HP Universal CMDB

for the Windows and Linux operating systems

Software Version: 9.01

Administration Guide

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Welcome to This Guide

This guide explains how to configure HP Universal CMDB.

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How This Guide Is Organized

The guide contains the following chapters:

Part I   Introduction

Describes the CMDB (the central repository for the configuration information that is gathered from the Data Flow Management processes and the various third-party applications and tools).

Part II   Administration

Describes how to configure HP Universal CMDB, how to deploy packages (that contain resources needed by Data Flow Management), and how to define schedules for tasks that are activated on a periodic basis.

Part III   Setting Up and Working with Users

Describes how to set up users and roles and grant permissions to roles to use components of the application; describes how to apply permissions to users and user groups to enable access to specific resources and resource instances in your business environment.

Part IV   CI Lifecycle

Describes how to view a list of CIs and relationships that are candidates for deletion by the aging mechanism, and how to initiate the aging procedure.

Part V   Glossary of HP Universal CMDB Terminology

Contains a list of HP Universal CMDB terminology.

Who Should Read This Guide

This guide is intended for the following users:

➤ HP Universal CMDB administrators

➤ HP Universal CMDB platform administrators

➤ HP Universal CMDB application administrators

➤ HP Universal CMDB data collector administrators

Readers of this guide should be knowledgeable about enterprise system administration, have familiarity with ITIL concepts, and be knowledgeable about HP Universal CMDB.

HP Universal CMDB Online Documentation

HP Universal CMDB includes the following online documentation:

Readme. Provides a list of version limitations and last-minute updates. From the HP Universal CMDB DVD root directory, double-click **readme.html**. You can also access the most updated readme file from the HP Software Support Web site.

What's New. Provides a list of new features and version highlights. In HP Universal CMDB, select **Help** > **What's New**.

Printer-Friendly Documentation. Choose **Help** > **UCMDB Help**. The following guides are published in PDF format only:

➤ the *HP Universal CMDB Deployment Guide* PDF. Explains the hardware and software requirements needed to set up HP Universal CMDB, how to install or upgrade HP Universal CMDB, how to harden the system, and how to log in to the application.

➤ the *HP Universal CMDB Database Guide* PDF. Explains how to set up the database (MS SQL Server or Oracle) needed by HP Universal CMDB.

➤ *HP Universal CMDB Discovery and Integration Content Guide*. Explains how to run discovery to discover applications, operating systems, and network components running on your system. Also explains how to discover data on other data repositories through integration.

HP Universal CMDB Online Help includes:

➤ **Modeling**. Enables you to manage the content of your IT Universe model.

➤ **Data Flow Management**. Explains how to integrate HP Universal CMDB with other data repositories and how to set up HP Universal CMDB to discover network components.

➤ **UCMDB Administration**. Explains how to work with HP Universal CMDB.

➤ **Developer Reference**. For users with an advanced knowledge of HP Universal CMDB. Explains how to define and use adapters and how to use APIs to access data.

Online Help is also available from specific HP Universal CMDB windows by clicking in the window and clicking the **Help** button.

Online books can be viewed and printed using Adobe Reader, which can be downloaded from the Adobe Web site (www.adobe.com).

Topic Types

Within this guide, each subject area is organized into topics. A topic contains a distinct module of information for a subject. The topics are generally classified according to the type of information they contain.

This structure is designed to create easier access to specific information by dividing the documentation into the different types of information you may need at different times.

Three main topic types are in use: **Concepts**, **Tasks**, and **Reference**. The topic types are differentiated visually using icons.

Topic Type	Description	Usage
Concepts	Background, descriptive, or conceptual information.	Learn general information about what a feature does.
Tasks	**Instructional Tasks.** Step-by-step guidance to help you work with the application and accomplish your goals. Some task steps include examples, using sample data. Task steps can be with or without numbering: ➤ **Numbered steps.** Tasks that are performed by following each step in consecutive order. ➤ **Non-numbered steps.** A list of self-contained operations that you can perform in any order.	➤ Learn about the overall workflow of a task. ➤ Follow the steps listed in a numbered task to complete a task. ➤ Perform independent operations by completing steps in a non-numbered task.
	Use-case Scenario Tasks. Examples of how to perform a task for a specific situation.	Learn how a task could be performed in a realistic scenario.

Topic Type	Description	Usage
Reference	**General Reference**. Detailed lists and explanations of reference-oriented material.	Look up a specific piece of reference information relevant to a particular context.
	User Interface Reference. Specialized reference topics that describe a particular user interface in detail. Selecting **Help on this page** from the Help menu in the product generally open the user interface topics.	Look up specific information about what to enter or how to use one or more specific user interface elements, such as a window, dialog box, or wizard.
Troubleshooting and Limitations	**Troubleshooting and Limitations**. Specialized reference topics that describe commonly encountered problems and their solutions, and list limitations of a feature or product area.	Increase your awareness of important issues before working with a feature, or if you encounter usability problems in the software.

Additional Online Resources

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. Choose **Help** > **Troubleshooting & Knowledge Base**. The URL for this Web site is http://h20230.www2.hp.com/troubleshooting.jsp.

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help** > **HP Software Support**. The URL for this Web site is www.hp.com/go/hpsoftwaresupport.

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Part I

Introduction

1

Configuration Management Database (CMDB)

This chapter includes:

Concepts

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➤ Configuration Items (CI) on page 21

➤ Query Nodes and Relationships on page 21

Tasks

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Reference

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➤ Log Severity Levels on page 32

➤ CMDB User Interface on page 33

Concepts

CMDB – Overview

The CMDB is the central repository for the configuration information that is gathered from the Data Flow Management (DFM) process and the various third-party applications and tools.

The CMDB contains all the configuration items (CIs) and relationships created in HP Universal CMDB, whether created automatically from the DFM process or inserted manually. The CIs and relationships together represent a model of all the components of the IT Universe in which your business functions. The CMDB stores and handles the infrastructure data collected and updated by the DFM process. For more information about the DFM process, see the *HP Universal CMDB Discovery and Integration Content Guide*.

The IT Universe model can be very large, containing millions of CIs. To facilitate their management, you work with the CIs in a view that provides a subset of the overall components in the IT Universe world.

You use factory views or views defined in the Modeling Studio to display and manage the CIs and relationships in the CMDB. The views enable you to focus on specific IT areas and are available via the CI Selector. An example of a view is shown in the following figure:
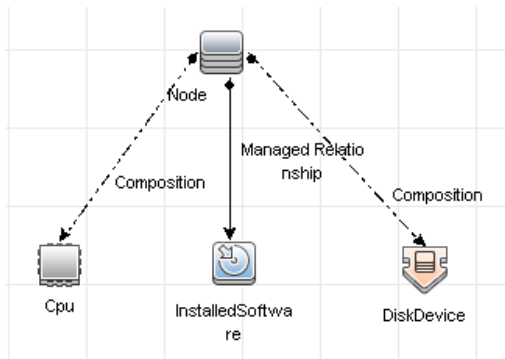
The CMDB also contains the TQL query definitions that are used to query and retrieve data from the CMDB, for presentation in the views; and the configuration item type (CIT) model, a repository for the CI types used to define the CIs and relationships. For information on TQL queries, see "Topology Query Language" in the *Modeling Guide*.

Configuration Items (CI)

A configuration item (CI) is a component of the CMDB that represents a physical or logical entity in the system, for example, hardware, software, services, business processes, and customers. The CIs are part of the IT Universe model in the CMDB, where they are organized into a hierarchical format based on the interdependencies in your organization's IT environment. The interdependencies in HP Universal CMDB are called relationships.

Each CI belongs to a configuration item type (CIT). The CIT defines a category of CIs used in HP Universal CMDB. The CITs provide templates for creating the CIs and associated properties in each category. You view and manage the CIs in the CMDB using views. Each view shines a spotlight on part of the IT Universe model.

Query Nodes and Relationships

Query nodes are the components from which TQL queries are built in Enrichment Manager, Impact Analysis Manager, and the Modeling Studio.

Relationships are connections defined between CIs. Relationships are defined one at a time for each pair of query nodes in a TQL query.

Tasks

🔧 Download Zip File of Log Files and Thread Dumps

You can produce a zip file that includes all logs and thread dumps. You create the file either through a JMX operation on the client machine, or by running a batch file on the UCMDB Server.

Thread dumps are created periodically: Once a minute, a thread dump snapshot is taken and is saved to a new file in the **C:\hp\UCMDB\UCMDBServer\runtime\log\threadDumps** folder. Thread dump files from the last hour are kept. This folder also holds the ad-hoc Server snapshots that are generated during the **logGrabber** execution.

To generate the zip file from the client machine:

1 Launch the Web browser and enter the server address, as follows: **http://<UCMDB Server Host Name or IP>:8080/jmx-console**.

You may have to log in with a user name and password.

2 Under UCMDB, click **UCMDB:service=Server services** to open the JMX MBEAN View page.

3 Locate the **executeLogGrabber** operation.

4 Click the **Invoke** button.

A Server snapshot file with the name **LogGrabber_serverSnapshot_<current date and time>.txt** is created in the following location: **C:\hp\UCMDB\UCMDBServer\runtime\log\threadDumps**. This is a thread dump that includes the threads of the Server framework only.

5 In the File Download dialog box, you can open the **logGrabber_<current time>.zip** file, or download it to the client machine.

To generate the zip file from the UCMDB Server:

1 Access the following folder on the UCMDB Server: **C:\hp\UCMDB\UCMDBServer\tools\logGrabber**.

2 Run the **logGrabber.bat** file.

A Server snapshot file with the name **LogGrabber_serverSnapshot_ <current date and time>.txt** is created in the following location: **C:\hp\UCMDB\UCMDBServer\runtime\log\threadDumps**. This is a thread dump that includes the threads of the Server framework only.

Reference

🔍 CMDB Log Files

CMDB log files enable you to perform basic troubleshooting of CMDB runtime problems. Additionally, by tracking the CMDB behavior in the log files, you can examine the effects of changes made in the system. The CMDB is composed of subsystems and each subsystem records to several log files.

Log files are located in the **C:\hp\UCMDB\UCMDBServer\runtime\log** folder.

This section includes the following topics:

Quota Log Parameters

The log name is **cmdb.quota.log**.

Log File	Description
Purpose	Quota names, quota values, and current quota levels.
Information Level	Quota names and values set in the server and customer levels during a customer load.

Log File	Description
Error Level	CMDB operations that fail because they exceed quota limits.
Debug Level	A count collector runs every **n** minutes and gathers current counts for all quotas. Collected counts are logged.
Basic Troubleshooting	If operations fail because of quota limits, check the count growth and quota values.

CI Type Model Log

The log name is **cmdb.classmodel.log**.

Log File	Description
Purpose	CI Type Model errors and debug messages.
Information Level	When a CI Type Model is loaded, incorrect definitions are logged as informational messages. An example of an incorrect definition is duplicate attributes.
Error Level	Not available.
Debug Level	Every CI Type update includes the following: ➤ original CIT in XML format ➤ new CIT in XML format ➤ differences between the CITs If the CI Type Model update is rejected, the reason is logged.
Basic Troubleshooting	Compares the differences that the server finds between the original CIT and the new CIT. This is useful to understand the following scenarios: ➤ a CIT in a package failed ➤ an action in the CIT browser applet failed ➤ an action in the CIT browser applet succeeded when it should have failed

CMDB Notification Log

The log name is **cmdb.notification.log**.

Log File	Description
Purpose	Notification messages from the time of the component's creation in the CMDB until the client's listener receives a message. Most components receive configuration changes from the CMDB in push mode, by the notification mechanism, rather than in pull mode.
Information Level	➤ startup and shutdown of publishers ➤ register and unregister remote and internal listeners
Error Level	➤ errors when messages are published ➤ errors when messages are received
Debug Level	➤ unique message ID ➤ number of changes that a message includes as well as more details according to the type of the message (for example, the TQL result version) ➤ JMS header properties
Basic Troubleshooting	If an application does not receive a notification, check the following: ➤ a listener is registered with the appropriate notification filter ➤ a message is published with data that matches this filter ➤ a message is received by the listener (use the unique message ID to verify)

CMDB Model Audit Short Log

The log name is **cmdb.model.audit.short.log**.

Log File	Description
Purpose	Information about a CI Type operation: type of operation, data received as input, and what happened to the data in each CIT. Also contains information about the caller application, execution times, and persistency time.
Information Level	Operation details
Error Level	Not available.
Debug Level	Not available.
Basic Troubleshooting	If there are no changes when there should be, check the following: ➤ the operation exists ➤ the input is correct ➤ what happened to the data. There may have been a false update. This is especially useful when running DFM to trace the input.

History Database Log

The log name is **cmdb.history.log**.

Log File	Description
Purpose	➤ Records which CITs are found by the History database when the database is initialized from an existing topology. ➤ Records what is to be saved in the History database. ➤ Tracks events saved in the History database. ➤ Records when the History database was purged.
Information Level	➤ When the last purge was carried out. ➤ Information about initialization of the History database.

Log File	Description
Error Level	Lists errors that occur when event information is inserted in the History database.
Debug Level	➤ Details about CITs inserted during initialization of the History database. ➤ Details about changes in the TQL results saved in the History database.

CMDB Enrichment Log

The log name is **cmdb.enrichment.log**.

Log File	Description
Purpose	Enrichment definitions: adding, updating, removing, and calculating. Calculation results such as how many CIs were added, how many relationships were removed, and so forth. Supplies the reason for a calculation failure. Failure in a model update, however, is not included since it is an asynchronous execution.
Information Level	➤ Add, update, and remove enrichment definitions. ➤ Add, update, and remove CIs or relationships to or from a model.
Error Level	Calculation failure.
Debug Level	Traces the enrichment calculation process.
Basic Troubleshooting	➤ If no calculation was carried out, check the definition of **add enrichment**. ➤ If there are no results, check the **finish calculate** entry.

CMDB Plug-in Log

The log name is **cmdb.plugins.log**.

Log File	Description
Purpose	Plug-in input and output notification.
Information Level	Lifecycle of publisher.
Error Level	➤ no customer name exists in the customer ID ➤ publisher failure
Debug Level	Receive or send a change.
Basic Troubleshooting	If notification did not reach the destination, check that the plug-in received the input.

CMDB Dal Log

The log name is **cmdb.dal.log**.

Log File	Description
Purpose	Information about activity that occurred in the data access layer, the layer that works with the CMDB.
Information Level	Not available.
Error Level	➤ connection pool errors ➤ database errors ➤ command execution errors
Debug Level	➤ all DAL commands executed ➤ all SQL commands executed
Basic Troubleshooting	If you suspect that CMDB actions are taking too long, check the time spent on queries and updates in the DAL logs and operation logs. Exception details and ID are entered into the log. The exception ID appears in the exception itself.

CMDB Operation Statistics Log

The log name is **cmdb.operation.statistics.log**.

Log File	Description
Purpose	Statistics for all operations performed in the past 15 minutes including worst operation instances.
Information Level	Statistics per operation including operation class name, caller application, and customer ID. Default of 10 worst operation instances.
Error Level	Disables the statistics feature.
Debug Level	Not available.
Basic Troubleshooting	Check when there is a performance slow down.

