, the provided HP Connect-It scenarios transfer the same PPT types from Asset Manager to HP Service Manager and from HP Service Manager to Asset Manager.

You cannot implement the scenarios as they are, because data replication would circle back and forth.

Thus you must decide whether the Asset Manager or HP Service Manager database will store the reference data, for each of the PPT types:

- Companies
- Vendors
- Locations
- Departments
- Contacts
- Models
- Stock rooms

Once you have made a choice, here are the matching configurations to make:

- If the reference database for all PPT types is Asset Manager:
  - Use `amsm-ppt.scn` to transfer the PPTs from Asset Manager to HP Service Manager.
  - Do not use `smam-ppt.scn`.
  - Do not use `amsm-ci-ppt-link.scn` because links between CIs and Contact, Model, Vendor, Location and Department are managed by the `amsm-ppt.scn` scenario.
  - Use `smam-wo.scn` to transfer changes and tasks.
- If the reference database for all PPT types is HP Service Manager:
  - Use `smam-ppt.scn` to transfer the PPTs from Asset Manager to HP Service Manager.
  - Do not use `amsm-ppt.scn`.
  - Use `amsm-ci-ppt-link.scn` to transfer links between CIs and Contact, Model, Vendor, Location and Department.
  - Use `smam-wo.scn` to transfer changes and tasks.

- If the reference database for PPT types is a mixed solution between Asset Manager or HP Service Manager according to PPT type:
  - Customize `smam-ppt.scn` so that PPTs referenced in HP Service Manager are transferred to Asset Manager.
  - Customize `amsm-ppt.scn` so that PPTs referenced in Asset Manager are transferred to HP Service Manager.
  - Do not use `amsm-ci-ppt-link.scn` because links between CIs and Contact, Model, Vendor, Location and Department are managed by the `amsm-ppt.scn` scenario.
  - Use `smam-wo.scn` to transfer changes and tasks.

To understand how to customize HP Connect-It scenarios: ▸ HP Connect-It guide called *User's guide*, chapter *Implementing an integration scenario*, section *Define the mapping of document types*.

Preparing the Asset Manager database

Some data is required in your Asset Manager database before the HP Connect-It scenarios can run properly.

Follow the instructions below, except if you already imported the following line-of-business data:

- Financials - Line-of-business data (TCO-budgets-chargeback)
- Shared data

1. Execute Asset Manager Application Designer.
2. Select the **File/ Open** menu item.
3. Select the **Open database description file - create new database** option.
4. Select the `gbbase.xml` file which is located in the `config` sub-folder of the Asset Manager installation folder.
5. Start the database creation wizard (**Action/ Create database** menu).
6. Populate the pages of the wizard as follows (navigate through the wizard pages using the **Next** and **Previous** buttons):

   Generate SQL script / Create database page:

Fields	Value
Database	Select the connection to the database into which you wish to import the line-of-business data.
Creation	Import line-of-business data.
Use advanced creation options	Do not select this option.

Creation parameters page:

Fields	Value
Password	Enter the administrator's password. Note: The Asset Manager database administrator is the record in the **Departments and employees** (amEmplDept) table for which the **Name** (Name) field is set to *Admin*. The database connection login is stored in the **User name** (UserLogin) field. The administration name is *Admin*. The password is stored in the **Password** field (LoginPassword).

Data to import page:

Fields	Value
Available data	Select the following options: ■ Financials - Line-of-business data (TCO-budgets-chargeback) ■ Shared data
Stop import if error	Select this option for the import to stop if a problem is encountered.
Log file	Full name of the file to which all import operations, including errors and warnings, are logged.

7 Execute the options defined using the wizard (**Finish** button).

Note:

- Financials - Line-of-business data (TCO-budgets-chargeback): this is needed to create a nature required by HP Connect-It scenarios (**amNature:Code** = *TCO_WORK_UNIT*).
- Shared data: this is needed to create nature required by HP Connect-It scenarios (used by the *ScToAcNature* map table to transfer models from HP Service Manager to Asset Manager).

Configuring the HP Connect-It scenarios

The following connectors are used by the scenarios and need to be configured:

- Asset Manager
- HP Universal CMDB (Java)

For the HP Universal CMDB connector, customize the defaults on the **Define the connection parameters** page, as well as the location of `BusinessServices.xml`, if necessary.

For information on how to configure connectors, refer to the HP Connect-It *Connectors* guide.

Scheduling the execution of the scenarios

Execution of the scenarios can be scheduled in one of two ways by defining a scheduler in HP Connect-It.

- HP Connect-It *User's guide*, chapter *Implementing an integration scenario*.

3 Technical Reference

Introduction

This chapter explains, for each database involved in the SCAM integration, which data objects are sourced and mapped by which scenario or adapter, as well as the reconciliation keys used and any special requirements needed for data transfers to work properly.

