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for the Windows and Solaris operating systems

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IT World Model Management

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Welcome to This Guide

This guide explains how to configure and work with an IT model that enables you to build a topology of your system. You populate the model with configuration items and their relationships, and then use the model to measure and manage critical business processes.

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How This Guide Is Organized

The guide contains the following chapters:

Part I IT World Model Management Settings

Describes how to create or edit a package out of existing resources to suit your IT management needs using the Package Manager; how to define schedules for tasks that are activated on a periodic basis using the Scheduler; how to define attribute states using the State Manager; how to perform federation over several data sources using Federated CMDB; how to use the Infrastructure Settings Manager. Also describes how to set up users and roles and grant permissions to roles to use components of the application.

Part II IT World Model Management Modeling

Describes how to model your business environment by defining views and by building TQL queries that retrieve the required information from the CMDB. The TQL query results populate the views with CIs and relationships.

Furthermore, describes how to work with the topology of the views defined in the Modeling Managers. You can edit CI properties, define new CIs, and attach existing CIs to each other to reflect changes in your IT infrastructure.

Part III IT World Model Management Application

Describes how to view the CIs of the currently selected view in graphical format in Topology View, how to view a list of CIs and relationships that are candidates for deletion by the aging mechanism, how to compare two snapshots of a specific view taken at different times, how to compare the hierarchies of two compound CIs, and how to create a Gold Master report definition. In addition, this part describes the pages and dialog boxes that you use to work with Asset report, Host Dependency report, Change report, System report, and Gold Master report, and the Overview reports.

Part IV IT World Model Management User Interface

Describes, in detail, the pages and dialog boxes that you use to work with the various Managers.

Who Should Read This Guide

This guide is intended for the following users of HP Universal CMDB:

- ▶ 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.

Getting More Information

For a complete list of all online documentation included with HP Universal CMDB, additional online resources, information on acquiring documentation updates, and typographical conventions used in this guide, see the *HP Universal CMDB Deployment Guide* PDF.

Welcome to This Guide

Part I

IT World Model Management Settings

1

User Manager

This chapter includes the main concepts and tasks of User Manager.

This chapter describes:	On page:
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User Manager Overview

When you create a user or role, you define which actions the user or role can perform. 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.

Default Users

- **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.** Users and roles with guest access rights have permissions to display views in the Topology View.

Set Up Users

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

Define Roles

A role is a group of users to whom you assign the same access rights. For details, see “Role Manager Overview” on page 37 and “Role Manager Window” on page 188.

Assign Access Rights to the Roles

You assign permissions for roles to access HP Universal CMDB. For details, see “Set Up Security” on page 36 and “Security Manager Window” on page 170.

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 “Web Service User Roles” on page 38.

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 Window” on page 170 and “View Manager Window” on page 239.
- 2 Create another role, `dba`, and give it rights to both the Oracle and SQL Server views.

Define Users

For details on defining a user, see “User Manager Window” on page 137. During user definition, you associate a user with one or more roles. For details, see “User Manager Overview” on page 17.

Define a Profile for a User

You can set preferences, such as time zone and locale, for a specific user. For details, see Chapter 19, “User Profile User Interface.”

Change a User’s Password

For details on changing a password, see “Change Password Dialog Box” on page 136.

2

Package Manager

This chapter includes the main concepts, tasks, and references of Package Manager.

Note: Package Manager is not available to HP Managed Software Solutions customers.

This chapter describes:	On page:
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Package Contents and Structure	23
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Package Creation and Deployment	24
General Reference	
Package Resources	25
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Package Administration Overview

Packages contain definitions, resources, and tools that enable you to discover IT infrastructure resources such as network extensions, applications, and databases. Packages are located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib.

Packages fulfill several functions:

- ▶ A package includes all resources needed for the discovery of a specific IT infrastructure asset. For example, HP Universal CMDB runs the `SQL_Server` package to discover Microsoft SQL Servers.

For details on resource configuration in Discovery, see “The Resource Configuration Structure” in *Discovery*.

For details on package structure, see “Package Contents and Structure” below.

- ▶ HP Universal CMDB extracts information from packages when building views, hierarchies, TQL queries, and so on.
- ▶ Packages enable you to copy resources from one environment to another, for example, from a test to a production environment.

Package Contents and Structure

A package is a zip file that contains resources that are structured in subdirectories.

Name	Type	Modified	Size	Ratio	Packed	CRC
Host_Resources_By_SNMP.xml	XML Document	12/25/2006 5:29 PM	617	57%	266	7d9830bc
Process by SNMP.xml	XML Document	12/25/2006 5:23 PM	418	47%	223	3407964f
Service by SNMP.xml	XML Document	12/25/2006 5:25 PM	417	47%	223	a819d8e4
snmp_dis_disk.py	PY File	1/4/2007 5:10 PM	4,658	70%	1,406	cca71918
snmp_dis_process.py	PY File	1/4/2007 4:51 PM	3,247	68%	1,039	28be00f0
snmp_dis_service.py	PY File	1/4/2007 4:52 PM	4,296	69%	1,324	2e34018c
snmp_dis_software.py	PY File	1/4/2007 5:09 PM	4,355	70%	1,308	e9f5828b
snmp_dis_user.py	PY File	1/4/2007 4:48 PM	2,313	63%	858	636a3c8
SNMP_HR_Disk.xml	XML Document	1/3/2007 7:36 PM	902	55%	408	91b74db5
SNMP_HR_Process.xml	XML Document	1/3/2007 7:35 PM	916	55%	414	a34f5078
SNMP_HR_Service.xml	XML Document	1/3/2007 7:35 PM	914	56%	406	b1b3dc06
SNMP_HR_Software.xml	XML Document	1/3/2007 7:35 PM	917	55%	412	42610a7
SNMP_HR_User.xml	XML Document	1/3/2007 7:35 PM	905	55%	409	dc2c58d1
Software by SNMP.xml	XML Document	12/25/2006 5:27 PM	423	47%	224	b49533fc
User by SNMP.xml	XML Document	12/25/2006 5:27 PM	416	45%	229	5ae1369e

Each resource is described in an individual file. Most files are in XML format. Each file describes the attributes, parameters, and values needed to work with the resource.

For example, the package `Network.zip` includes the file `SNMP_NET_Dis_HostBase.xml` that discovers advanced information about hosts using SNMP.

HP Universal CMDB includes default packages that can discover most IT infrastructure resources. However, you can create customized packages for the resources and tools you develop. For details on creating customized packages or editing existing ones, see “Package Manager User Interface” on page 143.

A package can be either deployed or undeployed:

- ▶ A deployed package is a package whose resources are imported into the system and available for use.
- ▶ An undeployed package is a package whose resources are not in the system but can be imported by deployment.

A package can be deployed and undeployed from the Package Manager window (for details, see “Package Manager Window” on page 150).

Package Creation and Deployment

This task describes how to create and deploy packages.

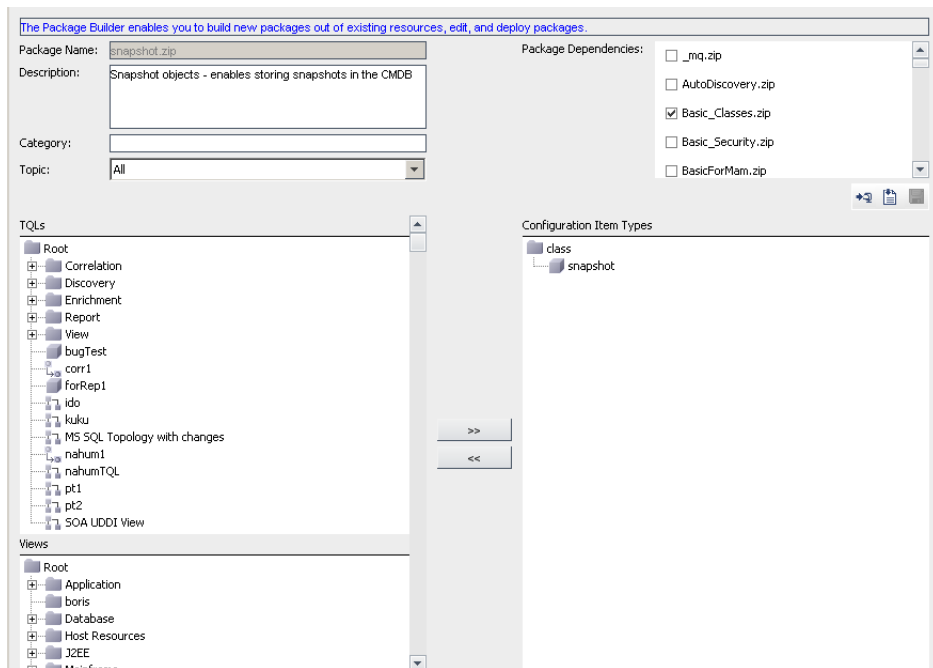
Create a Package

You can create a package with existing resources or edit an existing package. For details, see “Package Builder Dialog Box” on page 146.

Example

The illustration below shows the following:

- ▶ The package that has been created is called **snapshot.zip**.
- ▶ The package contains the following resource: the **snapshot** CIT.
- ▶ The **snapshot.zip** package is dependent on the **Basic_Classes.zip** package.



Move Resources from Package to Package

You can move resources from one package to another. For details, see “Move Resource Dialog Box” on page 146.

Package Resources

Packages can contain any of the following resources:

- ▶ **acl.** The definition of a role such as Administrator or Guest. To define permissions, go to **Admin > Settings > User Manager**. For details, see “User Manager User Interface” on page 135.
- ▶ **categories.** Contains the State definitions used by Correlation Manager. For details on States, see “State Manager User Interface” on page 191. For details on Correlation Manager, see “Correlation Manager User Interface” on page 247.
- ▶ **class.** CIT descriptions, such as host, file, switch, and so on. For details, see “CI Type Manager” in *CI Attribute Customization*.
- ▶ **correlation.** Correlation rule definitions. For details, see “Correlation Manager User Interface” on page 247.
- ▶ **datamodel.** Used to import CI instances into the system.
- ▶ **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).
- ▶ **discoveryConfigFiles.** Configuration files include properties and parameters that are needed to discover components on the system. For details, see “Resource Configuration User Interface” in *Discovery*.
- ▶ **discoveryJobs.** A Discovery job includes configuration data needed to activate Discovery of components. For details, see “Job Configuration User Interface” in *Discovery*.
- ▶ **discoveryModules.** A Discovery module includes all the jobs needed to discover a specific component on the system. For details, see “Job Configuration User Interface” in *Discovery*.

- **discoveryPatterns.** A Discovery pattern includes parameters, scheduling information, and TQL assignments needed to discover a specific component on the system. Discovery patterns are one of the resources of a job. For details, see “Resource Configuration User Interface” in *Discovery*.
- **discoveryResources.** External resources include all external resources that are needed in Discovery, for example, a Visual Basic file, a credentials file, and so on. For details, see “Resource Configuration User Interface” in *Discovery*.
- **discoveryScripts.** Discovery scripts enable navigating to, and accessing, components that must be discovered. For details, see “Resource Configuration User Interface” in *Discovery*.
- **enrichment.** Enrichment rule definitions. For details, see “Enrichment Manager User Interface” on page 291.
- **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 “Report Manager User Interface” on page 261.
- **schedulerJobs.** Tasks that have been defined to run in the Scheduler. For details, see “Scheduler User Interface” on page 157.
- **tql.** TQL query definitions. For details, see “Query Manager User Interface” on page 281.
- **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 User Interface” in *CI Attribute Customization*.

Note: This resource should not be used to deploy the resource **usertypedef**.

- **userclass.** CITs created or edited by users.
- **users.** The definition of a user and the user’s role. For details, see “Security Manager User Interface” on page 169.

- ▶ **usertypedef.** User-created/edited Enumeration definitions that relate to attributes of Enumeration types, such as severity levels, admin states, and so on. For details, see “System Type Manager User Interface” in *CI Attribute Customization*.
- ▶ **uservalidlinks.** All possible valid connections (relationships) between the CITs that are user-created or edited.
- ▶ **validlinks.** All predefined, valid connections (relationships) between CITs.
- ▶ **view.** View Manager definitions. For details, see “View Manager User Interface” on page 225.






Note: For details on package dependencies, see the following section.

Package Dependencies

Certain packages are dependent for their functioning on the installation of other packages. This means that certain packages have to be deployed before deploying others.

When you create your own customized packages, you must define the required dependencies for that package. For details on how to deploy, undeploy, and customize packages, see “Package Manager User Interface” on page 143.

These dependencies are specified in the `descriptor.xml` file included in each package.

Name	Type ^	Modified	Size	Ratio	Packed
 ci_alert_details_tql.xml	XML Document	6/20/2007 9:51...	90,533	93%	6,371
 descriptor.xml	XML Document	1/30/2007 2:09...	252	29%	179
 detached_alerts_tql.xml	XML Document	5/9/2007 10:58...	19,243	90%	1,844
 event_alert_details_tql.xml	XML Document	3/19/2007 7:57...	49,861	92%	4,096
 rum_default_bpgroup.xml	XML Document	5/24/2007 11:4...	9,417	91%	803

For example, the `SQL_Server` package is based on resources that are contained in the `Database_Basic` package. To view this dependency, open `SQL_Server.zip` and open `descriptor.xml` in a text editor.

Note: For details on how to view package dependencies in a topology map, see “Show Dependency Map” on page 155.

Troubleshooting and Limitations

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

Verify Dependency Among Packages

Certain packages are dependent for their functioning on the installation of other packages. These dependencies are specified in the **descriptor.xml** file included in each package. The success of package deployment or removal of a package may depend on the installation of other packages.

For example:

- ▶ If package A is dependent on package B, you cannot remove package B.
- ▶ If you want to deploy package A, which is dependent on package B, but package B does not exist, you cannot deploy package A.

Note: For details on package dependencies, see “Package Dependencies” on page 27.

Package Undeployment

- You cannot remove (undeploy) a package that contains a CIT if an instance of that CIT appears in the CMDB.
- You cannot undeploy a package if one of its resources remains deployed.

Verify Packaging Operations

To verify success, check the **mam.packaging.log** file each time a package is deployed or undeployed. If the operation is not successful, the log file contains detailed information on why the operation failed.

The **mam.packaging.log** file is located in: <HP Universal CMDB root directory>\j2f\log.

3

Scheduler

This chapter includes the main concepts, tasks, and references of the Scheduler.

This chapter describes:	On page:
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Define Tasks that Are Activated on a Periodic Basis	32
General Reference	
Cron Expressions	33

Scheduler Overview

You can define tasks to run periodically. For example, you can define a schedule for automatic backup of generated reports, and determine how many backups are saved. For details, see “Scheduler User Interface” on page 157.

Define Tasks that Are Activated on a Periodic Basis

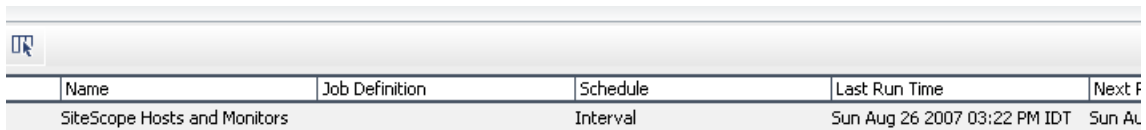
This task describes how to run jobs on a periodic basis.

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 Definitions Dialog Box” on page 161.

Example

The illustration below shows that two Enrichment rules are set to run — one at a set interval and one on a daily basis.



Name	Job Definition	Schedule	Last Run Time	Next F
SiteScope Hosts and Monitors		Interval	Sun Aug 26 2007 03:22 PM IDT	Sun Au

Choose an Action

Select the actions that you want the Scheduler to run. For details, see “Action Definition Dialog Box” on page 158.

Schedule a Task

Set the schedule for activating a task in the Scheduler pane. For details, see “Job Definitions Dialog Box” on page 161.

Example

The illustration below shows that the Scheduler is set to take a snapshot of the View called **Host Resources** every day at 1:00 AM.

The screenshot shows two main sections: 'Actions' and 'Scheduler'.

Actions: A table with two columns: 'Name' and 'Action Definition'. The first row contains 'Save a snapshot' and 'Host Resources'. There are icons for adding, editing, deleting, and moving actions above the table.

Scheduler: A section with radio buttons for scheduling frequency: 'Once', 'Interval', 'Daily' (selected), 'Weekly', 'Monthly', and 'Cron'. Below this, there is a 'Time zone:' dropdown menu set to 'US/Pacific-New' and a 'Reset server time zone' button. The 'Invocation hour' is set to '01:00' with a 'Next' button.

Cron Expressions

A Cron Expression is a string composed of six or seven fields separated by white space. Six of the fields are mandatory, and one is optional.

The following table contains the fields used in a Cron Expression.

Field Name	Allowed Values	Allowed Special Characters
Seconds	0-59	, - * /
Minutes	0-59	, - * /
Hours	0-23	, - * /
Day of month	1-31	, - * ? / L W C
Month	1-12 or JAN-DEC	, - * /

Field Name	Allowed Values	Allowed Special Characters
Day of week	1-7 or SUN-SAT	, - * ? / L C #
Year (optional)	empty, 1970-2099	, - * /

The following table contains examples of how to use Cron expressions.

Cron Expression	Meaning
0 0 12 * * ?	The task runs every Wednesday at 12:00 PM.
0 15 10 ? * *	The task runs at 10:15 AM every day.
0 15 10 * * ? 2005	The task runs at 10:15 AM every day during the year 2005.
0 0/5 14 * * ?	The task runs every 5 minutes starting at 2 PM and ending at 2:55 PM, every day.
0 15 10 15 * ?	The task runs at 10:15 AM on the 15th day of every month.
0 15 10 ? * 6L	The task runs at 10:15 AM on the last Friday of every month.
0 15 10 ? * 6#3	The task run at 10:15 AM on the third Friday of every month.

For more details about Cron expressions, go to <http://quartz.sourceforge.net/javadoc/org/quartz/CronTrigger.html>.

4

Security Manager

This chapter includes the main concepts and tasks of Security Manager.

This chapter describes:	On page:
Concepts	
Security Manager Overview	35
Tasks	
Set Up Security	36
Assign Access Rights	36

Security Manager Overview

You assign role access rights to TQL queries, views, domain instances, configuration item types, and customize 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 (Topology View, CI Type Manager, Query Manager, and so on). For example, to give a role permissions for a view, give the role access rights to the View Manager.

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 Role Manager option in the Settings tab is disabled. If a user is not assigned permissions to view a certain manager, the manager does not appear in the View Explorer.

Set Up Security

Choose the roles (recommended) or users for which you are assigning permissions. For details, see “Roles/Users Dialog Box” on page 169.

Assign Access Rights

Enable permissions for a resource. For details, see “Security Manager Window” on page 170.

5

Role Manager

This chapter includes the main concepts and tasks of Role Manager.

This chapter describes:	On page:
Concepts	
Role Manager Overview	37
Web Service User Roles	38

Role Manager Overview

Roles enable you to assign permissions to your 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 in View Manager but not to edit existing TQL queries.

Default Roles

HP Universal CMDB provides the following default roles:

- ▶ **Admin.** Users with this role have unrestricted access to all functions.
- ▶ **Guests.** Users with this role have permissions to display views in the Topology View.
- ▶ **Web service roles.** CmdbOpenApiClassModel, CmdbOpenApiImpact, CmdbOpenApiQuery, and CmdbOpenApiUpdate. For details, see “Web Service User Roles” below.

Web Service User Roles

Users who are working with the HP Universal CMDB API to write data to the UCMDB must be given permissions to the UCMDB.

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, see “Working with the HP Universal CMDB API” in *Solutions and Integrations*.

6

State Manager

This chapter includes the main concepts and tasks of State Manager.

This chapter describes:	On page:
Concepts	
State Manager Overview	39
Tasks	
Define an Attribute State	40

State Manager Overview

State Manager enables you to define attribute states. Change is the default state. It is not recommended to define states without first consulting Customer Support.

A state can be applied to each CIT. For every CI in the system, the application manages two state attributes:

- **<state> Corr State.** Manages the Correlation state of the CI.
- **<state> State.** Manages the CI's state.

For example, for the Performance state, the application automatically creates the attributes **Performance Corr State** and **Performance State**. These attributes can be used whenever you define attribute conditions for a node.

Note: To view the state attributes you have defined, open the **Attribute Name** list. For details, see “Attribute Condition Dialog Box” in *Reference Information*.

Define an Attribute State

Enter a unique name and description for the state. Then select an Enumeration definition that can be used to define an attribute type. The Type Definition list displays the Enumeration definitions that are defined in the System Type Manager. For details, see “System Type Manager Dialog Box” in *CI Attribute Customization*.

You can also click the New Enumeration button to create a new Enumeration definition. For details, see “State Manager Dialog Box” on page 191.

Part II

IT World Model Management Modeling

7

IT Universe Manager

This chapter includes the main concepts, tasks, and reference information for IT Universe Manager.

This chapter describes:	On page:
Concepts	
IT Universe Manager Functionality	44
Working with Pattern and Instance Views in IT Universe Manager	45
View Tree Structure	47
Working with CIs	48
Working with Relationships	53
Tasks	
Populate an Instance View	58
General Reference	
Handling Large Views	59

IT Universe Manager Functionality

IT Universe Manager offers a number of possibilities for managing your view content. The following tasks represent the basic functionality of the application:

- ▶ **Creating CIs without creating relationships.** You can define new CIs that are added at the root level of the view, so that no new relationships are created. For details, see “Creating a Non-Related CI” on page 49.
- ▶ **Creating CIs with relationships for them.** You can define new CIs and attach them to existing CIs in the view, so defining a new CI and a new relationship in the CMDB. For details, see “Creating a Related CI” on page 50.
- ▶ **Adding existing CIs and creating relationships for them.** You can copy CIs and CI subtrees from another view to the current view, and attach them to an existing CI in the view, so creating new relationships for existing CIs. For details, see “Attaching Existing CIs” on page 55.

Populating the IT Universe Model

The IT Universe model in the CMDB contains the CIs and relationships produced by the CI-generating tools that operate within HP Universal CMDB. Most CIs and relationships originate from one of the following sources:

- ▶ **Discovery.** Automatically creates CIs and relationships based on the discovered IT resources and topology in your company’s infrastructure. For details, see “Discovery Overview” in *Discovery*.
- ▶ **IT Universe Manager.** Enables you to manually create CIs and relationships that represent logical and physical elements of the business. For details, see “Working with CIs” on page 48.
- ▶ **Enrichment Manager.** Enables you to add CIs and relationships to the CMDB by receiving data from the attributes of Enrichment nodes as defined in the Enrichment TQL query. For details, see “Enrichment Manager” on page 105.

Working with Pattern and Instance Views in IT Universe Manager

There are two types of service views: pattern and instance.

- Pattern views are built from a TQL (Topology Query Language) query that defines the structure of the view. The view displays only those CIs and relationships that satisfy the query definition.
- Instance views are built by manually defining individual CIs and relationships directly in the new view and/or by adding CIs that exist in other views in the CMDB.

The functionality for working with the two view types in IT Universe Manager differs somewhat, as described in the following sections.

For information on the different view types and how they function, see “Instance Views and Pattern Views” on page 62.

Note: You must have **Change** permissions for a view to edit a view. If you do not have the necessary permissions, contact your HP Universal CMDB Administrator.

This section includes the following topics:

- “Working in Instance Views” on page 46
- “Working in Pattern Views” on page 46
- “View Lifecycle” on page 47

Working in Instance Views

The instance views you create are empty until you manually add CIs to them. You can add any type of CI or relationship to an instance view, either by adding existing CIs or by creating new CIs within the view. When you define a new CI in the view, the CI (and any associated relationship) is also created in the CMDB, and is automatically added to any other view where the new CI is relevant. For example, if the parent of the created CI appears in another instance view and is set to show its child CIs, then the new child CI is automatically added to the parent in that view; or if the new CI fits the requirements of the TQL query in a pattern view, then it automatically appears in the pattern view.

Working in Pattern Views

CIs created by Discovery or by Source Manager are automatically added to each pattern view where the CIs (and their relationships) fit the TQL definition for the view. When you open a pattern view in View Explorer, the TQL query for the view queries the CMDB for CIs that match the defined pattern. If there are no matches (for example, in the case of a view for a discovery process where the process has not yet run) then the view remains empty.

When you define a new CI while working in any view in IT Universe Manager, the CI (and any associated relationship) is created in the CMDB. The CI is also added to your current view if you are working in an instance view. However, if you are working in a pattern view, the new CI (and relationship) is visible in the view only if it meets the view's TQL specifications.