Data Flow Management Log Files

Server log files store information about Server activity, including error messages, that occurs on the Server side.

mam.AutoDiscovery.log

Contains information about tasks running on the server. The server provides services to the user interface or the Probe Gateway, such as: activating jobs, processing results from the Probe, or creating tasks for the Probe.

Level	Description
Error	All DFM process errors on the server side.
Information	Information about requests being processed.
Debug	Logs mainly for debugging purposes.

Basic Troubleshooting. Check this log when you have invalid user interface responses or errors you need to explore. This log provides information to enable you to analyze the problems.

discoveryServlet.log

This log receives messages from:

➤ **The Collectors Utilities Servlet.** The user interface connects to the server through this servlet.

➤ **The Collectors Servlet.** The Probe requests new tasks from the server through this servlet.

➤ **The Collectors Results Servlet.** The Probe sends new results through this servlet.

➤ **The Collectors Download Servlet.** The Probe downloads new server data through this servlet.

Level	Description
Error	All errors in the servlet.
Information	Information about user requests and Probe task requests.
Debug	➤ User requests ➤ Probe requests to read DFM tasks. ➤ Probe access of the servlet.

Basic Troubleshooting.

➤ User Interface–Server communication problems.

➤ Probe–Server communication problems.

Some processing problems may be written to this log instead of to **mamAutoDiscovery.log**.

mam.AutoDiscovery.Results.Stat.log

Contains the statistics of the results received from the Probe.

🔍 Log Severity Levels

Each log is set so that the information it records corresponds to a certain severity threshold. Because the various logs are used to keep track of different information, each is pre-set to an appropriate default level. For details on changing the log level, see "Changing Log Levels" on page 33.

Typical log levels are listed below from narrowest to widest scope:

➤ **Fatal.** The log records only events that prevent the system from functioning.

➤ **Error.** In addition to Fatal events, the log records events that adversely affect the immediate functioning of the CMDB. When a malfunction occurs, you can check if Error messages were logged and inspect their content to trace the source of the failure.

➤ **Warning.** The log's scope includes, in addition to Fatal and Error-level events, problems for which the CMDB is currently able to compensate and incidents that should be noted to prevent possible future malfunctions.

➤ **Info.** The log records all activity. Most of the information is normally routine and of little use and the log file quickly fills up.

➤ **Debug.** This level is used by HP Software Support when troubleshooting problems.

Note: The names of the different log levels may vary slightly on different servers and for different procedures. For example, **Info** may be referred to as **Always logged** or **Flow**.

Changing Log Levels

If requested by HP Software Support, you may have to change the severity threshold level in a log, for example, to a debug level. For details on changing the log level, see "Log Configuration Dialog Box" on page 33.

CMDB User Interface

This section includes (in alphabetical order):

➤ Log Configuration Dialog Box on page 33

➤ Status Bar on page 34

Log Configuration Dialog Box

This dialog box enables you to view HP Universal CMDB logs and change the log level.

To access	Click **Log Level Configuration** 📝 in the Status bar.

User interface elements are described below:

UI Elements	Description
Appender file	Click the link to open the log file in an editor.
Apply	Click to apply the selected log level to the log.
Loggers pane	An expandable list of HP Universal CMDB logs. Select the required log from the list: the details of the log appear in the lower pane.
Logger's appender	A string defining the log category. For internal use only.
Log level	Select a log level from the drop-down list.

🔍 Status Bar

This feature provides information on the CMDB application and enables you to configure certain aspects of your interface.

To access	Appears at the bottom of the screen on all pages in HP Universal CMDB.

User interface elements are described below:

UI Elements	Description
Module	Indicates the manager currently selected. Click this item to display a page with descriptions for all of the managers.
User	Indicates the name of the current user. Click to display a balloon with the current user name and login time.
Server status	Indicates the current status of the server. Click to display a balloon with the server availability, time zone and time.
	Click **Configure User Preferences** to open the User Preferences dialog box, which enables you to reset system preferences.
	Click **Log Level Configuration** to open the Log Configuration dialog box, which enables you to set the log level for a selected log.
	Click **Run Screen Capture Tool** to take screen captures of the application.
	Click **UCMDB Help** to access the HP Universal CMDB Help.
Total Heap Size	Indicates the amount of memory being used by the application.
	Click **Run the Garbage Collector** to manually clean the memory (it runs automatically on a periodic basis).

Part II

Administration

2

Infrastructure Settings

This chapter includes:

Concepts

➤ Infrastructure Settings Overview on page 38

Reference

➤ Infrastructure Settings User Interface on page 39

Concepts

🟦 Infrastructure Settings Overview

You can define the value of settings that determine how HP Universal CMDB and its applications run.

Caution: By modifying certain settings, you may adversely affect the performance of HP Universal CMDB. It is strongly recommended not to modify any settings without first consulting HP Software Support or your HP Services representative.

Reference

⚙ Infrastructure Settings User Interface

This section includes (in alphabetical order):

➤ Change Default Value Dialog Box on page 39

➤ Infrastructure Settings Page on page 40

⚙ Change Default Value Dialog Box

This dialog box enables you to edit the default values of the infrastructure settings.

To access	Select **Infrastructure Settings** from the Navigation Menu or select **Managers** > **Administration** > **Infrastructure Settings**, select the required setting, and then click the ⬇ **Change Default Value** button.
Important information	Note that the default values for global settings cannot be altered.

User interface elements are described below:

UI Elements (A-Z)	Description
Default Value	The modified default value.
Factory Value	The default value initially provided by HP Universal CMDB.

Infrastructure Settings Page

This page enables you to view and edit infrastructure settings.

To access	Select **Infrastructure Settings** from the Navigation Menu or select **Managers** > **Administration** > **Infrastructure Settings**.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
	Save. Saves the changes you have made.
	Properties. Enables you to view the infrastructure properties for the selected setting. Opens the Properties window.
Restore Default	**Restore default value for selected settings.** Restores the previous default value of the selected infrastructure setting.
	Change Default Value. Enables you to edit an infrastructure setting. Opens the Change Default Value dialog box.
<Was modified>	**Note:** This is the first column in the table. It is situated to the left of the **Name** column. You can view the column name by moving the cursor over the column heading. ➤ If the parameter was not modified, the row in the column for the relevant parameter remains empty. ➤ If the parameter was modified, an asterisk appears in the row of the relevant parameter.
Categories pane	Contains a list of the infrastructure setting categories. You can either select a category to view the infrastructure settings connected with that category, or alternatively select <**All**> to display all the infrastructure settings.
Description	A description of the infrastructure setting.

UI Elements (A-Z)	Description
Filter by	Enables you to define the criteria for which infrastructure settings you want to appear in the Infrastructure Settings page.
	➤ In the **Filter** box, select the required filter criteria.
	➤ In the **by** box, enter the text or part of the text for which to search.
	Note: If you want to filter the parameter settings by **<Was modified>**, do the following:
	➤ Enter **false** in the **by** box to display the parameters which were not modified.
	➤ Enter **true** in the **by** box to display the parameters which were modified.
Name	The name of the infrastructure setting.
Refresh Rate	Indicates when the change takes effect in HP Universal CMDB after an infrastructure setting value is modified.
Value	The value of the infrastructure setting.

3

Package Manager

This chapter includes:

Concepts

Tasks

Reference

Concepts

♣ Package Administration Overview

A package contains resources that are grouped together by defined criteria. For a list of the default resource types, see "Resource Types" on page 57.

Package Manager fulfills several functions:

➤ Enables the discovery of specific IT infrastructure assets. For example, HP Universal CMDB deploys the SQL_Server package to discover Microsoft SQL servers.

➤ Enables you to define the CI Type model through the CI types that are included in the packages. For example, some of the CI types included in the Host_Resources_Basic package are File System, CPU, Process, and Print Queue.

➤ Enables you to move groups of resources from one system to another, for example, from a test to a production environment.

There are two types of packages:

➤ **Factory package**. Contains resources that are deployed with the installation and are used to initialize HP Universal CMDB.

By default, factory packages are located in:
C:\hp\UCMDB\UCMDBServer\content\basic_packages.

Note: Some of the factory packages that are deployed with the installation are not visible in the list of packages that appear in Package Manager. To display the hidden packages, right-click anywhere on the Package Manager page and select **Show Hidden Packages**.

➤ **Custom package**. A package that is user created. You may want to create a custom package if the factory packages do not contain the resources needed for the tool you are developing, or if you want to export resources from system to system. For details, see "Create Custom Package/Edit Package Wizard" on page 60.

Caution: If you create custom packages for the resources or tools you develop, do not place them in the **C:\hp\UCMDB\UCMDBServer\content\basic_packages** folder. This folder is only for factory packages.

Export and deployment of packages from system to system is performed through the Package Manager interface.

You can:

➤ Export some or all of a package's resources to your local directory. For details, see "Export a Package" on page 49.

➤ Deploy some or all of a package's resources to the CMDB from your local directory. For details, see "Deploy a Package" on page 49.

Package Locations

There are three pre-defined folders with out-of-the-box, automatically deployed packages under **C:\hp\UCMDB\UCMDBServer\content**:

➤ basic_packages
   Internal packages.

➤ adapters
   Adapter packages.

➤ CP.zip
   Content pack packages.

Package Manager User Interface

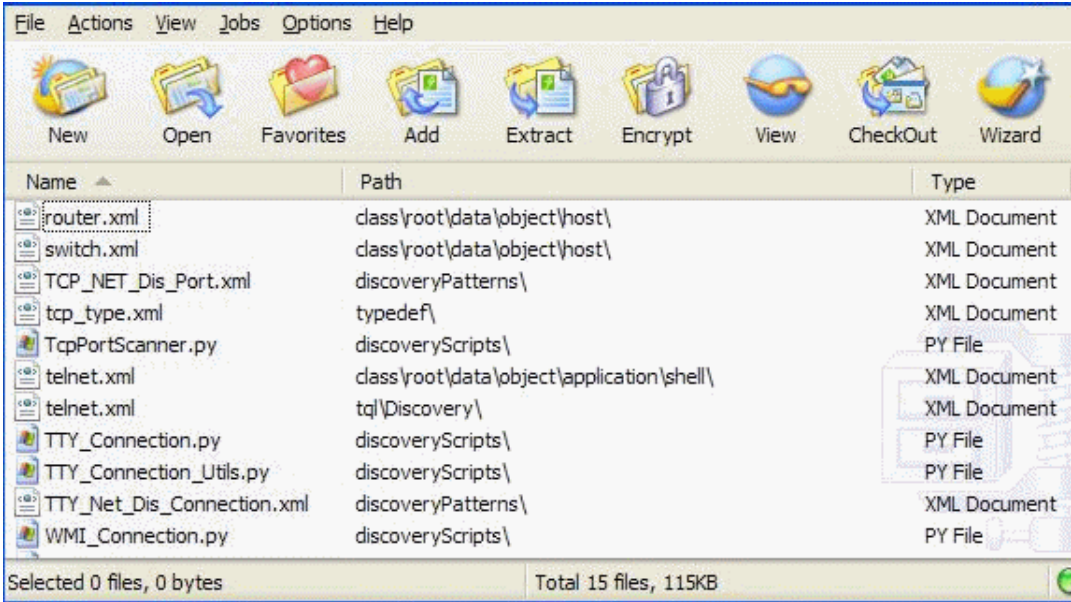Each package in the Package Manager User Interface includes the following:

➤ An **Icon** identifying the package as factory, hidden or user

➤ A **Package Name** representing the name of the .zip file (optional).

➤ The **Category** as allocated in the descriptor.xml file (optional).

➤ A **Readme** file that corresponds to the package (optional).

➤ A **Description** that corresponds to the description located in the descriptor.xml file.

Package Zip File Contents and Format

A package's resources are stored in the CMDB. To export a package from system to system, you use the Package Manager interface (for details, see "Package Manager Page" on page 67). Package Manager creates a zip file containing the resources to enable the export of the resources.

When you export resources from the Package Manager to your local directory, the resource definitions are stored in various formats, for example, XML format.

In the sample **Network.zip** below, the **router.xml** file contains a Router CIT definition and the **Switch.xml** file contains a Switch CIT definition.

Name ▲	Path	Type
router.xml	class\root\data\object\host\	XML Document
switch.xml	class\root\data\object\host\	XML Document
TCP_NET_Dis_Port.xml	discoveryPatterns\	XML Document
tcp_type.xml	typedef\	XML Document
TcpPortScanner.py	discoveryScripts\	PY File
telnet.xml	class\root\data\object\application\shell\	XML Document
telnet.xml	tql\Discovery\	XML Document
TTY_Connection.py	discoveryScripts\	PY File
TTY_Connection_Utils.py	discoveryScripts\	PY File
TTY_Net_Dis_Connection.xml	discoveryPatterns\	XML Document
WMI_Connection.py	discoveryScripts\	PY File

File   Actions   View   Jobs   Options   Help

New   Open   Favorites   Add   Extract   Encrypt   View   CheckOut   Wizard

Selected 0 files, 0 bytes   Total 15 files, 115KB

🍀 Packages for Integration Adapters

You deploy Integration adapters by creating a package and placing them in the appropriate folder. For details, see "Add an Adapter for a New External Data Source" in the *HP Universal CMDB Developer Reference Guide*.

Tasks

🏷 Create a Custom Package

When you create a new package, you give the package a unique name and description, and then select the resources you want included in the package. For details, see "Create Custom Package/Edit Package Wizard" on page 60.

Example of Resources Selected to Be Included in a Package:

The summary page in the Create Custom Package wizard displays the resources selected to be included in the package, as shown in the illustration below:

The package contains resources from the following resource groups:

➤ Relationships

➤ Valid Links

➤ Configuration Item Types

Selection Summary

View the resources to be included in the package.

Relationships:
applicationLink

Valid Links:
Service Desk Link: Siebel Application -> IT Incident

Configuration Item Types:
Business Service View

⚒ Deploy a Package

You can deploy some or all of a package's resources to the CMDB from your local directory. For details, see "Package Manager Page" on page 67.

**Example of Deploying Only Specific Resources in a Package:**

You want to deploy only some of the resources contained in the package called **ticket2.zip**. Click the ⚒ button. In the Deploy Specific Resources dialog box, browse to the package's location and select the resources from the package you want to deploy. See the following illustration:
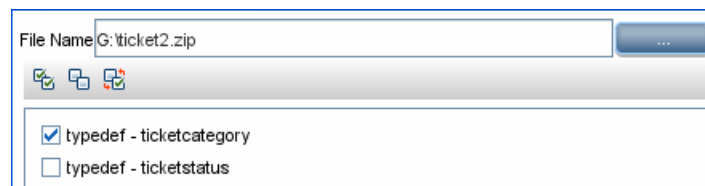
⚒ Export a Package

You can export some or all of a package's resources to your local directory. For details, see "Package Manager Page" on page 67.

Example of Exporting Only Specific Resources in a Package:

You want to export only some of the resources contained in a package called **ticket2.zip** to your local directory. Click the 🖫 button. In the Export Package dialog box, select the **Export Resources** option and select the resources you want to export. See the following illustration:
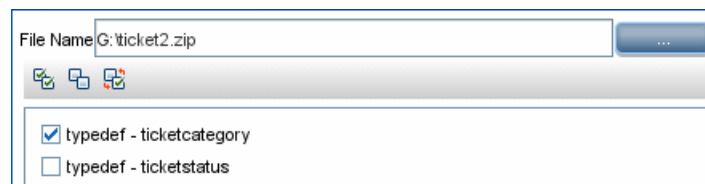
⚓ Use the JMX Console to Perform Package Manager Tasks

This section describes the Package Manager tasks you can perform using the JMX console.