Format used to refer to a field, link or index:

Database	Format
Asset Manager	<Table SQL name>:<Field, link or index SQL name>
HP Service Manager (when transferring data from Asset Manager to HP Service Manager) and HP Discovery and Dependency Mapping - Inventory	<Table name>:<Field, link or index name>
HP Universal CMDB	<CI type>:<Attribute name>

Database	Format
HP Service Manager (when transferring data from HP Service Manager to Asset Manager)	<Web service object name>:<Web service field caption>

HP Discovery and Dependency Mapping - Inventory -> Asset Manager

Overview of the HP Discovery and Dependency Mapping - Inventory -> Asset Manager integration

▸ Overview [page 19]

Reconciliation keys used for HP Discovery and Dependency Mapping - Inventory scanned computers

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
amAsset:AssetTag	UCase(EDDIGetACAssetTag ([hwAssetData.hwAssetTag], [hwNetworkData.hwNetworkNames.hwWorkgroupName], [hwNetworkData.hwNetworkNames.hwLocalMachineID], [NMID.Appliance.Appliance_ServerID],[NMID.NMID_NMID]))
If no record can be found in HP Discovery and Dependency Mapping - Inventory using the previous key: **amComputer:PhysicalAddress**	[Device_PreferredMACAddress], [hwNetworkData.hwNetworkCards(0).hwNICPhysicalAddress]
If no record can be found in HP Discovery and Dependency Mapping - Inventory using the previous key: **amComputer:TcpIpAddress**	[Device_PreferredIPAddress], [hwNetworkData.hwNetworkCards(0).hwNICIPAddresses(0).hwNICIPAddress]

Reconciliation keys used for HP Discovery and Dependency Mapping - Inventory computers without agent and network devices (including network printers)

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
amAsset:AssetTag	UCase(EDDIGetSCLogicalName ([NMID.Appliance.Appliance_ServerID], [NMID.NMID_NMID]))
If no record can be found in HP Discovery and Dependency Mapping - Inventory using the previous key: **amComputer:PhysicalAddress**	[Device_PreferredMACAddress]

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
If no record can be found in HP Discovery and Dependency Mapping - Inventory using the previous key: **amComputer:TcpIpAddress**	[Device_PreferredIPAddress]

Value of the Asset Manager **amComputer:ComputerType** field

The HP Discovery and Dependency Mapping - Inventory **Device:DeviceCategory** field is used to set the Asset Manager **amComputer:ComputerType** field, which in turn is used to select the HP Universal CMDB CI Type as shown in the following table:

Table 3.1. DeviceCategory_ID -> Computer type -> CI Type mapping

HP Discovery and Dependency Mapping - Inventory	Asset Manager	HP Universal CMDB
Device:DeviceCategory_ID field	**amComputer:ComputerType** field	*CI Type* (for 1 Asset Manager CI, 1 or more CIs are created in HP Universal CMDB. This column lists for which CI Types those CIs are created).
1000000028, 1000000050, 1000000051, 1000000119, 1000000128, 1000000129, 1000000135, 1000000136, 1000000138, 1000000139, 1000000154, 1000000159, 1000000160, 1000000161, 1000000162, 1000000170, 1000000173	Windows computer	nt, sm_host, memory, cpu
1000000033, 1000000034, 1000000035, 1000000048, 1000000115, 1000000137, 1000000171	Windows desktop computer	nt, sm_host, memory, cpu
1000000113, 1000000133	Modem	sm_modem, memory, cpu
1000000003, 1000000053, 1000000130, 1000000132, 1000000144	Router	router, sm_network_component_ext, memory, cpu
1000000020, 1000000058, 1000000060, 1000000073, 1000000076, 1000000122, 1000000127	Gateway	sm_gateway, memory, cpu
1000000006, 1000000017, 1000000023, 1000000061	Hub	sm_hub, memory, cpu
1000000011, 1000000012, 1000000013, 1000000126, 1000000157	Network printer	sm_printer, netprinter, memory, cpu
1000000032	Mainframe	mainframe, sm_host, memory, cpu

HP Discovery and Dependency Mapping - Inventory	Asset Manager	HP Universal CMDB
Device:DeviceCategory_ID field	**amComputer:ComputerType** field	*CI Type* (for 1 Asset Manager CI, 1 or more CIs are created in HP Universal CMDB. This column lists for which CI Types those CIs are created).
1000000007, 1000000018, 1000000024, 1000000025, 1000000040, 1000000041, 1000000052, 1000000059, 1000000072, 1000000078, 1000000079, 1000000080, 1000000089, 1000000090, 1000000094, 1000000100	Network component	sm_network_component, memory, cpu
1000000016, 1000000054	ATM switch	atmswitch, sm_network_component_ext, memory, cpu
1000000001, 1000000010, 1000000022, 1000000026, 1000000027, 1000000030, 1000000031, 1000000062, 1000000063, 1000000074, 1000000075, 1000000081, 1000000082, 1000000085, 1000000086, 1000000103, 1000000107, 1000000108, 1000000111, 1000000134, 1000000149, 1000000150, 1000000152, 1000000155, 1000000168, 1000000174	Computer servers	host_node, sm_host, memory, cpu
1000000004, 1000000036, 1000000064, 1000000095, 1000000143, 1000000145, 1000000146, 1000000148, 1000000153, 1000000156	Desktop computers	host_node, sm_host, memory, cpu
1000000029, 1000000151	Unix server computer	unix, sm_host, memory, cpu
1000000037, 1000000147	Unix desktop computer	unix, sm_host, memory, cpu
1000000021	Firewall	firewall, sm_network_component_ext, memory, cpu
1000000005, 1000000009, 1000000015, 1000000055, 1000000056, 1000000057, 1000000093, 1000000096, 1000000098, 1000000099, 1000000102, 1000000104, 1000000116, 1000000142, 1000000167	Switch	switch, sm_network_component_ext, memory, cpu
Other values	Computer	host_node, sm_host, memory, cpu