If the created CI and relationship do not meet the TQL requirements, then the CI and relationship are created in the CMDB but are not visible in the view. Similarly, if you attach an existing CI to a CI in the view, and the new pattern does not meet the TQL requirements, then the attached CIs do not appear in the view, but the relationship is still created.

View Lifecycle

If you do not access a view from View Explorer for a specified period of time, the view is cleared out, to save memory in the system. It is not deleted from the CMDB; the view can be retrieved by clicking on it. The default time period for clearing out unused views is one hour. You can set the time period using the MAM Server configuration parameter **Views Usage Untouched Time Before Empty View** in Infrastructure Settings Manager. After changing the parameter's value, you must execute the JMX command: `Core manager\reloadSystemParameters()` for the change to take effect.

You can also modify the frequency with which the system checks whether a view has been accessed. The default frequency is for the system to check every 15 minutes. To change this value, select the **Views Usage Check Time Interval** parameter in Infrastructure Settings Manager. After you change the value, restart the server service for the change to take effect.

For details regarding Infrastructure Settings Manager, see “Infrastructure Settings Manager User Interface” on page 133.

Note: Views defined as persistent are not cleared out and always remain in the memory.

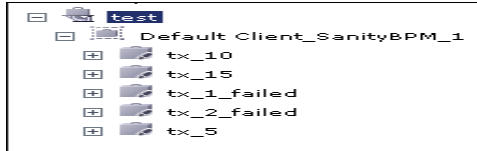
View Tree Structure



Views are organized in a hierarchical tree format in the left pane of IT Universe Manager, which is known as View Explorer. The highest node in the tree shows the view name, displayed beside the view icon. The view name is not a CI, but rather acts as the containing folder for the CIs in the view.

At the next level of the View Explorer tree are the nodes for the root CIs. A root CI is the starting point for a view subtree. A view may contain any number of subtrees. Under the root CIs come the branch CIs, expanding down to the leaf CIs as the last nodes at the ends of each branch.

The CIs at each level in a subtree are considered to be attached to the CI on the branch directly above. This attachment generally depicts a dependent relationship, so that the higher branch (closer to the root CI) represents a component of your business that depends on the CIs on the next branch down (closer to the leaf CIs) in the business process. For example, an application depends on the servers running the application.



The attachment between a higher node and lower node is referred to as a parent-child relationship. The parent CI may have many attached child CIs, and the child CIs pass operational status to the parent.

When defining an instance view, you build your own topology for the subtrees, according to the business structure or process you want represented. For more information, see “Working in Instance Views” on page 46.

When working with pattern views, the tree topology is determined by the pattern defined for the view. For more information on defining pattern views, see “Working in Pattern Views” on page 46.

Working with CIs

In IT Universe Manager, you can create related and non-related CIs, edit the CI properties, and remove out-of-date CIs using the Aging Mechanism.

This section includes the following topics:

- ▶ “Creating a Non-Related CI” on page 49
- ▶ “Creating a Related CI” on page 50
- ▶ “General Properties for CIs” on page 51
- ▶ “CIT-Specific Properties” on page 52
- ▶ “Removing Out of Date CIs Using the Aging Mechanism” on page 52

Creating a Non-Related CI

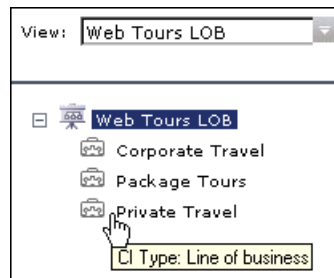
When you build a new subtree in your view, you generally start by creating a root CI representing a high-level logical element in your business. When working at the top level of the view, you can add a root CI by clicking the **Insert CI** button in the toolbar or selecting **New Related CI** from the context menu when clicking the view name.

The New CI Wizard opens, which enables you to define the properties for the new CI. The wizard creates the CI in the CMDB and adds the created CI as a root CI in your view. For details, see “New CI Wizard” on page 203.

Note: If you are working in a pattern view, the CI is added to the view only if it meets the pattern specifications.

A CI created in this way is added as an independent entity without any current relationship to any other CI existing in the CMDB. After creating the first CI, you can then create or add related CIs below the first CI.

For example, if you are building an instance view to show your lines of business (LOB), you can add root CIs representing different LOBs within your organizational structure, as shown in the following figure:



Each LOB CI in the example is an independent entity, with no relationships, ready to become the root CI for a subtree. To build the subtree, you attach existing or new CIs. For details on attaching existing CIs, see “Attaching Existing CIs” on page 55.

Creating a Related CI

You can define a new CI to be added to your view as a parent, child, or sibling of an existing CI. Both the new CI and its relationship are created in the CMDB.

To attach a new CI:

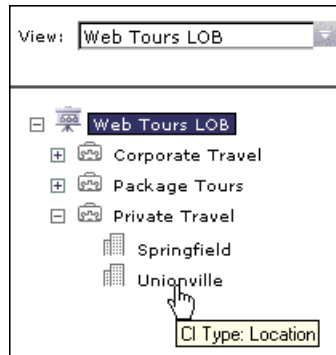
- 1** Select the CI in your view to which you want to attach the new CI.
- 2** Click the **Insert Related CI** button in the toolbar, or select **New Related CI** from the context menu.
- 3** In the New CI Wizard, define the properties and relationship for the CI. For details, see “New CI Wizard” on page 203.

The wizard creates the CI in the CMDB, and adds the new CI as a related CI in your view.

Note: If you are working in a pattern view, the CI is added to the view only if it meets the pattern specifications.

In an instance view, the new child CI is included in other instances of the parent CI, on condition that the subtree is configured to use the Include All Child CIs rule. For information on the relationships between CIs, see “Working with Relationships” on page 53.

For example, if you are building an instance view to show your lines of business, under the LOB CIs at the root of the subtrees you can add logical CIs representing different locations dealing with that business line within your organizational structure. Each location is added as a child of the LOB CI, so that the LOB CI depends on the Location CI:



You can continue to build the branches of each LOB subtree by creating more related CIs to attach under the locations, and/or by attaching CIs or whole CI subtrees that already exist in the CMDB. For details on attaching existing CIs and CI subtrees, see “Attaching Existing CIs” on page 55.

General Properties for CIs

The general properties of a CI are common to all CIs. Some general properties are defined automatically during CI creation; others can only be defined manually in the General Properties page of the wizard. You can access the Properties page to view the CI properties from IT Universe Manager by right-clicking the CI in View Explorer and selecting **Properties** from the context menu or by clicking the Properties tab. You can edit the CI properties as well if you have the necessary permissions for editing CIs. For details on CI properties, see “Properties Tab” on page 210.

CIT-Specific Properties

CIT-specific properties are created as part of the CIT definition in the CI Type Manager. The values for the CIT-specific properties are taken from the data samples for the source adapter CIs, or from the CIs discovered during Discovery. The values can also be entered manually, when you manually create CIs to represent entities in your infrastructure. For details, see “CI Type Manager” in *CI Attribute Customization*.

The CIT-specific properties are displayed in the **Other Properties** area in the Properties tab. Some properties for the automatically created CIs can be edited; however, if the CI is configured to **Allow CI Update** (in the general properties), then Discovery may override your changes when it updates the CI.

Select **Tooltip Descriptions** (in the bottom-right corner of the page) to see more information on the CIT-specific properties.

Some of the CIT-specific properties for Discovery CIs are set by default to be monitored for changes. When one of these properties has been modified, information on the change can be viewed in a change report. For more information, see “Change Report User Interface” on page 353.

Removing Out of Date CIs Using the Aging Mechanism

If a CI or relationship is not updated or refreshed over a period of time (for example, a CI is not rediscovered by Discovery and no manual update occurs), an aging mechanism deletes the CI from the CMDB.

When the aging mechanism is enabled, the CI is marked for deletion if the CI has not been accessed for a specified period of time (by default, 14 days). The **Last Access Time** parameter (displayed in the General Properties area), is used to make the calculations. By default, the CI is deleted 28 days after the last access time. These default values are set per CIT and can be changed in the CI Type Manager.

The aging mechanism for the CMDB is enabled or disabled from Infrastructure Settings Manager: Select **Admin > Settings > Infrastructure Settings Manager**, choose **Foundations**, select **CMDB**, and locate the **Is Aging Enabled** entry in the **Aging Settings** table. Change the value to **true** or **false**, as required.

When the aging mechanism is enabled for the CMDB in Infrastructure Settings, you can enable or disable aging and automatic deletion for individual CIs by selecting or deselecting the **Enable Aging** box in the CI General Properties (the box is selected by default for Discovery CIs). If the aging mechanism is disabled for the CMDB, the **Enable Aging** box is ignored and no CIs are deleted.

Working with Relationships

Many of the relationships between CIs in the CMDB are created automatically, for example, by Discovery. In addition, you can manually create relationships in IT Universe Manager, in Enrichment Manager, or in the Instance View Editor in View Manager. This section includes the following topics:

- “Creating Relationships” on page 53
- “Creating Hierarchical Relationships” on page 54
- “Automatically-Created Relationships” on page 55
- “Parent and Child Relationships” on page 55
- “Attaching Existing CIs” on page 55
- “Adding Folding Rules to Relationships” on page 57

Creating Relationships

You can create relationships by right-clicking a CI or multiple CIs in the View Explorer pane or the Topology Map and selecting **Attach Related CI** from the context menu. In the Topology Map, you can define a relationship between two CIs in the view by drawing a line between the two, using the **Create Relationship** button from the toolbar. Either of these actions opens the Attach Related CIs wizard. For details, see “Attach Related CIs Wizard” on page 195.



You can create as many relationships as necessary between a CI in the CMDB and other CIs. Each new relationship exists as its own entity in the CMDB, and has its own properties that can be edited in IT Universe Manager (as described in “Properties Tab” on page 210). You can also create more than one relationship between the same two CIs, when each relationship is based on a different relationship type. In the following example, host7 has both a **Backbone** and a **Talk** relationship with host8.

	Relationship ▲	Direction	CI Name	CI Type
<input type="checkbox"/>	Backbone	←	host7	Host
<input type="checkbox"/>	Talk	←	host7	Host

Creating Hierarchical Relationships

By attaching one CI to another in IT Universe Manager you create a hierarchical relationship (parent-child) between them, so that one CI is influenced by the other.

Certain relationships defined in this way can be only of relationship type **Depends On** (if the relationship is between two non-monitoring CIs), or of relationship type **Monitored By** (if the child CI in the relationship is a monitor type CI); however, other relationship types are used between specific types of CIs. For example, if a relationship is defined between two Host CIs, there are several possible relationship types.

Relationship Definition

CI 1: aaa

CI 2: bbb

Relationship type: Talk

Direction:

- Talk
- Unnumbered
- Dependency
- Member
- Backbone

Automatically-Created Relationships

When a CI is added to your view under another CI using the Instance View Editor in View Manager, a relationship is automatically created between the two CIs, using the default relationship for the two CI types. This can be a **Depends On** relationship (for example, between two logical CIs) or a **Monitored By** relationship (between a logical CI and a monitor CI). If there is no valid relationship between the two CIs (for example, between two monitor CIs), a message is displayed saying that no valid link was found between the two items.

Parent and Child Relationships

When you attach a child CI to a parent CI in your view, you are also creating that relationship in the CMDB. The child therefore impacts on the parent CI in every view where the relationship exists, and is displayed in every instance view where the parent CI is set to display all CMDB children (and for pattern views, where the child and relationship matches the TQL). For more information, see “Using the Instance View Editor” on page 67.

Attaching Existing CIs

You attach existing CIs using the Attach Related CIs wizard. The wizard has two main stages:

- Selecting the CIs that you want to attach.
- Defining the relationship between the original CI and the CIs to attach. For information on relationships, see “Working with Relationships” on page 53.

When selecting the CIs to attach, you can select multiple CIs from a view to attach to the original CI. However, all CIs that you want to attach in one operation must have the same relationship type. For example, you cannot attach a CI that uses the relationship **Depends On** in the same operation as a CI that uses the relationship **Monitored By**.

You cannot create an identical relationship between the same CIs twice within a view. For example, if parent CI *Italy* depends on child CI *Rome*, *Rome* appears under the CI *Italy* in the view. If you then again attach *Rome* to *Italy* with a **Depends On** relationship, *Rome* still appears once only under that parent CI. This is true even if you attach each instance of the child with different settings, for example, one instance set to display child CIs, and one instance set to not display them.

Attaching CIs in Instance Views

When attaching CIs to a parent CI in an instance view, you can choose to set the CIs to display all CMDB children, by using the **Add CIs and Their Children** button. For more information, see “Child CI Rule Functionality” on page 68.

When CIs are added under a CI that is already set to display all CMDB children, the child CIs are displayed, regardless of which child rule the CIs in the subtree are using. The CIs are added to the list in the right pane, with the **Include Child CIs** column selected as relevant.

If there is a compatibility problem with the relationship types for the different CIs that you select, an error message is displayed saying that no valid relationships were found. In this case, select the CIs that you think are causing the problem from the list in the right pane, and remove them using the **Remove CIs** arrow button.

If, when attaching multiple CIs to a CI, you define all of the attached CIs as parents to the original CI (for example, so that the relationship direction reads CI X, CI Y, CI Z **Depends On** CI 1), a separate subtree is created in the view for each parent, with the original CI appearing as a child in each subtree.

When you add an existing CI to an instance view as a child CI, there may already exist relationships in the CMDB between that CI and other CIs in your view. Now that the CI is displayed in the view in the new location, it also appears under other CIs in the view to which it is related.

Attaching CIs in Pattern Views

When working in pattern views, the **Add CIs and Their Children** option is not available. Both the added CI and its child CIs appear in the view only if the CIs and the relationships conform to the requirements of the TQL for the view. For more information, see “Working in Pattern Views” on page 46.

Note: When copying a CI from a Discovery process pattern view to an instance view, if you choose to display the child CIs, be aware that you may be adding hundreds of hidden child CIs that do not appear in the pattern view.

Adding Folding Rules to Relationships

After setting the node and relationship definitions of a pattern view, you can add folding rules to selected relationships in View Manager. This enables you to define the organizational structure of CIs in the Topology Map by displaying selected CIs at different levels. When no folding rules are defined, the Topology Map displays all CIs included in the query results on one level by default. For example, if the query results include hosts and networks, both CIs are displayed on the same level in the Topology Map.



If an icon appears with a downward arrow in the Topology Map, it means that there is an additional CI layer beneath it, created by a parent or child folding rule.

For details on adding folding rules, see “Add Rule” in *Reference Information*.

Populate an Instance View

You can create a new instance view from within View Manager. For details, see “Create New View/View Properties Dialog Box” on page 227.

Add CIs to the View

To populate an instance view with CIs, you can add existing CIs from the CMDB to your view or you can define new CIs to appear in your view. The new CI and relationship are created in the CMDB and the created CI is added at the specified point in the view tree. For details, see “Instance View Editor” on page 232.



Tip: If the CI does not appear in the view, try refreshing the view using the **Refresh** button in View Explorer.

Adding Existing CIs

You can add existing CIs from the CMDB to your view using the Attach Related CIs Wizard. Select the CIs you want to add to your view in the Select Related CIs dialog box of the wizard. Then define the relationships in the Relationship Properties dialog box of the wizard. For details, see “Attach Related CIs Wizard” on page 195.

Adding New CIs

To define a new CI in IT Universe Manager, select **New Related CI** to access the New CI Wizard. For details, see “New CI Wizard” on page 203.

Set Permissions

You should apply viewing and editing permissions to users and user groups for that view. You set permissions in **Admin > Settings > User Manager**. For details, see “User Manager User Interface” on page 135.

Handling Large Views

The Topology Map cannot display a view with more than 900 CIs in a single layer. Views which contain a layer with more than this number of CIs are automatically deactivated.

To solve this problem, use one of the following solutions:

- ▶ Change the TQL query in the view definition in View Manager by adding conditions to redefine the view. For details, see “Attribute Condition Dialog Box” in *Reference Information*.
- ▶ Define different folding rules or Group By rules for the view to redistribute the CIs among the view’s layers. For details on defining folding rules, see “Adding Folding Rules to Relationships” on page 57.
- ▶ Reset the maximum number of CIs allowed in the configuration parameters. Select the **Max Object Count GUI for TS** parameter under **UCMDB common – Viewing Settings** in Infrastructure Settings Manager. However, be aware that increasing the maximum number of CIs per layer may significantly slow down the redrawing of the Topology Map.

For details regarding Infrastructure Settings Manager, see “Infrastructure Settings Manager User Interface” on page 133.

8

View Manager

This chapter includes the main concepts, tasks and reference information for View Manager.

This chapter describes:	On page:
Concepts	
View Manager Overview	62
Instance Views and Pattern Views	62
Predefined Folders and Views	63
Building a Business View	66
Using the Instance View Editor	67
Link Nodes to Application CI	70
Tasks	
Create and Populate an Instance View	73
Pattern View Workflow	74
General Reference	
Grouping By Attribute Properties	77
Merge Identical Instances	77

View Manager Overview

View Manager is a tool for creating and managing views. You can create your own views, or work with the out-of-the-box (factory) views provided with your HP Universal CMDB installation.

The IT universe model in the configuration management database can be very large, holding thousands of configuration items (CIs). A view enables you to build a subset of the overall IT universe model, containing only those CIs relating to a specific area of interest. You can define your own views to display only the information that is relevant to your organization's business needs.

HP Universal CMDB supports two view formats, pattern and instance views, which are populated through different processes. For details, see "Instance Views and Pattern Views" on page 62.

For information on the out-of-the-box views, see "Predefined Folders and Views" on page 63.

Instance Views and Pattern Views

HP Universal CMDB supports two view formats, pattern and instance views, by which to populate your view:

- ▶ **Pattern views** are built from a Topology Query Language (TQL) query that defines the structure of the view. You can create the TQL query as you build the view from within View Manager (or build the view based on an existing query). The view displays only those CIs and relationships that satisfy the query definition. When the view is opened up or refreshed, View Manager queries the CMDB for all elements that fit the query, and automatically updates the view with those elements.

For more information on pattern views, see "Working in Pattern Views" on page 46.

- ▶ **Instance views** are built by manually defining individual CIs and relationships directly in the view and/or by adding CIs that exist in the CMDB in the view.

For more information on instance views, see “Working in Instance Views” on page 46.

You can also create new views (both instance and pattern views) by cloning an existing view, and editing the view contents. You can then select **Save As** from the context menu and give the new view a unique name.

Predefined Folders and Views

The file folder system in View Manager includes predefined folders and views, as described in the following sections:

- ▶ “About Predefined Folders” on page 63
- ▶ “About Factory Views” on page 63
- ▶ “Folder and View List” on page 64

About Predefined Folders

View Manager contains a hierarchical file folder system to help you organize your views, displayed in the Folders pane. Predefined folders are provided for the out-of-the-box views; you can modify these folders, or add additional folders according to your organization’s requirements.

About Factory Views

Your HP Universal CMDB installation includes out-of-the-box pattern views. These views provide a quick start for working with the CMDB.

The out-of-the-box views are initially empty. As soon as CIs are added to the CMDB by one of the CI generators, the TQL query built into each pattern view is able to identify the CIs that meet the pattern requirements, and add them to the view.

Pattern views for CIs are created when a Discovery process is run; these views correspond to the relevant Discovery packages. For example, an out-of-the-box Oracle view is provided; the CIs in this view are created when Discovery Manager runs the Discovery processes for the Database - Oracle package. For details on running Discovery processes, see “Discovery Concepts” in *Discovery*.

Some of the out-of-the-box pattern views are considered basic to the system and cannot be deleted from the folders. The following section specifies which views must not be deleted.

Folder and View List

The out-of-the-box views are contained in the following predefined folders:

- **Root.** Top level folder, containing all view folders.
- **Application.** Contains the Applications Deployment view, and the following subfolders:
 - **IIS.** Contains the IIS_Topology view, which displays the results of a Discovery task that looks for the IIS elements and topology in the system.
 - **MQ.** Contains various views for WebSphere MQ; these views display results for a Discovery task that looks for all MQ applications in the system.
 - **Oracle E-Business Suite.** Contains the OracleApps_Topology view, which displays the results of a Discovery task that looks for the E-Business Suite application in the system.
 - **SAP.** Contains views for SAP; these views display results for Discovery tasks that look for all SAP applications in the system.
 - **Siebel.** Contains views for Siebel topologies; these views display results for Discovery tasks that look for all Siebel applications in the system.
- **Database.** Contains the following subfolders:
 - **DB2.** Contains the DB2 view, which displays the results of a Discovery task that discovers DB2 databases in the system.
 - **Oracle.** Contains the Oracle view, which displays the results of a Discovery task that looks for all Oracle databases in the system.

- ▶ **SQL Server.** Contains views for SQL Server; these views display results for Discovery tasks that look for all SQL Server applications in the system.
- ▶ **Host Resources.** Contains the Host Resources view, which displays the results of a Discovery task that discovers data for hosts in the system.
- ▶ **J2EE.** Contains the following subfolders:
 - ▶ **Apache.** Contains the Apache_Topology view, which displays the results of a Discovery task that discovers Apache servers in the system.
 - ▶ **Weblogic.** Contains the Weblogic_Topology view, which displays the results of a Discovery task that discovers J2EE WebLogic servers and components in the system.
 - ▶ **WebSphere.** Contains views for J2EE WebSphere; these views display results for Discovery tasks that discover J2EE WebSphere servers and components in the system.
- ▶ **Mainframe.** Contains the Mainframe view, which displays the results of a Discovery task that discovers information on mainframe systems.
- ▶ **Network.** Contains various views for network packages; these views display results for Discovery tasks that build a network map of the system.

The Network folder contains the following subfolder:

- ▶ **Layer2.** Contains the Layer2 view, which displays results for a Discovery task that discovers information on catalyst Layer 2 switches in the system.
- ▶ **SOA.** Contains the SOA Web Services and SOA UDDI views, which display results for Discovery tasks that discover Web services and UDDI Registry components in the system.

Building a Business View

You can define your own views in View Manager to model your business environment. These views should provide the business users with logical representations of your company's structure, processes, and goals.

To meet these requirements, you generally build multiple instance views representing different aspects of your business; for example, you could build business views that revolve around any of the following:

- ▶ Company structure, so that data is organized by the geographical location of branches, or by data centers
- ▶ Business processes, so that data is organized by line of business, or by applications
- ▶ Business goals, so that data is organized by sales, or by key customers

The views you create depend on the particular demands of your organization and the actual hierarchical structure of the views should reflect those demands.

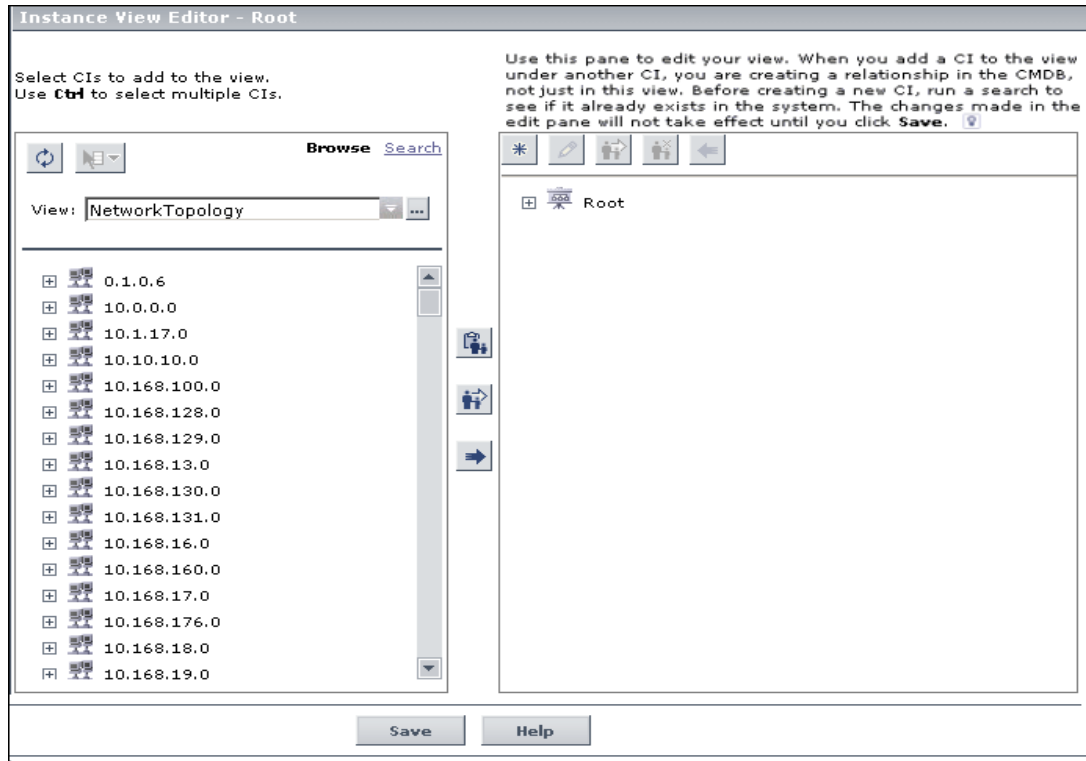
The usual hierarchical format of a view is as follows:

- ▶ **Top level.** The highest levels of the view, consisting of the root CI and the branches below it, are normally built from logical **Business** CI types such as **Location, Line of Business, Customer, Application**, and so on.
- ▶ **Intermediate level.** The intermediate branches of the view normally consist of **System** CI types, representing actual hardware and software and/or monitoring group CI types, representing groups containing monitors.
- ▶ **Bottom level.** The lowest level of the view, consisting of leaf CIs at the ends of the subtrees, is built from the **Monitor** CI types.