Note:

➤ It is recommended that you use the Package Manager to perform these tasks instead of the JMX console.

➤ View Package Deployment History cannot be performed by the Package Manager.

This section includes the following tasks:

➤ "Deploy a Package" on page 50

➤ "View Package Deployment History" on page 51

➤ "Undeploy a Package" on page 52

➤ "Display Currently Deployed Packages" on page 52

➤ "Export Packages" on page 53

Deploy a Package

Follow these steps to deploy a package using the JMX console.

1 Launch your Web browser and enter the following address: **http://<server_name>:8080/jmx-console**, where **<server_name>** is the name of the machine on which HP Universal CMDB is installed.

2 Under **UCMDB**, click **service=Packaging Services** to open the JMX MBEAN View page.

3 Locate **java.lang.String deployPackages**.

4 In the **ParamValue** box for the parameter **customerId**, enter the <customer id>.

5 In the **ParamValue** box for the parameter **dir**, enter the name of the folder that contains the package's zip file. Ensure that you include the full path to the folder.

Note: To deploy the package from the **basic_packages** directory, leave this box empty.

---

6 In the **ParamValue** box for the parameter **packagesNames**, enter the name of the packages. For details, see "Package Name Rules" on page 53.

7 Select **True** to override DFM job configurations changed in DFM. For details, see "Advanced Mode Window" in the *HP Universal CMDB Data Flow Management Guide*.

8 Click **Invoke** to deploy the package.

View Package Deployment History

Each time you deploy packages, a report is created displaying the deployment status of those packages. Use the JMX console to view the deployment status report.

1 Launch the Web browser and navigate to:
http://<server_name>:8080/jmx-console, where **<server_name>** is the name of the machine on which HP Universal CMDB is installed.

2 Under **UCMDB**, click **service=Packaging Services** to open the JMX MBEAN View page.

3 Locate **java.lang.String displayResourcesDeploymentHistory.**

4 In the **ParamValue** box for the parameter **customerId**, enter the <customer id>.

5 In the **ParamValue** box for the parameter **reportNum**, enter the number of the report you want to view.

6 Click **Invoke** to view the deployment status report of the packages.

Undeploy a Package

Follow these steps to undeploy a package using the JMX console.

1 Launch the Web browser and navigate to:
http://<server_name>:8080/jmx-console, where **<server_name>** is the
name of the machine on which HP Universal CMDB is installed.

2 Under **UCMDB**, click **service=Packaging Services** to open the JMX MBEAN
View page.

3 Locate **java.lang.String undeployPackages**.

4 In the **ParamValue** box for the parameter **customerId**, enter the
<customer id>.

5 In the **ParamValue** box for the parameter **packagesNames**, enter the name
of the package you want to remove. For details, see "Package Name Rules"
on page 53.

6 Click **Invoke** to undeploy the package.

Display Currently Deployed Packages

Follow these steps to display currently deployed packages using the JMX
console.

1 Launch the Web browser and navigate to:
http://<server_name>:8080/jmx-console, where **<server_name>** is the
name of the machine on which HP Universal CMDB is installed.

2 Under **UCMDB**, click **service=Packaging Services** to open the JMX MBEAN
View page.

3 Locate **java.lang.String displayDeployedPackages.**

4 In the **ParamValue** box for the parameter **customerId**, enter the
<customer id>.

5 In the **ParamValue** box for the parameter **packagesNames**, specify the
names of the packages you want to display. For details, see "Package Name
Rules" on page 53.

6 Click **Invoke** to display the packages that are currently deployed.

Export Packages

Follow these steps to export resources from the CMDB to the server on which HP Universal CMDB is installed using the JMX console.

1 Launch the Web browser and navigate to:
http://<server_name>:8080/jmx-console, where **<server_name>** is the name of the machine on which HP Universal CMDB is installed.

2 Under **UCMDB**, click **service=Packaging Services** to open the JMX MBEAN View page.

3 Locate **java.lang.String exportPackages**.

4 In the **ParamValue** box for the parameter **customerId**, enter the <customer id>.

5 In the **ParamValue** box for the parameter **packagesName**, enter the name of the package you want to export. For details, see "Package Name Rules" on page 53.

6 In the **ParamValue** box for the parameter **outputDir**, enter the name of the folder on the HP Universal CMDB server to which you want to export the package's zip file. Ensure that you include the full path to the folder.

7 In the **ParamValue** box for the parameter **userOnly**, select one of the following:

> ➤ **True**. Export only the custom packages.

> ➤ **False**. Export both custom and factory packages.

8 Click **Invoke** to export the package.

Package Name Rules

The rules for entering a package name are as follows:

➤ Wildcard characters (*****) are not supported.

➤ The package name is case sensitive.

➤ The package name must have a **.zip** extension.

➤ When deploying more than one package, separate the package names by commas.

Reference

🔍 Package Resources

This section contains a list of the resources a package can contain. For a list of the available resource types and their descriptions, see "Resource Types" on page 57.

➤ **acl**. The definition of a role such as Administrator or Guest. For details, see "Users and Roles" on page 95.

➤ **adapter**. Contains a description and the capabilities of the deployed federated adapter.

➤ **adapterCode.** Contains compiled classes (normally a jar), based-on *****.jar files, and configuration files needed for federated adapters. Place these files in the **adapterCode\<adapter ID>** folder in the zip package. For details, see "Add an Adapter for a New External Data Source" in the *HP Universal CMDB Developer Reference Guide*.

➤ **calculatedlinks**. Contains the calculated super class for each of the calculated links defined.

➤ **calculatedlinkstriplets**. Contains the calculated relationships and their triplets as defined in the CI Type Manager.

➤ **categories**. Contains the State definitions used by Impact Analysis. For details on States, see "State Manager" on page 75. For details on Impact Analysis, see "Impact Analysis Manager" in the *Modeling Guide*.

➤ **class.** CI type descriptions, such as host, file, switch, and so on. For details, see "CI Type Manager" in the *Modeling Guide*.

➤ **cmdbview**. Contains the hierarchy rules defined for the base TQL query of each view. For details, see "Modeling Studio" in the *Modeling Guide*.

➤ **correlation**. Impact rule definitions. For details, see "Impact Analysis Manager" in the *Modeling Guide*.

➤ **datamodel.** Used to import CI instances into the system. If the CI does not exist in the CMDB, an instance of the CI is created. If a CI already exists in the CMDB, the values of the CI from the package resource overwrites the values of the CI in the CMDB.

➤ **datamodelcreateonly.** Used to import CI instances into the system. If the CI does not exist in the CMDB, an instance of the CI is created. If a CI already exists in the CMDB, the values of the CI from the package resource does not overwrite the values of the CI in the CMDB.

➤ **datamodelgenerateids**. Used to import CI instances into the system for CITs that require the ID to be calculated dynamically upon deployment (such as CITs with no key attributes).

➤ **dataStore**. Contains the integration point defintion.

➤ **discoveryConfigFiles**. Configuration files include properties and parameters that are needed to discover components on the system. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryJobs**. A Data Flow Management (DFM) job includes configuration data, scheduling information, and TQL assignments needed to activate discovery of components. For details, see "Discovery Control Panel" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryModules**. A DFM module includes all the jobs needed to discover a specific component in the system. For details, see "Discovery Control Panel" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryPatterns**. DFM adapters define which code to run and in which order, declare the input and output CI Types and parameters to be configurable on the DFM jobs related to them. The adapater can be used as an integration adapter or a Discovery adapter. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryResources**. External resources include all external resources that are needed in DFM, for example, a Visual Basic file, an additional jars file, and so on. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryScripts**. DFM Jython scripts populates the CMDB with data, either by performing Discovery on a network component or during integration with an external data repository. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **discoveryWizard**. Used to define the Discovery Wizard dialog box contents. For details, see "Discovery Control Panel" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **enrichment**. Enrichment rule definitions. For details, see "Enrichment Manager" in the *Modeling Guide*.

➤ **identification**. Contains the identification defintion of a specific CI type.

➤ **integrationUsers**. Used to define a user of type integration.

➤ **modelnotification**. Contains filter definitions for CMDB model notifications. The data model notification system gives notification of changes that occurred in the CMDB. For example, items in the CMDB that have been removed, updated, or added.

➤ **report**. Report rule definitions, as described in "Topology Reports Overview" in the *Modeling Guide*.

➤ **schedulerJob.** Tasks that have been defined to run in the Scheduler. For details, see "Scheduler" on page 81.

➤ **singletqlref**. Contains TQL template and perspective instances. For details, see "Modeling Studio" in the *Modeling Guide*.

➤ **tql**. TQL query definitions. For details, see "Topology Query Language (TQL) Overview" in the *Modeling Guide*.

➤ **typedef**. Predefined Enumeration definitions that relate to attributes of type Enumeration, such as severity levels, admin states, and so on. For details, see "System Type Manager" in the *Modeling Guide*.

➤ **users.** The definition of a user and the user's role. For details, see "Security Manager User Interface" on page 114.

➤ **validlinks.** All predefined, valid connections (relationships) between CITs.

🔍 Resource Types

This section contains a list of the available resource types and their descriptions. For a list of the resources a package can contain, see "Package Resources" on page 54.

Model

➤ **Configuration Item Types**. The CITs defined in the CI Type Manager. For details, see "CI Types Overview" in the *Modeling Guide*.

➤ **Relationships**. The relationships defined in the CI Type Manager. For details, see "CI Type Relationships" in the *Modeling Guide*.

➤ **Calculated Relationships**. Contains the calculated relationships and their triplets as defined in the CI Type Manager.

➤ **Valid Links**. All possible predefined valid connections (relationships) between the CITs that are defined in the CIT folder.

Query

➤ **Queries**. The TQL queries defined in the TQL Editor in the Modeling Studio. For details, see "Topology Query Language" in the *Modeling Guide*.

➤ **Views**. The views defined in the View Editor in the Modeling Studio. For details, see "View Formats" in the *Modeling Guide*.

➤ **Enrichments**. The Enrichment rules defined in the Enrichment Manager. For details, see "Enrichment Manager" in the *Modeling Guide*.

➤ **Impact Rules**. The Impact Analysis rules. For details, see "Impact Analysis Manager" in the *Modeling Guide*.

Settings

➤ **Type Definitions**. Predefined Enumeration definitions that relate to attributes of enumeration type, such as severity levels, admin states, and so on. For details, see "System Type Manager" in the *Modeling Guide*.

➤ **Job Scheduler**. Tasks that have been defined to run in the Scheduler. For details, see "Scheduler" on page 81.

➤ **Users**. The definition of a user and the user's role. For details, see "Security Manager User Interface" on page 114.

➤ **State Categories**. The states defined in the State Manager. For details, see "State Manager" on page 75.

➤ **Integration Users**. Enables external applications such as Business Service Management, Amber, Release Control, and so on, to consume the UCMDB Java API (SDK), to communicate with UCMDB. Integration users should be deployed via packages and do not appear in the list of users.

Discovery

➤ **Adapters**. DFM adapters define which scripts need to be run and in which order, declare the input and output CI Types and the parameters to be configurable on the Discovery jobs related to them. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **Discovery Modules**. A Discovery module includes all the jobs needed to discover a specific component on the system. For details, see "Discovery Modules Pane" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **Discovery Jobs**. A discovery job includes configuration data, scheduling information, and TQL assignments needed to activate discovery of components. For details, see "Discovery Control Panel" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **Discovery Configuration Files**. Configuration files include properties and parameters that are needed to discover components on the system. For details, see "Resource Files" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **Discovery Jython Script**. Discovery Jython Scripts are Jython scripts used by the discovery process to discover and map the various network entities.

➤ **Discovery External Resource**. Includes resources not used by the Data Flow Probe directly, but rather indirectly by the DFM scripts. It can contain binary executable files or DLLs, XML configuration files, or any other essential resource needed for the discovery to function properly. For details, see "Adapter Management" in the *HP Universal CMDB Data Flow Management Guide*.

➤ **Discovery Wizard Resource**. Used to define the Discovery Wizard dialog box contents. For details, see "Basic Mode Window" in the *HP Universal CMDB Data Flow Management Guide*.

Package Manager User Interface

This section includes (in alphabetical order):

➤ Choose Resources to Export Dialog Box on page 59

➤ Create Custom Package/Edit Package Wizard on page 60

➤ Export Package Dialog Box on page 64

➤ Filter Dialog Box on page 65

➤ Find Dialog Box on page 66

➤ Package Manager Page on page 67

➤ Undeploy Package Resource Wizard on page 70

Choose Resources to Export Dialog Box

This dialog box enables you to select export an entire package or specific resources to your local directory.

To access	Select the **Export resources** button in the Export Package dialog box.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<List of resources >	Displays the list of resources contained in the package. Select the resources you want to export to your local directory.

Create Custom Package/Edit Package Wizard

This wizard enables you to create a package using existing resources or edit an existing package.

To access	Click the **Add** ✚ button on the Package Manager page to create a new package or select a package and click the **Edit** ✐ button to edit an existing package.
Relevant tasks	"Create a Custom Package" on page 48
Wizard map	The Create Custom Package Wizard contains: Package Properties Page > Resource Selection Page > Selection Summary Page

Package Properties Page

This wizard page enables you to define the properties of the package.

Wizard map	The Create Custom Package/Edit Package Wizard contains: **Package Properties Page** > Resource Selection Page > Selection Summary Page

User interface elements are described below:

UI Elements (A-Z)	Description
Package Category	A free text box for any notes you want to associate with the package.
Package Description	A description of the package.
Package Name	The name of the package.

🔖 Resource Selection Page

This wizard page enables you to add the required resources to the package. Select the required resources from the various resource types.

Important information	You can make multiple selections from each resource type.
Wizard map	The Create Custom Package/Edit Package Wizard contains: Package Properties Page > **Resource Selection Page** > Selection Summary Page

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
✔	Appears in the left pane. Indicates that a resource has been added to the package.
–	Appears in the left pane. Indicates that no resource has been added to the package.

UI Elements (A-Z)	Description
<Resource types in the left pane>	Contains the resource types from which you can choose the required resources to add to the package. For details of a list of the available resource types and their descriptions, see "Resource Types" on page 57. **Note**: A green dot appears on the resource type icon in the right pane, when one or more of its resources are selected to be included in the package.

UI Elements (A-Z)	Description
\<Resources in the right pane\>	Select the resources you want to add to the package. You can select multiple resources. **Notes**: ➤ A green check appears to the right of a Configuration Item Types, Relationships, or Calculated Relationships when one or more of its children in the resource tree are included in the package. ➤ A folder's check box has a ■ when only some of its resources are included in the package. (This does not apply to Configuration Item Types, Relationships, or Calculated Relationships.) ➤ A folder's check box is selected when all its resources are included in the package. (This does not apply to Configuration Item Types, Relationships, or Calculated Relationships.) **Important information**: To add a calculated relationship to the package, select either the required calculated relationship together with one or more of its triplets, or the required triplets without selecting the calculated relationship itself. ➤ If you select only specified triplets and not the calculated relationship, the triplets are added only if you already have an existing calculated relationship in the system. ➤ If you select a calculated relationship together with one or more of its triplets, the property definitions of the calculated relationship are included in the package. If you already have a calculated relationship in the system, the property definitions of the existing calculated relationship are updated with the properties of the calculated relationship you are adding to the package. For details on calculated relationships and triplets, see "Using Calculated Relationships" and "Triplets Page" in the *Modeling Guide*.