HP Discovery and Dependency Mapping - Inventory	Asset Manager	HP Universal CMDB
Device:DeviceCategory_ID field	**amComputer:ComputerType** field	*CI Type* (for 1 Asset Manager CI, 1 or more CIs are created in HP Universal CMDB. This column lists for which CI Types those CIs are created).
	Virtual machine (Directly created in Asset Manager)	host_node, sm_host, memory, cpu
	VMWare ESX Server (Directly created in Asset Manager)	nt, sm_host, memory, cpu
	VMWare VirtualCenter (Directly created in Asset Manager)	nt, sm_host, memory, cpu
	Laptop (Directly created in Asset Manager)	host_node, sm_host, memory, cpu
	Solaris Zone Server (Directly created in Asset Manager)	unix, sm_host, memory, cpu

Note:

In HP Universal CMDB the CI Type is also flagged as **Host is desktop** or **Host is virtual**. ▸ How are some of the CI attributes defined? [page 58]

You may assciate the **Device:DeviceCategory_ID** values to other **amComputer:ComputerType** values, but you must keep the values already defined for **amComputer:ComputerType**.

This is done in the the `<HP Connect-It installation folder>>\config\ed\ddmi75\mpt\ddmi.mpt` file (*DeviceCategoryAMComputerType* maptable).

▸ HP Connect-It guide called *User's guide*, chapter *Implementing an integration scenario*, section *Define mapping scripts / Editing associated files / Maptables*.

Reconciliation keys used to link a model to the Asset Manager portfolio items

The following reconciliation keys are used to link the Asset Manager portfolio items to a model:

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
If the portfolio item is a virtual machine	

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
amModel:Name	[VMInformation.VMHost.Host_Type]
If the portfolio item is not a virtual machine	
amModel:Name	[hwSMBIOS.hwSmbiosSystemInformation(0).hwsmbiosProductName], [hwBiosData.hwBiosMachineModel], [Model.Model_Name], [DeviceCategory.DeviceCategory_Description]

Reconciliation keys used to link a model to a Asset Manager categorizing model

The model associated to the portfolio item is linked to a model used for categorization purposes.

The following reconciliation keys are used to link the Asset Manager model to a categorization model:

If the portfolio item is not a virtual machine or virtual machine host

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
amModel:BarCode	HP Connect-It searches an Asset Manager record for which **amProdClassCode:UnspscKey** = **DeviceCategory:UNSPSC_ID** in HP Discovery and Dependency Mapping - Inventory. If such a record is found, HP Connect-It searches for the model associated to the UNSCPSC record in the **amProdClassCode** table. This model is the one used as a categorizing model for the model associated to the portfolio item (**amModel:Parent** link).

If the portfolio item is a virtual machine

The portfolio item model is linked to a the parent model for which *amModel:BarCode* = *VMCPU*

If the portfolio item is a virtual machine host

The portfolio item model is linked to a the parent model for which *amModel:BarCode* = *SERVER*

Nature linked to the Asset Manager portfolio models

Case	Asset Manager nature
If the portfolio item is a virtual machine	Nature for which *amNature:Code* = *CPUVM*

Case	Asset Manager nature
If the portfolio item is not a virtual machine	Nature for which *amNature:Code = CPU*

Reconciliation key used to link the portfolio items to a network card

Portfolio items are linked to a network card using the following reconciliation keys:

Key in Asset Manager	HP Discovery and Dependency Mapping - Inventory value searched for in the Asset Manager key
amNetworkCard:PhysAddress	1 hwNetworkData.hwNetworkCards.hwNICPhysicalAddress] 2 [hwNetworkData.hwNetworkNames.hwLocalMachineID] & " - " & [hwNetworkData.hwNetworkCards.hwNetworkCards_Seq], else "N / A" & " - " & [hwNetworkData.hwNetworkCards.hwNetworkCards_Seq]

Asset Manager -> HP Universal CMDB

Overview of the Asset Manager > HP Universal CMDB integration

▸ Overview [page 23]

Are CIs federated or replicated?

CIs are either replicated or federated. This depends on their CI Type.

To understand which CI Types are federated and which are replicated from Asset Manager to HP Universal CMDB:

1. Start UCMDB Server.
2. Open an internet browser and connect to UCMDB Server.
3. Select the **Settings/ Federated CMDB** menu option.
4. Select **AMDBAdapter** in the list of adapters.
5. Display the **Supported CI Types** tab.
6. CI Types for which the checkboxes are checked are federated. The others are replicated.

Warning:

Changes to these selections are not supported.

For definitions of data federation and replication: ▸ Federation [page 75] and Replication [page 76]

In what conditions are **amComputer** records replicated to HP Universal CMDB?

amComputer records are replicated if the following conditions are met:

- The portfolio item linked to the **amComputer** record is in use (**amPortfolio:seAssignment** = *In use*).
- The **amComputer** record is linked to at least one network card (**amComputer:NetworkCards** link), whose **amNetworkCard:TcpIpAddress** and **amNetworkCard:PhysAddress** fields are populated.
- The **amComputer:ComputerType** field of the **amComputer** record must have a value that is present in the second column of the DeviceCategory_ID -> Computer type -> CI Type mapping [page 49] table.

Can diff replication be used?