Note: The bottom level is only relevant when a monitoring solution such as HP Business Availability Center is connected and modeled in the CMDB.

Using the Instance View Editor

The Instance View Editor contains two panes. In the View Explorer pane on the left, you can survey the existing views in HP Universal CMDB, and view information for CIs, such as CI properties. In the edit pane on the right, you can build and modify the contents of your view.



Note: If you navigate away from the Instance View Editor without clicking **Save**, your changes are not updated to the CMDB.

The following functionality is available from the edit pane of the Instance View Editor:

- ▶ Create a CI in your view and in the CMDB, as described in “New CI Wizard” on page 203.
- ▶ Edit the properties for a CI, as described in “Properties Tab” on page 210.
- ▶ Change the display/hide all child CIs status for a CI, as described in “Display All CMDB Children” on page 236.
- ▶ Disconnect a CI from the parent CI, so removing the relationship between the two CIs in the IT universe, as described in “Delete Relationship to Parent CI” on page 235.

Child CI Rule Functionality

The child CI rule assigned to a parent CI determines which child CIs are displayed for the parent CI in the view.

A child CI is displayed or hidden depending on the child CI rule that is applied to the parent:



- ▶ A CI defined as **Display all CMDB children** recursively displays in the view all child CIs that exist in the CMDB. The subtree is dynamically updated with every added child CI, whether it is added within the current view or in a different view. Once a parent CI is set to display all CMDB children, the child rule used for the CIs on the next branches in the subtree is irrelevant—all child CIs are displayed all the way down the subtree.

In the edit pane of the Instance View Editor, all child CIs that are included recursively are displayed in italic text and with a faded icon.



Note: The recursively-included child CIs are all marked in their tooltips as **Display only manually added children**, but they dynamically display all child CIs in the CMDB.



- If you define a CI as **Display only manually added children** by clicking the **Hide All CMDB Children** button, it displays only those child CIs that were created or added to that CI within the current view. The child CIs themselves may be set to display or hide their children.

In the edit pane of the Instance View Editor, these child CIs are shown in the standard format used for CIs. In the following figure, CI `app1` is set as **Display only manually added children**:



However, the child CI of a parent with this rule can itself be set to use either rule. In the following picture, the rule for `tx_yellow2` has been changed to **Display all CMDB children**:



You can toggle the rule used by a parent CI, as described in “Display All CMDB Children” on page 236.

Include Related CIs

You can set the child CI rule when creating CIs using the New CI wizard or when attaching CIs using the Attach Related CIs wizard.

You can set CIs to display or hide child CIs as follows:

- ▶ **Creating or editing the CI.** Select the **Include Related CIs** check box in the CI properties to set the child CI rule to display all CMDB children. Clear the check box to set the child CI rule to display only future manually added children. (This option may be non-editable, depending on the definitions for the parent CI.) For details on editing properties, see “Properties Tab” on page 210.
- ▶ **Adding an existing CI to a view.** Use the **Add CIs and their children** (recursive) button to set the child CI rule to display all CMDB children. Use the **Add CIs** (single arrow) button to set the child CI rule to display only future manually added children. For details, see “Attaching Existing CIs” on page 55.
- ▶ **Working in the Instance View Editor.** Use the recursive arrow button or select the **Display All CMDB Children** option to set the child CI rule to display all CMDB children. Use the single arrow button or select the **Hide All CMDB Children** option to set the child CI rule to display only future manually added children. For details, see “Instance View Editor” on page 232.

Link Nodes to Application CI

HP Universal CMDB enables you to define a node in a view to be linked to all the instances of that CIT in your IT universe. You can use this feature, for example, to show which hosts are serving a specific business service or to create correlation rules that reflect problems at the business level.

When you select **Add to Applications** from the context menu for a node in View Manager, a new CI of type **application** is created. All instances of the selected node in any corresponding view are then linked to the new CI with **Depends On** links.

If you make a change to the existing nodes of a view, such as selecting another node to be linked to the application CI or removing the link from a node to the application CI, the enrichment recalculation is performed immediately. However, if you add a node to the view, the enrichment recalculation is performed at the next scheduled enrichment update.

This functionality can be applied to any CI type except for: IT Universe, Business, Application, and all extended CI types (from running CMDB federation functionality).

Linking a Node to an Application CI

To link a node to an application CI, select a node in the TQL in the Editing pane of View Manager. Right-click the node and select **Add to Applications**. A dialog box opens with a default name for the new application CI, which is the name of the view from which you defined it followed by “_Application.” You can accept the default name or assign it a name of your choice. The new CI is connected by **Depends On** links to all the instances of the node.

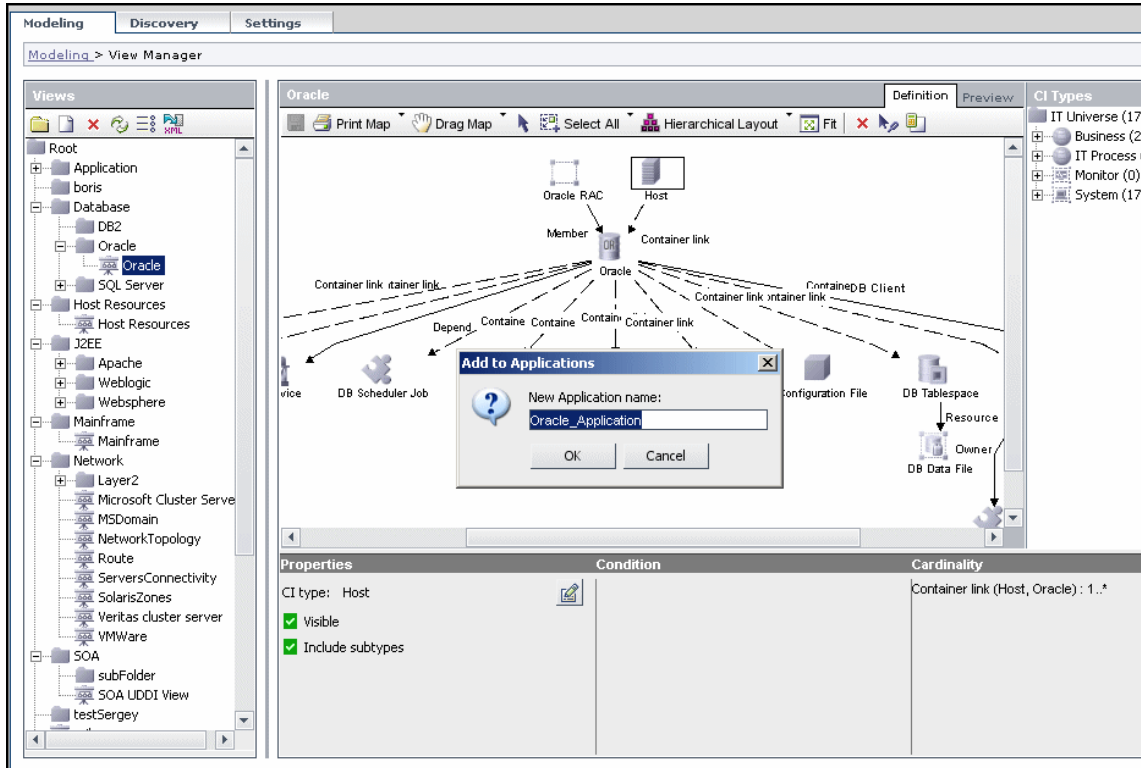


A small black briefcase icon appears to the right of the node. The creation of the application CI and the links occurs when you save the view.

If you select a different node and repeat the process, the dialog box does not open (only one application CI is created per view), but **Depends On** links are created between that CI and the instances of the second node.

Example

In a view called Oracle, you select a host and click **Add to Applications** from the context menu. A new CI of type application named Oracle_Application is created and all the hosts queried in this TQL are linked to the Oracle_Application CI by Depends On links.



Removing the Link between a Node and the Application CI

To remove the link between a node and the application CI, right-click the node you selected as **Add to Applications**, and select **Remove from Applications**. The briefcase icon disappears and the relationships to the application CI are removed. If there are no remaining nodes in the view selected for linking to the application CI, the application CI itself is deleted. The change takes effect when you save the view. When you delete a view, the application CI created from within the view is also deleted.

Create and Populate an Instance View

This task describes how to define a new instance view and populate it with CIs.

Create a New Instance View

You can define a new instance view from the Create View – View Properties dialog box. Select Instance View and enter a name for the view. For details, see “Create New View/View Properties Dialog Box” on page 227.

Note: The view is created in the same folder as the view currently displayed in View Explorer.

Add CIs to the View

You can add existing CIs from the CMDB to your view or you can define new CIs to appear in your view.

Using the Instance View Editor

The Instance View Editor enables you to add any CIs in the CMDB to your view, by adding them from other views in the system. When a CI is added to your view under another CI, a relationship is automatically created between the two CIs, using the default relationship for the two CI types. For details, see “Using the Instance View Editor” on page 67.

You can also define a new CI from within the Instance View Editor using the New CI Wizard. The new CI and relationship are created in the CMDB and the created CI is added at the specified point in the view tree, if the created CI is appropriate for the current view. For details, see “Instance View Editor” on page 232.

Tip: If the CI does not appear in the view, try refreshing the view using the **Refresh** button in View Explorer.



Set Permissions

You should apply viewing and editing permissions to users and user groups for that view. You set permissions in **Admin > Settings > User Manager**. For details, see “User Manager User Interface” on page 135.

Pattern View Workflow

You create pattern views according to the following workflow:

Create a Pattern View

Set the name and properties of the managed view in which you want to define the TQL query. For details on defining the properties to create the view, see “Create New View/View Properties Dialog Box” on page 227.

Add Nodes and Relationships to a TQL Query

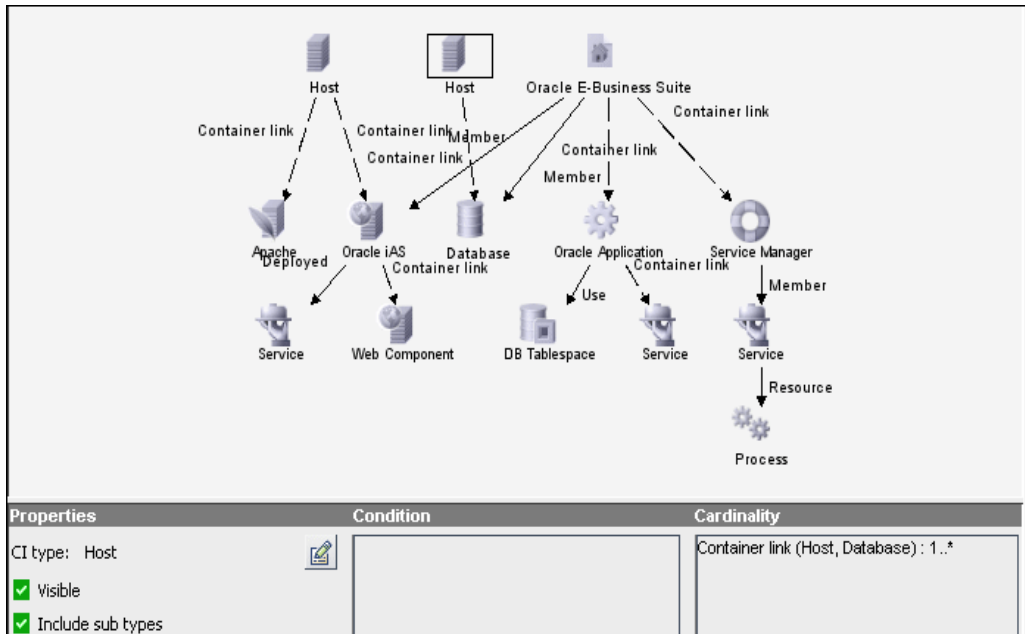
Add the nodes and relationships that define the query. For details on how to add nodes and relationships to a TQL query, see “Adding Nodes and Relationships to a TQL Query” in *Reference Information*.

Define Attribute Conditions for Nodes and Relationships

You can set attribute definitions for the nodes and relationships you added to the TQL query. The definitions for the selected node or relationship appear in the Information pane. For details on how to define node and relationship definitions, see “Node/Relationship Condition Dialog Box” in *Reference Information*.

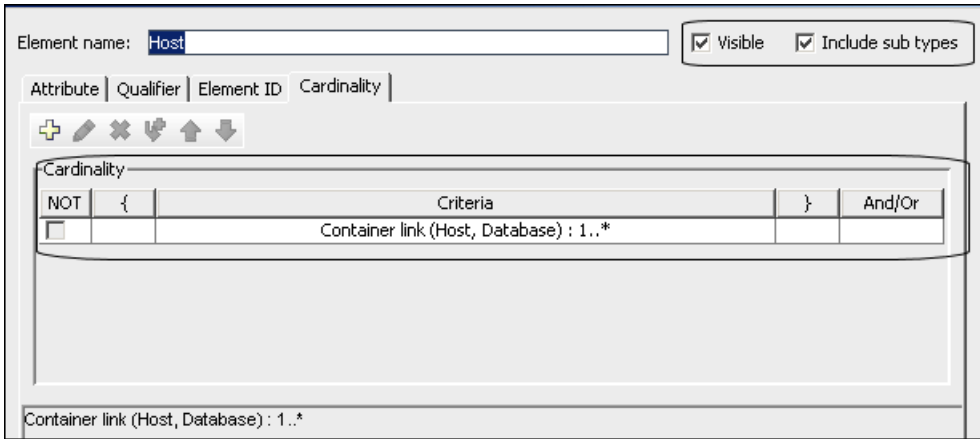
Example

This example displays the attribute conditions defined for the sample TQL query shown below. The Information pane shows that the following relationship conditions are defined for the TQL:



- In the **Properties** area, the **Visible** and **Include Subtypes** check boxes are selected.
- The following relationship cardinality was defined in the Relationship Cardinality dialog box.
 - Container link – **Min: 1, Max: ***

The definitions appear in the Cardinality tab:



Add Folding Rules to Relationships

You can add folding rules to selected relationships by right-clicking the relationship you want and selecting **Add Rule**. For details, see **Add Rule** in “Topology Query Language Context Menu Options” in *Reference Information*.

Define Multiple Relationship Rules

You can define multiple relationship rules to define the structure between CITs in a view using the Relationship Rules dialog box. For details, see “Relationship Rules Dialog Box” on page 237.

Grouping By Attribute Properties

When grouping CIs in View Manager by attribute using **View Node Definition**, you can group CIs of different types in the Topology Map by using a regular expression as described in “Condition Dialog Box” on page 226. You should enter the expression in the **Mask to group by** field. For details about regular expressions, see “Regular Expression Examples” in *Reference Information*.

Nested Groups

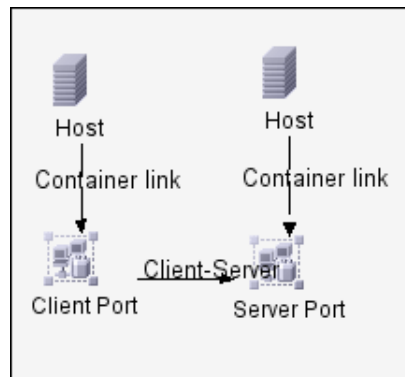
You can create nested groups (a node group inside another node group) to help fine-tune the TQL results that are displayed in the Topology Map.

For example, after grouping host nodes by their CIT, you can use their **operation state** attribute to create more focused groups.

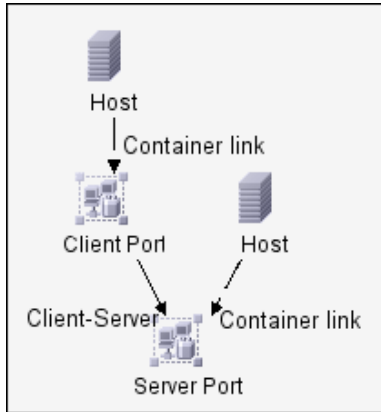
Merge Identical Instances

When defining a view, you can have identical instances that appear on the same layer in the view automatically merged into one symbol on the editing pane. This helps you remove redundant information and sharpen the view’s focus.

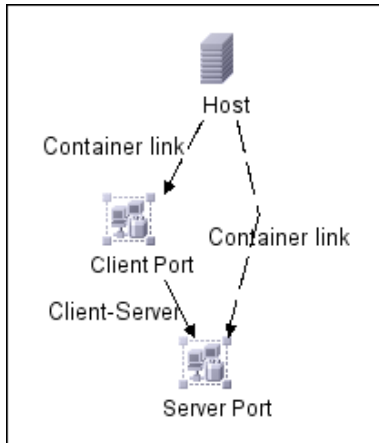
For example, if you want to discover and display hosts that are connected to other hosts in a server-client relationship, you can create the following TQL:



However, if both the server and the client are installed on the same host, one host appears twice.



To overcome the redundant host display, you define that identical instances should be merged by selecting **Merge Identical Instances** in the Advanced area of the **Create New View** dialog box:



9

Correlation Manager

This chapter includes the main concepts and tasks of Correlation Manager.

This chapter describes:	On page:
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Tasks	
Create a Correlation Rule	81

Correlation Manager Overview

Correlation Manager enables you to define the interdependencies between components in your IT infrastructure to simulate how infrastructure changes (for example, a new software installation or upgrade) can impact your system. For details, see “Correlation Manager User Interface” on page 247.

By creating Correlation rules based on TQL queries, you can determine the true origin of a problem and its business impact. Each Correlation rule you define is attached to a specific Correlation TQL query. For more information about TQL queries, see “Topology Query Language” in *Reference Information*.

You define Correlation rules to specify a causal relationship between two or more Correlation nodes. Define one node as the trigger, or the node that represents the changes you want to make to the system, and another node as the one that is affected. After the causal relationship is established, the Correlation Manager enables you to determine the effect of the changes occurring in root cause nodes.

You then run the Correlation rules in the Topology View tab (go to **Applications > Topology View**) to simulate how the changes impact your system and discover the root causes of the changes (for details, see “Run Correlation Dialog Box” on page 310). This enables you to evaluate and handle accordingly, the possible implications of any action, update, new deployment, or a failure of the service delivery.

A simulated change in an affected CI can alter the CI’s map status, which is manifested through an addition of a status icon to the CI’s symbol. The Topology Map displays the statuses of the trigger CIs as well as all statuses of the CIs that are affected by it. Each color represents a different status.

For details about the status icons and the colors that represent them, see “Correlation Rules Window” on page 308.

You can then generate a report displaying the following:

- ▶ CIs in the system that are impacted by the changes
- ▶ Trigger CIs (the CIs that represent the changes you want to make to the system)
- ▶ CIs that belong to a specific business service. For details, see “Link Nodes to Application CI” on page 70.

Create a Correlation Rule

This task describes how to define a Correlation rule.

Create a Correlation TQL Query

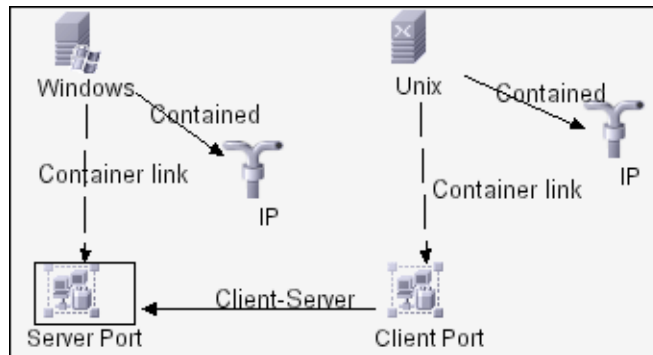
When you create a Correlation rule, you either name the rule and attach it to a specific TQL query in the Query Manager, or create a new one. For details, see “Create New Correlation Rule/Properties Dialog Box” on page 258.

Add Nodes and Relationships to the Query

Add the TQL nodes and relationships that define the query. The TQL nodes represent the CITs, as defined in the CI Type Manager (for details, see *CI Attribute Customization*), and the relationships represent the connection between them. Relationships are defined one at a time for each pair of TQL nodes in the query. For details, see “Adding Nodes and Relationships to a TQL Query” in *Reference Information*.

Example

The direction of the relationship indicates which node is dependent on the other. The following example displays two hosts, a Server Port, and a Client Port, which are linked through a client/server connection. The TQL results must comply with the direction of the arrows.



Note: A Correlation TQL query is subject to certain validation restrictions. For details, see “TQL Query Validation Restrictions” in *Reference Information*.

Set TQL Node and Relationship Definitions

Define the required attribute conditions for the nodes and relationships you have added to your query. The definitions for the selected node or relationship appear in the Information pane. For details on how to define attribute conditions for nodes and relationships, see “Node/Relationship Condition Dialog Box” in *Reference Information*.

Example

This example displays the attribute conditions defined for the sample TQL query shown below. The Information pane shows that the following relationship conditions are defined for the TQL:

Properties	Condition	Cardinality
CI type: Host <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Include sub types		Container link (Host, Database) : 1..*

- In the **Properties** area, the **Visible** and **Include Subtypes** check boxes are selected.
- The following relationship cardinality is defined in the Relationship Cardinality dialog box: Container link – **Min: 1, Max: ***.

The definitions appear in the Cardinality tab, as displayed below.

Element name: Visible Include sub types

Attribute | Qualifier | Element ID | Cardinality

Cardinality

NOT	{	Criteria	}	And/Or
<input type="checkbox"/>		Container link (Host, Database) : 1..*		

Container link (Host, Database) : 1..*

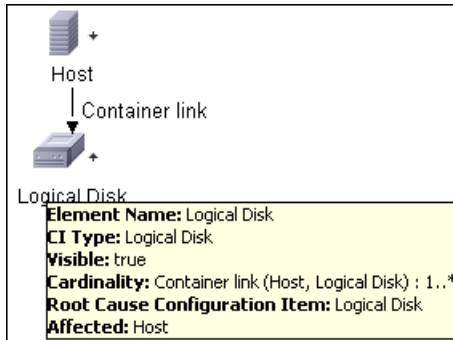
Define Trigger and Affected Nodes

Define which node in the TQL query is the trigger node and which nodes are affected by the simulated changes in the system. For details, see “Affected Nodes Dialog Box” on page 247.

Example

The picture below displays the following:

- The **Logical Disk** is defined as the trigger node.
- The **Host** node is defined as the affected node.



Set Conditions for Defining Affected Nodes

Define a Correlation rule that defines conditions for the node's attributes. When these conditions are met, the simulated changes are triggered. For details, see "Correlation Definition Dialog Box" on page 248.

10

Report Manager

This chapter includes the main concepts, tasks, and references of Report Manager.

This chapter describes:	On page:
Concepts	
Report Manager Overview	86
Tasks	
Define a Report Rule	86
Compare a CI Configuration to a Gold Master Template	90
General Reference	
Sample System Report	90

Report Manager Overview

Report Manager enables you to define the following reports:

- ▶ **System reports.** Contains information about selected Report nodes in the managed world. Each report is based on a specific Report TQL query, which is created especially for it. (If required, you can define multiple reports for each query.) For more information about TQL queries, see “Topology Query Language” in *Reference Information*. The Report Manager enables you to define exactly which information appears in each report, including the order in which nodes are listed and their placement relative to other nodes, and how the information within each Report is sorted. For details, see “Report Manager Window” on page 269.
- ▶ **Gold Master reports.** Compares the configuration of a Gold Master CI to other CIs of the same CIT. Select the CI you want to use as the Gold Master CI, and then the CIs whose configuration you want to compare to the Gold Master template. You can choose the CIs from existing views or from the CMDB. The report that is generated specifies which of the selected CIs are configured differently. For details, see “Gold Master Report Pane” on page 267.