Selection Summary Page

This wizard page enables you to view the resources to be included in the package.

Wizard map	The Create Custom Package/Edit Package Wizard contains:
	Package Properties Page > Resource Selection Page > **Selection Summary Page**

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<Selected resources>	Displays the resources that were selected to be part of the package.

Export Package Dialog Box

This dialog box enables you to export the selected package's resources to your local directory.

To access	Click the **Export Package to Local Directory** button on the Package Manager page.
Important information	You can choose to export some or all the resources in the package.

User interface elements are described below:

UI Elements (A-Z)	Description
Export to directory	Select the directory to which you want to export the resources.
Export resources	Export only some of the package's resources to your local directory. Opens the Choose Resources to Export dialog box.

UI Elements (A-Z)	Description
Export whole package	Export all the resources in the package to your local directory.
File name	The name of the package. **Note**: The package name cannot be edited.

🔦 Filter Dialog Box

This dialog box enables you to display only specific packages on the Package Manager page.

To access	A description of the filter condition you defined appears above the table columns on the Package Manager page. For example, the following illustration shows that a filter condition was created to display a package called **Network**. Filter: Package Name[Equal Network]; **To access**: Click the **Filter** 🔽 button on the Package Manager page.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<Click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
<Right-click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
Condition	Click inside the box and select the required operator. For details, see "Attribute Operator Definitions" in the *Modeling Guide*.

UI Elements (A-Z)	Description
Display Name	Filter the task list according to one of the following: ➤ **Package name** ➤ **Package Category** ➤ **Package Description** ➤ **Readme** For details, see "Package Manager Page" on page 67.
Value	Click inside the box to open the Edit box. Enter the required value.

🔍 Find Dialog Box

This dialog box enables you to find a package that contains a specified resource.

To access	Click the **Find** 🔍 button on the Package Manager page.
See also	"Resource Types" on page 57

User interface elements are described below:

UI Elements (A-Z)	Description
Case sensitive	Distinguish between uppercase and lowercase characters. When you select **Case Sensitive**, search results find only those instances in which the capitalization matches the text you typed in the **Resource name** box.
Resource name	Enter a word or phrase contained in the resource for which you are looking.
Search Results	The search results. Displays the names of up to 30 resources containing the text entered in the **Resource name** box.
Topic	The subsysytem containing the resource you want the package to contain. For details, see "Resource Types" on page 57.

🔭 Package Manager Page

This page enables you to create a package out of existing resources or edit an existing package to suit your IT management needs.

To access	Select Package Manager from the **Administration** module in the Navigation Menu or select **Managers > Administration > Package Manager**.
See also	"Package Administration Overview" on page 44

User interface elements are described below:

UI Elements (A-Z)	Description
✚	Enables you to create a package out of existing resources. Opens the Create Custom Package Wizard. For details, see "Create a Custom Package" on page 48.
🖊	Enables you to edit an existing package. Opens the Edit Package Wizard.
✖	Deletes a package from the Package Manager while the resources from the package remain in the system. The package that is deleted is removed from the list of packages on the Package Manager page.
🔍	View the resources included in the selected package. Opens the View package resources dialog box.
📊	Generate a report displaying a list of the packages that are deployed in the system.
📦	Deletes the resources from the system and removes them from the selected package. Opens the Undeploy Package Resource Wizard.

UI Elements (A-Z)	Description
	Deploys a package's resources to the CMDB from your local directory. In the upper pane, click the ✚ button to open the Deploy Packages to Server dialog box. Browse to the required package. The resources from that package appear in the lower pane of the dialog box. Select the resources that you want to deploy. **Note**: When deployment is finished and it is not successful, a Deploy Package dialog box is displayed indicating which resources within the package are not successfully deployed.
	Exports some or all of the package's resources to your local directory. Opens the Export Package dialog box.
	Finds a package that contains a specified resource. Opens the Find dialog box.
	Update the contents of the table.
	Click to install the latest Data Flow Content Pack. This button is enabled from Content Pack 7.00 onwards.
	Opens the Filter dialog box. You use the Filter dialog box to show only the packages you want displayed on the Package Manager page.
	Clear the filter definitions you created in the Filter dialog box. This is enabled only if filter definitions were created.
	Click the **Customize Columns** button to open the Select Columns dialog box and change the display order of the columns, hide a column, or display a hidden column. For details on the Select Columns dialog box, see "Select Columns Dialog Box" in the *Modeling Guide*.
	Represents a factory package.
	Represents a hidden package.
	Represents a custom package.

UI Elements (A-Z)	Description
Category	The free text you want to associate with the package, as displayed in the Package Properties page of the Create Custom Package Wizard.
Description	The description of the package, as displayed in the Package Properties page of the Create Custom Package Wizard.
Package Name	The name of the package.
Readme	Click to read a description of the package, as well as other relevant information.

Shortcut Menu

Menu Item	Description
Delete	Deletes a package from the Package Manager while the resources from the package remain in the system. The package that is deleted is removed from the list of packages on the Package Manager page.
Edit	Edit the selected package. Opens the Edit Package Wizard.
Export Package	Exports some or all of the package's resources to your local directory. Opens the Export Package dialog box.
Show hidden packages	Toggle between displaying and hiding hidden packages.
Undeploy	Deletes the resources from the system and removes them from the selected package. Opens the Undeploy Package Resource Wizard.
View package resources	View the resources included in the selected package. Opens the View package resources dialog box.

🔖 Undeploy Package Resource Wizard

This wizard deletes the resources from the system and removes them from the selected package.

To access	Click the **Undeploy resources** 🔖 button on the Package Manager page.
Important information	When you undeploy a package, the resources are removed from the system, and from the other packages that contain that resource. You can restore the resources only when a package containing those resources is deployed.
Wizard map	The Undeploy Package Resource Wizard contains: Remove Resources Page > Selection Summary Page

🔖 Remove Resources Page

This wizard page enables you to select the resources you want to delete.

Important information	If you delete all the resources from the package, the package is automatically deleted and removed from the list of packages on the Package Manager page.
Wizard map	The Undeploy Package Resource Wizard contains: **Remove Resources Page** > Selection Summary Page

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<List of resources contained in the selected package>	Displays the resources contained in the selected package. Select the resources you want to delete from the system.

🔍 **Selection Summary Page**

This wizard page enables you to view the resources you selected to be deleted.

Important information	When undeployment is finished and it is not successful, an Undeploy Package dialog box is displayed indicating which resources within the package are not successfully undeployed.
Wizard map	The Undeploy Package Resource Wizard contains: Remove Resources Page > **Selection Summary Page**

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<List of deleted resources>	Displays the resources that were selected to be deleted from the package.

🔍 Troubleshooting and Limitations

This section describes some of the troubleshooting issues that might arise when deploying and undeploying packages.

This section includes the following topics:

➤ "Gold Master Reports Cannot be Deployed by Package Manager" on page 72

➤ "Datamodel Resources Cannot Be Undeployed" on page 72

➤ "Additional Information on Package Deployment Failure" on page 72

➤ "Package Creation and Deployment in a Non-English Locale" on page 73

Gold Master Reports Cannot be Deployed by Package Manager

If you export a package's resources from Package Manager that includes a Gold Master report definition, and then export those resources again to another system, the Gold Master report definition is not deployed.

Datamodel Resources Cannot Be Undeployed

For a list of the package resources, see "Package Resources" on page 54.

Additional Information on Package Deployment Failure

If package deployment fails, you can check the Package Manager log files for additional information on why the deployment failure occurred.

Log files are located in the **C:\hp\UCMDB\UCMDBServer\runtime\log** folder.

Package Creation and Deployment in a Non-English Locale

This section describes the limitations when working in a non-English locale.

➤ You cannot deploy a package if the server locale is different than the client locale and the package name contains non-English characters.

➤ You cannot create a package that contains resources (for example, views and TQL queries) having non-English characters in their names, if the server locale is different from the client locale.

4

State Manager

This chapter includes:

Concepts

➤ State Manager Overview on page 76

Tasks

➤ Define a State on page 77

Reference

➤ State Manager User Interface on page 78

Concepts

🍀 State Manager Overview

A state is based on a severity list called an Enumeration definition.

States are necessary for retrieving Impact Analysis results in IT Universe Manager. For details, see "IT Universe Manager" in the *Modeling Guide*.

To retrieve Impact Analysis results, you must create an Impact Analysis rule in Impact Analysis Manager, which is based on a state that exists in State Manager. For details, see "Impact Analysis Manager" in the *Modeling Guide*.

State Manager contains two default states – Change and Operation. Each one is based on its own severity list.

You can use a default state, or if required, create one based on a severity list (Enumeration definition) that is more relevant to your needs. For details on creating Enumeration definitions, see "Create/Update List/Enumeration Definition Dialog Box" in the *Modeling Guide*.

Note: It is not recommended to define states without first consulting HP Software Support.

Tasks

🦖 Define a State

1 Click the **Add State** button and enter a unique name and description for the state.

2 Click inside the **Type Definition** column to select the required Enumeration definition. The Type Definition list displays the Enumeration definitions that are defined in System Type Manager. For details, see "System Type Manager Dialog Box" in the *Modeling Guide*.

3 (Optional) You can create a new Enumeration definition by clicking the **New Enumeration** button. For details, see "State Manager Page" on page 78.

Note: Only the Enumeration definitions whose list of key values begins with zero (0) appear in the State Manager.

Alternatively, you can create an Enumeration definition in System Type Manager. The Enumeration definition you create in System Type Manager appears in State Manager.

Reference

🔍 State Manager User Interface

This section includes (in alphabetical order):

➤ State Manager Page on page 78

🔍 State Manager Page

This page enables you to create a state based on a severity list (Enumeration definition).

To access	Select **State Manager** from the **Administration** module in the Navigation Menu or select **Managers > Administration > State Manager**.
Important information	➤ The **Change** and **Operation** states are default states that cannot be edited. ➤ It is recommended to consult with HP Software Support before defining a state.
Relevant tasks	"Define a State" on page 77
See also	"Create an Enumeration Definition – Workflow" in the *Modeling Guide*

User interface elements are described below:

UI Elements (A-Z)	Description
➕	Add a state.
✖	Delete a state.

UI Elements (A-Z)	Description
New Enumeration	Creates an Enumeration definition. Opens the Create Enumeration Definition dialog box.
	For details, see "Create/Update List/Enumeration Definition Dialog Box" in the *Modeling Guide*.
	The Enumeration definition you have created appears in the System Type Manager dialog box, where you can edit it if required (for details, see "System Type Manager" in the *Modeling Guide*).
Description	(Optional) Click in the box and enter a description of the state.
Name	Click in the box and enter a unique name for the state.
Type Definition	Click in the box to display a list of the Enumeration definitions.
	Note: The **Type Definition** list only displays the Enumeration definitions whose list of key values begins with zero (0) (and not List definitions) that are defined in the System Type Manager.

5

Scheduler

This chapter includes:

Tasks

➤ Define Tasks that Are Activated on a Periodic Basis on page 82

Reference

➤ Scheduler User Interface on page 84

Tasks

🐦 Define Tasks that Are Activated on a Periodic Basis

This task describes how to run jobs on a periodic basis.

This section includes the following tasks:

➤ "Create a Job Definition" on page 82

➤ "Choose an Action" on page 83

➤ "Schedule a Task" on page 83

1 Create a Job Definition

Define a job definition. Add actions to the job you created and define how often they run. The Job Definition dialog box displays the tasks that are defined. For details, see "Job Definition Dialog Box" on page 86.

Example of a Job Definition

The illustration below shows that an Enrichment rule is set to run every week on Sunday at 7:30 AM.

Active	Name	Job Definition	Schedule	Last Run Time	Next Run Time
☑	CUSTOM_ENRICHMENT_JOB	Run an Enrichment rule	Weekly ([Sunday][07:30])		Sun Apr 25 2010 07:30 ...

2 Choose an Action

Select the actions that you want the Scheduler to run. For details, see
"Action Definition Dialog Box" on page 84.

3 Schedule a Task

Set the schedule for activating a task in the Scheduler pane. For details,
see "Job Definition Dialog Box" on page 86.

Example of a Scheduled Task

The illustration below shows that the Scheduler is set to run an
Enrichment rule called **SAP_Old_Transports** every day at 1:00 AM and
6:00 AM.

Name	
Run an Enrichment rule	SAP_Old_Transports

Scheduler

○ Once	○ Interval	⦿ Daily	○ Weekly	○ Monthly	○ Cron

Time zone: US/Central ▼   Reset server time zone

Invocation hour   01:00, 06:00   >>

Reference

Scheduler User Interface

This section includes (in alphabetical order):

➤ Action Definition Dialog Box on page 84

➤ Filter Dialog Box on page 85

➤ Job Definition Dialog Box on page 86

➤ Job Scheduler Page on page 90

➤ Select Days Dialog Box on page 91

➤ Select Hours Dialog Box on page 92

Action Definition Dialog Box

This dialog box enables you to select a required action in a list of actions that can be run by the Scheduler.

To access	Click the **Add** ✚ button in the Actions pane in the Job Definition dialog box.
Important information	After selecting the required action, click **Next** to display a list of actions. The list of action details depends on which action you choose.
	For example, if you select **Run an Enrichment Rule**, a list of the existing Enrichment Rules appears. Select the required Enrichment rules. You can make multiple selections.
Relevant tasks	"Define Tasks that Are Activated on a Periodic Basis" on page 82

The following elements are included (unlabeled GUI elements are shown in angle brackets):

UI Elements (A-Z)	Description
<Click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
<Right-click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
Actions	For a list of actions that can be run by the Scheduler, see "Scheduler Actions" on page 85.

Scheduler Actions

This section contains a list of actions that can be run by the Scheduler.

➤ **Rerun Discovery on View**. Runs discovery on the CIs in a selected view. This enables you to configure a general discovery for the entire infrastructure on a less frequent basis, such as once a week, while updating the CIs in important views more frequently, for example, on a daily basis.

➤ **Run an Enrichment rule**. Activates the selected Enrichment rule according to its set schedule. Click **Next** to display a list of the available Enrichment rules and select the required ones. For details, see "Enrichment Manager" on page 685 in the *Modeling Guide*.

Filter Dialog Box

This dialog box enables you to filter the tasks displayed on the Job Scheduler page.

To access	Click the **Filter** button on the Job Scheduler page.
Relevant tasks	"Define Tasks that Are Activated on a Periodic Basis" on page 82

The following elements are included (unlabeled GUI elements are shown in angle brackets):

UI Elements (A-Z)	Description
\<click a column header\>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
\<right-click a column header\>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
Condition	Click inside the box and select the required operator. For details, see "Attribute Operator Definitions" on page 44 in the *Modeling Guide*.
Display Name	Filters the task list according to one of the following: ➤ **Active** ➤ **Job Definition** ➤ **Last Run Time** ➤ **Name** ➤ **Next Run Time** ➤ **Schedule** For details, see the Job Scheduler page.
Value	Click inside the box and either enter or select the required value.