HP Universal CMDB offers 2 kinds of replications:

- Full replication: a replication is done for all Asset Manager CIs.
- Diff replication: a replication is done for Asset Manager CIs only if the CI has been created or updated since the last Full or Diff replication job was executed.

  For an update, the replication job compares the HP Universal CMDB **host.root_updatetime** field (mapped on **amComputer.dtLastModif** field in Asset Manager) with the last Full or Diff replication job execution time.

  For a creation, the replication job compares the HP Universal CMDB **host.root_createtime** field (mapped on **amPortfolio.dtSACMCreate** field in Asset Manager) with the last Full or Diff replication job execution time.

  Diff replication jobs take less time than Full replication jobs.

There is a drawback to the diff replication: in Asset Manager, **amComputer.dtLastModif** is updated only if a field or link is changed in the **amComputer** table, although CIs are described in other tables, in particular **amAsset** and **amPortfolio**.

For instance, if the **amPortfolio:seAssignment** field changes for a CI, and no field changes in **amComputer**, the **amComputer.dtLastModif** is not updated.

Therefore, we recommend that you run a full replication periodically to catch up with all changes in Asset Manager database.

Here is the list of all fields for which changes in Asset Manager may not be caught by a diff replication:

Asset Manager field	CI Type	Corresponding HP Universal CMDB attribute
amPortfolio.seAssignment	host	data_note
amModel.Name	host	host_model
amAsset.SerialNo	host	host_serialnumber
amAsset.Description	host	data_description
amBrand.Name	host	host_manufacturer
amEmplDept.Name + amEmplDept.FirstName	SM device	contact_name
amEmplDept.MobilePhone	SM device	contact_cellphone
amEmplDept.title	SM device	title
amEmplDept.Phone	SM device	contact_telephone
amAsset.SerialNo	SM device	bios_serialnumber
amCostCenter.title	SM device	cost_center
amLocation.City + amCountry.Name	SM device	location
amLocation.Name	SM device	room
amLocation.Name	SM device	floor
amLocation.Name	SM device	building
amEmplDept.Name	SM device	department
amNetworkCard.DefaultGateway	SM device	default_gateway
amNetworkCard.DNSSuffixes	SM device	domain_suffix
amModel.Name	SM Host	bios_model
amAsset.sMaxCnxCount	SM Base Network Component	number_of_ports
amBrand.Name	SM Base Network Component	manufacturer
amPortfolio.seAssignment	SM Network Component	data_note
amModel.Name	SM Network Component	model
amAsset.Description	SM Network Component	data_description
amNetworkCard.bDHCPEnabled	IP	ip_isdhcp
amNetworkCard.DHCPServer	IP	is_dhcpdomainname
amNetworkCard.TcpIpAddress	IP	ip_address
amNetworkCard.SubnetMask	IP	ip_netmask
amNetworkCard.PhysAddress	Network interface	interface_macaddr
amNetworkCard.Description	Network interface	interface_description

Asset Manager field	CI Type	Corresponding HP Universal CMDB attribute
amPortfolio.seAssignment	Network interface	data_note

What is created in HP Universal CMDB?

When a CI is replicated/federated from Asset Manager to HP Universal CMDB:

- A CI is created in HP Universal CMDB.

  Its CI Type depends on the value of the **amComputer:ComputerType** field.

  ▸ Value of the Asset Manager amComputer:ComputerType field [page 49]
- For each record in the **amComputer:NetworkCards** collection attached to the Asset Manager CI, two CI types are created in HP Universal CMDB: *IP*, and *Network interface*.

IP and Network Interface CIs are created by mapping attributes from the Asset Manager **amNetworkCard** table:

- **amNetworkCard:TcpIpAddress** is used to create an IP CI.
- **amNetworkCard:PhysAddress** is used to create a Network Interface CI.

Warning:

If 2 Asset Manager CIs have the same value for **amComputer:PhysicalAddress**, 1 host CI is created in HP Universal CMDB with 2 linked sm_host CIs.

Reconciliation keys for the creation/update of root CI types

The reconciliation from Asset Manager to HP Universal CMDB creates 2 CI types at the root level: host and sm_network_component.

If **CI Type** = *host*:

Key in HP Universal CMDB	Asset Manager value searched for in the HP Universal CMDB key
host:host_key	Smallest **amNetworkCard:PhysAddress** value of the network cards attached to the host

If **CI Type** = *sm_network_component*:

Key in HP Universal CMDB	Asset Manager value searched for in the HP Universal CMDB key
sm_device:device_id	**amPortfolio.AssetTag** value of the **amComputer** record to which the network cards are linked.

Reconciliation keys for the creation/update of CI types attached to the root CI types

If **CI Type** = *host*:

Key in HP Universal CMDB	Asset Manager value searched for in the HP Universal CMDB key
host:host_systemassettag	amAsset:AssetTag
If first key not found: ip:ip_address	amComputer:TcpIpAddress

If **CI Type** = *sm_network_component*:

Key in HP Universal CMDB	Asset Manager value searched for in the HP Universal CMDB key
sm_network_component:asset_tag	amAsset:AssetTag
If first key not found: ip:ip_address	amComputer:TcpIpAddress

Reconciliation between Asset Manager and HP Universal CMDB is performed using the rules defined in the `reconciliation_rules.txt` file.