Define a Report Rule

This task describes how to define a Report TQL query.

Create a Report TQL Query

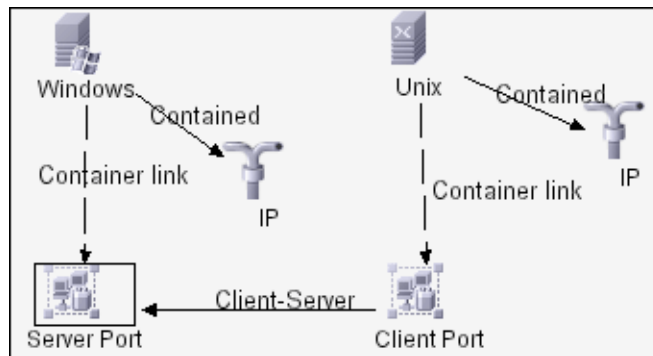
When creating a Report rule, you first give the name a rule and then either attach it to an existing TQL query in the Report Manager, or create a new one. For details, see “Create New Report Definition/Properties Dialog Box” on page 264.

Add TQL Nodes and Relationships to a Query

Add the TQL nodes and relationships that define the query. The TQL nodes represent the CITs, as defined in the CI Type Manager (for details, see *CI Attribute Customization*), and the relationships represent the connection between them. Relationships are defined one at a time for each pair of TQL nodes in the query. For details, see “Adding Nodes and Relationships to a TQL Query” in *Reference Information*.

Example

The direction of the relationship indicates which node is dependent on the other. The following example displays two hosts, a Server Port, and a Client Port that are linked to one another through a client/server connection. The TQL results must comply with the direction of the arrows.



Note: A TQL query is subject to certain validation restrictions. For details, see “TQL Query Validation Restrictions” in *Reference Information*.

Set TQL Node and Relationship Definitions

Define the required attribute conditions for the nodes and relationships you have added to your query. The definitions for the selected node or relationship appear in the Information pane. For details on how to define attribute conditions for nodes and relationships, see “Node/Relationship Condition Dialog Box” in *Reference Information*.

Example

This example displays the attribute conditions defined for the sample TQL query shown below. The Information pane shows that the following relationship properties and cardinality are defined for the TQL:

Properties	Condition	Cardinality
CI type: Host <input checked="" type="checkbox"/> visible <input checked="" type="checkbox"/> Include sub types		Container link (Host, Database) : 1..*

- In the **Properties** area, the **Visible** and **Include Subtypes** check boxes are selected.
- The following relationship cardinality is defined in the Relationship Cardinality dialog box.
 - Container link – **Min: 1, Max: ***

The definitions appear in the Cardinality tab, as displayed below.



Define the Column Content of the Selected Node

Define which nodes appear in the report, the parameter reported for each node and the function to be performed on the information. For details, see “Report Node Definition Dialog Box” on page 277.

Sort the Column Information

Determine the order of the information displayed for each node, and the method by which the data is sorted in each column. For details, see “Attribute Columns Dialog Box” on page 264.

Set the Node Order

Determine the order in which the nodes appear in the report. For details, see “Set Node Order Dialog Box” on page 279.

Refine the Report Layout

You can display nodes dependent on other nodes either aligned underneath or indented underneath the parent node a generated report. Displaying nodes indented beneath one another enables you to better distinguish between parent nodes and their dependents. The Editing Rule pane contains the options that enable you to define how nodes are displayed in a generated report. For details, see “Report Manager Window” on page 269.

Compare a CI Configuration to a Gold Master Template

This task describes how to create a Gold Master report definition and then generate a Gold Master report.

Create a Gold Master Report Definition

Define a Gold Master report that compares the configuration of a Gold Master CI to other CIs of the same CIT, or a CIT that is derived from it. Select the CI you want to use as the Gold Master CI and then the CIs whose configuration you want to compare to the Gold Master template. You can select the CIs from existing views or from the CMDB. For details, see “Gold Master Report Pane” on page 267.

Generate a Gold Master Report

Generate a report that specifies which of the selected CIs are configured differently. For details, see “Gold Master Report Pane” on page 267.


Sample System Report

This section leads you step-by-step through the process of creating a sample report in the Report Manager. The purpose of this sample report is to display Hosts whose severity is critical.

Create the Report TQL Query

You first create a Report TQL query.

To create the Report TQL query:

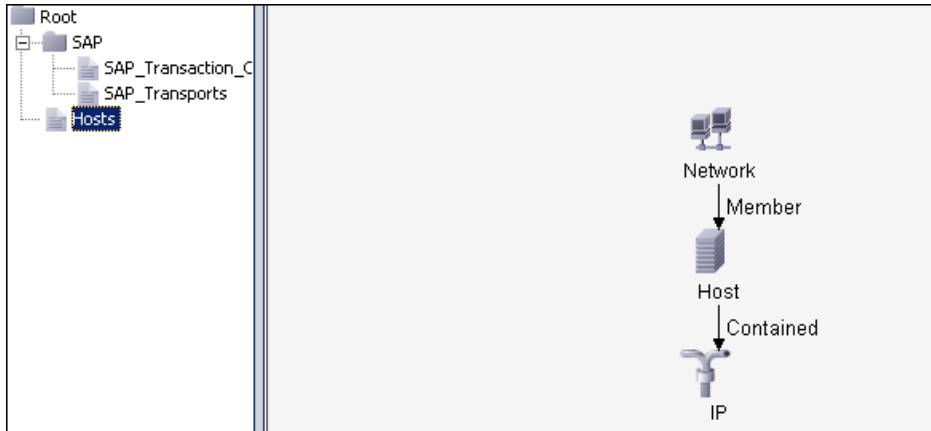
- 1 Select **Admin > Modeling > Report Manager**.
- 2  In the Reports pane, click **New** to open the Create New Report Definition dialog box.
- 3 In the **Name** box, enter Hosts.
- 4 In the **Description** box, enter Hosts with a Critical state.
- 5 In the **Title** box, enter Malfunctioning Services. This title is displayed at the head of the report.

- 6** In the **Subtitle** box, enter (Laboratory). This subtitle is displayed at the head of the report underneath the title.
- 7** To the right of **Type**, select **Topology**.
- 8** Click **OK**.
- 9** With the **Hosts TQL** selected in the Reports pane, from the CI Types pane, click and drag the following nodes to the Editing pane:
 - **Network**
 - **Host**
 - **IP**

Note: To find each node in the CI Types pane, press the key of the letter that the node begins with until it selects the required node.

- 10** Create a relationship between the **Network** and **Host** nodes and between the **Host** and **IP** nodes as follows:
 - a** Select the **Network** and **Host** nodes and right-click them.
 - b** Select **Add Relationship** to open the Add Relationship dialog box.
 - c** Click **Advanced**.
 - d** Expand the IT World Links hierarchy and select the **Member** relationship.
 - e** Click **OK**.
 - f** Repeat this process to define a **Contained** relationship between the **Host** and **IP** nodes.

- 11** The new report is displayed in the Reports pane and in the Editing pane, as shown in the following figure:



- 12** Define the Report TQL to retrieve only malfunctioning Hosts. You can do this by defining the attribute condition of the Host node to retrieve only Hosts that are in a critical state. Set this definition as follows:
- a** In the Editing pane, right-click the **Host** node and select **Node Condition** to open the Node Condition dialog box.
 - b** Click **Add an attribute condition** to open the Attribute Condition dialog box.
 - c** From the **Attribute Name** list, select **Operation State**.
 - d** From the **Operator** list, select **Equal**.
 - e** In the **Value** area, do the following:
 - Select **Fixed value**.
 - Select **Critical**.
 - Click **OK**.
 - f** In the Node Condition dialog box, click **OK**.



When **Operation State** equals **Critical**, all Hosts that have a Critical state are displayed in the report query results.

Define the Report Nodes

After you create the report, define the nodes to include in the report, (the report's columns). This includes determining which information to display for each node (attributes and functions).

To define the report nodes:

Beginning with the **Network** node, select each of the nodes in the scenario displayed in the Editing pane.

- 1 With the **Network** node selected, right-click and select **Report Node Definition** to open the Report Node Definition dialog box.
-  2 Click **Add Attributes** to display the Add Attributes dialog box and define the content of the selected node's columns.
- 3 Select the following attributes for the **Network** node:
 - **Network Domain Name**
 - **Network Class**
 - **Network Address**
 - **State**
- 4 Click **OK**. The selected attributes appear in the Report Node Definition dialog box.
- 5 To display the number of Hosts that are attached to the **Network** node, do the following:
 -  **a** Click the **Add Function** button to display the Add/Edit Function dialog box.
 - b** From the **Related** list, select **Host**.
 - c** From the **Function** list, select **count**.
 - d** In the Title box, edit the column title if required.
 - e** Click **OK** to save your changes.

- 6 Repeat steps 1 to 4 to add column definitions for the **Host** node (see step 2).
Select the following attributes:
 - **Host DNS Name**
 - **State**
- 7 Repeat step 5 to display the number of IPs that are attached to the Host node.
 - From the **Related** list, select **IP**.
 - From the **Function** list, select **count**.
- 8 Repeat steps 1 to 4 to add column definitions for the **IP** node (see step 2).
Select the following attributes:
 - **IP Network Address**
 - **Created By**
 - **Last Access Time**

Sort the Report Node Data

Determine the order of information displayed for each node, and how it is sorted (ascending or descending).

To sort the data for the Report nodes:

Perform the following steps for each node displayed in the TQL query.

- 1 Right-click the appropriate node and select **Report Node Definition** to open the Report Node Definition dialog box.
- 2 Click **Sort** to open the Attribute Columns dialog box.

3 Sort the column information as follows:

Node	Sort Items by	Then by	Order of Direction
Network	Network Class		Descending
		Network Address	Descending
		State	Descending
		Network Domain Name	Descending
Host	Host DNS Name		Descending
		State	Descending
IP	IP Network Address		Descending
		Created By	Descending
		Last Access Time	Descending

4 Click **OK** to save your changes and close the Attribute Columns dialog box.

5 Click **OK** to save your changes and close the Report Node Definition dialog box.

Set the Report Node Order

Determine the order of the nodes in the report. For this sample report, the **Network** node is the parent node, so it should appear at the beginning of the report. The data of the **Host** node is displayed next, followed by the **IP** node.

To set the Report node order:

1 Right-click any node from the query and select **Node Order** to open the Set Node Order dialog box. The Set Node Order dialog box displays a row for each node that is included in the report.



2 Use the up and down arrows to move the **Network** node to the beginning of the list and the **IP** node to the bottom.

3 Click **OK**.

Refine and Save the Report Layout

For better visual identification of the parent and dependent nodes, you can define the report layout to display the node data indented underneath one another. In this sample report, the report layout is defined as follows:

- The **Host** node is defined as the child of the **Network** node
- The **IP** node is defined as the child of the **Host** node

To refine and save the report layout:

- 1** In the Editing pane, right-click the relationship in between the **Network** and the **Host** nodes and ensure that **Child** is selected to display the **Host** node columns indented beneath the **Network** node in the report.
- 2** Right-click the relationship between the **Host** and **IP** nodes and ensure that **Child** is selected to display the **IP** node columns indented beneath the **Host** node in the report.
- 3** To save all the report definitions, click the **Save** button.



Viewing the System Report

In the Reports pane, right-click the **Hosts** report and select **Generate**.

192.168.90.120 (Network)	
Network Address: 192.168.90.120	count: 1
Network Class: C	Network Domain Name: DefaultDomain
State:	
myd02gwn03-flr2.europe.hp.net (Host) (Path: 192.168.90.120 (Network))	
Host DNS Name: myd02gwn03-flr2.europe.hp.net	count: 5
State:	
192.168.84.120 (IP) (Path: 192.168.90.120 (Network) --> myd02gwn03-flr2.europe.hp.net (Host))	
Created By: Host Connection by SNMP	Last Access Time: Sat Jul 28, 2007 06:11 PM
IP Network Class: C	
16.35.178.32 (IP) (Path: 192.168.90.120 (Network) --> myd02gwn03-flr2.europe.hp.net (Host))	
Created By: Host Connection by SNMP	Last Access Time: Sat Jul 28, 2007 06:12 PM
IP Network Class: C	
192.168.90.120 (IP) (Path: 192.168.90.120 (Network) --> myd02gwn03-flr2.europe.hp.net (Host))	
Created By: Host Connection by SNMP	Last Access Time: Sat Jul 28, 2007 06:12 PM
IP Network Class: C	
16.59.42.1 (IP) (Path: 192.168.90.120 (Network) --> myd02gwn03-flr2.europe.hp.net (Host))	

As defined in the report layout, **Host** nodes are indented underneath **Network** nodes and **IP** nodes are indented underneath **Host** nodes. For details on the columns that appear in the report, see “Define the Report Nodes” on page 93.

11

Query Manager

This chapter includes the main concepts and tasks of Query Manager.

This chapter describes:	On page:
Concepts	
Query Manager Overview	100
Tasks	
Define a TQL Query	101

Query Manager Overview

Query Manager enables you to create TQL queries that can be used in other managers.

Note: It is recommended to use the relevant managers (Correlation Manager, Enrichment Manager, View Manager, Report Manager, Trigger TQL Editor) to create your TQL queries, rather than the Query Manager. All TQL queries that are created in the other managers automatically appear in the Query Manager.

You can use the Save As option in the Query Manager to change the type of a TQL, so you do not have to recreate it. For details, see “TQLs Pane” on page 285. Then, to see the query results in the Topology Map, you can create, in View Manager, a view based on the TQL query created in Query Manager.

Once you create and save a TQL query of the types View, Correlation, Enrichment, and Report, you cannot edit it. To edit a TQL of these types, you can go to the relevant manager, for example, the View Manager, and create a new view based on the TQL query that you created in the Query Manager. Then you can then edit the TQL query which was created in the Query Manager, in the View Manager. Any changes you made to the query in the View Manager, appear in the TQL query in the Query Manager. You can only edit queries of the types Integration or Discovery in the Query Manager.

You can display the retrieved data of the view's TQLs in a Topology Map where you can monitor the data. For details, see “Topology View Application User Interface” on page 307. It resides in the system's memory and generates updated results automatically. For more information about Topology Query Language, see “Topology Query Language” in *Reference Information*.

Define a TQL Query

This task describes how to create a TQL query.

Create a TQL Query

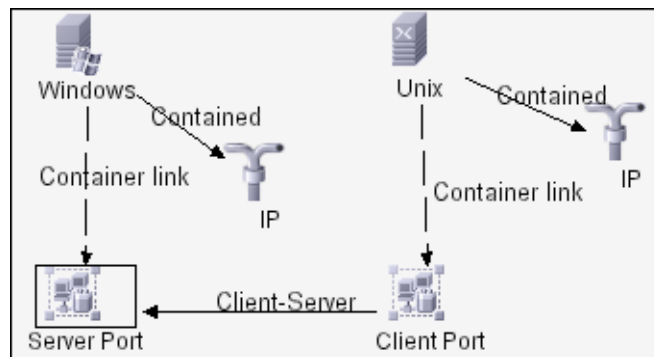
Create a new query by giving the query a unique name. For details, see “Create New TQL/TQL Properties Dialog Box” on page 281.

Add Nodes and Relationships to the Query

Add the TQL nodes and relationships that define the query. The TQL nodes represent the CITs, as defined in the CI Type Manager (for details, see *CI Attribute Customization*), and the relationships represent the connections between them. Relationships are defined one at a time for each pair of TQL nodes in the query. For details, see “Adding Nodes and Relationships to a TQL Query” in *Reference Information*.

Example

The direction of the relationship indicates which node is dependent on the other. The following example displays two hosts, a Server Port, and a Client Port, which are linked to one another via a client/server connection. The TQL results must comply with the direction of the arrows.



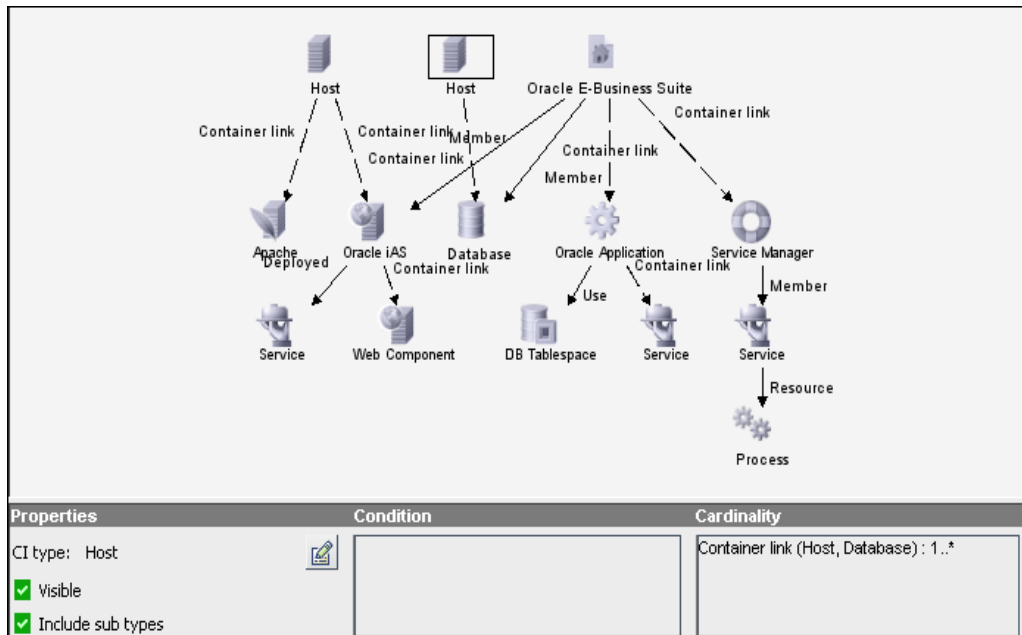
Note: A TQL query is subject to certain validation restrictions. For details, see “TQL Query Validation Restrictions” in *Reference Information*.

Set TQL Node and Relationship Definitions

Define the required attribute conditions for the nodes and relationships you have added to your query. The definitions for the selected node or relationship appear in the Information pane. For details on how to define attribute conditions for nodes and relationships, see “Node/Relationship Condition Dialog Box” in *Reference Information*.

Example

This example displays the attribute conditions defined for the sample TQL query shown below. The Information pane shows that the following relationship conditions are defined for the TQL:



- ▶ In the **Properties** area, the **Visible** and **Include Subtypes** check boxes are selected.
- ▶ The following relationship cardinality was defined in the Relationship Cardinality dialog box.
 - ▶ Container link – **Min: 1, Max: ***

The definitions appear in the Cardinality tab, as displayed below.

Element name: Visible Include sub types

Attribute | Qualifier | Element ID | Cardinality

+ ✎ ✕ ↕ ⬆ ⬇

Cardinality				
NOT	{	Criteria	}	And/Or
<input type="checkbox"/>		Container link (Host, Database) : 1..*		

Container link (Host, Database) : 1..*

12

Enrichment Manager

This chapter includes the main concepts, tasks, and references of Enrichment Manager.

This chapter describes:	On page:
Concepts	
Enrichment Manager Overview	105
Tasks	
Define an Enrichment Rule	108
General Reference	
Sample Enrichment Rule	111

Enrichment Manager Overview

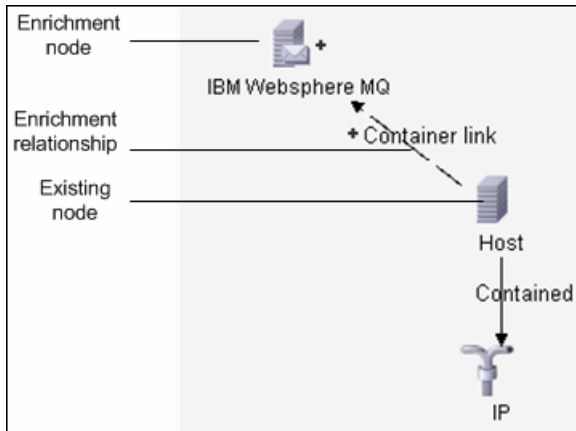
Enrichment Manager enables you to integrate prior knowledge of the infrastructure with data that is found and gathered through the Discovery process.

Enrichment nodes and relationships differ from other nodes and relationships in that they are conceptual deductions that represent real relationships and CIs that cannot be discovered automatically by the Discovery process.

Enrichment nodes and relationships are created as part of a TQL, whose other TQL nodes are regular ones, meaning TQL nodes that already exist in the CMDB. For more information about TQL queries, see “Topology Query Language” in *Reference Information*.

For more information on the Enrichment Manager, see “Enrichment Manager User Interface” on page 291.

The following example displays a regular **Host** node linked to an **IBM Websphere MQ Enrichment** node by an Enrichment **Container link** relationship.

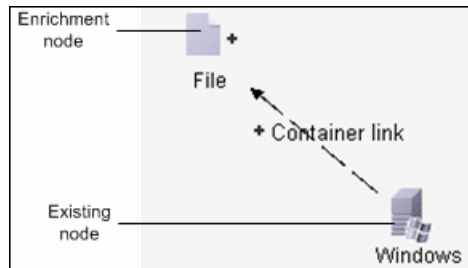


By placing an Enrichment node within a TQL query context, the query receives data from its attributes, and uses it to insert new information into the CMDB.

When you create Enrichment rules, the following results can occur:

- ▶ **The CMDB is enlarged.** Add Enrichment nodes and relationships that are currently not included in the CMDB.

The following Enrichment rule example displays a regular **Windows** node (that already exists in the CMDB) connected to a **File** Enrichment node by an Enrichment **Container link** relationship.



This Enrichment rule states that for every **Windows** CI instance that is found in the CMDB, a new **File** CI instance is created, and linked to the **Windows** CI with a **Container link** relationship.

- ▶ **Specific CI instances are deleted from the CMDB.** For an example, see “Sample Enrichment Rule” on page 111.
- ▶ **The values of CI attributes are updated.** Use an Enrichment rule to update the attributes of a CI that already exists in the CMDB.

The following Enrichment rule example illustrates that a regular **Disk** node (that already exists in the CMDB) has been updated with an Enrichment rule.



This Enrichment rule states that every **Disk** CI found in the CMDB is updated with the attribute value defined in the Enrichment rule.

Define an Enrichment Rule

This task describes how to define an Enrichment rule.

Create an Enrichment TQL Query

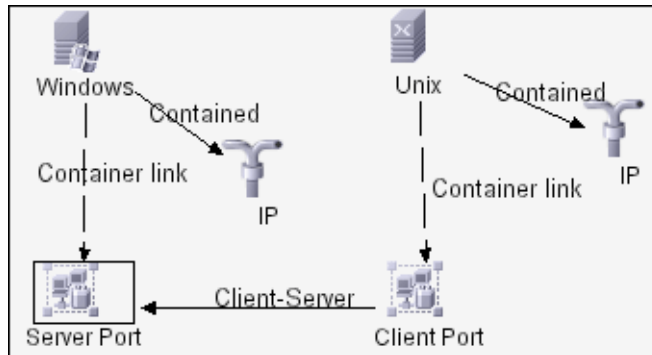
When creating an Enrichment rule, you either name the rule and attach it to a specific TQL query in the Enrichment Manager, or create a new one. For details, see “Create New Enrichment Rule/Properties Dialog Box” on page 292.

Add TQL Nodes and Relationships to a Query

Add the TQL nodes and relationships that define the query. The TQL nodes represent the CITs, as defined in the CI Type Manager (for details, see *CI Attribute Customization*), and the relationships represent the connection between them. Relationships are defined one at a time for each pair of TQL nodes in the query. For details, see “Adding Nodes and Relationships to a TQL Query” in *Reference Information*.

Example

The direction of the relationship indicates which node is dependent on the other. The following example displays two hosts, a Server Port, and a Client Port that are linked to one another through a client/server connection. The TQL results must comply with the direction of the arrows.