🔖 Job Definition Dialog Box

This dialog box enables you to add actions to the job you created and define how often they run.

To access	Click the **Add ➕** button in the Schedule tab in the "Job Definition Pane" on page 183. or Click the **Add ➕** button on the Job Scheduler page.
Relevant tasks	➤ "Choose an Action" on page 83 ➤ "Schedule a Task" on page 83

The following elements are included:

UI Elements (A-Z)	Description
Job Definition	(Optional) A description for this job.
Name	The name of the job.

Actions Pane

This area enables you to add the required actions to the task you created.

Relevant tasks	"Choose an Action" on page 83

The following elements are included:

UI Elements (A-Z)	Description
✚	Adds an action to the task. Opens the Action Definition dialog box.
✏	Edits an existing action.
✖	Deletes an action.
⬆	Moves a selected row up.
⬇	Moves a selected row down.
Action Definition	Displays the action details you selected in the Action Definition dialog box for the action added.
Name	Displays the name of the action that was added to the job.

Scheduler Pane

This area enables you to set the schedule for activating a task.

Relevant tasks	"Schedule a Task" on page 83
See also	"Cron Expressions" on page 512

The following elements are included (unlabeled GUI elements are shown in angle brackets):

UI Elements (A-Z)	Description
Reset server time zone	Automatically set the time zone to the correct one for the server.
Validate Expression	(Appears when you choose **Cron**) Click to validate the Cron expression you entered.
<Schedule options>	Select the required option for scheduling the task. The available options are: ➤ **Once.** Activates the task only once. ➤ **Interval.** Activates the action at a set time interval. ➤ **Daily.** Runs a task on a daily basis. ➤ **Weekly.** Runs a task on a weekly basis. ➤ **Monthly.** Runs a task on a monthly basis. ➤ **Cron.** Use a Cron expression to schedule a job. For a description of the fields used in Cron expressions and examples of how to use them, see "Cron Expressions" in the *Modeling Guide*.
Cron Expression	Enter a Cron expression in the proper format. For a description of the fields used in Cron expressions and examples of how to use them, see "Cron Expressions" in the *Modeling Guide*.
Days of month	(Appears when you choose **Monthly**) Click the `>>` button to the right of the **Days of month** box to choose the day of the month on which you want to run the action. Opens the Select Days dialog box.
Days of the week (Sunday - Saturday)	(Appears when you choose **Weekly**). Select the day or days on which you want the action to run.

UI Elements (A-Z)	Description
End by	(Does not appear when you select **Once**) Choose the date and time when you want the action to stop running by selecting the **End by** check box and then clicking the down-arrow to the right of the box.
	Note: This step is optional. If you do not want to specify an ending date, leave the **End by** check box unselected.
Invocation Hour	Choose the time to activate the action. Click the ⟩⟩ button to the right of the **Invocation Hour** box to open the Select Hours dialog box. For details, see the Select Hours dialog box.
	Note: You can enter the time manually in the **Invocation hour** box once you have chosen a time using the Select hours dialog box. You can assign more than one time. Each time is separated by a comma.
	The manually entered action times are not restricted to the hour and half hour only; they can be assigned any hour and minute combination. Use the 24:00 format.
	For example:
	11:15 AM is 11:15
	11:15 PM is 23:15
	Note: This box is only available when you want to schedule a task to run on a daily, weekly, or monthly basis.
Invocation Time	(Appears when you choose **Once**) Choose the date and time you want the action to begin running by clicking the down-arrow to the right of the box.
Months of the year (January - December)	(Appears when you choose **Monthly**). Select the month or months in which you want the action to run.
Repeat every	(Appears only when you select **Interval**) Type a value for the interval between successive runs and then choose the required unit of time measurement (seconds, minutes, hours, or days).

UI Elements (A-Z)	Description
Start at	(Does not appear when you select **Once**) Choose the date and time when you want the action to begin running by selecting the **Start at** check box and then clicking the down-arrow to the right of the box.
	Note: This step is optional. If you do not want to specify a beginning time, leave the **Start at** check box unselected.
Time Zone	Set the required time zone.

🔍 Job Scheduler Page

This page enables you to define tasks that are activated on a periodic basis. For example, you can define a task that generates a Topology report on a daily basis at 3:00 PM. Or, you can define a schedule for taking snapshots of a specific view on a daily basis.

To access	Select Scheduler from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Scheduler**.
Important information	"Define Tasks that Are Activated on a Periodic Basis" on page 82

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
✚	Creates and schedules a job. Opens the Job Definition dialog box.
✎	Edits a task. Opens the Job Definition dialog box.
✖	Deletes a job.
▼	Opens the Filter dialog box which enable you to filter the scheduled jobs displayed on the Job Scheduler page.

UI Elements (A-Z)	Description
	Clears the filter definitions you created in the Filter dialog box.
	Changes the display order of the columns, hide a column, or displays a hidden column. Opens the Columns dialog box. For details, see "Select Columns Dialog Box" in the *Modeling Guide*.
	Refresh the display of the jobs in the Job Scheduler page.
<Click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
<Right-click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.
Active	Select the check box to activate the scheduled job.
Job Definition	A description of the scheduled job as defined in the **Definitions** box in the Job Definition dialog box.
Last Run Time	The last time the job was run.
Name	The name of the scheduled job.
Next Run Time	The next time the job is scheduled to run.
Schedule	How often the job is scheduled to run. For details, see the "Scheduler Pane" on page 87.

🔖 Select Days Dialog Box

This dialog box enables you to choose the day on which to activate the action.

To access	Click **Monthly** in the Job Definition dialog box, and then click the » button to the right of the **Days of month** box.
Relevant tasks	"Define Tasks that Are Activated on a Periodic Basis" on page 82

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<List of days from 1-31>	Choose the required days by selecting the required check boxes. You can select multiple days.
	The selected days appear in the **Days of month** box. For details, see Scheduler pane in the Job Definition dialog box.

Select Hours Dialog Box

This dialog box enables you to choose the time at which to activate the action.

To access	In the Job Definition dialog box, click **Daily, Weekly, or Monthly**, and then click the » button to the right of the **Invocation hour** box.
Relevant tasks	"Define Tasks that Are Activated on a Periodic Basis" on page 82

User interface elements are described below:

UI Elements (A-Z)	Description
List of times by the hour and half hour	Choose all the required times by selecting the required check box. You can select multiple times.
	The selected hours appear in the **Invocation hour** box. For details, see "Invocation Hour" on page 89.

Part III

Setting Up and Working with Users

6

Users and Roles

This chapter includes:

Concepts

➤ Users and Roles Overview on page 96

Tasks

➤ Set Up Users and Roles on page 97

➤ Change a User's Password on page 98

Reference

➤ Users and Roles User Interface on page 99

Troubleshooting and Limitations on page 106

Concepts

🔩 Users and Roles Overview

When you create a user or role, you define which actions the user or role can perform. Roles enable you to assign permissions to users according to their responsibilities in the organization. For example, you could create a role that enables its users to create TQL queries, or you could create a role that enables its users to create views but not to edit existing TQL queries.

You can assign administrator or guest access rights to these users or roles, and if necessary, specify additional permissions in the Security Manager (for example, which views a user can display). For details, see "Security Manager" on page 111.

Note: The Users and Roles pages are available only to those logged in with admin or administrator access rights.

Tasks

🪝 Set Up Users and Roles

Use the following procedures to set up users in your system:

1 Define Roles

A role is a group of users to whom you assign the same access rights. For details, see "Users and Roles Overview" on page 96 and "Roles Tab" on page 103.

2 Assign Access Rights to the Roles

You assign permissions for roles to access HP Universal CMDB. For details, see "Set Up Security" on page 113 and "Security Manager Page" on page 116.

Note: From a best practices point of view, it is preferable to assign access rights to roles only, and to associate users with a role that has the appropriate access rights.

For details on assigning access rights to Web service users, see "Roles Tab" on page 103.

Example – Create a Role Hierarchy:

One team maintains the Oracle databases in your organization and another maintains the Microsoft SQL Server databases. The team leader needs to be familiar with both databases. You can create a role hierarchy:

1 Create two roles, dba_oracle and dba_mssql, and give the first role access rights to the Oracle view and the second role access rights to the SQL Server view. For details, see "Security Manager Page" on page 116.

2 Create another role, dba, and give it rights to both the Oracle and SQL Server views.

3 Define Users

For details on defining a user, see "Users Tab" on page 105. When defining users, you associate a user with one or more roles. For details, see "Users and Roles Overview" on page 96.

4 Define a Profile for a User

You can set preferences, such as time zone and locale, for a specific user. For details, see "User Profile" on page 107.

✈ Change a User's Password

For details on changing a password, see "Reset Password Dialog Box" on page 102.

Note: You do not see the option to change a password if your CMDB is set up to use LDAP authentication.

Reference

🦋 Users and Roles User Interface

This section includes (in alphabetical order):

➤ Add New User Wizard on page 99

➤ New/Edit Role Dialog Box on page 101

➤ Reset Password Dialog Box on page 102

➤ Roles Tab on page 103

➤ Users Tab on page 105

🦋 Add New User Wizard

This wizard enables you to create a user.

To access	Select **Users and Roles** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Users and Roles** > **Users tab**. Click the **Add New User** 🌟 button.
Important information	It is recommended to define roles prior to defining new users. For details, see "Roles Tab" on page 103.
Relevant tasks	"Define Users" on page 98
Wizard map	The Add New User wizard contains: User Name and Password Page > User Details Page > Role List Page

🔍 User Name and Password Page

This wizard page enables you to assign a name and password for the user.

Wizard map	The Add New User Wizard contains:
	User Name and Password Page > User Details Page > Role List Page

User interface elements are described below:

UI Elements (A-Z)	Description
Confirm Password	Type in the password you entered in the Password box.
Password	Type in a password.
User Name	Type a unique user name.

🔍 User Details Page

This wizard page enables you to add the details of the user.

Wizard map	The Add New User Wizard contains:
	User Name and Password Page > **User Details Page** > Role List Page

User interface elements are described below:

UI Elements (A-Z)	Description
Update recipient	Enables you to add the name and email address of the selected user to the Recipients Manager, or update the existing email address of a recipient currently listed in the Recipients Manager. For details, see "Recipients Manager" on page 121.

🔖 Role List Page

This wizard page enables you to associate a user with one or more roles.

Important information	If you do not select a role, you must assign permissions in the Security Manager to enable access rights for the user. For details, see "Security Manager Page" on page 116.
Wizard map	The Add New User Wizard contains: User Name and Password Page > User Details Page > **Role List Page**
See also	"Roles Tab" on page 103

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<List of roles>	Contains the list of default and custom roles. For details, see "Security Manager Page" on page 116.

🔖 New/Edit Role Dialog Box

This dialog box enables administrators to create and manage roles, and assign permissions to each role to perform specific actions. For example, a role named dba could have permissions to view all database views and to create new views.

To access	Click the **New Role** ✳ or **Edit** ✏ button in the Roles tab.
Relevant tasks	"Set Up Users and Roles" on page 97

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<Roles>	Contains the list of roles that appear in the Role list in the Roles tab.
	Select the roles whose permissions you want to assign to the new role.
	Note: If you do not select a role from the Role List, you must assign permissions in the Security Manager, to enable access rights for the role. For details, see "Security Manager Page" on page 116.
Description	Enter a description of the role you are defining.
Name	Enter a unique name for the role.

🔍 Reset Password Dialog Box

Description	Enables you to change your password. If you have admin permissions, you can change the password of other users.
	To access:
	➤ For a user (on condition that the administrator has created a user name for you, and sent you the user name and password): **Managers** > **Administration** > **User Profile** and click **Change Password**.
	➤ For an admin: **Managers** > **Administration** > **Users and Roles** > **Users tab.** Select the user and click the **Reset Password** 🔒 button.
Important Information	Passwords are case sensitive.

🔍 Roles Tab

This tab enables you to create, edit, and delete roles. For example, you can create a role that enables its users to create TQL queries, or you can create a role that enables its users to create views but not to edit existing TQL queries.

To access	Select **Users and Roles** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Users and Roles** > **Roles tab.**
Relevant tasks	"Set Up Users and Roles" on page 97

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
✳	**New Role.** Creates a role. Opens the New Role dialog box.
✖	**Delete Selected Item(s).** Removes the selected role. You can make multiple selections.
💾	**Save.** Saves the changes you have made.

UI Elements (A-Z)	Description
✏️	**Edit Role.** Edits an existing role. Opens the Edit Role dialog box.

<List of roles>	Contains the name and description of default and custom roles.
	
	The default roles are:
	
	➤ **Admin**. Users with this role have unlimited access to all functions.
	
	➤ **Guests**. By default, users with this role can only access the profile of the currently logged in user.
	
	➤ **Web service roles**. Users who are working with the HP Universal CMDB API or the Discovery and Dependency Mapping API to write data to the CMDB must be given permissions to the CMDB.
	
	The following roles enable the API writer to work with the CMDB:
	
	  ➤ **CmdbOpenApiClassModel**. A user with this role can perform operations on CITs.
	
	  ➤ **CmdbOpenApiImpact**. A user with this role can perform impact operations on the CMDB.
	
	  ➤ **CmdbOpenApiQuery**. A user with this role can send queries to the CMDB and receive replies.
	
	  ➤ **CmdbOpenApiUpdate.** A user with this role can update the CMDB with changes.
	
	For details on writing APIs, see "HP Universal CMDB Web Service API" in the *HP Universal CMDB Developer Reference Guide*.

🔍 Users Tab

This tab enables you to define a user or edit an existing one.

To access	Select **Users and Roles** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Users and Roles** > **Users tab**.
See also	➤ For details on the complete procedure for creating users and assigning roles and access permissions, see "Set Up Users and Roles" on page 97. ➤ For details on the Roles tab, see "Roles Tab" on page 103.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
✳	**Add New User.** Enables you to create a user. Opens the Add New User wizard.
✖	**Delete Selected Item(s).** Removes the user name. You can make multiple selections.
💾	**Save.** Saves the changes you have made.
🔄	**Refresh.** Refreshes to update the data content that may have been modified by other users.
🔒	**Reset Password.** Resets the password for the selected user.
📝	**Update the Recipient Manager with selected users.** Enables you to add the name and email address of the selected user to the Recipients Manager. You can make multiple selections. The button updates several recipients at one time. For details, see "Recipients Manager" on page 121.

UI Elements (A-Z)	Description
<List of users>	Contains the list of default and custom users. ➤ 🧍 . Represents users that have Administrator access rights. ➤ 🧍. Represents users that do not have Administrator access rights. The default users are: ➤ **Administrator**. Users and roles with Administrator access rights have unrestricted access to all functions. Administrators can edit the access rights of the default users and roles. ➤ **admin**. Users and roles with admin access rights have the same access rights as Administrators. ➤ **guest**. By default, users with this role can only access the profile of the currently logged in user.
Details tab	Edit the user details as required. For details, see "User Details Page" on page 100.
Full Name	The first and last name of the user as defined in the Details tab. For details, see "User Details Page" on page 100.
Roles tab	Associate a user with different roles. For details, see "Role List Page" on page 101.
Profile tab	Edit the preferences, such as time zone and locale, for a specific user. For details, see "User Profile Page" on page 110.
User Name	The name of the user.