Example of how the TQLs proceed when they display CPU CIs attached to a replicated host CI type using federation:

- the attributes of the CPU CI defined in the `orm.xml` mapping file are retrieved from Asset Manager
- the attributes of the CPU CI type defined in `reconciliation_rules.txt` (using the host:host_systemassettag and ip:ip_address reconciliation keys) are also retrieved in Asset Manager.

Here is the reconciliation algorithm that is executed when you preview the TQLs for this example:

```
If host_systemassettag of CPU matches one host_systemassettag in list of r
eplicated uCMDB hosts, then the CPU is linked to the host
Else if ip_ip_address of CPU (TcpIpAddress in amComputer) matches one ip_a
ddress of list of ip CIs linked to the uCMDB hosts, then the CPU is linked
to the corresponding host
Else, CPU not linked to host
```

What happens when changes occur in Asset Manager during replication?

- If the value of the **amPortfolio:seAssignment** field for a CI is no longer *In use*, the corresponding CI is deleted from HP Universal CMDB uCMDB with all its *container_f* links but the associated IPs remains in HP Universal CMDB.

  However, they will be aged out if the aging mechanism is active.
- However, if the IT equipment record is deleted from Asset Manager, the previously replicated CI remains in HP Universal CMDB.
- Changes in **amPortfolio:seAssignment** are taken into account only if the **amComputer:dtLastModif** field changes for the computer record.

  ▸ In what conditions are amComputer records replicated to HP Universal CMDB? [page 54]
- When a Network Card is deleted in Asset Manager, the corresponding IP and Network Interface CIs are detached from their hosts in HP Universal CMDB but remain in HP Universal CMDB attached to no host.
- When a Network Card is updated in Asset Manager by changing either its IP Address (**amComputer:TcpIpAddress**) or its Physical address (**amComputer:PhysicalAddress**), a new IP or Network Interface is created in HP Universal CMDB without deleting the old ones.
- If you change the **amAsset:AssetTag** of a CI after it has been replicated to HP Universal CMDB (as a host + linked sm_host CIs), an additional sm_host host CI will be created and linked to the original host CI.
- If you change the value **amComputer:ComputerType** after a CI has been replicated to HP Universal CMDB, you will not be able to go through the next replication unless you delete the previous CI from HP Universal CMDB.

How are some of the CI attributes defined?

CI Type

When a CI is replicated to HP Universal CMDB, it's CI Type is defined according to the value of **amComputer:ComputerType** in Asset Manager.

The mapping between the values of **amComputer:ComputerType** and the HP Universal CMDB CI Type is defined in the `<HP Universal CMDB installation folder>\j2f\fcmdb\CodeBase\AMDBAdapter\META-INF\discriminator.properties` file.

A summary of the mapping can be found at the following location: Value of the Asset Manager amComputer:ComputerType field [page 49].

Host is Virtual

When a CI is replicated to HP Universal CMDB, the **Host is Virtual** attribute of the CI is defined according to the value of **amComputer:ComputerType** for the CI in Asset Manager.

The mapping between the values of **amComputer:ComputerType** and the **Host is Virtual** attribute is defined in the `<HP Universal CMDB installation folder>\j2f\fcmdb\CodeBase\AMDBAdapter\META-INF\server_virtual_distinguisher.properties` file.

If the value of **amComputer:ComputerType** in Asset Manager is...	the value of **Host is Virtual** in HP Universal CMDB is...
Virtual Machine	Yes
■ Windows computer ■ Windows desktop computer ■ VMware Virtual Center ■ VMware ESX server ■ Unix server computer ■ Unix desktop computer ■ Solaris Zone Server ■ Desktop computers ■ Computer servers ■ Laptop ■ Mainframe ■ ATM switch ■ Firewall ■ Router ■ Switch ■ Network printer	No

Host is Desktop

When a CI is replicated to HP Universal CMDB, the **Host is Desktop** attribute of the CI is defined according to the value of **amComputer:ComputerType** for the CI in Asset Manager.

The mapping between the values of **amComputer:ComputerType** and the **Host is Desktop** attribute is defined in the `<HP Universal install directory>\j2f\fcmdb\CodeBase\AMDBAdapter\META-INF\server_desktop_distinguisher.properties` file.

If the value of **amComputer:ComputerType** in Asset Manager is...	the value of **Host is Desktop** in HP Universal CMDB is...
■ Windows desktop computer ■ Unix desktop computer ■ Desktop computers	Yes
■ Windows computer ■ VMware Virtual Center ■ VMware ESX server ■ Unix server computer ■ Solaris Zone Server ■ Computer servers ■ Laptop ■ Mainframe ■ ATM switch ■ Firewall ■ Router ■ Switch ■ Network printer	No

IP Domain names

When replicating IP data from Asset Manager to HP Universal CMDB, the **ip:ip_domain** attribute value of the IP CI Type is populated with the *DefaultDomain*.