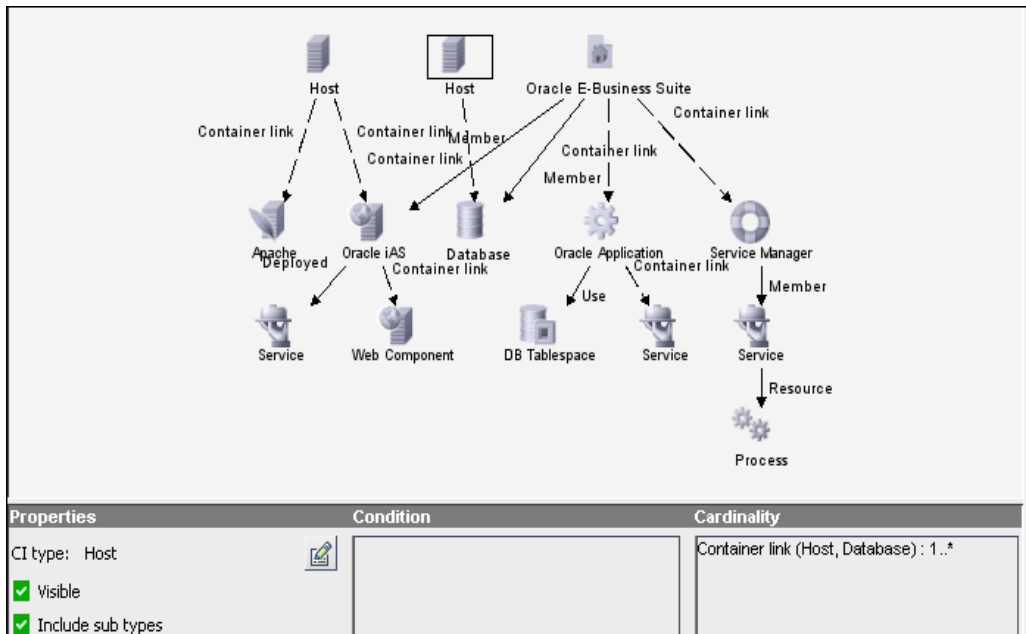
Note: A TQL query is subject to certain validation restrictions. For details, see “TQL Query Validation Restrictions” in *Reference Information*.

Set TQL Node and Relationship Definitions

Define the required attribute conditions for the nodes and relationships you have added to your query. The definitions for the selected node or relationship appear in the Information pane. For details on how to define attribute conditions for nodes and relationships, see “Node/Relationship Condition Dialog Box” in *Reference Information*.

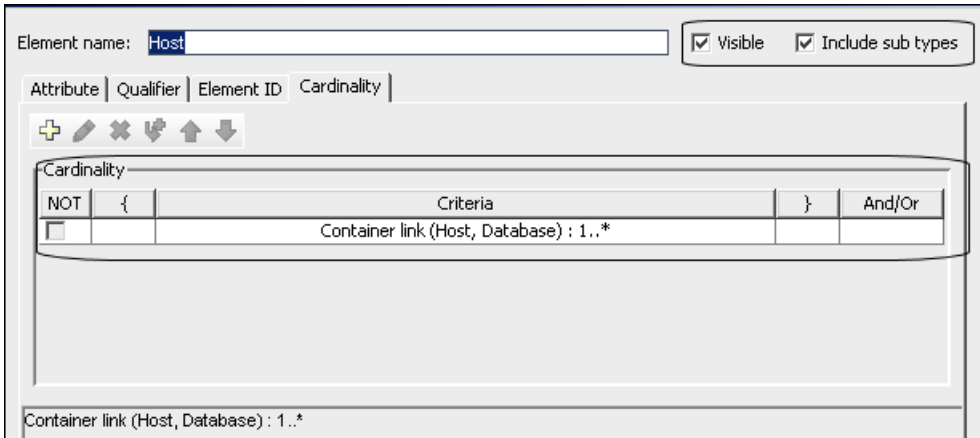
Example

This example displays the attribute conditions defined for the sample TQL query shown below. The Information pane shows that the following relationship conditions are defined for the TQL:



- ▶ In the **Properties** area, the **Visible** and **Include Subtypes** check boxes are selected.
- ▶ The following relationship cardinality was defined in the Relationship Cardinality dialog box: Container link – **Min: 1, Max: ***.

The definitions appear in the Cardinality tab, as displayed below.



Add Enrichment TQL Nodes and Relationships to a Query

Add Enrichment TQL nodes and relationships to the query. For details, see “Adding Enrichment Nodes and Relationships to an Enrichment TQL Query” in *Reference Information*.

Set Node Attribute Definitions

Use an Enrichment rule to update the value of CI attributes in the CMDB, or to add data to attributes that currently do not have values. To update CI attributes, you open an Enrichment TQL query in the Enrichment Manager, and update the attributes of one or more of its nodes. For details, see “Node Definition – Attributes Dialog Box” on page 301.

Sample Enrichment Rule

This section describes how to create a sample Enrichment rule that deletes an identical **Host** CI.

Create an Enrichment Rule to Delete an Identical Host CI

The purpose of this exercise is to create an Enrichment rule where, for every instance in the CMDB in which an **IP** CI is connected to two identical **Host** CIs, but one **Host** CI is identified by its IP address and the other host is identified by its lowest MAC address, the **Host** CI that is identified by its IP address is deleted from the CMDB.

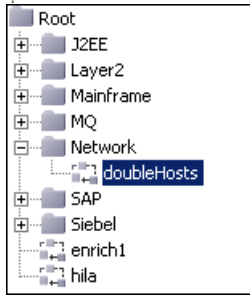
To create a TQL query:



- 1 Select **Admin > Modeling > Enrichment Manager**, click the **New** button to open the New dialog box.

- 2 In the **Name** box, enter doubleHosts.
- 3 (Optional) In the **Description** box, enter Delete incomplete hosts.

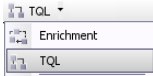
- 4 Click **OK**. The **doubleHosts** Enrichment rule is displayed in the Enrichment Rules pane.



Add Nodes to the doubleHosts Enrichment Rule

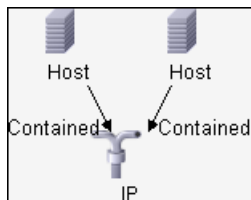
This section describes how to add nodes and relationships to the **doubleHosts** Enrichment rule.

To add nodes and relationships to the **doubleHosts** Enrichment rule:



- 1 At the top of the Enrichment Manager window, select **TQL** mode.
- 2 With the **doubleHosts** Enrichment rule selected, click and drag the following TQL nodes to the Editing pane from the Configuration Item Type Model on the right:
 - **Host**
 - **Host**
 - **IP**
- 3 Select one of the **Host** nodes, and the **IP** node, and right-click.
- 4 Select **Add Relationship** to open the Add Relationships dialog box.
- 5 Click **Advanced**, and select **Relationship** from the **Advanced** list.
- 6 Select **Contained** and click **OK**.
- 7 Select the other **Host** node and the **IP** node and right-click.
- 8 Choose **Add Relationship** to open the Add Relationships dialog box.
- 9 Select **Advanced**, and then select **Relationship** from the **Advanced** list.
- 10 Select **Contained** relationship and click **OK**.

The TQL query now looks like this:

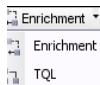


Note: For details on TQL validation restrictions, see “TQL Query Validation Restrictions” on page 127.

Define the Host Node that Is Identified by its Lowest MAC Address

This section describes how to define the **Host** node in the **doubleHosts** query that is identified by its lowest MAC address.

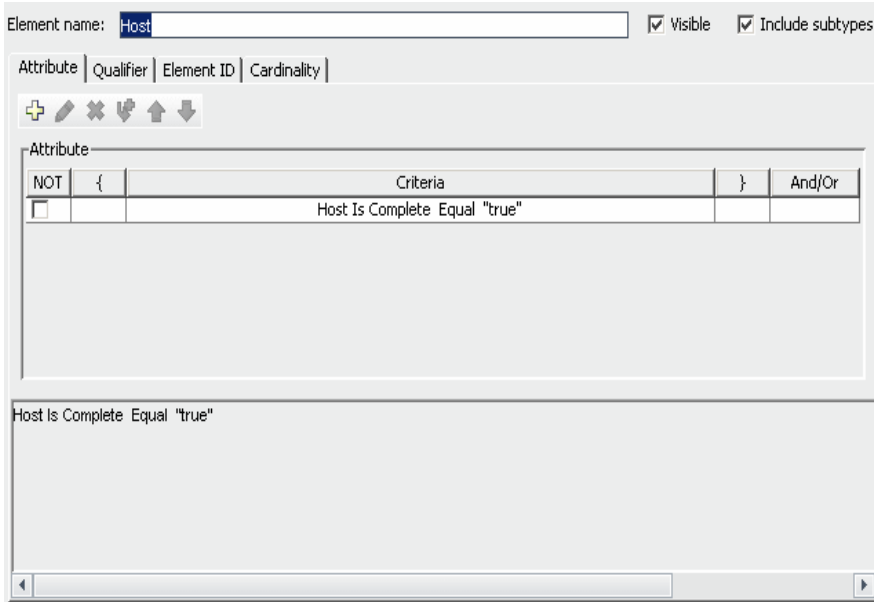
To define the Host node that is defined by its lowest MAC address:



- 1** At the top of the Enrichment Manager window, select **TQL** mode.
- 2** In the Editing pane, right-click the required **Host** node, select **Node Condition** to open the Node Condition dialog box.
- 3** In the **Attribute** tab, click **Add an attribute condition** to open the Attribute Condition dialog box.
- 4** From the **Attribute name** list, select **Host Is Complete**.
- 5** From the **Operator** list, select **Equal**.
- 6** Under **Value**, select **Fixed value**.
- 7** From the **Value cannot be changed** list, select **true**.
- 8** Click **OK** to save the changes and close the Attribute Condition dialog box.



The Attribute area in the Attribute tab now looks like this.

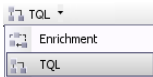


- 9 Click **OK** again to save your changes and close the Node Condition dialog box.

Define the Host Node that is Identified by its IP Address

This section describes how to define the **Host** node in the **doubleHosts** query that is identified by its IP address.

To define the Host node that is identified by its IP address:



- 1 At the top of the Enrichment Manager window, select **TQL** mode.
- 2 In the Editing pane, right-click the required **Host** node, and select **Node Condition** to open the Node Condition dialog box.
- 3 In the **Attribute** tab, click the **Add an attribute condition** button to open the Attribute Condition dialog box.
- 4 From the **Attribute name** list, select **Host Is Complete**.
- 5 From the **Operator** list, select **Equal**.
- 6 Under **Value**, select **Fixed value**.



- 7 From the **Value cannot be changed** list, select **false**.
- 8 Click **OK** to save the changes and close the Attribute Condition dialog box.
- 9 In the **Attribute** tab, click the **Add an attribute condition** button to open the Attribute Condition dialog box.
- 10 From the **Attribute name** list, select **Host Is Complete**.
- 11 From the **Operator** list, select **Is null**.
- 12 Click **OK** to save the changes and close the Attribute Condition dialog box.
- 13 Click inside the **And/Or** column and choose **OR** from the list.

The Attribute area in the Node Condition dialog box now looks like this.

The screenshot shows the 'Attribute' tab of the Node Condition dialog box. The 'Element name' is 'Host'. The 'Visible' and 'Include subtypes' checkboxes are checked. The 'Attribute' tab is selected, and the 'Criteria' table is populated with two conditions: 'Host Is Complete Equal "false"' and 'Host Is Complete Is null'. The 'And/Or' column is set to 'OR'. The resulting expression is displayed at the bottom: 'Host Is Complete Equal "false" OR Host Is Complete Is null'.

Attribute	Qualifier	Element ID	Cardinality	Criteria	And/Or
<input type="checkbox"/>	{			Host Is Complete Equal "false"	OR
<input type="checkbox"/>				Host Is Complete Is null	

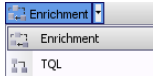
Host Is Complete Equal "false" OR
Host Is Complete Is null

- 14 Click **OK** to save your changes and close the Node Condition dialog box.

Define the Enrichment Rule

After you create a TQL and define the **Host** and **IP** nodes, define the Enrichment rule to delete all the hosts that are identified by their IP address.

To delete instances of the Host nodes that are identified by their IP address:

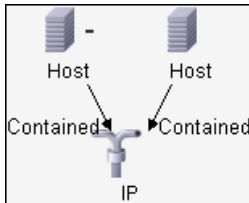


- 1 At the top of the Enrichment Manager window, select **Enrichment** mode.
- 2 In the Enrichment Rules pane, select the **doubleHosts** Enrichment rule.
- 3 Right-click the **Host** node that is identified by its IP address and select **Delete Relationship/Node Item**.



The **Host** node now has a removed indicator to denote that all host instances that have identical attribute and cardinality settings are removed from the CMDB.

The Enrichment query now looks like this.



- 4 Click the **Save** button on the Enrichment Builder toolbar to save the **doubleHosts** TQL query.

Part III

IT World Model Management Application

13

Topology View Application

This chapter includes the main concepts and tasks of the Topology View application.

This chapter describes:	On page:
Concepts	
Topology View Application Functionality	120
Tasks	
Retrieve Correlation Results	120
Take a Snapshot of a View	122

Topology View Application Functionality

Topology View displays the CIs of the currently selected view in graphical format. It has the same functionality as IT Universe Manager, with the exception of the context menu options. For information on IT Universe Manager, see “IT Universe Manager User Interface” on page 193.

The following tasks represent the basic functionality of the Topology View application:

- ▶ **Get Correlation results.** Topology View Application enables you to run the Correlation rules you defined for that view to simulate how certain defined changes impact your system, and to discover the root causes of the changes. For more information about Correlation rules, see “Correlation Manager Overview” on page 79. You can run the Correlation rule you defined in the Correlation Manager. For details, see “Retrieve Correlation Results” on page 120.
- ▶ **Take a snapshot of a view.** HP Universal CMDB enables you to display the status of a view in one snapshot by comparison with its status taken at a different time. For details on how to take snapshots, see “Take a Snapshot of a View” on page 122.

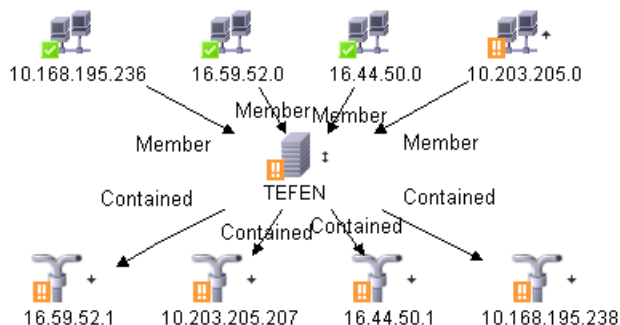
Retrieve Correlation Results

You can simulate the impact certain defined changes have on your system according to the following workflow:

Simulate the Impact on CI Statuses

Simulate how the statuses of the affected CIs are impacted for the selected state. The Topology Map displays, as seen in the example below, the statuses of the trigger CIs as well as all statuses of the CIs that are affected by the simulated change. For details, see Show in Views in “Run Correlation Dialog Box” on page 310.

Example



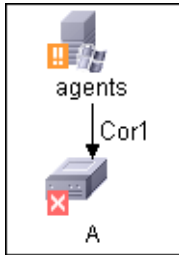
This example illustrates the following:

- The **10.203.205.0** CI is the Trigger CI (it has the Trigger indicator to the right of it). It affects the **TEFEN** CI.
- ⊞ ➤ The **TEFEN** CI is both an affected and a trigger CI (it has the Affected/Trigger indicator to the right of it). It is affected by the **10.203.205.0** CI and affects the **16.59.52.1**, **10.203.205.207**, **16.44.50.1**, **10.168.195.238** CIs.
- ⊞ ➤ The **16.59.52.1**, **10.203.205.207**, **16.44.50.1**, **10.168.195.238** CIs are the affected CIs (they have the Affected indicator to the right of each one).

Display Affected CIs

Display the statuses of the trigger CI as well as all statuses of the CIs that are affected by it. The relationships in the map represent the Correlation rules. The name of the relationship displayed in the map is the name of the Correlation rule you defined in the Correlation Manager. For details, see Show Map in “Run Correlation Dialog Box” on page 310.

For details on how to define a Correlation rule, see “Create New Correlation Rule/Properties Dialog Box” on page 258.



The example above displays a Correlation rule defined in Correlation Manager called **Cor1**.

Generate a Report

Generate a report that displays a list of CIs that are impacted in the system as a result of the simulated changes. For details, see “Run Correlation Dialog Box” on page 310.

Take a Snapshot of a View

You can take a snapshot of a view in Topology View application, save it, and then compare snapshots of the same view taken at different times using Compare Snapshots in **Application > Compliance > Compare Snapshots**. For details on how to take a snapshot of a view, see “Save Snapshot Dialog Box” on page 313. For details on how to view actual differences in the compared views, see “Compare Snapshots Window” on page 328.

14

CI Lifecycle

This chapter includes the main concepts and tasks of the CI Lifecycle application.

This chapter describes:	On page:
Concepts	
CI Lifecycle Overview	124
Tasks	
Generate CI Lifecycle Data and Filter the Results	124

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. When the aging mechanism is enabled for a CI or relationship, it becomes marked for deletion if it is not accessed for a specified period of time (by default, 14 days). The CI or relationship is actually deleted after a fixed period of time since it was last accessed (by default, 28 days). You can set the time period before a CI becomes a candidate for deletion or before it is actually deleted for each CIT in the CIT Manager. For details regarding the aging mechanism, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.

The CI Lifecycle results include the Display Label, CI Type, Last Access Time, Actual Delete Time and Updated By information for each CI. For relationships, CI Lifecycle also displays the CIs at the two ends of the relationship. Once you have generated CI Lifecycle data, you can select the columns to be displayed and filter the results by any of the columns. You can also select specific CIs or relationships and postpone their deletion or mark them as deletion-proof. For details, see “CI Lifecycle Window” on page 321.

Generate CI Lifecycle Data and Filter the Results

This task describes the steps to follow to generate CI lifecycle data and filter the results.

Generate CI Lifecycle Data

To generate CI Lifecycle results, select either the CI tab or the relationship tab. Select the time period in which to search, using the calendar buttons, and click **Generate**. If no results are generated, try extending the time period further into the future. For details, see “CI Lifecycle Window” on page 321.

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 323.

15

Compare Snapshots

This chapter includes the main concepts and tasks of Compare Snapshots.

This chapter describes:	On page:
Concepts	
Snapshot Comparison Overview	127
Tasks	
Snapshot Comparison	127

Snapshot Comparison Overview

Compare Snapshots displays the status of a view in one snapshot by comparison with its status taken at a different time. You can compare a current snapshot to a previous snapshot or two snapshots both taken in the past. For details, see “Compare Snapshots Window” on page 328.

Snapshot Comparison

This task describes how to take a snapshot of a view, and then compare two snapshots of a specific view taken at different times.

Take a Snapshot of a View

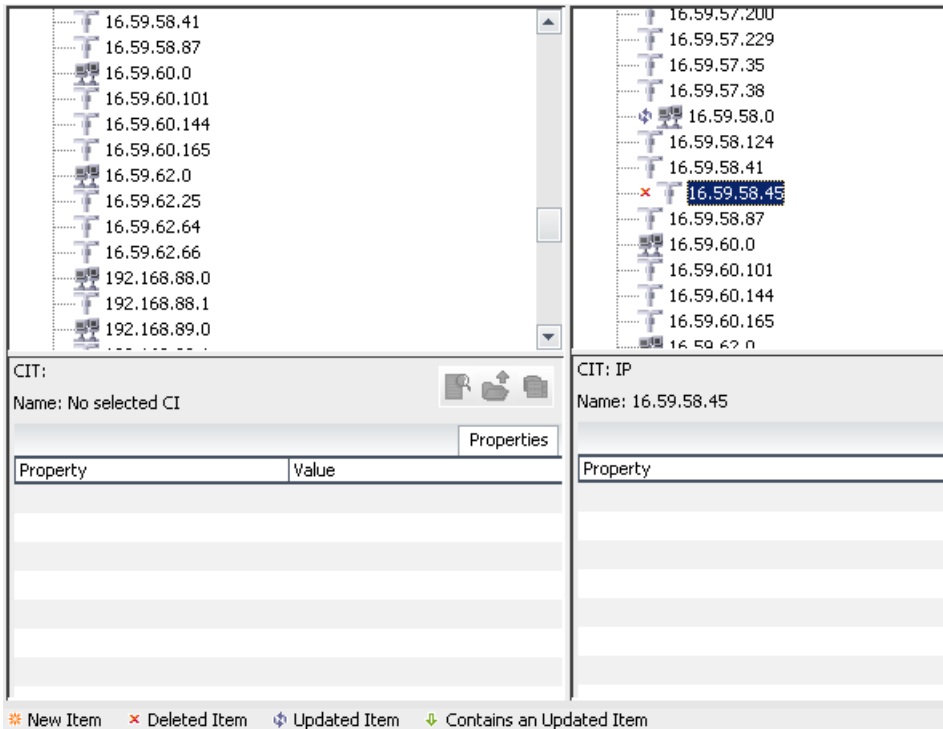
Take a snapshot of a view in Topology View application and save it. For details, see “Save Snapshot Dialog Box” on page 313.

Save Snapshots on a Periodic Basis

Optionally, you can schedule snapshots to be taken of a certain view at specific times by defining a task. For details, see “Job Scheduler Window” on page 164.

Compare Snapshots

Compare the snapshots of a view from different times. In the following example, the **Deleted Item** icon next to the CI **16.59.58.45** in the right pane, indicates that the CI has been deleted in the newer view.



For details on how to compare snapshots taken at different times, see “Compare Snapshots Window” on page 328.

16

Compare CIs

This chapter includes the main concepts and tasks of Compare CIs.

This chapter describes:	On page:
Concepts	
CI Comparison Overview	129
Tasks	
CI Comparison	130

CI Comparison Overview

Compare CIs enables you to compare the hierarchies of two compound CIs. A compound CI is a CI that is linked to another CI by a **Container link** relationship.

You can display the compared CIs and their child CIs that appear in a selected view or in the CMDB. Change indicators denote:

- A CI on one side does not match any corresponding CI on the other side.
- A CI has a match but one of its children does not have a match.

You can see differences in the attributes of the CI whose values have been defined as **Comparable** in the CI Type Manager. For information, see “Add/Edit Attribute Dialog Box” in *CI Attribute Customization*. For example, a comparison might show a difference in the operating system or disk capacity. For details on how to compare CIs, see “Compare CIs Window” on page 336.

CI Comparison

This task describes how to compare the hierarchies of two compound CIs, view a CI's configuration file, and show the difference between two configuration files.

Select the Required CIs

Select the two CIs you want to compare. You can choose to compare two CIs that appear in the selected view or in the CMDB. For details, see “Compare CIs Window” on page 336.

View a CI's Configuration File

Select a CI of the CIT **Configuration File** and view the configuration file. For details, see “Compare CIs Window” on page 336.

Show the Difference Between Two Configuration Files

Select two CIs of the CIT **Configuration File** and view the difference between the two configuration files. For details, see “Compare CIs Window” on page 336.

Part IV

IT World Model Management User Interface

17

Infrastructure Settings Manager User Interface


This chapter includes the pages and dialog boxes that are part of the Infrastructure Settings Manager user interface.

This chapter describes:	On page:
Infrastructure Settings Manager Window	133
Edit Setting Dialog Box	134

Infrastructure Settings Manager Window

Description	Enables you to view and edit infrastructure settings. To access: Select Admin > Settings > Infrastructure Settings Manager .
--------------------	---

The Infrastructure Settings Manager window includes the following elements (listed alphabetically):

GUI Element	Description
	Click the Edit Setting button to open the Edit Settings dialog box which enables you to edit an infrastructure setting.
All	Displays all the infrastructure settings.
Applications	Displays the infrastructure settings connected with the Applications.

GUI Element	Description
Description	A description of the infrastructure setting.
Foundations	Displays the infrastructure settings connected with the Administration tools.
Name	The name of the infrastructure setting.
Value	The value of the infrastructure setting.

Edit Setting Dialog Box

Description	<p>Enables you to change the value of an infrastructure setting.</p> <p>To access: In Infrastructure Settings Manager, click the Edit Setting button next to the infrastructure setting to be edited.</p>
--------------------	--

The Edit Setting dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Description	A description of the infrastructure setting.
Name	The name of the infrastructure setting.
Restore Default	Click to restore the default value of the infrastructure setting.
Value	The value of the infrastructure setting.

18

User Manager User Interface

This chapter includes the pages and dialog boxes that are part of the User Manager user interface.