🔍 Troubleshooting and Limitations

This section describes troubleshooting and limitations for Users and Roles.

You cannot create a new user if the name of the new user contains more than 20 Asian characters. For details on creating a new user, see "Users Tab" on page 105.

7

User Profile

This chapter includes:

Concepts

➤ User Profile Overview on page 108

Tasks

➤ Define User Preferences on page 109

Reference

➤ User Profile User Interface on page 110

Concepts

🎲 User Profile Overview

You can configure the user profile of the currently logged in user, such as change the time zone and the user's password. For details, see "User Profile Page" on page 110.

Note: Administrators can configure profiles for all users using the Users page in Users and Roles. For details, see the "Users Tab" on page 105.

Tasks

🦤 Define User Preferences

Configure preferences for the currently logged in user. For details, see "User Profile Page" on page 110.

Reference

🔍 User Profile User Interface

This section includes:

➤ User Profile Page on page 110

🔍 User Profile Page

This page enables you to set preferences for the currently logged in user.

To access	➤ For admin users: Select a user and click the **Profile** tab in the Users page in Users and Roles. For details, see "Users Tab" on page 105.
	➤ For non-admin users: Select **User Profile** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **User Profile**.
Important information	Non-admin users can change their own password here.
Relevant tasks	"Define User Preferences" on page 109

User interface elements are described below:

UI Elements (A-Z)	Description
Change Password	Click to open the Change Password dialog box. Enter the old and new passwords and click **OK**.
Time zone	Select the appropriate time zone, according to the user's location.

8

Security Manager

This chapter includes:

Concepts

➤ Security Manager Overview on page 112

Tasks

➤ Set Up Security on page 113

➤ Assign Access Rights on page 113

Reference

➤ Security Manager User Interface on page 114

Concepts

🔩 Security Manager Overview

You assign role access rights to TQL queries, views, domain instances, configuration item types, and custom options. Once the roles are assigned access rights, you create users and associate them with a role or roles, thus assigning the access rights to the users.

You must also assign access rights to the appropriate manager (Impact Analysis, CI Type Manager, and so on). For example, to give a role permissions for a view, give the role access rights to the Modeling Studio.

When users launch HP Universal CMDB, the actions for which you gave them permissions are available. For example, if a user is not assigned permissions to create a new role, the Users and Roles option in the Administration module is not available. If a user is not assigned permissions to view a certain manager, the manager does not appear in HP Universal CMDB.

Tasks

🐦 Set Up Security

Choose the roles (recommended) or users for which you are assigning permissions. For details, see "Role and User Selector Dialog Box" on page 114.

🐦 Assign Access Rights

Enable permissions for a resource. For details, see "Security Manager Page" on page 116.

Reference

🔖 Security Manager User Interface

This section includes (in alphabetical order):

➤ Role and User Selector Dialog Box on page 114

➤ Security Manager Page on page 116

🔖 Role and User Selector Dialog Box

This dialog box enables you to choose the roles or users for which you are assigning access rights.

To access	Click the **Add** button 🧑 in the Roles/Users pane.
Important information	The roles and users that appear are defined in Users and Roles.
	For details, see "Users and Roles" on page 95.
Relevant tasks	"Set Up Security" on page 113

User interface elements are described below:

UI Elements (A-Z)	Description
➡	**Move to Selected Roles and Users.** Move the role or user to the Selected Roles and Users pane.
⬅	**Move to Defined Roles and Users.** Move the role or user back to the Defined Roles and Users pane.
⇛	**Move all to Selected Roles and Users.** Move all the roles and user to the Selected Roles and Users pane.
⇚	**Move all to Defined Roles and Users.** Move all the roles and users back to the Defined Roles and Users pane.

UI Elements (A-Z)	Description
Defined Roles and Users pane	Contains the list of the roles and users that are defined in Users and Roles.
Description	A description of the role or user.
Name	The name of the role or user.
Selected Roles and Users pane	The roles or users for which you are assigning permissions for the selected resource.
Type	Represents a user. Represents a role.

🔍 Security Manager Page

This page enables you to assign access rights to view, create, update, remove, or perform actions.

To access	Select **Security Manager** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Security Manager**.
Important information	➤ When assigning permissions, you must also assign access rights to the appropriate manager. For example, to give a role permissions for a view, give the role access rights to the Modeling Studio.
	➤ Do not give regular users access to the **Managers** > **Administration** > **Users and Roles** menu option. This is because an administrator can override any user's password from this menu option. Users can change their own passwords through the **Change Password** option. For details, see "User Profile" on page 107.
	➤ It is recommended to assign access rights to roles only, and to associate users with a role that has the appropriate access rights.
	➤ You cannot select an item at the folder level.
	➤ If you make a selection at the root level, the user or role receives access rights to all items contained in the root.
	➤ Child resources inherit the permissions assigned to their parents or the nearest parent to which permissions are assigned. For example, if you assign permissions to node, its children (atmswitch, concentrator, and so on) inherit the permissions assigned to node.
Relevant tasks	"Assign Access Rights" on page 113

User interface elements are described below:

UI Elements (A-Z)	Description
CI Types tab	Give permissions to users to perform a specific operation on the selected CI types.

UI Elements (A-Z)	Description

Customize tab	Give permissions to users to view, update, or perform specific operations in the UCMDB Admin and Application menus.
	
	CMDB Admin
	
	➤ **Modeling**. Grants permissions to access the UCMDB Managers and generate Topology and Custom reports.
	➤ **Data Flow Management**:
	  ➤ **View**. View the configuration of the DFM jobs in the Run Discovery tab, for example, which DFM job is active, and information and statistics about all active jobs and errors discovered during a run.
	  ➤ **Update**. (Requires Execute permissions) Grants full permissions for all DFM operations, including updating and creating new DFM patterns, scripts, and configuration files.
	  ➤ **Execute**. (Requires Execute permissions) Grants permissions to activate DFM jobs, run the DFM wizards, define a schedule for a DFM job, override DFM pattern behavior, and edit DFM TQL queries.
	➤ **Administration**: Grants permissions to users to view or perform operations in the selected application.
	➤ **General Actions**
	  ➤ **Snapshots**. Grants permissions to create snapshots.
	  ➤ **Change Password.** Grants permissions to change user passwords.
	  ➤ **Search CIs Permission**. Grants permissions to users to access the CI Selector search option.
	  ➤ **Get Related CIs Permission**. Grants permissions to users to view data of related CIs.
	  ➤ **Data Modifier Permission**. Grants permissions to users to change CIs in IT Universe Manager.

Domain tab	Give permissions to users to edit the DFM domain credentials and the range of network addresses for the DFM probe.
Queries tab	Give permissions to users to view, update, or delete the selected TQL queries.

UI Elements (A-Z)	Description
Views tab	Give permissions to users to view, update, or delete the selected views.

Resources Pane

This area contains the resource tree for the selected tab.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
<Resources for the selected tab>	Select the resource to which you want to assign access rights.

Roles/Users Pane

This area displays the users or roles for which you want to assign permissions for the selected resource.

User interface elements are described below:

UI Elements (A-Z)	Description
	Choose users or roles to which you want to assign permissions for the selected resource.
	Remove the selected user or role for the selected resource.
	Remove all the users and roles for the selected resource.

Permissions Pane

This area enables you to apply permissions to roles and users for specific resources and instances of those resources that are defined in the system.

User interface elements are described below:

UI Elements (A-Z)	Description
Permissions	To enable permissions for a resource, you must first select the role or user to which you are assigning access rights. Then select the check box next the action that you want the user or role to perform.
	➤ **View.** The role or user can view the resource, but cannot make changes.
	➤ **Create.** The role or user can define new resources.
	➤ **Update.** The role or user can update an existing resource.
	➤ **Remove.** The role or user can delete a resource from the CMDB.
	➤ **Execute.** The role or user can perform actions, for example, running a script.
	Note: Only those permissions that are relevant to the selected resource are enabled.

9

Recipients Manager

This chapter includes:

Concepts

➤ Recipients Manager Overview on page 122

Tasks

➤ Define an Email Recipient on page 123

Reference

➤ Recipients Manager User Interface on page 124

Concepts

🔱 Recipients Manager Overview

The Recipients Manager enables you to define the recipients who can automatically receive scheduled reports, through email, at regular intervals, from the Reports module. For details, see "Reports" in the *Modeling Guide*.

Tasks

🐾 Define an Email Recipient

You create a new email recipient by clicking the **Add** button on the Recipients Manager page and entering the recipients name and email address. For details, see "Add Mail Recipient Dialog Box" on page 124.

Reference

🔍 Recipients Manager User Interface

This section includes (in alphabetical order):

➤ Add Mail Recipient Dialog Box on page 124

➤ Recipients Manager Page on page 125

🔍 Add Mail Recipient Dialog Box

This dialog box enables you to create a new email recipient or edit the properties of an existing one.

To access	➤ To create a new email recipient, click the **Add** button on the Recipients Manager page.
	➤ To edit the properties of an existing recipient, select the required recipient and click the 🖉 button.
Relevant tasks	"Define an Email Recipient" on page 123

User interface elements are described below:

UI Elements (A-Z)	Description
➕	Click to add an email address for the recipient. You can add more than one email address.
✖	Click to delete the selected email address.
Name	Enter the name of the email recipient.

🔎 Recipients Manager Page

This page enables you to create new email recipients or edit the properties of existing email recipients.

To access	Select **Recipients Manager** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **Recipients Manager**.
Important information	The recipients that appear in the Recipients Manager page are updated with the email recipients defined in the "Schedule Job Dialog Box" on page 569 in the Reports Manager (click the **Open Address Book** 📧 button in the **Send to** box to open the Message Recipients dialog box).
Relevant tasks	Only the recipients whose email addresses are defined here can automatically receive scheduled reports through email from the Reports Manager.

User interface elements are described below:

UI Elements (A-Z)	Description
➕	Define a new email recipient.
✏️	Edit the selected recipient.
✖️	Delete the selected recipient.
E-mail(s)	The email addresses of the email recipient.
Name	The name of the email recipient.

10

LDAP Mapping

This chapter includes:

Concepts

➤ LDAP Mapping Overview on page 128

Tasks

➤ Synchronize HP Universal CMDB User Roles With LDAP Groups on page 129

➤ Configure LDAP for Active Directory on page 132

Reference

➤ LDAP Mapping User Interface on page 134

Concepts

🟦 LDAP Mapping Overview

The LDAP server can be used to authorize users and as a user repository for mapping user groups on the LDAP server to roles in HP Universal CMDB.

You can associate HP Universal CMDB user roles with LDAP groups using the LDAP Mapping module in the Administration section of the Navigation bar. The LDAP Mapping module only appears under Administration if the user has the required permissions. For details, see "Users and Roles" on page 95.

For details on synchronizing LDAP groups with HP Universal CMDB groups, see "Synchronize HP Universal CMDB User Roles With LDAP Groups" on page 129.

For details on configuring LDAP authentication, see "Enable and Define the LDAP Authentication Method" in the *HP Universal CMDB Deployment Guide* PDF.

Tasks

⚜ Synchronize HP Universal CMDB User Roles With LDAP Groups

This task describes how to synchronize LDAP user groups with HP Universal CMDB user roles:

1 Configure infrastructure settings to set an LDAP synchronization strategy

To set up an LDAP authentication synchronization, you must first modify the settings in the Infrastructure Settings Manager.

Note: Any changes you make for **LDAP General** > **Enable LDAP Authentication** and **LDAP General** > **Enable User Synchronization** remain in effect for all future Web sessions.

---

a Select **Managers** > **Administration** > **Infrastructure Settings**.

b Select **LDAP General**, and then in the **LDAP server URL** setting, enter the URL of the LDAP server in the following format:

ldap://<ldapHost>:<port>/<baseDN>??scope

c Select **LDAP Group Definition**, and then in the **Groups base DN** setting, enter the distinguished name of the general group.

d Select **LDAP Group Definition**, and then in the **Root groups base DN** setting, enter the distinguished name of the root group.

e Select **LDAP General**, and then in the **Enable User Synchronization** setting and verify that the value is set to **True.**

Caution: In addition to the LDAP settings described in this step, it is highly recommended that you verify all LDAP settings. Some of the default values that come with the other LDAP settings may not be appropriate for your needs.

---

f Select **Managers** > **Administration** > **LDAP Mapping** and verify that the list of the LDAP groups that are configured on the LDAP server appear in the LDAP Repository pane. If the list of LDAP groups do not appear, verify your LDAP settings.

For details on Infrastructure Settings, see "Infrastructure Settings Overview" on page 38.

2 **Create HP Universal CMDB roles**

You can create local HP Universal CMDB roles that can be assigned to the remote LDAP server. For details on how to create HP Universal CMDB roles, see "Set Up Users and Roles" on page 97.

3 **Map LDAP groups to HP Universal CMDB roles**

You map user groups on the LDAP server with roles in HP Universal CMDB to synchronize LDAP groups and HP Universal CMDB roles and enable management of your HP Universal CMDB roles via the LDAP server, as follows:

a Select **Managers** > **Administration** > **LDAP Mapping**.

b In the **LDAP Repository** pane, select a remote group and click **Assign Roles** and select the required HP Universal CMDB roles.

The HP Universal CMDB roles synchronized with the selected LDAP group are displayed in the **UCMDB Roles for LDAP Group: <group name>** pane.

Existing synchronization of all LDAP groups is displayed in the **LDAP Groups to UCMDB Roles Mappings** pane.

Caution: When defining mappings, make sure to map at least one LDAP group to an Admin group in the CMDB before logging out. If this is not done, you may not have any remaining group with administration permissions.

---

4 Log out and log in to HP Universal CMDB

   a Select **LDAP General** > **Enable LDAP authentication** and set the value to **True**

   b Log out of HP Universal CMDB and then log in again with the LDAP user name and password.

🔧 Configure LDAP for Active Directory

This task describes how to configure LDAP for Active Directory.

To enable LDAP login and user synchronization, edit the following parameters in Infrastructure Settings:

Note: For all other parameters, you can use either the default values or, if required, LDAP-specific values.

LDAP Integration Settings	Comment
Distinguished Name of Search-Entitled User	CN=AD Connector CN=Users DC=consult DC=example DC=com
Enable User Synchronization	**true:** Enables LDAP group mapping with HP Universal CMDB roles (when **Enable LDAP Authentication** is set to **true**).
Group class object	group
Groups base DN	CN=Users DC=consult DC=example DC=com
Groups member attribute	member
Groups search filter	(|(objectclass=groupOfNames) (objectclass=group) (objectclass=groupOfUniqueNames)(objectclass=groupOfUrls)(objectclass=access Group)(objectclass=accessRole))

LDAP Integration Settings	Comment
LDAP server URL	The URL to your LDAP server, including port: ldap://LDAP-SERVER:389/ DC=consult,DC=example, DC=com??sub;
Password of Search-Entitled User	*****
Remote users repository mode	Enable LDAP authentication.
Root groups base DN	Defines the parent LDAP node of all users to be synchronized. A Synchronization User List base DN includes all users in that DN—unless the users are excluded by the Synchronization User List's filter or the user's DN is matched in a more specific Synchronization User List. CN=Users DC=consult DC=example DC=com
Root groups filter	(|(objectclass=groupOfNames) (objectclass=group) (objectclass=groupOfUniqueNames)(obje ctclass=groupOfUrls)(objectclass=access Group)(objectclass=accessRole));
Users filter	Defines an LDAP filter used to include or exclude users from a Synchronization User List: (&(sAMAccountName=*) (objectclass=user));
Users object class	user
UUID attribute (User Unique ID attribute)	sAMAccountName

Reference

🔍 LDAP Mapping User Interface

This section includes:

➤ LDAP Mapping on page 134

🔍 LDAP Mapping

This page enables you to map groups configured in HP Universal CMDB to groups configured on the LDAP server.