If you would like to use another value, change the following line in the `<HP Universal install directory>\j2f\fcmdb\CodeBase\AMDBAdapter\META-INF\fixed_values.txt` file:

```
'entity[ip] attribute[ip_domain] value[DefaultDomain]'
```

Supported TQLs

To understand which TQLs are supported; display the definitions in HP Universal CMDB:

1. Start HP Universal CMDB
2. Select the **Modeling/ Query Manager** menu option.
3. Select **Integration/ SM Query**
4. Supported TQLs in this folder are :
   - hostData
   - hostRelationsData
   - networkData1

- networkData2
- networkRelationsData
- printerData

5 Select **Integration/ SM Sync**

6 Supported TQLs in this folder are :
- hostExtendedData
- networkComponentExtendedData1
- networkComponentExtendedData2
- printerExtendedData

HP Universal CMDB -> Asset Manager

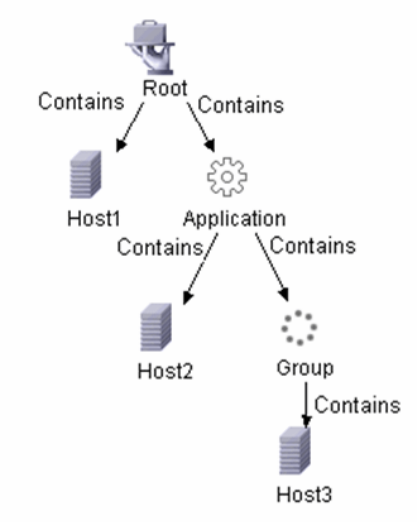
Overview

▸ Overview [page 38]

HP Universal CMDB is the authoritative source of business services (Asset Manager is the authoritative source of host CIs to which a Business Service is linked;).

By default the scope of the integration takes two CI Types into account:
- CI Type = *Business Service*
- CI Type = *Application*, where the application is also attached to a CI Type = *Business Service*

Business services are replicated provided they comply with the following diagram:



A HP Universal CMDB business service is replicated in Asset Manager as a business service asset plus client-resource relationships for the following hosts:

- All hosts linked to a Business Service
- All hosts linked to an Application
- All hosts attached to a group attached to an Application. (All hosts, provided they already exist in Asset Manager.)

  The application is linked to the computers that form the group, but not to the group.

For all these relationships, the **amClientResource:CRType** field is set to *Within '<Name of the AM Business Service>', uses*.

Note:

CIs not present in Asset Manager are not created, only business service assets and relationships with existing CIs.

For successful replication, the structure of the Business Services must conform to that required in the supplied *Business Services* TQL and reflected in `BusinessServices.xml`. This configuration is that taken into account by the HP Connect-It scenario. It is customizable, but changes require modifications to the HP Connect-It scenario.

Reconciliation keys

If CI Type = *Business Service*

Key in Asset Manager	HP Universal CMDB value searched for in the Asset Manager key
amAsset:AssetTag	Business Service:data_name

> **Warning:**
>
> The HP Universal CMDB key is not unique. Thus you should verify that their values are unique.

If CI Type = *Application*

Key in Asset Manager	HP Universal CMDB value searched for in the Asset Manager key
amAsset:AssetTag	Application:data_name

> **Warning:**
>
> The HP Universal CMDB key is not unique. Thus you should verify that their values are unique.

Business services-Host relationships

Key in Asset Manager	HP Universal CMDB value searched for in the Asset Manager key
amAsset:AssetTag	host:host_systemassettag

> **Warning:**
>
> The **host:host_systemassettagis** is not a unique key in HP Universal CMDB.
>
> The values should be unique though.
>
> If you do not create CIs manually in HP Universal CMDB, this should be the case, because CIs will come from Asset Manager and use the **amAsset:AssetTag** which is unique and used as a reconciliation key from Asset Manager to HP Universal CMDB.

What happens when

- If in HP Universal CMDB you unlink a host from a root business service, the host is not unlinked in Asset Manager.
- When a business service is deleted from HP Universal CMDB, it is not deleted in Asset Manager.

HP Service Manager <-> Asset Manager

Overview

▸ Overview [page 40]

What happens when a CI does not exist in HP Service Manager

If a CI does not exist in HP Service Manager yet when a PPT/CI link is presented, an Asset Manager output event is created by the HP Connect-It scenarios.

HP Connect-It will try and process the output events whenever the scenario is rerun.

Note that output events automatically expire according to the Asset Manager database options:

1. Start the Asset Manager Windows client and connect to the database.
2. Use the **Administration/ Database options...** menu.
3. Configure the *Event management / Expiration time for output events (hours)* option.

Reconciliation keys for `amsm-ppt.scn`

Companies

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
company:customer.id	amCompany:Code

Only Asset Manager companies for which **amCompany:Qualif1** = *Parent company* are replicated.

For languages other than English, the `<HP Connect-It installation folder>\config\ac\strings\qualif.str` file must be customized. The

ID of the string to modify in this file is *AMQUALIF_PARENT*. Replace *Parent company* with the right string for your language.

The Asset Manager **amCompany:Code** field must be populated.

Vendors

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
vendor:vendor	amCompany:Name
AND vendor:location	amCompany:MainSite:Barcode

Locations

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
location:location	amLocation:BarCode

The Asset Manager **amLocation.BarCode** field must be populated.

Departments

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key

dept:company + dept:dept	amEmplDept.Location.Company.Code
	Reconciliation uses the following rule:
	`RetVal = RemoveSlashAtExtremity([FullName])`
	`If [Location.Company.Code] <> "" Then`
	`RetVal = [Location.Company.Code] & "/" _`
	`& RetVal`
	`End If`
	Example:
	In Asset Manager, we have 4 departments:
	■ Department *NameA*
	FullName = /*NameA*/
	■ Department *NameB* under *NameA*
	FullName = /*NameA*/*NameB*/
	■ Department *NameC* under *NameB*
	FullName = /*NameA*/*NameB*/*NameC*/
	■ Department *NameD* under *NameC*
	FullName = /*NameA*/*NameB*/*NameC*/*NameD*/
	NameD is linked to a location linked to a company with **amCompany:Code** = *COMPANY_CODE SM*
	The key for *NameD* is *COMPANY_CODE*/*NameA*/*NameB*/*NameC*/*NameD*.
	The key for *NameC* is *NameA*/*NameB*/*NameC*.