This chapter describes:	On page:
Add New User Wizard	136
Change Password Dialog Box	136
Edit User Properties Dialog Box	137
User Manager Window	137

Add New User Wizard

Description	<p>Enables you to add a user.</p> <p>To access: Admin > Settings > User Manager. Click the Add button.</p>
Important Information	<p>You should define roles prior to defining new users. For details, see “Role Manager Window” on page 188.</p> <p>To add a new user:</p> <ol style="list-style-type: none"> 1 In the first page, enter a unique user name and type in the password. Confirm the password. 2 In the Details page, enter details on the user. 3 In the Roles page, select one or several roles. If you do not select a role, to enable access rights for the user, you must assign permissions in the Security Manager. For details, see “Security Manager Window” on page 170.
Wizard Map	<p>The Add New User wizard contains:</p> <p>Add New User dialog box - Security > Add New User dialog box - Details > Add New User dialog box - Roles</p>

Change Password Dialog Box

Description	<p>Enables you to change your password; if you have admin permissions, you can change the password of other users.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ For a user (on condition that the administrator has created a user name for you, and sent you the user name and password): Admin > Settings > User Profile and click the Change Password button. ▶ For an admin: Admin > Settings > User Manager. Select the user and click the Profile icon. In the User Profile dialog box, click the Change Password button.
Important Information	<p>Passwords are case sensitive.</p>





Edit User Properties Dialog Box

Description	Enables you to edit an existing user. To access: Admin > Settings > User Manager. Select an existing user and click the Edit button.
Important Information	To edit an existing user: <ol style="list-style-type: none"> 1 In the Security tab, you can change only the password. Confirm the new password. 2 In the Details tab, make changes to the user details, where necessary. 3 In the Roles tab, make changes to the roles that enable access rights for the user. If you do not enable access rights for the user, you must assign permissions in the Security Manager. For details, see “Security Manager Window” on page 170.
Included in Tasks	Set Up Users

User Manager Window

Description	Enables you to define users. To access: Admin > Settings > User Manager
Important Information	User names are case sensitive.
Useful Links	For details on the complete procedure for creating users and assigning roles and access permissions, see “Set Up Users” on page 18.

The User Manager window includes the following elements (listed alphabetically):

GUI Element	Description
	Click to open the Add New User wizard.
	Select a user and click to remove the user name.
	Click to open the Edit User Properties dialog box and edit an existing user.
	Click to open the User Profile window. For details, see “User Profile Window/Dialog Box” on page 139.
Name	The name of the user.

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User Profile User Interface



This chapter includes the pages and dialog boxes that are part of the User Profile user interface.


This chapter describes:	On page:
User Profile Window/Dialog Box	139

User Profile Window/Dialog Box

Description	Enables you to set preferences for a specific user, such as time zone and locale. Non-admin users can change their own password here. To access: <ul style="list-style-type: none">▶ For admin users: Click the icon in the User Manager window.▶ For non-admin users: Admin > Settings > User Profile.
Important Information	This dialog box displays information about: <ul style="list-style-type: none">▶ File Editor. The editor you use when editing configuration files.▶ Time Zone Preferences. The time zone of the user who is either logged in.▶ Symbol Label. Sets display definitions.
Included in Tasks	"Set Up Users" on page 18

The User Profile window/dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Click to browse to the file editor to use when editing configuration files.
Change Password	Click to open the Change Password dialog box. Enter the old and new passwords and click OK .
Flags	(Optional) Enter the necessary parameters to open the text editor appropriately. For example, -L “eng” :C:\temp_files signifies that the language is English and the location of the temporary file that is opened by the text editor is C:\temp_files. Ensure that the parameters are entered in the correct order.
Full path	Full path to the executable file of the file editor.
Label Transparency	<ul style="list-style-type: none"> ▶ Yes. The default. If you drag one CI on top of another CI so that the text of one label overlaps the text of the other label, the text of both labels remains visible. ▶ No. If you drag one CI on top of another CI so that the text of one label overlaps the text of the other label, the text of only one of the labels remains visible.
Locale	Select the locale to define the user’s user interface.
Max number of characters in a line	Enter the maximum size (in characters) of item labels. In the following example, a maximum number of 15 characters is defined: <div style="border: 1px solid black; padding: 5px; margin-top: 10px; width: fit-content;">  labm2am172.dev1 </div>

GUI Element	Description
Max number of lines	<p>Enter the maximum number of lines for an item label. When the label is longer than the number of allocated characters, text flows to the next line. In the following example, a maximum number of 10 characters and three lines is defined:</p> <div data-bbox="582 406 719 576" style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> labm1platf orm07.devl ab.ad</div>
Time zone	The time zone of the user.

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Package Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Package Manager user interface.

Note: Package Manager is not available to HP Managed Software Solutions customers.

This chapter describes:	On page:
Filter Dialog Box	144
Find Dialog Box	145
Move Resource Dialog Box	146
Package Builder Dialog Box	146
Package Manager Window	150
Show Dependency Map	155


Filter Dialog Box

Description	<p>Enables you to display only specific packages in the Package Manager.</p> <p>To access: Click the Filter  button in the Package Manager window.</p>
--------------------	---

The Filter dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<click a column header>	For details, see “Working with Tables” on page 57.
<right-click a column header>	For details, see “Working with Tables” on page 57.
Condition	Click inside the box and select the required operator. For details, see “Attribute Operator Definitions” on page 195.
Display Name	<p>Filter the task list according to one of the following:</p> <ul style="list-style-type: none"> ➤ Package name ➤ Status ➤ Category ➤ Description ➤ Version ➤ Last Update Time ➤ Update Version ➤ Updated By <p>For details, see “Package Manager Window” on page 150.</p>
Value	Click inside the box and either enter or select the required value.



Find Dialog Box

Description	<p>Find a package that contains a specified resource. For details, see “Resource Groups” on page 148.</p> <p>To access: Click the Find  button in the Package Manager window.</p>
--------------------	--

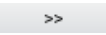

The Find dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Case sensitive	<p>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.</p>
Package name	<p>The search result (the package name containing the resource specified in the Resource name box).</p> <p>Note: The package name that appears in the Package name box is also selected in the Package Manager window.</p>
Resource name	<p>Enter the name of the resource contained in the package for which you are looking.</p> <p>Note: You can use the percentage wildcard (%) in your string to match one or more words of text.</p> <p>For example, entering <code>symbol%</code>, returns the following CITs: symbolAdditionalInfo, symbolNode, AdditionalInfo.</p> <p>The percentage sign cannot be used by itself. It must be used with other characters.</p>
Topic	<p>The resource group containing the resource you want the package to contain. For details, see “Resource Groups” on page 148.</p>



Move Resource Dialog Box

Description	Enables you to move resources from one package to another. To access: Click the Move resource(s) from one package to another  button in the Package Manager window.
Important Information	The Move resource(s) from one package to another  button is available only if two packages are selected in the Package Manager window.
Included in Tasks	“Package Creation and Deployment” on page 24






The Move Resource dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Move selected resources from the package in the left pane to the package in the right pane. Note: You can make multiple selections.
	Move selected resources from the package in the right pane to the package in the left pane. Note: You can make multiple selections.

Package Builder Dialog Box

Description	Enables you to edit an existing package or create a new one using existing resources. To access: Click the Add  button in the Package Manager window or select a package in the Package Manager window and click the Edit  button.
Included in Tasks	“Package Creation and Deployment” on page 24

The Package Builder dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Add the selected resources to the package. Note: You can make multiple selections.
	Remove the selected resources from the package. Note: You can make multiple selections.
	Copy the package's zip file to your local directory.
	The Package Report that appears contains the layout of the package, that is, the names of the folders and resources contained in the report. You can produce the report in different formats. For details, see “Understanding Common Report Elements” on page 34. Note: When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of the Infrastructure Settings manager. For details, see “Printing Reports” in <i>Reference Information</i> .
	Save the changes you have made in the package definition.
Category	A free text box for any notes you want to associate with the package.
Description	A description of the package.
Package Dependencies	Select the package or packages on which you want the package to be dependent. For details on package dependencies, see “Package Dependencies” on page 27.

GUI Element	Description
Package Name	The name of the package.
Topic	<p>Contains a list of the resources you can use to edit an existing package or create a new one. Each topic contains a group of resources. You can choose to display only one specific resource group or all of them. The resource groups appear in the left pane at the bottom.</p> <p>From the Topic list, you can either:</p> <ul style="list-style-type: none"> ▶ Choose the required resource group. ▶ Choose All to display all the available resource groups. <p>For a description of each resource group in the Topic list, see Resource Groups below.</p>

Resource Groups

Following is a list of the available resource groups and their descriptions:






- ▶ **Configuration Item Types.** The CITs defined in the CI Type Manager. For details, see “CI Types Overview” in *CI Attribute Customization*.
- ▶ **Correlations.** The Correlation rules defined in the Correlation Manager. For details, see “Correlation Manager User Interface” on page 247.
- ▶ **Discovery Configuration Files.** Configuration files include properties and parameters that are needed to discover components on the system. For details, see “Resource Configuration User Interface” in *Discovery*.
- ▶ **Discovery External Resource.** External resources include all resources external to HP UCMDB/HP BAC that are needed in Discovery, for example, a Visual Basic file, a credentials file, and so on. For details, see “Resource Configuration User Interface” in *Discovery*.
- ▶ **Discovery Jobs.** A Discovery job includes configuration data needed to activate Discovery of components. For details, see “Job Configuration User Interface” in *Discovery*.
- ▶ **Discovery Jython Script.** Discovery Jython Scripts are Jython scripts used by the Discovery process to discover and map the various network entities.


- ▶ **Discovery Modules.** A Discovery module includes all the jobs needed to discover a specific component on the system. For details, see “Job Configuration User Interface” in *Discovery*.
- ▶ **Discovery Patterns.** A Discovery pattern includes parameters, scheduling information, and TQL assignments needed to discover a specific component on the system. Discovery patterns are one of the resources of a job. For details, see “Resource Configuration User Interface” in *Discovery*.
- ▶ **Enrichments.** The Enrichment rules defined in the Enrichment Manager. For details, see “Enrichment Manager User Interface” on page 291.
- ▶ **Job Scheduler.** Tasks that have been defined to run in the Scheduler. For details, see “Scheduler User Interface” on page 157.
- ▶ **Relationships.** The relationships defined in the CI Type Manager. For details, see “CIT Relationships” in *CI Attribute Customization*.
- ▶ **Reports.** Report rules definitions, as described in “Report Manager User Interface” on page 261
- ▶ **State Categories.** The states defined in the State Manager. For details, see “State Manager Overview” on page 39.
- ▶ **TQLs.** The TQL queries defined in the Query Manager. For details, see “Query Manager User Interface” on page 281.
- ▶ **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 User Interface” in *CI Attribute Customization*.
- ▶ **Users.** The definition of a user and the user’s role. For details, see “Security Manager User Interface” on page 169.
- ▶ **Valid Links.** All possible predefined valid connections (relationships) between the CITs that are defined in the CIT folder.
- ▶ **Views.** The views defined in the View Manager. For details, see “View Manager User Interface” on page 225.






Package Manager Window






<p>Description</p>	<p>Package Manager enables you to:</p> <ul style="list-style-type: none"> ➤ Create a package out of existing resources or edit an existing one to suit your IT management needs. ➤ Deploy and undeploy packages. <p>To access: Select Admin > Settings > Package Manager.</p>
---------------------------	---



The Package Manager window includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Creates a package out of existing resources. Opens the Package Builder dialog box.</p> <p>The package you create is automatically placed in the packages_undeployed folder located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib.</p> <p>Note: To deploy the package, select the package and click the Deploy  button.</p>
	<p>Enables you to edit an existing package. Opens the Package Builder dialog box.</p>
	<p>Deletes a package from the Package Manager. The package is deleted from your disk. If the package is deployed, a warning message appears saying that the package is first undeployed, and then removed.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ If the package is deployed at the time it is deleted, its resources remain in the system until the server stops. ➤ If the package is undeployed at the time it is deleted, the resources are not present in the system.
	<p>Finds the package that contains a specified resource. Opens the Find dialog box.</p>

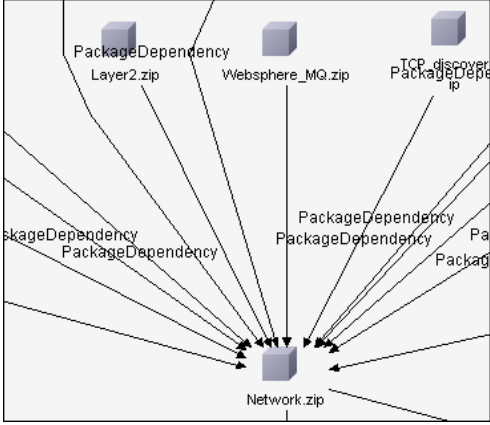

GUI Element	Description
	<p>Deploys a package. A deployed package is a package whose resources are imported into the system and available for use.</p> <p>The package is moved from the packages_undeployed folder to the packages folder located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib.</p> <p>The package's resources are deployed in the CMDB.</p> <p>Notes:</p> <ul style="list-style-type: none"> ▶ If deployment is unsuccessful, the package remains in the packages_undeployed folder. ▶ When deployment is finished, a Deploy Package window is displayed, indicating whether deployment is successful. If it is not successful, the message indicates which .xml files within the package are not successfully deployed.

GUI Element	Description
	<p>Undeploys a package. An undeployed package is a package whose resources are not in the system, but can be imported by deployment.</p> <p>The resources in the zip file are removed from the system but the <package>.zip file is not deleted from disk. It is moved from the packages folder to the packages_undeployed folder, located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib.</p> <p>When you undeploy a package, all resources are removed from the system even if the resources exist in other packages. You can restore the resources only when a package containing those resources is deployed.</p> <p>Notes:</p> <ul style="list-style-type: none"> ▶ When a server starts, it checks all the packages that are in the packages_undeployed folder. The server deploys the packages whose modification dates are newer than what is currently deployed. ▶ When undeployment is finished, an Undeploy Package window is displayed, indicating whether the undeployment is successful or not. If it is not successful, the message indicates which .xml files within the package are not successfully undeployed.
	<p>Update the contents of the table.</p>
	<p>Open the Show Dependencies map that displays all the deployed and undeployed package dependencies in a separate window. For details, see “Show Dependency Map” on page 155.</p>
	<p>Move resources from one package to another. Opens the Move resource dialog box.</p>
	<p>Upload a package’s zip file from your local directory to the packages_undeployed directory.</p> <p>The imported package (if valid) is saved on the server side and appears on the list of packages in the Package Manager as an undeployed package.</p>


GUI Element	Description
	Copy the package's definition to your local directory, which can be used for backup purposes. The package is saved in XML format.
	Opens the Filter dialog box. You use the Filter dialog box to show only the packages you want displayed in the Package Manager window.
	Clear the filter definitions you created in the Filter dialog box.
	Click the Customize Columns button to open the Columns dialog box and change the display order of the columns, hide a column, or display a hidden column. For details on the Columns dialog box, see “Columns Dialog Box” on page 57.
	Produce the report in different formats. For details, see “Understanding Common Report Elements” on page 34. Note: When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of the Infrastructure Settings manager. For more details, see “Printing Reports” in <i>Reference Information</i> .
Category	Free text for any notes you want to associate with the package as described in the Package Builder.
Description	The description of the package as described in the Package Builder.
Last Update Time	The date and time when the package was last updated. This value is updated automatically.
Package Name	The name of the package.

GUI Element	Description
Status	<p>The options are:</p> <ul style="list-style-type: none"> ▶ Deployed  . The package is located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib\packages. The package's resources are deployed in the CMDB. ▶ Undeployed  . The package is located in: \\<HP Universal CMDB root folder>\HP Universal CMDBServer\root\lib\packages_undeployed. The package's resources are not deployed in the CMDB until the package is deployed manually, via scheduled deployment (for details, see "Scheduler User Interface" on page 157) or automatic deployment on the next server startup.
Update Version	The updated version and build number of the package.
Updated By	The user name of the administrator who updated the package. This value is updated automatically.
Version	The version and build number of the package.

Show Dependency Map

<p>Description</p>	<p>Certain packages are dependent for their functioning on the installation of other packages. This means that certain packages have to be deployed before deploying others. The Dependency Map is a topology map that displays the package dependencies of the packages selected in the Package Manager window, including both deployed and undeployed packages.</p> <p>Note: To include all the packages in the Dependency Map, select all the packages in the Package Manager window.</p> <p>Packages are connected by the PackageDependency relationship. The direction of the relationship indicates which package is dependent on the other.</p> <p>Note: If there is a package for which no dependency was defined, the package appears without a connection to another package in the map.</p> <p>The following example shows that Websphere_MQ is dependent on Network.</p>  <p>To access: Click the Show Package Dependencies  button in the Package Manager window.</p>
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The Show Dependency map includes the following elements (listed alphabetically):

GUI Element	Description
	An icon that represents all the deployed and undeployed packages in your system.
<toolbar options>	For details, see Chapter 7, “Toolbar Options.”
<tooltip>	Hold the cursor over a package or a relationship in the Dependency map to display a tooltip with the following information <ul style="list-style-type: none"> ▶ Configuration Item Type. The display name of the Configuration Item type to which the item belongs. ▶ Is package deployed. The options are Yes or No. ▶ Label. The label of the selected package/relationship that is displayed in the map.
Configuration Item Type	The CI type of the selected package.
Label	The label of the selected package/relationship that is displayed in the map.
No. of Children	The number of children and relationships that exist at all map levels below the selected level. Double-click the selected package to view the map level below the current level.
Package Dependency relationship	Connects the packages in the Dependency map.
Symbol	The icon defined for the CIT of the selected CI.


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Scheduler User Interface

This chapter includes the pages and dialog boxes that are part of the Scheduler user interface.

This chapter describes:	On page:
Action Definition Dialog Box	158
Filter Dialog Box	160
Job Definitions Dialog Box	161
Job Scheduler Window	164
Select Days Dialog Box	166
Select Hours Dialog Box	166

Action Definition Dialog Box

Description	<p>Enables you to select a required action in a list of actions that can be run by the Scheduler.</p> <p>To access: Click the Add  button in the Actions pane in the Job Definitions dialog box.</p>
Important Information	<p>After selecting the required action, click Next to display a list of actions. The list of action details depends on which action you choose.</p> <p>For example, if you select Run TQL, a list of the existing TQL queries appears. Select the required TQL query names. You can make multiple selections.</p>
Included in Tasks	<p>“Define Tasks that Are Activated on a Periodic Basis” on page 32</p>

The Action Definition dialog box includes the following elements (listed alphabetically):


GUI Element	Description
<click a column header>	For details, see “Working with Tables” on page 57.
<right-click a column header>	For details, see “Working with Tables” on page 57.
Actions	For a list of actions that can be run by the Scheduler, see “Scheduler Actions” below.

Scheduler Actions

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

- ▶ **Generate and save a Gold Master report.** Generate a Gold Master report and save it to the CMDB according to its set schedule. Click **Next** to display a list of the available Gold Master reports and select the required ones. For details, see “Gold Master Report Pane” on page 267.
- ▶ **Generate and save a System report.** Generate a System report and save it to the CMDB according to its set schedule. Click **Next** to display a list of the available System reports and select the required ones. For details, see “Report Manager User Interface” on page 261.
- ▶ **Run an Enrichment rule.** Activate 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 User Interface” on page 291.
- ▶ **Run a Replication job.** Federate data stores from different sources to a single, central database according to its set schedule. Click **Next** to display a list of the data stores and select the required ones. For details, see “Federated CMDB User Interface” on page 173.
- ▶ **Run a TQL.** Run the selected TQL query according to its set schedule. Click **Next** to display a list of the available TQL queries and select the required ones. For details, see “Query Manager User Interface” on page 281.
- ▶ **Run a view.** Recalculate the selected view according to its set schedule. Click **Next** to display a list of the available views and select the required ones. For details, see “View Manager User Interface” on page 225.
- ▶ **Save a snapshot.** Save a snapshot of the selected view according to its set schedule. Click **Next** to display a list of the saved snapshots and select the required ones. For details, see “Compare Snapshots User Interface” on page 327.


Filter Dialog Box

Description	Displays only specific tasks in the Job Scheduler window. To access: Click the Filter  button in the Job Scheduler window.
Included in Tasks	“Define Tasks that Are Activated on a Periodic Basis” on page 32

The Filter dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<click a column header>	For details, see “Working with Tables” on page 57.
<right-click a column header>	For details, see “Working with Tables” on page 57.
Condition	Click inside the box and select the required operator. For details, see “Attribute Operator Definitions” on page 195.
Display Name	Filters the task list according to one of the following: <ul style="list-style-type: none"> ➤ Is Active ➤ Job Definition ➤ Last Run Time ➤ Name ➤ Next Run Time ➤ Schedule For details, see the Job Scheduler window.
Value	Click inside the box and either enter or select the required value.

Job Definitions Dialog Box

Description	Enables you to add actions to the job you created and define how often they run. To access: Click the Add  button in the Job Scheduler window.
Included in Tasks	“Choose an Action” on page 32 “Schedule a Task” on page 32





The Job Definitions dialog box includes the following elements (listed alphabetically):


GUI Element	Description
Job Definition	(Optional) A description for this job.
Name	The name of the job.

Actions Pane

Description	Enables you to add the required actions to the task you created.
Included in Tasks	“Choose an Action” on page 32

The Actions pane includes the following elements (listed alphabetically):


GUI Element	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.





GUI Element	Description
	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 task.


Scheduler Pane

Description	Enables you to set the schedule for activating a task.
Included in Tasks	“Schedule a Task” on page 32
Useful Links	“Cron Expressions” on page 33

The Scheduler pane includes the following elements (listed alphabetically):

GUI Element	Description
	Opens a calendar. Select the required date and time.
<input type="button" value="Reset server time zone"/>	Automatically set the time zone to the correct one for the server.
<input type="button" value="Validate Expression"/>	Click to validate the Cron expression you entered.
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” on page 33.
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” on page 33.
Daily	Runs a task on a daily basis.







GUI Element	Description
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.
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 Open Calendar  button to the right. Note: This step is optional. If you do not want to specify an ending date, leave the End by check box unselected.
Interval	Activates the action at a set time interval.
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 Open Calendar  button to the right.

GUI Element	Description
Monthly	Runs a task on a monthly basis.
Months of the year (January - December)	(Appears when you choose Monthly). Select the month or months in which you want the action to run.
Once	Activates the task only once.
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).
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 Open Calendar  button to the right. 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.
Weekly	Runs a task on a weekly basis.


Job Scheduler Window

Description	Enables you to define tasks that are activated on a periodic basis. For example, you can define a task that generates a System report on a daily basis at 3:00 PM. To access: Click Admin > Settings > Scheduler .
Included in Tasks	“Define Tasks that Are Activated on a Periodic Basis” on page 32

The Job Scheduler window includes the following elements (listed alphabetically):

GUI Element	Description
	Creates and schedules a task. Opens the Job definitions dialog box.
	Edits a task. Opens the Job definitions dialog box.
	Deletes a task.
	Opens the Filter dialog box. You use the Filter dialog box to show only the scheduled jobs you want displayed in the Job Scheduler window.
	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 “Columns Dialog Box” in <i>Reference Information</i> .
<click a column header>	For details, see “Working with Tables” in <i>Reference Information</i> .
<right-click a column header>	For details, see “Working with Tables” in <i>Reference Information</i> .
Is 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 definitions 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 162.


Select Days Dialog Box

Description	Enables you to choose the day on which to activate the action. To access: Click Monthly in the Job definitions dialog box, and then click the  button to the right of the Days of month box.
Included in Tasks	“Define Tasks that Are Activated on a Periodic Basis” on page 32

The Select Days dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Actions	<ul style="list-style-type: none"> ▶ Select all. Select all the listed days. ▶ Unselect all. Clear all the selected days.
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 “Invocation Hour” on page 163.

Select Hours Dialog Box

Description	Enables you to choose the time at which to activate the action. To access: Click Daily, Weekly, or Monthly , and then click the button  to the right of the Invocation hour box in the Job definitions dialog box.
Included in Tasks	“Define Tasks that Are Activated on a Periodic Basis” on page 32

The Select Hours dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Actions	<ul style="list-style-type: none">▶ Select all. Select all the listed times.▶ Unselect all. Clear all the selected times.
List of times by the hour and half hour	Choose all the required time 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 163.


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Security Manager User Interface



This chapter includes the pages and dialog boxes that are part of the Security Manager user interface.

This chapter describes:	On page:
Roles/Users Dialog Box	169
Security Manager Window	170

Roles/Users Dialog Box

Description	Enables you to choose the roles or users for which you are assigning permissions.  To access: Click the button in the Security pane.
Useful Links	Role Manager User Interface

The Roles/Users dialog box includes the following elements (listed alphabetically):



GUI Element	Description
	Signifies a user.
	Signifies a role.
<check box>	Select to assign permissions to a role or user

GUI Element	Description
Description	A description of the role or user.
Name	The role or user.