To access	Select **LDAP Manager** from the **Administration** module in the Navigation Menu or select **Managers** > **Administration** > **LDAP Mapping.**

LDAP Repository Pane

This pane enables you to map HP Universal CMDB roles to LDAP groups, and to view the LDAP groups and their users.

User interface elements are described below:

UI Elements (A-Z)	Description
🔏	**Assign Roles.** Enables you to map LDAP groups with HP Universal CMDB roles. Opens the Select UCMDB Roles to Assign dialog box. **Note:** ➤ You can also select this option by right-clicking a group. ➤ You can select multiple groups by holding the SHIFT or CTRL buttons.

UI Elements (A-Z)	Description
👤	**Show Users.** Enables you to view the list of users associated with the selected LDAP group. Opens the Remote Group Users dialog box. **Note:** You can also select this option by right-clicking a group.
<List of the LDAP Groups>	Displays a list of the LDAP groups that are configured on the LDAP server.

UCMDB Roles For LDAP Group: <group name> Pane

This pane:

➤ Displays the HP Universal CMDB role that is mapped to the LDAP group selected in the LDAP Repository pane,

➤ Enables you to remove the mapped HP Universal CMDB roles that was mapped to the selected LDAP group.

User interface elements are described below:

UI Elements (A-Z)	Description
👥	**Remove Roles.** Enables you to remove the association of the HP Universal CMDB role with the LDAP group. **Note:** You can remove multiple roles at once by holding the SHIFT or CTRL buttons.
Role Description	A description of the role mapped to the selected LDAP group in the LDAP Repository pane.
Role Name	The name of the role assigned to the selected LDAP group in the LDAP Repository pane.

LDAP Groups to UCMDB Roles Mappings Pane

This pane displays all the LDAP user groups that have been mapped to
HP Universal CMDB user roles.

User interface elements are described below:

UI Elements (A-Z)	Description
LDAP Group	The name of the LDAP user group.
UCMDB Roles	The HP Universal CMDB user roles that are mapped to the corresponding LDAP group.

11

Login Troubleshooting

This chapter includes:

Troubleshooting and Limitations on page 138

🔍 Troubleshooting and Limitations

Use the information below to troubleshoot possible causes of failure to log into HP Universal CMDB. For additional troubleshooting information, refer to the HP Software Self-solve knowledge base, accessed by selecting **Troubleshooting & Knowledge Base** from the HP Universal CMDB Help menu.

Problem/Possible Causes	Solutions
HP Universal CMDB is not started successfully. **Indication:** The **jboss_boot.log** file does not include the following line: ======== server is up ========	**Solution 1:** Verify that the HP Universal CMDB server is up and running by accessing the Web console **http://<server name> :8080/web-console** where **<server nam**e> is the name of the HP Universal CMDB server to which you are connecting. **Solution 2:** Check the database connection. **To check that the database server is up and running:** **1** Launch the Web browser and navigate to: **http://<server_name>:8080/jmx-console**, where **<server_name>** is the name of the machine on which HP Universal CMDB is installed. **2** Under Topaz, click **service=CMDB Dal Services** to open the JMX MBean View. **3** Invoke the function **java.lang.String getDbContext()** with a customerID parameter value of **1**. **4** Check that the operation result shows no problems. **Solution 3:** Check that the database connection parameters are correct. Ensure that you can log into Oracle Server or Microsoft SQL Server using the credentials you provided during the installation procedure.

Problem/Possible Causes	Solutions
HP Universal CMDB is not started successfully. *(cont'd)*	**Solution 4:** Use the log file EJBContainer\cmdb.dal_ejb.log to verify the database connections. (For details, see "CMDB Dal Log" in the *Modeling Guide*.) **Solution 5:** To verify that the database connection is valid, in the Windows command interpreter (cmd.exe), type sqlplus cmdb/cmdb@skazal.
The CMDB is corrupted (for example, a user record may have been deleted accidentally from the CMDB).	Import a previously backed up database file. For details, see the *HP Universal CMDB Database Guide* PDF. **Important:** The HP Universal CMDB server must be down while importing the database. **Note:** When you import a previously backed up database file, you lose all data previously existing in the system.
The HP Universal CMDB login fails. This may be due to an incorrect login name/password combination.	Ensure that you enter a correct login user name/password combination.
HP Universal CMDB login fails due to unexpected errors.	**Solution 1**: Select **Start** > **Programs** > **HP UCMDB** > **HP Universal CMDB Server Status** and ensure that the service is running. **Solution 2**: Look for errors in the following log files: ➤ **C:\hp\UCMDB\UCMDBServer\runtime\log\error.log** ➤ **C:\hp\UCMDB\UCMDBServer\runtime\log\ui-server.log** If you find errors that are unfamiliar to you, contact HP Software Support.

This section describes troubleshooting and limitations for initial login.

Java Not Installed on Client Machine

If Java is not installed on your machine, during login a message is displayed asking you whether to install the correct Java Runtime Environment version. JRE is needed to view HP Universal CMDB applets.

Click the relevant button to allow HP Universal CMDB to install Java from either sun.com or the HP Universal CMDB Server.

Updating the Java Configuration

The following message is displayed when HP Universal CMDB detects problems with initial memory:
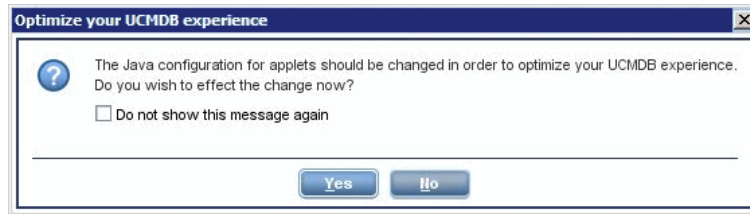
Note: From Java version 6 update 10, this message is no longer displayed as it is no longer relevant.

Part IV

CI Lifecycle

12

CI Lifecycle and the Aging Mechanism

This chapter includes:

Concepts

➤ The Aging Mechanism Overview on page 144

➤ CI Lifecycle – Overview on page 145

Tasks

➤ Enable and Run the Aging Mechanism on page 146

➤ Generate CI Lifecycle Data and Filter the Results on page 148

Reference

➤ CI Lifecycle User Interface on page 150

➤ Aging Parameters on page 158

Concepts

🔵 The Aging Mechanism Overview

After your system has been running for some time, previously discovered CIs may no longer exist. Such CIs should be removed from the CMDB to keep it up to date.

Discovery and Dependency Mapping (DFM) runs periodically and updates the last access time for all CIs and relationships that it discovers. This process is known as "touching," and prevents CIs and relationships that represent active components in the system from becoming deletion candidates. If DFM does not discover a CI that exists in the CMDB, the last access time is not updated, so after some predefined time (by default, 20 days) the CI becomes a deletion candidate.

Deletion candidates are reviewed and managed in the CI Lifecycle module.

If the CI remains untouched for a longer period of time (by default, 40 days), the aging mechanism deletes the CI from the system. In other words, aging deletes CIs and relationships that are no longer relevant, that is, have not been accessed for a specified period of time (by default, 40 days).

The deletion of large quantities of CIs and relationships creates a significant load for the CMDB and database servers and can impact the overall CMDB performance. To reduce this performance impact, the aging mechanism divides the objects to be deleted into chunks. A delay between chunks lowers the database load and enables other tasks to continue working. For faster work, you can shorten the delay, but the default delay value is the recommended delay. For details, see "Aging Parameters" on page 158.

Note:

➤ The aging mechanism is disabled by default.

➤ Aging operations are run only on CIs and relationships that have **Enable Aging** set to **true**. By default, CIs and relationships added by out-of-the-box DFM patterns are created with **Enable Aging** set to **true**. (For details, see Enable Aging in the "Configuration Item Properties Dialog Box" in the *Modeling Guide*.) This behavior can be changed in the **Enable aging** check box in DFM in the Pattern Management tab (in the Results Management tab). For details, see "Enable Aging" on page 152.

CI Lifecycle – Overview

The CI Lifecycle application enables you to view a list of CIs and relationships that are candidates for deletion by the aging mechanism, and to initiate the aging procedure. You can also select specific CIs or relationships and postpone their deletion or mark them as deletion-proof.

For each CIT, you can set the time period before a specific CI becomes a candidate for deletion or before it is actually deleted. For details, see Actual Deletion Period, Deletion Candidate Period, and Enable Aging in the "Configuration Item Properties Dialog Box" in the *Modeling Guide*.

Tasks

🔧 Enable and Run the Aging Mechanism

This task describes how to enable aging and run the aging mechanism.

This task includes the following steps:

➤ "Enable Aging" on page 146

➤ "First Aging Run" on page 147

1 Enable Aging

Access the Aging Status tab on the CI Lifecycle page (**Managers** > **Administration** > **CI Lifecycle**). Select the **Enable Aging** check box. For details, see "Aging Status Tab" on page 151.

Note: When aging is turned on or off (that is, enabled or disabled), you must restart the server for the changed setting to take effect.

---

2 First Aging Run

After your system has been running for some time, there are probably many CIs that need deleting. You should perform this step in the procedure to keep the CMDB up to date.

If the number of CIs to be deleted is greater than 10,000, a confirmation message is displayed. Choose between the following options:

➤ CI Lifecycle divides the number of CIs and/or relationships that must be deleted into chunks (to avoid overloading the database), deletes them, and adds the information to the History database. Chunk size is determined by the value in the **Aging Chunk Size** field in the Infrastructure Settings Manager.

This is the preferred method of deletion because the History database is updated with the information and there is no server downtime.

➤ You run the database aging tool, located at **C:\hp\UCMDB\UCMDBServer\tools\dbscripts\dbtool.bat**. If you choose this option, you must stop the UCMDB server service.

You would choose this second option if you needed a fast system of deletion: the database aging tool is an order of magnitude faster than the aging mechanism.

Caution: Before running this option, be aware of the following:

➤ You must completely shut down the server before running the tool, that is, there will be server downtime.

➤ No information is written to the History database.

To run the database aging tool:

a Back up the CMDB database schemas. This step is mandatory.

b Run the tool in a testing environment before running it in a production environment. This step is recommended.

c Stop the UCMDB server.

    d Run the **dbtool.bat** file from the file system.

    e Restart the UCMDB server.

    f Return to the Aging Status tab and enable aging.

🔧 Generate CI Lifecycle Data and Filter the Results

This task describes how to generate a list of CIs that are candidates for deletion, and to filter the results.

This task includes the following steps:

➤ "Generate CI Lifecycle Data" on page 148

➤ "Filter the CI Lifecycle Results" on page 149

1 Generate CI Lifecycle Data

To generate CI Lifecycle results for CIs or relationships, select either the **CIs** tab or the **Relationship** tab. Select the time period in which to search, using the drop-down calendars in the **From** and **To** fields, and click **Generate**. For details, see "CI Lifecycle Page" on page 156.

CI Lifecycle displays a list of CIs that are candidates for deletion.

Tip: If no results are generated, try extending the time period further into the future.

---

2 **Filter the CI Lifecycle Results**

To filter the CI Lifecycle data, click the **Filter** button to open the Filter dialog box. For each column by which you want to filter, select a condition from the drop-down list and fill in the value column, either by entering a value, selecting from a drop-down list, or using the calendar. Click **OK** to apply your filter.

To clear the filter and restore the original results, click the **Clear** button. For details, see "Filter Dialog Box" on page 157.

Reference

CI Lifecycle User Interface

This section includes (in alphabetical order):

Aging Run Statistics Dialog Box

This dialog box enables you to view statistics for the five previous runs of the aging mechanism.

To access	Click the **Statistics** button 🔻 on the CI Lifecycle page.
Relevant tasks	"Enable and Run the Aging Mechanism" on page 146

User interface elements are described below:

UI Elements (A-Z)	Description
Aging Runs	**Run at**. The start and finish time of the run. **Deleted**. The number of CIs that have been deleted. **Failed**. The number of CIs that have not been deleted.
Errors	**ID**. The IDs of the failed CIs, that is ,of the CIs that could not be deleted. **Error message**. A message describing the cause of failure.

🔍 Aging Status Tab

This dialog box enables you to enable the aging mechanism and to run the mechanism for the first time.

To access	Select **CI Lifecycle** from the Navigation Menu or select **Administration** > **CI Lifecycle**.
Important information	This tab displays information about the number of CIs that are candidates for deletion, and functions as follows, if you select the **Enable Aging** check box: ➤ If the number of CIs for deletion is larger than 10,000, you can choose to use the aging mechanism to delete the CIs in chunks, or to use the database aging tool. For details on which procedure to use, see "First Aging Run" on page 147. ➤ If the number of CIs for deletion is smaller than 10,000, the estimated time for deletion is displayed and the CIs are immediately deleted. A progress bar shows the stage of the deletion.
Relevant tasks	"Enable and Run the Aging Mechanism" on page 146

User interface elements are described below:
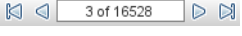
UI Elements (A-Z)	Description
Enable Aging	➤ To enable aging, select the check box. The frequency and size of the chunks that are marked as candidates for deletion are determined in the Infrastructure Settings Manager. For details, see "Aging Parameters" on page 158. ➤ To disable aging, clear the check box.
Run results	**Total CIs to delete**. The number of CIs or relationships that are delete candidates and that are being deleted by the aging mechanism. **Deleted**. The number of CIs or relationships that have been deleted. **Failed**. CIs or relationships that could not be deleted. If any failures exist, click the **Failed** link to view their details.

🔍 CI Lifecycle and Relationship Tabs

This area enables you to display a list of CIs and relationships that are candidates for deletion, and to manage the list (for example, to delete or prevent or postpone deletion of specific CIs, to view statistics, and to filter the list).

To access	Select **Administration** > **CI Lifecycle**.
Relevant tasks	"Generate CI Lifecycle Data and Filter the Results" on page 148
See also	"Working with CIs" on page 298

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements (A-Z)	Description
	Click to delay the deletion of a CI. It disappears from the list of candidates for deletion.
	Click to prevent a CI or relationship from being deleted. It disappears from the list of candidates for deletion.
	Click to delete a selected CI or relationship.
	Click to view statistics (such as the start and finish time of each run and the number of deleted CIs), for the previous five runs of the aging mechanism. For details, see "Aging Status Tab" on page 151.
	Click to select or clear all rows of data on the current page.
	Click to update the data displayed.
	Click to open the Filter dialog box, which enables you to customize the filter. For details, see "Filter Dialog Box" on page 157.
	Click to clear the filter and display the full results.
	Click to open the Select Columns dialog box, which enables you to change the display order of the columns, hide a column, or display a hidden column. For details, see "Select Columns Dialog Box" in the *Modeling Guide*.
30 ▼	Click the arrow to define the number of rows that should appear on each display page.
◁ ◁ 3 of 16528 ▷ ▷◁	Click to navigate through the results page by page or to jump to the first or last page.
📄 Generate	Generates data for a selected period. **Tip**: If no results are generated, try extending the time period further into the future (the **To** field).