Only Asset Manager departments for which **amEmplDept.bDepartment** = *1* are replicated.

Contacts

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
contacts:contact.name	amEmplDept:Name, Name:FirstName (amEmplDept:BarCode)

> **Important:**
>
> **amEmplDept:Name** can be 50 characters long, **Name:FirstName** 30 characters and **amEmplDept.BarCode** 255.
>
> But **contacts.contact.name** can only store 140 characters.
>
> If the **amEmplDept.BarCode** field does not exceed 55 characters, the reconciliation keys should work fine.

Models

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
model:part.no	amModels:BarCode

> **Note:**
>
> The Asset Manager *amModels.BarCode* field must be populated.

Stock rooms

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
stockroom:stockroom	amStock:Name

Reconciliation keys for `amsm-ci-ppt-link.scn`

Links between device CIs and PPT objects

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
device:logical.name	amComputer:AssetTag

Key in HP Service Manager	Asset Manager value searched for in the HP Service Manager key
Devices are linked to the following objects: ■ Contact ■ Model ■ Vendor ■ Location ■ Department	The same keys are used as for the transfer of PPTs themselves. See tables above.

The Asset Manager *amComputer:AssetTag* field must be populated.

Reconciliation keys for `smam-ppt.scn`

The `smam-ppt.scn` scenario uses the *SACMIntegration* web service.

Locations and their link to a company and a country

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amLocation:BarCode	location:location
amCompany:Code	location:company
amLocation:Country:Name	location:country

If no country can be found for which **amCompany:Code** = **location:country**, the location will be linked to a location with **amCompany:Code** = *Unknown country*.

Make sure the Asset Manager **amCompany:Code** field is populated.

Make sure the Asset Manager **amCountry:Name** field is populated with unique values.

`smam-ppt.scn` uses the *ScCountryToAc* map table in the `catmod.mpt` file to map HP Service Manager countries to Asset Manager countries.

Companies

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amCompany:Code	company:CompanyCode
amCompany:MainSite:Name	company:CompanyCode
amCompany:Sites:Name	company:CompanyCode

Make sure the Asset Manager **company:CompanyCode** field is populated with unique values.

Make sure the Asset Manager **amCompany:Code** field is populated.

HP Service Manager Companies replicated as Asset Manager departments

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amEmplDept:BarCode	company:CompanyCode
amEmplDept:Location:FullName	company:CompanyCode

Make sure the HP Service Manager **company:CompanyCode** field is populated with unique values.

amEmplDept:bDepartment is set to *1*.

Departments

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amEmplDept:FullName	dept:dept.structure

amEmplDept:bDepartment is set to *1*.

A function converts **dept:dept.structure** to **amEmplDept:FullName**.

Contacts

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amEmplDept:BarCode	contacts:contactname
amEmplDept:Location:BarCode	contacts:location
amEmplDept:Parent:FullName	contacts:dept

Make sure the HP Service Manager **contacts:locationcode** field is populated with unique values.

Operators

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amEmplDept:BarCode	operator:name
amEmplDept:WorkUnit:Description	operator:name
amEmplDept:WorkUnit:Model:Name	The scenario links the employee to the model for which **amModel:Name** = *Hourly rate*

Operators is an extension of the contacts table.

After contacts have been imported, operators are imported to populate **amEmplDept:WorkUnit**.

A model is created in Asset Manager with **amModel:Name** = *Hourly rate*. This model is linked to a nature (which must pre-exist) with **amNature:Code** = *TCO_WORK_UNIT* and also linked to a parent model which **amModel:Name** = *Work unit* and which will be created if it does not exist.

The parent model must also be linked to a similar nature.

This must be created by hand or can be retrieved through the import of *Financials - Line-of-business data (TCO-budgets-chargeback)*.

Vendors

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amCompany:Name	vendor:vendor
amCompany:MainSite:FullName	**vendor:vendor.id** + **vendor:vendor.location**
amCompany:MainSite:Country:Name	vendor:country
amCompany:Contact:FirstName + amCompany:Contact:Name	■ vendor:contract.person ■ vendor:order.person ■ vendor:sales.mgr ■ vendor:service

Make sure **vendor:contract.person**, **vendor:order.person**, **vendor:sales.mgr** and **vendor:service** use the *<Last name>, <First name>* format.

This is split into **amCompany:Contact:FirstName** and **mCompany:Contact:Name** in Asset Manager.

Make sure the HP Service Manager **vendor:vendor** field is populated with unique values. If two different HP Service Manager vendors have the same value for the **vendor:vendor** field in HP Service Manager in different locations, only the first vendor is imported to Asset Manager.

Make sure the HP Service Manager **vendor:vendor.location** + **vendor:vendor.id** fields are populated with unique values. If two HP Service Manager vendors have the same value for the **vendor:vendor.location** field and for the **vendor:vendor.id** field although they are linked to different locations (address differs), the two vendors will be linked to the same location (the first that was transferred to Asset Manager)

Make sure the Asset Manager **amCountry:Name** field is populated with unique values.