Security Manager Window

Description	<p>Enables you to assign access rights to view, create, update, remove, or execute objects.</p> <p>To access: Select Admin > Settings > Security Manager.</p>
Important Information	<ul style="list-style-type: none"> ▶ When assigning permissions, you must also assign access rights to the appropriate manager (CI Type Manager, TQL Builder, and so on). For example, to give a role permissions for a view, give the role access rights to the View Manager. ▶ Do not give regular users access to the Admin > Settings > User Manager 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. ▶ 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 ancestor to which permissions are assigned. For example, if you assign permissions to <code>host</code>, its children (<code>atwswitch</code>, <code>concentrator</code>, and so on) inherit the permissions assigned to <code>host</code>.

The Security window includes the following elements (listed alphabetically):

GUI Element	Description
	Click to choose users or roles to which you assign permissions.
	Click to remove permissions for user and role access rights.
<Save button>	Click to save changes.
<Tabs>	<ul style="list-style-type: none"> ▶ TQL: Give permissions to users to view, create, update, remove, or execute the selected TQLs. ▶ View Manager. Give permissions to users to view, create, update, remove, or execute the selected views. ▶ Domain. Give permissions to users to view, create, update, remove, or execute selected probes or their credentials. ▶ CI Type Manager. Give permissions to users to view, create, update, remove, or execute the selected CITs. Menu: Enable users to view the right-click menu options of a CIT. ▶ Customize. Give permissions to users to view, create, update, remove, or execute selected menu items in the Admin and Application menus.
Permissions	<p>To enable permissions for a resource, you must first select the role or user to which you are assigning access rights.</p> <p>For details on Web service user permissions, see “Web Service User Roles” on page 38.</p> <ul style="list-style-type: none"> ▶ 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. <p>Note: Only those permissions that are relevant to the selected resource are enabled.</p>

23

Federated CMDB User Interface

This chapter includes the pages and dialog boxes that are part of the Federated CMDB user interface.

This chapter describes:	On page:
Data Store Dialog Box	174
Data Stores Tab	179
Federated CMDB Window	180
Replication Job Dialog Box	181
Replication Job Statistics	182
Replication Jobs Tab	183
Troubleshooting	185

Data Store Dialog Box


Description	Enables you to configure an adapter that accesses external data sources. To access: Admin > Settings > Federated CMDB > Data Stores tab > click Add.
Important Information	Mandatory fields are labeled in red.
Wizard Map	Depending on the adapter's function, use one of the following workflows to define a data store: <ul style="list-style-type: none"> ▶ If the adapter supports federated replication only and can be used as a source, fill in the Data Store Properties dialog box and the Queries Supported by Adapter dialog box. Click Finish. ▶ If the adapter supports federated TQL queries only, fill in the Data Store Properties dialog box and the CITs Supported by Adapter dialog box. Click Finish. ▶ If the adapter supports both federated replication and federated queries, fill in the Data Store Properties dialog box, the CITs Supported by Adapter dialog box, and the Queries Supported by Adapter dialog box. Click Finish. ▶ If the adapter supports federated replication only and can be used as a target, fill in the Data Store Properties dialog box. Click Finish.

Data Store Properties Dialog Box

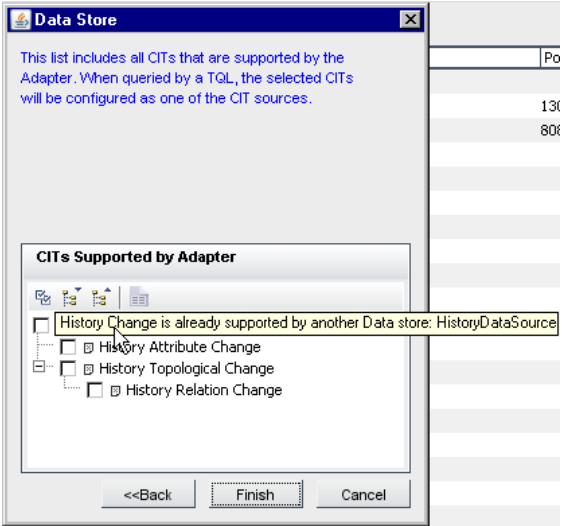
Description	Enables you to select the type of adapter, and to define the connection information for the external data store you are defining.
Important Information	Mandatory fields are labeled in red.

The Data Store Properties dialog box includes the following elements (listed alphabetically):


GUI Element	Description
Adapter	<p>Choose the adapter to bring the external data from a data store that you configure. The following adapters are predefined:</p> <ul style="list-style-type: none"> ▶ CmdbSoapAdapter. Select to define an adapter that uses a SOAP API to bring data from an external CMDB data store. Note: This adapter does not support federated queries and can be used only as a target in federated replication. ▶ CmdbRmiAdapter. Select to define an adapter that uses an RMI API to bring data from an external CMDB data store. Note: This adapter supports federated replication only by default. To support federated queries, contact Customer Support. ▶ CmdbHistoryAdapter. Select to define an adapter that brings data from a CMDB History database. Note: the History Adapter does not support replication, that is, you cannot use this adapter to define a replication job (to bring data from one data store to another one).
Customer ID	For HP Universal CMDB, enter 1 . For HP Managed Software Solutions, enter the customer ID number.
Host	Enter the name of the machine to which the adapter must connect.
Name	Enter a name to identify the data store. The name must be unique in the HP Universal CMDB version.

GUI Element	Description
<p>Next button</p>	<p>Click to continue defining the adapter.</p> <p>Note: If you did not test the connection, it is automatically tested when you click Next.</p> <p>If the adapter does not support a federated query and replication as a source (that is, the adapter supports replication only as a target, for example, the SOAP adapter), the following message is displayed:</p>  <p>Click OK, then click Finish.</p>
<p>Password</p>	<p>Enter the password needed to access the external data store to which you want to connect.</p>
<p>Port</p>	<p>Enter the port through which you are accessing the external data store (if required).</p>
<p>Test connection</p>	<p>Click to test that you have entered valid information.</p>
<p>URL</p>	<p>Use this field to define a specific URL to connect to the external data store.</p>
<p>User</p>	<p>Enter the user name needed to access the external data store to which you want to connect.</p>

CITs Supported by Adapter Dialog Box

Description	<p>Enables you to choose which CITs are to be supported by the data store. For example, if a federated TQL (FTQL) includes a node that represents a specific CIT, the instances of this CIT are accepted from this external data store.</p>
Important Information	<ul style="list-style-type: none"> ▶ This page is displayed when the selected adapter supports federated queries. ▶ A CIT can be used by one data store only. CITs that are already being used by a data store are marked as such. Hold the pointer over a CIT to display a tool tip with the name of the data store that is using the CIT: 


The CITs Supported by Adapter dialog box includes the following elements:

GUI Element	Description
	<ul style="list-style-type: none"> ▶ Select/Unselect All. Click to select all CITs in the list and click again to clear all CITs. ▶ Expand All. Click to expand the list of CITs and display all levels. ▶ Collapse All. Click to collapse the list of CITs and display the top level only. ▶ Show Selected. Click to open the Supported CITs dialog box that displays a list of CITs in hierarchical format that are supported by the adapter.
<p><List of CITs></p>	<p>This list includes all CITs that are supported by the adapter. When queried by an FTQL, the CITs you select here are configured to bring the data from this external data store. Select the CITs to be supported by this data store.</p>

Queries Supported by Adapter Dialog Box

<p>Description</p>	<p>Enables you to choose which queries should be supported by this data store for data replication.</p>
<p>Important Information</p>	<p>This page is displayed when the adapter is selected that supports federated replication and can be used as a source.</p>




The Queries Supported by Adapter dialog box includes the following elements:






GUI Element	Description
	<ul style="list-style-type: none"> ▶ Select/Unselect All. Click to select all queries in the list and click again to clear all queries. ▶ Switch Selection. Click to select all non-selected queries or to clear all selected queries. ▶ Show Selected Queries. Click to view a list of all selected queries.
<List of query names>	<p>This list includes all queries that are supported by the adapter. During replication job configuration, queries you select here are visible.</p> <p>Select the queries to be included in the configured data store.</p> <p>Visible. The query is visible in the Replication Job dialog box for the current data store.</p>

Data Stores Tab

Description	<p>Enables you to create a data store.</p> <p>To access: Admin > Settings > Federated CMDB > Data Stores tab.</p>
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The Data Stores window includes the following elements:

GUI Element	Description
	Add a data store.
	Edit an existing data store.
	Delete a data store.

GUI Element	Description
	Synchronizes federation configuration, such as defined adapters, data stores, and replication jobs.
	Filter the list to display only those data stores in which you are interested: Click the Filter button to open the Customize Filter dialog box. Build a query by choosing a condition and a value.  To enter a regular expression, click the button and enter the text in the Editing dialog box.
	Clear the filter to display all data stores.
	Select to display or hide columns and to change the order of the columns in the table. Opens the Columns dialog box.
<List of Defined Adapters>	Name. The name you give to the data store. Adapter. The type of adapter for this data store. Host Name. The name of the host to which the adapter connects. Port. The port to which the adapter connects.

Federated CMDB Window

Description	Enables you to define external data stores and create replication jobs. To access: Admin > Settings > Federated CMDB.
Important Information	<ul style="list-style-type: none"> ➤ For details on creating Data Stores, see “Data Stores Tab” on page 179. ➤ For details on creating Replication Jobs, see “Replication Jobs Tab” on page 183.

Replication Job Dialog Box

Description	Enables you to replicate data between two data stores. To access: Admin > Settings > Federated CMDB > Replication Jobs. Click the Add button.
Important Information	For successful replication, if you use CMDB adapters for replication (SOAP or RMI), the CIT class model in the target (the machine to which the data is imported, to be federated) must be identical to the class model in the source (the machine from which the data is exported).

The Replication Job dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Name	Enter a name to identify the replication job.
Replication Job Queries	<ul style="list-style-type: none"> ▶ Active. Select to use this query in the replication job. ▶ Name. The query name. ▶ Description. The description of the query. ▶ Permit Deletion in Target. Permits deletion of CIs and relationships on the target machine if they have been deleted in the source query result.
Source Data Store	<p>The data store for the data that is to be brought over and replicated to the data on the target machine.</p> <p>Only data stores that have adapters that support replication and can be used as a source are displayed here.</p>
Target Data Store	<p>The data store to which the data that is brought in from the source machine should be replicated.</p> <p>Only data stores that have adapters that support replication and can be used as a target are displayed here.</p>

Replication Job Statistics

Description	Enables you to view statistics for a selected replication job to verify whether replication is successful. To access: Admin > Settings > Federated CMDB > Replication Jobs tab. Select a replication job and click the Statistics icon in the toolbar.
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The Replication Job Statistics dialog box includes the following elements (listed alphabetically):










GUI Element	Description
Ad hoc	Yes. The replication job was run by Scheduler or by the user clicking the Ad hoc icon in the Replication Jobs tab.
Full replication	Yes. The user chose to bring all appropriate data in the source to the target, without taking the last run of the replication job into consideration.
Job Name	Name given to the replication job.


GUI Element	Description
Replication Job Statistics per Query	<ul style="list-style-type: none"> ▶ Query Name. The name of the query that is used for replication. ▶ Status. Can be SUCCEEDED or FAILED. ▶ Replication Start Time. The time the replication job started running replication for the current query. ▶ Replication Stop Time. The time the replication job stopped running replication for the current query. ▶ Updated. The number of CIs and relationships that were updated in the target data store during the last replication job. ▶ Added. The number of CIs and relationships that were added in the target data store during the last replication job. ▶ Removed. The number of CIs and relationships that were removed in the target data store during the last replication job. Note: The CIs and relationships are removed from the target only if Permit Deletion in Target is selected in the Replication Job definition. ▶ Has Error. Yes. Click to open the Replication Error dialog box that displays the reason for the failure.
Source Data Store	The ID of the source data store.
Status	Can be SUCCEEDED or FAILED.
Target Data Store	The ID of the target data store.

Replication Jobs Tab

Description	<p>Enables you to define the replication jobs that contain the source data store, target data store, and queries, whose results should be replicated.</p> <p>To access: Admin > Settings > Federated CMDB > Replication Jobs tab.</p>
-------------	---

The Replication Jobs Window includes the following elements (listed alphabetically):

GUI Element	Description
	Click to add a replication job.
	Click to edit an existing replication job.
	Click to delete a replication job.
	<p>Click to test that replication is successful:</p> <ul style="list-style-type: none"> ▶ Ad hoc diff replication. The result from the source data store is compared to the result from the last run of the replication job; only changes are sent to the target data store. ▶ Ad hoc full replication. All appropriate data in the source is brought to the target, without taking the last run of the replication job into consideration. <p>Note: This feature is useful when testing a replication job as you are developing it. During production, you should use the Scheduler to run the replication job. For details, see “Scheduler User Interface” on page 157.</p>
	Click to view replication job statistics about the selected replication job. For details, see “Replication Job Statistics” on page 182.
	Synchronizes federation configuration, such as defined adapters, data stores, and replication jobs.
	<p>Filter the list to display only those replication jobs in which you are interested:</p> <p>Click the Filter button to open the Customize Filter dialog box. Build a query by choosing a condition and a value.</p> <p> To enter a regular expression, click the button and enter the text in the Editing dialog box.</p>
	Clear the filter to display all replication jobs.

GUI Element	Description
	Select to display or hide columns and to change the order of the columns in the table. Opens the Columns dialog box.
Tasks Table	<p>Name. The name you give to the replication job.</p> <p>Source Data Store. The ID of the source data store.</p> <p>Target Data Store. The ID of the target data store.</p> <p>Queries. The queries that are used for replication in this replication job.</p>

Troubleshooting

This section includes troubleshooting and limitations for the Federated CMDB functionality.

- When configuring a local UCMDB data store, if your RMI adapter also supports federated queries, do not choose CITs in the CITs Supported by Adapter dialog box. (You should add an adapter for the local UCMD data store only if you want to use it for replication jobs).
- Do not choose a CIT to be supported by an external data store if instances of this CIT exist in the local UCMDB, as this can lead to state inconsistency. For example, if there are instances of the CPU CIT in the local UCMDB, you must not choose the CPU when defining an external data store, even if the selected adapter supports it.
- When using the RMI adapter, the version of the CMDB running on the configured host must be the same as the version of the UCMDB.
- When configuring a replication job between two CMDBs, verify that the class model is the same in the two CMDBs.

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Role Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Role Manager user interface.

This chapter describes:	On page:
Role Dialog Box	187
Role Manager Window	188

Role Dialog Box

Description	Enables administrators to create and manage roles, and assign permissions to each role to perform specific actions. For example, a role named <code>dba</code> could have permissions to view all database views and to create new views. To access: Click the Add or Edit button in the Role Manager window.
Important Information	For details on default users, see “Default Users” on page 17.
Included in Tasks	“Set Up Users” on page 18



The Role dialog box includes the following elements (listed alphabetically):


GUI Element	Description
<check box>	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 Window” on page 170.
Description	Enter a description to appear in the Role Manager window.
Name	Enter a unique name for the role.

Role Manager Window

Description	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 in the Service View Manager but not to edit existing TQL queries. To access: Admin > Settings > Role Manager
Included in Tasks	“Set Up Users” on page 18
Useful Links	For details on roles for Web service users, see “Web Service User Roles” on page 38.

The Role Manager window includes the following elements (listed alphabetically):

GUI Element	Description
	Click to add a new role in the Role dialog box.
	Click to delete an existing role.

GUI Element	Description
	Click to edit an existing role in the Role dialog box.
<Save button>	Click to save the changes.

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State Manager User Interface




This chapter includes the pages and dialog boxes that are part of the State Manager user interface.

This chapter describes:	On page:
State Manager Dialog Box	191

State Manager Dialog Box

Description	Enables you to define attribute states. The State Manager includes two default attribute states. For details, see “State Manager Overview” on page 39. To access: Select Admin > Settings > State Manager .
Important Information	<ul style="list-style-type: none">▶ The state change is a default state that cannot be edited.▶ It is not recommended to define states without first consulting with Customer Support.
Included in Tasks	“Define an Attribute State” on page 40
Useful Links	“Sample Enumeration Definition” on page 22

The State Manager Window includes the following elements (listed alphabetically):

GUI Element	Description
	Add an attribute state.
	Delete an attribute state.
	Create an Enumeration definition. Opens the Create Enumeration Definition dialog box. For details, see “Create/Update List/Enumeration Definition Dialog Box” in <i>CI Attribute Customization</i> .
Description	(Optional) Click in the row and enter a description of the state.
Name	Click in the row and enter a unique name for the state.
Type Definition	<p>Click in the box to display a list of the Enumeration definitions that can be used to define an attribute type. Select the required Enumeration definition. For details, see “System Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The Type Definition list only displays the Enumeration definitions (and not List definitions) that are defined in the System Type Manager.</p>

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IT Universe Manager User Interface

This chapter includes the pages and dialog boxes that are part of the IT Universe Manager user interface.

This chapter describes:	On page:
Add Background Image Dialog Box	194
Attach Related CIs Wizard	195
CI/Relationship History Dialog Box	199
Get Related CIs Report	200
IT Universe Manager Window	202
New CI Wizard	203
Properties Tab	210
Related CIs Tab	213
Select Configuration Item Type Dialog Box	215
Topology Map	216
View Discovery Wizard	220

Add Background Image Dialog Box

Description	<p>Enables you to add an image as a background to a view as a navigational aid.</p> <p>To access: In IT Universe Manager, select Manual View from the toolbar and then select Add Background Image from the toolbar.</p>
Important Information	<p>You can add an image file (of .gif type) as the background image of a view. This can be used as a navigational aid, for example, for global networks containing different networks in different countries.</p> <p>You can add additional background images to the existing list by inserting image files (of .gif type) to the following location:</p> <p><HP Universal CMDB root directory>\hp\UCMDB \UCMDBServer\j2f\AppServer\webapps\site.war\images \gui\mam_images\gui\images\backgrounds.</p> <p>Tip: Before copying this URL to a browser, copy to a text editor and remove the break markups (
).</p>

The Add Background Image dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Background Image	Displays the selected image.
File Name	<p>Contains a list of the available image files. Select the file name of the image you want to appear in the view and click OK. To remove an image from a view, select None in the File Name list and click OK. Click Save Layout in the toolbar to save your changes.</p>




Attach Related CIs Wizard

Description	<p>Enables you to attach CIs to the CI you selected in View Explorer.</p> <p>To access: In IT Universe Manager, right-click a CI in the Topology Map, and select Attach Related CIs from the context menu.</p>
Important Information	<p>The left pane of the Select Related CIs dialog box functionality follows the standard View Explorer functionality. For details, see “View Explorer” in <i>Reference Information</i>.</p> <p>You can select two CIs in View Explorer or the Topology Map and then select Attach Related CIs from the context menu, to create a relationship between them.</p>
Included in Tasks	“Populate an Instance View” on page 58
Wizard Map	<p>The Attach Related CIs Wizard contains:</p> <p>Select Related CIs Dialog Box > Relationship Properties Dialog Box</p>

Select Related CIs Dialog Box

Description	Enables you to select the CIs to be attached to the CI you selected in View Explorer.
Important Information	<p>The left pane of the Select Related CIs dialog box functionality follows the standard View Explorer functionality. For details, see “View Explorer” in <i>Reference Information</i>.</p> <p>For general information about the Attach Related CIs Wizard, see “Attach Related CIs Wizard” on page 195.</p>
Wizard Map	<p>The Attach Related CIs Wizard contains:</p> <p>Select Related CIs Dialog Box > Relationship Properties Dialog Box</p>

The Select Related CIs dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Click Add CIs to add the selected CIs in the left pane to the Edit pane without adding the children of the CI.
	Click the Add CIs and their Children button to add the selected CIs in the left pane to the edit pane together with all the children of the selected CIs in the CMDB. Note: This option appears for instance views only.
	Click Remove CIs to remove selected CIs in the Edit pane (this does not delete the CIs from the CMDB).
CI Name column	Shows the names of the selected CIs.
CI Type column	Shows the types of the selected CIs.
Include child CIs column	Indicates whether the selected CI was added together with its child CIs. Note: This column appears for instance views only.

Relationship Properties Dialog Box

Description	Enables you to define the relationship to be created between your CI and the CIs selected in the previous step.
Important Information	When defining multiple relationships, you can define different descriptions and property values for each relationship: Skip the property definitions here and edit each relationship individually after it is created.
Wizard Map	The Attach Related CIs Wizard contains: Select Related CIs Dialog Box > Relationship Properties Dialog Box

The Relationship Properties dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Allow CI Update	When the check box is selected, the Discovery process automatically updates the relationship.
CI 1	Displays the name of the CI on the first end of the relationship. This is the CI that you selected in the view.
CI 2	Displays the name of the CI on the second end of the relationship, that is attached to the original CI.
Created By	The user name of the administrator who manually created the relationship, where applicable.
Create Time	The date and time when the relationship was created.
Description	A detailed description of the relationship.
Destination Network Address	Defined only for route links. Indicates the destination network address to which this route is configured.
Direction	<p>Enables you to define the direction of the relationship, by selecting the appropriate radio button. For example, if [CI 1] Depends On [CI 2] (generally the default option), then the new CI is created as child CIs of the originally selected CI. If [CI 2] Depends On [CI 1], then the new CI is created as a parent to the originally selected CI.</p> <p>For some relationship types (for example, Container link, or between a group CI and a monitor CI), only one direction is enabled.</p>
Enable Aging	(Only displayed for certain CIs.) When this option is selected, the aging mechanism is enabled for this relationship. It is selected by default for Discovery CIs. For details, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.
Last Access Time	The time that the CI or relationship was last accessed, whether when being updated or being discovered by Discovery. This field is displayed only for certain CIs.


GUI Element	Description
Must	<p>When the check box is selected, the child CI is dominant when the percentage rule is used to calculate status for the parent CI. If the CI has low status, the parent must take the child CI status, if necessary overriding the percentage rule calculation. This is useful to give emphasis to an important CI. For example, you might want to define Must for a database CI, so that status is critical all the way up the subtree if the database falls, regardless of the status of the other CIs in the subtree.</p> <p>The must status defined for a relationship applies for that relationship only – it is not used in any other relationships of the child CI.</p>
Name	A brief description of the relationship. If no value is entered, the relationship type is used in place of the name.
Note	Enables you to enter other information about the relationship.
Origin	An ID for the source that automatically created the relationship, or the application where the relationship was created.
Relationship Type	Enables you to define the type of relationship created between the original CI and the CIs being attached. Select an option from the list. For most relationships, only the Depends On option or the Monitored By option is available, depending on the type of CIs for which you are creating a relationship.
Updated By	The user name of the administrator who updated the CI properties.
Update Time	The date and time when the relationship properties were last updated.

GUI Element	Description
User Label	Enables you to define a display label for the relationship. If no value is entered, the relationship name appears as the default label.
Weight	<p>When a weight value is entered in the box, the child CI is given more weight in percentage calculations, when percentage rule is used to calculate status for the parent CI. For example, if a child CI is given a weight of 3, then it has three times more impact on the parent status calculation than its unweighted siblings.</p> <p>The weight defined for a relationship applies for that relationship only – it is not used in any other relationships the child CI may have.</p>

CI/Relationship History Dialog Box


Description	<p>Displays a list of attributes in which changes have occurred as well as the difference between two configuration files.</p> <p>To access: In IT Universe Manager, right-click the selected CI or relationship in View Explorer or the Editing pane and select CI History from the context menu.</p>
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The CI/Relationship History dialog box includes the following elements (listed alphabetically):




GUI Element	Description
	View the difference between two configuration files. Select two CIs of type configfile and click the Show difference button to open the Visualdiff report, which displays a comparison of the two files. Text added to the second file appears highlighted in yellow. Text removed from the first file appears highlighted in red. Differences between the files appear highlighted in green.
Attribute	The name of the attribute.

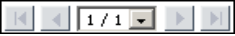


GUI Element	Description
Change Date	The date when the last change occurred.
Changer	Indicates the cause of the change. For example, the field can contain the name of a user or a Discovery pattern.
CI ID	An internal ID for the CI or relationship in the CMDB.
CI Name	The name of the CI or the relationship type.
Filter by	Select an attribute type from the drop-down list to reduce the number of attributes appearing in the list.
New Value	The new value of the attribute.