UI Elements (A-Z)	Description
🗎	Click **Export Data to File** to choose the export format for the table data. The available options are: ➤ **Excel.** The table data is formatted as an .xls (Excel) file that can be displayed in a spreadsheet. ➤ **PDF.** The table data is exported in PDF format. ➤ **CSV.** The table data is formatted as a comma-separated values (CSV) text file that can be displayed in a spreadsheet. **Note:** For the CSV formatted table data to display correctly, the comma (,) must be defined as the list separator. In Windows, to verify or modify the list separator value, open Regional Options from the Control Panel, and on the Numbers tab ensure that the comma is defined as the List Separator value. ➤ **XML.** The table data is formatted as an XML file that can be opened in a text or XML editor.
<Right-click a CI>	For details on the menu options, see "IT Universe Manager Shortcut Menu" in the *Modeling Guide*.
<Right-click a column header>	For details, see "Sort Column Content Dialog Box" in the *Modeling Guide*.

UI Elements (A-Z)	Description
CIs/Relationships tabs	Select to see a list of CIs or relationships that are candidates for deletion:
	Select. Select the check box to select a CI or relationship before performing an operation on it (such as Delete or Postpone Deletion).
	End1. The query node at one end of the relationship (relevant only for relationships).
	Display Label. The name of the CI or relationship as it appears in the Topology Map.
	End2. The query node at the second end of the relationship (relevant only for relationships).
	CI Type. The type of the CI or relationship.
	Last Access Time. The last time that the CI or relationship was accessed, whether it was updated or discovered by the DFM process.
	Updated by. The administrator or process that updated the CI or relationship.
	Actual Delete Time. The date and time when the CI or relationship is deleted.
From	Click the arrow and use the calendar to select the beginning date and time for the CI Lifecycle results.
Relationships tab	Select to see lifecycle results for relationships.
Set Rows per Page	Select the number of rows per page from the drop-down list.
To	Click the arrow and use the calendar to select the end date and time for the CI Lifecycle results.

🔍 CI Lifecycle Page

This page enables you to enable and run the aging mechanism. It also enables you to display a list of CIs and relationships that are candidates for deletion and to manage the list (for example, to delete, prevent, or postpone deletion of specific CIs, to view statistics, and to filter the list).

To access	Select **Administration** > **CI Lifecycle**.
Important information	The CI Lifecyle page includes the following tabs: ➤ **Aging Status**. Use this tab to enable the aging mechanism and to run aging. For details, see "Aging Status Tab" on page 151. ➤ **CIs**. Use this tab to display a list of CIs that are candidates for deletion. For details, see "CI Lifecycle and Relationship Tabs" on page 152. ➤ **Relationships**. Displays the same information as the CIs tab, with the addition of the **End1** and **End2** columns. The tab that is displayed by default depends on whether aging is enabled or disabled: ➤ **If aging is enabled**, the CIs tab is displayed. ➤ **If aging is disabled**, the Aging Status tab is displayed.
Relevant tasks	➤ "Enable and Run the Aging Mechanism" on page 146 ➤ "Generate CI Lifecycle Data and Filter the Results" on page 148
See also	"Working with CIs" on page 298

🔍 Filter Dialog Box

This dialog box enables you to filter the list of CIs that are candidates for deletion.

Description	Click **Filter** on the CI Lifecycle page.
Included in Tasks	"Generate CI Lifecycle Data and Filter the Results" on page 148

User interface elements are described below:

UI Elements (A-Z)	Description
Condition	Click in the **Condition** column and select an option.
Display Name	The columns displayed for the CIs or relationships on the CI Lifecyle page.
Value	Click in the **Value** column to set a value for the selected condition. Depending on the condition selected, you can select a value from a drop-down list, select a date and time from the calendar, or click the ellipsis button ⬜ to open an editing dialog box where you can enter a value.
	When the conditions **Like** or **Like ignore case** are selected in the **Condition** column, you can use a wildcard (%) before and after the string for which you are searching.
	Note: You must select a condition before entering a value.

🔍 Aging Parameters

Aging parameters are defined in the Infrastructure Settings Manager (**Administration** > **Infrastructure Settings Manager**):

➤ **Aging Chunk Size**. The number of CIs or relationships that are sent to the aging mechanism at one time. The default is 1,000.

➤ **Aging Scheduler Hour of the First Run.** Defines at what time aging first runs after server startup (for example, 02=2:00 AM).

➤ **Aging Scheduler Interval.** Defines the interval between runs. If Aging Time Unit = days, the interval value is days; if Aging Time Unit = hours, the interval value is hours.

➤ **Aging Time Unit.** The default is days. (The hours option is provided to enable convenient verification checks of specific CIs.)

➤ **Delay Between Chunks in Milliseconds**. The period between one chunk being deleted by the aging mechanism and the next chunk being sent to the aging mechanism to be deleted. The default is 30 seconds, that is, 30,000 milliseconds.

➤ **Threshold for running storage optimization**. The threshold for running storage optimization during the aging operations (for example, each N deleted CIs). As database operations could take considerable time (several minutes), this option enables the technical organization of the schema to reduce this time.

Part V

Glossary of HP Universal CMDB Terminology

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Glossary

This chapter lists terminology that is used throughout the documentation.

adapter

> An entity in CMDB responsible for retrieving or updating data in a remote system (data that is not saved in the Universal CMDB database). The adapter is aware of how specific data is modeled and knows the vendor-specific protocol for communicating with the repository. An adapter can be used either for setting up integrations (integration adapter) or for performing discovery tasks (discovery adapter).

Adapter Management

> The application module that enables you to manage the adapters needed to run discovery or set up integrations.

calculated relationship

> A calculated relationship represents the connection between the source and target CI, whose path meets the conditions defined for the triplets on which it is based in the CI Type Manager. The direction of the calculated relationship is not always the same direction as the physical relationship taken from the CI Type model. You can use calculated relationships to create TQL queries just like any other relationship in the CI Type model. This enables you to base Enrichment rules, Impact Analysis rules, and views on calculated relationships.

CI

A component of the CMDB that represents a physical or logical entity in the system. For example, CIs can represent hardware, software, services, or business processes. The CIs are organized into a hierarchical format based on the dependencies in your organization's IT environment.

CI Selector

A tool used in various applications for displaying, managing, and searching within the CI views.

CMS

The central CMDB server and the authority for configuration management in the multiple CMDBs solution.

compound relationship

Represents a path in the topological graph. You use a compound relationship to define the allowed steps in the path between a source and target CIs.

configuration item (CI)

A component of the CMDB that represents a physical or logical entity in the system. For example, CIs can represent hardware, software, services, or business processes. The CIs are organized into a hierarchical format based on the dependencies in your organization's IT environment.

configuration item type (CIT)

The category for each configuration item (CI). Each CIT provides a template for creating the CI and its associated properties.

Configuration Item Type Manager

Enables you to view the information in the CI Type model, which contains the definitions of all configuration item types (CITs) defined in the system and the relationships that define the connections between them. Each CIT has its own attributes, as well as the attributes inherited from its parent CIT.

configuration management database (CMDB)

The core information repository of HP Universal CMDB. The CMDB stores and handles the infrastructure information as CIs and relationships.

credentials

The user names and passwords provided by the user to enable Data Flow Management to connect to remote systems.

data flow

The flow of information, either into the CMDB or outwards to an external repository.

Data Flow Management

The management capabilities provided by the CMDB to control data flows.

Data Flow Probe

The main data flow component responsible for requesting tasks from the HP Universal CMDB server, executing them, and sending the results back to the CMDB. The Probe includes two components: the Probe Gateway and the Probe Manager. The Gateway provides communication (http or https) between the Manager and the CMDB, for processes such as downloading tasks and returning task results. The Manager executes the task provided by the CMDB. The Gateway communicates with the Manager using RMI. One Gateway can connect to several Managers. By default, the Manager and the Gateway run as one process.

Data Flow Probe Setup

The application module that enables you to configure Probes and credentials.

Data Flow Probe Status

The application module that enables you to view current information on all active jobs running on the Probes.

data push

A data flow of type Data Push sends information from the CMDB outwards to an external system.

data source

A UCMDB data source represents a possible source of information for the UCMDB TQL engine. A data source can be either the CMDB itself (including all the data populated into it by either discovery or integrations), or any integration of type Federation.

discovery

The mechanism that enables you to collect information about the IT infrastructure resources on your system and their interdependencies.

discovery adapter

An adapter that is used by Data Flow Management to collect information about the IT infrastructure resources on your system and their interdependencies.

Discovery Control Panel

The application module that is used to control the discovery process. Using the Discovery Control Panel, you can select which discovery jobs to activate, as well as track the ongoing discovery process.

discovery job

Discovery jobs are based on discovery adapters, and may override parameters, scheduling information, and trigger TQL assignments. All customization resides in the job, which means that one adapter can be used for different schedules and with different parameters.

discovery job execution policy

A set of parameters that defines when discovery jobs are allowed to run.

discovery module

One or more discovery jobs that together enable the discovery of a specific technology or application.

discovery protocol

Communication credentials that are used to establish connections with remote systems such as SNMP, WMI, SSH, Telnet, and so on.

domain

A logical term for a customer site where each IP address is individual, that is, each domain must contain unique IP addresses. There are two types of domains: **customer**, for a specific customer site that contains private IP addresses; **external**, for the Internet (public) domain that contains all the IP addresses that are not included in the customer site.

external class

A class defined in the HP Universal CMDB data model whose instances are stored in external data repositories and not in HP Universal CMDB.

federation

The ability of the CMDB to bring in data from external data sources. That is, the data is not stored in the CMDB, but remains in the external data source. Each time the data is queried, UCMDB brings the data on the fly to the CMDB from the external data source.

federated data source

Represents an external data repository from which UCMDB is capable of federating data. Federated data sources are created within the Integration Studio by setting up Integration Points of type Federation.

fuse

Represents the limits defined for different operations in the system.

global ID

A unique CI ID, generated by the CMS, that identifies that CI throughout the system, making it easier to work in multiple CMDB environments.

hardening

Hardening guidelines provide the configuration information required to implement a more secure (hardened) HP Universal CMDB platform. For details on these guidelines, refer to the *HP Universal CMDB Deployment Guide* PDF.

hierarchy rule

The hierarchy of a view defines the organizational structure of CIs in the topology map, by displaying selected CIs at different levels (layers). When no hierarchy rules are defined, the topology map displays all CIs included in a query result on one level. For example, if a query result includes a CI and its child, both CIs are displayed on the same layer in the topology map.

HP Business Service Management

HP's solution for real-time performance and availability monitoring from a business perspective, service level management, end-user management, system availability management, and custom reporting.

inheritance relationship

CITs that inherit the attributes and behavior (such as the label function) of the parent CIT.

integration

A UCMDB integration enables the setting up of data flows, either from the CMDB to some external system (data push) or from an external system into the CMDB (population/federation).

integration adapter

An adapter that is used to integrate CIs and relationships between the CMDB and external data repositories. Available integration flows are population, federation, and data push.

IT Universe model

Part of the CMDB, responsible for holding the CIs and the relationships between the CIs. The IT universe model is organized into a hierarchical format that represents your organization's IT environment.

JMX Console

A portal that displays the operations and properties of all active, registered MBeans as a web interface, using HTML controls.

job execution policy

A set of parameters that defines when discovery jobs are allowed to run.

mapping engine

A component in the federation flow that connects CIs from different data repositories, when those data repositories are connected with a virtual link. By default, the connection is made using the UCMDB reconciliation engine.

modeling

The process of mapping the complex relationships between servers, network, storage, and software, and logical elements such as business services, VPNs, and end users.

module

One or more discovery jobs that together enable the discovery of a specific technology or application.

multinode

An artificial entity defined in an adapter for reconciliation. For example, if reconciliation is done by a host CI, a host multinode is defined and all fields used for reconciliation are mapped to columns in the database.

package

A subset of resources defined by certain criteria, logically grouped together, which is used to add content to the CMDB. This content can include the discovery of IT infrastructure, integrations, CITs, views, and so on.

Package Manager

The application module that is responsible for dispatching user or system requests for resource operations such as export, import and delete. It enables you to deploy some or all of a package's resources to the CMDB from your local directory, as well as export some or all of a package's resources in the Package Manager to your local directory.

Package Repository

Packages and their resources are modeled in the CMDB as instances of CI types: *deployedpackage* and *deployedresource*.

Package Resource

Each entity available in HP Universal CMDB is a CI type, TQL query, view, report, impact rule, discovery job, adapter, or schedule.

Package Subsystem

In terms of the Package Manager, a subsystem is a logical type of resource such as: class model, data model, view, type definition, discovery job, and so on.

pattern view

Enables a query to the CMDB by defining topology query language (TQL) queries.

perspective

A pattern to be applied to a model or a collection of CIs to create a perspective based view using the Modeling Studio.

population

A data flow of type Population populates information from some external system as CIs and relationships, which are stored and managed within the CMDB.

protocol

Communication credentials that are used to establish connections with remote systems such as SNMP, WMI, SSH, Telnet, and so on.

reconciliation

The process of resolving data conflicts, either by resolving to a common naming schema or resolving data overlap differences within the records to a single answer. Reconciliation is composed of two parts: the first is identification of the CIs and relationships according to data entering the CMDB, and the second is the decision taken of which reported data is to be considered authoritative, in case of data conflicts (reconciliation priority).

resources

Applications, databases, network devices (hardware and software), and servers that are discovered and managed by HP Universal CMDB

subgraph

A graph that represents additional TQL query data related to a specific CI.

System Health

An application that enables administrators to view performance and availability statistics for, and to manage the workload of, the HP Universal CMDB server, data processors, load balancers, and data collectors and the services they are running.

Topology Query Language (TQL)

A language and tool for discovering, organizing, and managing IT infrastructure data. It is used to create queries that retrieve specific data from the CMDB and display that data. TQL enables you to draw conceptual relationships between CIs and create visual images of IT infrastructure resources.

trigger CI

A CI (or set of CIs) that is used as a trigger to create a task from a discovery job.

trigger node

A node can be defined as a trigger node in Impact Analysis Manager. Impact Analysis Manager enables you to simulate how infrastructure changes you want to make impact your system. A node defined as a trigger node is the root cause node, or the node that represents the changes you want to make to the system.

trigger TQL

A TQL query that is assigned to a discovery job and automates the process of adding trigger CIs to that job.

triplet

The allowed steps in a path in a topology graph leading from the source CI to the target CI when creating a subgraph definition, a compound relationship, or a calculated relationship.

upgrade

> HP Universal CMDB provides procedures and recommendations to enable you to upgrade your platform to the latest version with the minimum possible interruption to your system and operations. For details, see the *HP Universal CMDB Deployment Guide* PDF.

view

> A collection of CIs and relationships represented by icons. These CIs and relationships are the result of a TQL query to the CMDB, and are displayed as a view according to display and organizational rules that are assigned to them. Each CI/relationship can be presented in multiple views or by multiple icons in different view layers.

virtual relationship

> A relationship between two graph nodes that come from different data repositories. The instances of these relationships do not exist in any data repository and are created during TQL calculation.

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