The HP Connect-It scenario uses the *ScCountryToAc* map table in the `catmod.mpt` file to map **amCountry:Name**.

HP Service Manager vendor sites replicated as companies in Asset Manager

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amLocation:FullName	**vendor:vendor.id** + **vendor:location** are used to create a full name
amLocation:Company:Name	vendor:vendor

Make sure the HP Service Manager **vendor:vendor.id** + **vendor:location** fields are populated with unique values. If two HP Service Manager vendors have the same value for the **vendor:vendor.id** + **vendor:location** fields although they are linked to different locations (address differs), the two vendors locations will result in a single location in Asset Manager (the first that was transferred to Asset Manager)

When vendors were created (▸ Vendors [page 70]): If two different HP Service Manager vendors have the same value for the **vendor:vendor** field in HP Service Manager in different locations, only the first vendor is imported to Asset Manager. So when the location created by this mapping is linked to a company, it may be associated to the wrong company.

Stocks

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amStocks:Name	stockRoom:stockroom
amStock:Supervisor:BarCode	stockRoom:manager
amStock:DelivLocation:Field1	location:location

Models

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amModel:BarCode	model:part.no
amModel:Brand:Name + amModel:Brand:Company:Name	model:manufacturer
amModel:Nature:Code	model:Category
amModel:Parent:BarCode	model:Category

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key

amModel:Photo	`if [RetrieveSACMModelResponse.model.instance.attachments.attachment(0).name] = "" then`
	`RetVal = [RetrieveSACMModelResponse.model.instance.Model] + "_" + [RetrieveSACMModelResponse.model.instance.PartNumber]`
	`else`
	`RetVal = "SM_" & [RetrieveSACMModelResponse.model.instance.attachments.attachment(0).name]`
	`end if`

amModel:Nature:Code is mapped using the *ScToAcNature* map table located in `<HP Connect-It installation folder>\scenario\ac\ac51\sacm\mpt\catmod.mpt`.

The natures listed in the *ScToAcNature* map table must exist in the Asset Manager database.

A model is not created in Asset Manager unless at least one of following is populated in HP Service Manager: *model:Model*, *model:PartNumber*, *model:Category*.

Reconciliation keys for `smam-wo.scn`

This scenario propagates details of unplanned changes and tasks from HP Service Manager to Asset Manager as Work Orders.

The relevant links between CIs and PPT data are propagated from Asset Manager to HP Service Manager by another HP Connect-It scenario.

Changes-> Workorders

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amWorkOrder:WoNo	cm3r:header.number

Tasks-> Workorders

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amWorkOrder:WoNo	cm3t:header.number

For the corresponding CI

Key in Asset Manager	HP Service Manager value searched for in the Asset Manager key
amComputer:AssetTag	device:logical.name

HP Service Manager -> HP Universal CMDB

This section explains how HP Service Manager retrieves actual state information about CIs.

Displaying the actual state of CIs is a standard HP Service Manager feature.

The actual state reflects the real attributes of a CI. Most of the time, these attributes will be retrieved through HP Discovery and Dependency Mapping - Inventory inventory data that is replicated to Asset Manager, and then replicated/federated to HP Universal CMDB.

To retrieve actual state data, HP Service Manager calls a HP Universal CMDB Web service. This Web service calls TQLs. The TQLs retrieve Asset Manager data through federation and replication.

4 Glossary

Actual State

The actual state of a CI (Configuration Item) is its actual configuration, and includes such attributes as installed software, IP addresses and file systems. This may differ from its managed state.

Federation

Data federation aims to efficiently join data from multiple heterogeneous sources, leaving the data in place -- without creating data redundancy. The data federation pattern supports data operations against an integrated and transient (virtual) view where the real data is stored in multiple diverse sources. The source data remains under the control of the source systems and is pulled on demand for federated access.

HP Universal CMDB federation, for instance, allows Asset Manager data to be viewed and leveraged by other HP Software solutions, such as HP Service Manager.

An alternative strategy to data *Federation* is data *Replication*.

▸ Replication [page 76]

Managed State

The managed state of a CI (Configuration Item) is its officially managed configuration. This may differ from its actual state.

PPT

Data relating to People, Places and Things. This is synchronized between HP Service Manager and Asset Manager using HP Connect-It.

The synchronized PPTs include:

- Companies
- Vendors
- Locations
- Departments
- Contacts
- Models
- Stock rooms

Replication

Data replication is a storage strategy that copies data from a host database to another. One database maintains the master copy of the data and additional databases maintain slave copies of the data.

HP Connect-It, for instance, allows HP Discovery and Dependency Mapping - Inventory data to be replicated to Asset Manager.

An alternative strategy to data *Replication* is data *Federation*.

▸ Federation [page 75]

SACM

Service Asset and Configuration Management is an ITIL process.

The objective of SACM is to maintain information about Configuration Items required to deliver an IT service, including their relationships.

TQL (Topology Query Language)

The SACM integration uses a collection of Topology Query Language (TQL) queries to gather CI attribute information from Asset Manager to HP Universal CMDB and from HP Universal CMDB to HP Service Manager.

UNSPSC

United Nations Standard Products and Services Code. UNSPSC provides an open, global multi-sector standard for efficient, accurate classification of products and services.

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