Get Related CIs Report

Description	<p>Enables you to view the CIs related to a specified CI in a tree format.</p> <p>To access: In IT Universe Manager, click Get Related CIs Report  from the toolbar in the Related CIs tab.</p>
Important Information	<p>When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of Infrastructure Settings manager. For more details, see “Printing Reports” in <i>Reference Information</i>.</p>

The Get Related CIs Report includes the following elements (listed alphabetically):

GUI Element	Description
	Click to select a printing option for the report.
	Click to select a formatting option for the report data.
	Click to select an option for exporting the report.

GUI Element	Description
	Click to navigate through the results page by page or to jump to the first or last page.
	Click the Reset Columns Width button to reset the report columns to their original width.
	Click the Select Columns button to open the Select Columns dialog box, which enables you to determine which columns appear in the report.
<Related CIs data>	The report data consists of the CIs related to the selected CI, arranged in tree format with the selected CI as the root. The child CIs are arranged by CIT.
Generate	Click the Generate button to generate the data for the selected period.

IT Universe Manager Window

<p>Description</p>	<p>Enables you to define and manage the CIs and relationships in your views.</p> <p>The IT Universe Manager window contains the following panes:</p> <ul style="list-style-type: none"> ➤ View Explorer. Displays the CIs of a selected view. You can select the view from a drop-down list. For details, see “View Explorer” in <i>Reference Information</i>. ➤ Editing pane. Select one of the following tabs: <ul style="list-style-type: none"> ➤ Topology Map. For details, see “Topology Map” on page 216. ➤ Properties. For details, see “Properties Tab” on page 210. ➤ Related CIs. For details, see “Related CIs Tab” on page 213. <p>To access: Select Admin > Modeling > IT Universe Manager.</p>
<p>Important Information</p>	<p>When working in a view in IT Universe Manager, you can create new CIs, modify existing CIs, or delete CIs. All of these actions have a direct effect on the entire IT Universe model. For example, if you delete a CI in your view, that CI is deleted from the IT Universe model and no longer appears in any views.</p>

New CI Wizard


Description	<p>Enables you to enter basic information to define a new CI.</p> <p>To access: In IT Universe Manager, click the Insert CI or Insert Related CI icon in the toolbar or right-click a view or CI in View Explorer or a CI in the Topology Map and select New Related CI.</p>
Important Information	<p>The first step of the wizard is the Define General Properties dialog box. The next step depends on the selected CIT. For some CITs, the Next button takes you to the Define CIT-Specific Properties dialog box, followed by the Define CI Relationship dialog box for related CIs. For others, it takes you directly to the Define CI Relationship dialog box. For non-related CIs, the wizard does not take you to the CI Relationship dialog box.</p> <p>Note: When a CI is selected in View Explorer or the Topology Map, you can select either the Insert CI or the Insert Related CI options from the toolbar. When a view is selected in View Explorer, you can only select Insert CI.</p>
Included in Tasks	<p>“Populate an Instance View” on page 58, “Create and Populate an Instance View” on page 73</p>
Wizard Map	<p>The New CI Wizard contains:</p> <p>Define General Properties Dialog Box > (Define CIT-Specific Properties Dialog Box) > (Define Configuration Item Relationship Dialog Box)</p>

Define General Properties Dialog Box

Description	Enables you to enter basic information to define a new CI.
Important Information	<p>This is the first step of the New CI Wizard. Mandatory fields are denoted by a red asterisk.</p> <p>The general properties are common to all CITs. There are additional properties which may appear under general properties for specific CITs when they are defined as key properties of those CITs. For example, the Container field is defined as a key property for all CITs grouped under Host Resources.</p> <p>For general information on the New CI Wizard, see “New CI Wizard” on page 203.</p>
Wizard Map	<p>The New CI Wizard contains:</p> <p>Define General Properties Dialog Box > (Define CIT-Specific Properties Dialog Box) > (Define Configuration Item Relationship Dialog Box)</p>

The Define General Properties dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Allow CI Update	<p>When selected, this option enables the Discovery process to automatically update the CI properties with information that it discovers. If you change the value of a property supplied by the Discovery process, the value is overridden by the discovered value.</p> <p>When this option is cleared, the CI properties are not overridden by the Discovery process.</p>
Change State	<p>Indicates whether the CI has been changed (read-only value).</p> <p>Note: This field is only displayed for certain CIs.</p>
City	<p>The name of the city. The list is automatically updated when you select a country (or state, when applicable). Select an option from the list.</p>

GUI Element	Description
CI Type	<p>Enables you to select the CI Type for the new CI. The CI Type property is context sensitive, permitting you to select only the CITs that are appropriate for the selected CI or view.</p> <p>You can select the CI Type from the drop-down list by clicking the down arrow to the right of the CI Type box. This contains an abbreviated list of the most commonly used CITs as well as CITs that you have previously used.</p> <p>Alternatively, you can select from the CI Types Tree or CI Types Table by clicking the ellipsis button  next to the CI Type box. For details, see “Select Configuration Item Type Dialog Box” on page 215.</p> <p>These display all the available CITs that are appropriate for the context. You can toggle the display between the CI Types Tree and the CI Types Table using the button in the bottom left of the box.</p>
Country	The country in which the CI is located. Select an option from the list.
Created By	The user name of the administrator who manually created the CI, where applicable.
Create Time	The date and time when the CI was created.
Description	A description of the CI.
Enable Aging	<p>When this option is selected, the aging mechanism is enabled for this CI. It is selected by default for Discovery CIs. For details, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.</p> <p>Note: This field is only displayed for certain CIs.</p>
Include Related CIs	<p>This feature is only enabled for instance views.</p> <p>If the check box is selected, the CI is set to recursively display in the view all child CIs from the CMDB, and all CIs in the subtree for the CI are also displayed in the view.</p> <p>If the check box is not selected, the CI is set to display only child CIs that are manually added within the view.</p>

GUI Element	Description
Last Access Time	The time that the CI was last accessed, whether when being updated or being discovered by Discovery. This field is displayed only for certain CIs. This parameter is used by the aging mechanism. For details, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.
Name	The name of the CI.
Note	Enables you to enter other information about the CI.
Origin	An ID for the source that automatically created the CI, or the application where the CI was created.
State	The name of the state – when applicable for the selected country. The list is automatically updated when you select a country. Select an option from the list.
Tooltip Descriptions	Select to display tooltips for the fields in the wizard.
Updated By	The user name of the administrator who updated the CI properties.
Update Time	The date and time when the CI properties were last updated.
User Label	Enables you to define a display label for the CI. If no value is entered, the CI name appears as the default label.

Define CIT-Specific Properties Dialog Box

Description	Enables you to enter CIT-specific properties for certain CIs.
Important Information	Each CIT has fields for the specific properties relevant to that CIT. Click the Show Descriptions button on each page for more information on the properties of that CIT. Mandatory fields are denoted by a red asterisk.
Wizard Map	The New CI Wizard contains: Define General Properties Dialog Box > Define CIT-Specific Properties Dialog Box > (Define Configuration Item Relationship Dialog Box)

The Define CIT-Specific Properties dialog box includes the following elements:

GUI Element	Description
<Properties>	Enter the relevant information for the properties specific to the selected CIT. Fields designated with a red asterisk are mandatory. Note: Certain CITs have ID fields in the CIT-Specific Properties page which are automatically generated randomly and cannot be edited. These are indicated on the page as Auto-generated.
Tooltip Descriptions	Select to display tooltips for the fields in the wizard.

Define Configuration Item Relationship Dialog Box

Description	Enables you to define the relationship between the new CI and the CI selected in the view, as well as the properties of the relationship.
Important Information	This is the final step of the New CI Wizard, when creating a related CI.
Wizard Map	The New CI Wizard contains: Define General Properties Dialog Box > (Define CIT-Specific Properties Dialog Box) > Define Configuration Item Relationship Dialog Box

The Define Configuration Item Relationship dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Allow CI Update	When the check box is selected, the Discovery process automatically updates the relationship.
Change State	Indicates whether the relationship has been changed (read-only value).

GUI Element	Description
CI 1	The name of the CI on the first side of the relationship. This is the CI that you selected in the view.
CI 2	The name of the CI on the second side of the relationship. This is the new CI that you are creating.
Created By	The user name of the administrator who manually created the relationship, where applicable.
Create Time	The date and time when the relationship was created.
Description	A description of the relationship.
Enable Aging	Enables the aging mechanism for the CI being created. It is selected by default for Discovery CIs.
Last Access Time	The time that the CI was last accessed, whether when being updated or being discovered by Discovery. This field is only displayed for certain CIs.
Must	<p>When the check box is selected, the child CI is dominant when the percentage rule is used to calculate status for the parent CI. If the CI has low status, the parent must take the child CI status, overriding the percentage rule calculation if necessary. This is useful to give emphasis to an important CI. For example, you might want to define Must for a database CI, so that status is critical all the way up the subtree if the database falls, regardless of the status of the other CIs in the subtree.</p> <p>The Must status defined for a relationship applies to that relationship only – it is not used in any other relationships of the child CI.</p>
Name	The name of the CI.
Network Address	Defined only for route links. Indicates the destination network address to which this route is configured.
Note	Enables you to enter other information about the CI.
Origin	An ID for the source that automatically created the relationship, or the application where the relationship was created.

GUI Element	Description
Relationship Type	Enables you to define the type of relationship that is created between the two CIs. For most relationships, only the Depends On option is available.
Tooltip Descriptions	Select to display tooltips for the fields in the wizard.
Updated By	The user name of the administrator who updated the relationship properties.
Update Time	The date and time when the CI properties were last updated.
User Label	Enables you to define a display label for the relationship.
Weight	<p>When a weight value is entered in the box, the child CI is given more weight in percentage calculations, when the percentage rule is used to calculate status for the parent CI. For example, if a child CI is given a weight of 3, then it has three times more impact on the parent status calculation than its unweighted siblings.</p> <p>The weight defined for a relationship applies to that relationship only – it is not used in any other relationships of the child CI.</p>

Properties Tab

Description	<p>Enables you to edit basic information for an existing CI or relationship.</p> <p>To access: Use one of the following:</p> <ul style="list-style-type: none"> ▶ Select Admin > Modeling > IT Universe Manager > Properties. ▶ Right-click a CI in View Explorer or the Topology map and select Properties.
Important Information	<p>The Properties tab contains two panes:</p> <ul style="list-style-type: none"> ▶ General Properties includes general information about the CI or relationship. ▶ Other Properties includes properties specific to that CI and varies according to the type of CI or relationship. <p>The general properties are common to all CITs. Additional properties appear under the general properties for specific CITs when they are defined as key properties of those CITs. For example, the Container field is defined as a key property for all CITs grouped under Host Resources.</p> <p>Mandatory fields are denoted by a red asterisk.</p>

The Properties tab includes the following elements (listed alphabetically):

GUI Element	Description
Actual Deletion Period	The number of days after which the CI or relationship is deleted.
Allow CI Update	<p>When selected, this option allows the Discovery process to automatically update the CI or relationship properties with information that it discovers. If you change the value of a property supplied by the Discovery process, the value is overridden by the discovered value.</p> <p>When this option is cleared, the CI or relationship properties are not overridden by the Discovery process.</p>
Apply	Click Apply to save the changes made to the CI or relationship properties.

GUI Element	Description
Change State	Indicates whether the CI or relationship has been changed (read-only value).
City	The name of the city. The list is automatically updated when you select a country (or state, when applicable). Select an option from the list. Note: This field does not appear for relationships.
CI Type	The type of the CI or relationship (read-only value). For information about CITs in HP Universal CMDB, see <i>CI Attribute Customization</i> .
CMDB ID	The internal ID of the CI or relationship in the CMDB (read-only value).
Country	The country in which the CI is located. Select an option from the list. Note: This field does not appear for relationships.
Created By	The user name of the administrator who manually created the CI or relationship, where applicable (read-only value).
Create Time	The date and time when the CI or relationship was created.
Deletion Candidate Period	The number of days after which the CI or relationship becomes a candidate for deletion.
Description	A brief description of the CI or relationship.
Display Label	The name of the CI or relationship as it appears in View Explorer.
Enable Aging	Enables the aging mechanism for this CI or relationship. It is selected by default for Discovery CIs. This field is only displayed for certain CIs. For details, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.


GUI Element	Description
Include Related CIs	<p>This feature is only enabled for instance views.</p> <p>If the check box is selected, the CI is set to recursively display in the view all child CIs from the CMDB, and all CIs in the subtree for the CI are also displayed in the view.</p> <p>If the check box is not selected, the CI is set to display only child CIs that are manually added within the view. For details, see “Include Related CIs” on page 70.</p> <p>This element appears only in the CI Properties page, not in the Edit CI dialog box.</p>
Last Access Time	<p>The time that the CI or relationship was last accessed, whether when being updated or being discovered by Discovery. This field is only displayed for certain CIs.</p> <p>This parameter is used by the aging mechanism—for details, see “Removing Out of Date CIs Using the Aging Mechanism” on page 52.</p>
Name	The name of the CI or relationship.
Note	Enables you to enter other information about the CI or relationship.
Origin	An ID for the source that automatically created the CI or relationship, or the application where the CI or relationship was created (read-only value).
Other Properties	The Other Properties pane contains properties specific to the CI type of the selected CI or relationship.
Reset	Click the Reset button to restore the original property settings of the CI or relationship.
State	<p>The name of the state – when applicable for the selected country. The list is automatically updated when you select a country. Select an option from the list.</p> <p>Note: This field does not appear for relationships.</p>
Tooltip Descriptions	Select to display tooltips for the fields on the page.
Updated by	The user name of the administrator who updated the CI or relationship properties.



GUI Element	Description
Update Time	The date and time when the CI or relationship properties were last updated.
User Label	Enables you to define a display label for the CI or relationship. If no value is entered, the CI name appears as the default label.

Related CIs Tab

Description	<p>Displays a graphical depiction of the selected CI and its related CIs.</p> <p>To access: Select Admin > Modeling > IT Universe Manager > Related CIs.</p>
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The Related CIs tab includes the following elements:

GUI Element	Description
<Node>	<p>The nodes in the Topology Map represent CIs.</p> <p>Hold the pointer over a node to display its tooltip which describes the type of the CI.</p>
<Relationship>	<p>The links in the Topology Map represent relationships.</p> <p>Hold the pointer over a relationship to display its tooltip which describes the type of the relationship.</p>
<Toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i>
<p>Filtered Related in Database</p> 	<p>Opens a dialog box which displays the number of related CIs by type. Select the CI type you want to appear in the Topology Map results.</p> <p>Note: This option is available from a drop-down menu accessed by clicking the arrow next to Related in view in the toolbar.</p>


GUI Element	Description
Related in Database 	Displays a map containing the interdependencies of the selected CI within the entire CMDB. Note: This option is available from a drop-down menu accessed by clicking the arrow next to Related in view in the toolbar.
Related in view 	Displays a map containing the interdependencies of the selected CI within the current view.
Related number of hops	Click to open a dialog box which enables you to set the degree of separation of the related CIs to appear in the Topology Map. The degree must be between 1 and 3. Note: This option is available from a drop-down menu accessed by clicking the arrow next to Related in view in the toolbar.

Context Menu

The Related CIs tab includes the following elements (listed alphabetically) available by right-clicking a CI or view in the View Explorer pane or the Topology Map:

GUI Element	Description
<Topology Map right-click options>	All of the context menu options available in the Topology Map are also available in the Related CIs tab. For details, see the context menu description under “Topology Map” on page 216.
Next In Database	Displays all CIs in any layer from the database that are connected to the selected CI, on the same Topology Map. Note: This option is only enabled after selecting Related in Database from the toolbar.
Next In View	Displays all CIs in any layer from the current view that are connected to the selected CI, on the same Topology Map. Note: This option is only enabled after selecting Related in View from the toolbar.

Select Configuration Item Type Dialog Box

Description	<p>Enables you to select a CI type for a new CI from a table or tree.</p> <p>To access: In IT Universe Manager, click the ellipsis button  from the Define General Properties page of the New CI Wizard.</p>
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The Select Configuration Item Type dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<CI types>	The list of available CI types to select from when creating a new CI.
CI Type Tree/Table	Toggles between the tree view and table view of the available CI types.
Display all possible CITS	Select this option to display all possible CI types in the tree or table.
Display only CITS that match the current view	<p>Select this option to display in the tree or table only those CI types matching the current view.</p> <p>Note: This option is only available for pattern views.</p>

Topology Map

Description	<p>Displays the CIs of the currently selected view in graphical format.</p> <p>To access: Select Admin > Modeling > IT Universe Manager > Topology Map.</p>
Important Information	<p>You can customize the Topology Map context menu to include other commands (for example, ping, run a program, open a URL) from within CI Type Manager. For details, see “Create Configuration Item Type Wizard” in <i>CI Attribute Customization</i>.</p> <p>Note: For grouped CIs and the relationships between them, not all of the context menu options are active. Grouped CIs appear in parentheses in View Explorer and in the Topology Map. You can double-click a link to a grouped CI to open the Link Map, which displays the individual CIs and relationships. Right-click a CI or relationship in the Link Map to display the regular context menu. For details about grouping CIs, see “Group By Dialog Box” on page 230.</p>

The Topology Map includes the following elements (listed alphabetically):

GUI Element	Description
<Node>	<p>The nodes in the topology map represent CIs.</p> <p>Hold the pointer over a node to display its tooltip which describes the type of the CI.</p>
<Relationship>	<p>The links in the topology map represent relationships.</p> <p>Hold the pointer over a relationship to display its tooltip, which describes the type of the relationship.</p>
<Toolbar>	<p>For details, see “Toolbar Options” in <i>Reference Information</i>.</p>

Topology Map Context Menu

The IT Universe Manager window includes the following elements (listed alphabetically) available by right-clicking a CI, relationship, or view in the View Explorer pane or Topology Map:

GUI Element	Description
Actions	<p>Select one of the following options:</p> <ul style="list-style-type: none"> ▶ Add CI to Discovery Job. Displays the Add CI to Discovery Job dialog box, which enables you to manually invoke a Discovery job for the selected CI. You can use this option to discover additional information about the CI through one of the available Discovery jobs. ▶ Remove CI from Discovery Job. Displays the Remove CI from Discovery Job dialog box, which enables you to manually remove a CI from the Discovery job.
Attach Related CI	Opens the Attach Related CI Wizard. For details, see “Attach Related CIs Wizard” on page 195.
CI/Relationship History	Displays the CI History dialog box. For details, see “CI/Relationship History Dialog Box” on page 199.
Delete	<p>Enables you to delete the selected CI or relationship from the view and from the CMDB.</p> <p>Note: When you delete a parent CI, the selected CI and its children are removed from the view, but only the selected CI is removed from the database.</p>
Full View Recalculation	<p>Rebuilds the view by performing a full recalculation.</p> <p>Note: The recalculation may take a long time.</p> <p>Note: This option is only available in the context menu for the view, and not for the CIs.</p>
Go To View Definition	<p>Takes you directly to View Manager for the current view.</p> <p>Note: This option is only available in the context menu for the view, and not for the CIs.</p>

GUI Element	Description
Label	Select one of the following options: <ul style="list-style-type: none"> ▶ Edit Label. Opens the Edit Label dialog box which enables you to edit the name of the CI. ▶ Reset Label. Resets the CI name to its default value from the CMDB.
New Related CI	Opens the New CI Wizard. For details, see “New CI Wizard” on page 203.
Note	Select one of the following options: <ul style="list-style-type: none"> ▶ Add Note. Opens an editing box where you can add a note to the CI. ▶ Delete Note. Deletes all text saved in a note for the selected CI.
Open	Appears only for configuration file CIs. Opens the configuration file in a popup window.
Properties	Displays the Properties page for the selected CI or relationship. For details, see “Properties Tab” on page 210.
Refresh View	Select Refresh View to update the view. Note: This option is only available in the context menu for the view, and not for the CIs.
Set View Parameters	Appears if at least one node in the view has a parameterized node condition. Displays the Set View Parameters dialog box where you can edit the parameter of each condition. For details, see “Set View Parameters/Set View Element Parameters Dialog Box” on page 238. Note: This option is only available in the context menu for the view, and not for the CIs.
Show Differences	Appears only for configuration file CIs. When two such CIs are selected, the option is active. Displays the differences between the two configuration files in a popup window. For details, see “CI/Relationship History Dialog Box” on page 199.

GUI Element	Description
Straighten	Straightens the relationship between two nodes. This option is only available for relationships that have angles.
View Sublayer	Displays a popup window showing the CIs in the layer beneath the selected CI. Note: This option is only active for CIs with children.

Deleting CIs

Deleting a CI does not delete its child CIs. If the child CIs do not appear in any other view, they remain in the CMDB without appearing in a view. The child CIs might appear in the future in pattern views where they meet the pattern requirements.

One exception to this rule is when the relationship between a child and parent CI is a **Container link**; in that case, when the parent CI is deleted, the contained CI is also removed from the CMDB and the view. For example, if a host CI is the container for a child CPU CI, then when the host CI is deleted, the CPU is also removed from the CMDB.

If you delete a CI without first deleting the relationship between the CI and any child CIs that were added within the view, the child CIs are not removed from the view, and they move up to the root level. This does not apply when deleting CIs from the view when working in the Instance View Editor in View Manager.

When you delete a CI that was created by the Discovery process, the CI is restored the next time that Discovery runs (if the CI is still valid), and it reappears in all relevant pattern views.

Deleting Relationships


The Topology Map shows only the relationships for the CIs that are part of the current view; however, the same relationships may also be part of other views. When you delete a relationship from the current view, it is also deleted from the other views.

When a relationship is deleted, CIs that were added to the view are not removed. Following the relationship deletion, the CI is no longer related to any other CI in the view, and the CI is shown at the top level of the view. To remove the CI completely from the view (without deleting it from the CMDB), use the **Delete Relationship to Parent CI** option in the Instance View Editor.

When you delete a relationship that was created by the Discovery process, the relationship is restored the next time that Discovery runs (if the relationship is still valid), and it reappears in all relevant pattern views.

It can take a few minutes to delete subtrees, or multiple CIs and relationships, from a view.

View Discovery Wizard

<p>Description</p>	<p>Enables you to find recent changes in a configuration, by manually running an ad-hoc Discovery that rediscovers the CIs in a view. The Discovery Probe immediately runs the jobs that originally discovered the CIs.</p> <p> To access: In IT Universe Manager, select the CIs to be rediscovered and click the Rediscover View button in the toolbar.</p>
<p>Important Information</p>	<p>This wizard is displayed on condition that at least one Probe is connected to the server.</p>
<p>Included in Tasks</p>	<p>“Run an Ad-Hoc Discovery to Rediscover CIs” in <i>Discovery</i>.</p>
<p>Wizard Map</p>	<p>The View Discovery wizard contains:</p> <p>View Discovery Wizard (this page) > Choose Jobs for View Dialog Box > View Discovery Dialog Box > Discovered Changes Details Dialog Box</p>

The View Discovery Wizard includes the following elements (listed alphabetically):


GUI Element	Description
<Text box>	<ul style="list-style-type: none"> ▶ Includes an explanation of the wizard. ▶ Probes that are defined on the server but are not connected are listed; they are not included in the rediscovery of the CIs. ▶ Scheduling is ignored, that is, the job is run immediately, even if it is scheduled to run at a later time. ▶ Any Discovery policies connected to the job are also ignored.

Choose Jobs for View Dialog Box

Description	Enables you to choose the jobs that need to be run again. To access: Click the Next button in the View Discovery Wizard dialog box.
Included in Tasks	“Run an Ad-Hoc Discovery to Rediscover CIs” in <i>Discovery</i> .
Wizard Map	The View Discovery Wizard contains: View Discovery Wizard > Choose Jobs for View Dialog Box > View Discovery Dialog Box > Discovered Changes Details Dialog Box

The Choose Jobs for View dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select to enable the Discovery job.
Job Name	The Discovery job name.

GUI Element	Description
Relevant Probe	The probe which the Discovery job runs on. Click the ellipsis button  to open the Choose Probes dialog box and select the probe on which you want the Ad-Hoc view to run.
Triggered CIs Count	The number of CIs triggered by the Discovery job.

View Discovery Dialog Box

Description	Enables you to view the progress of the rediscover process. To access: Click the Finish button in the Choose Jobs for View dialog box.
Included in Tasks	“Run an Ad-Hoc Discovery to Rediscover CIs” in <i>Discovery</i> .
Wizard Map	The View Discovery Wizard contains: View Discovery Wizard > Choose Jobs for View Dialog Box > View Discovery Dialog Box > Discovered Changes Details Dialog Box

The View Discovery dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Discovered Changes	The number of changes that occurred to CITs since
Probe Name	The name of the probe on which the job is running.
Progress	The progress of the CI rediscovery.

Discovered Changes Details Dialog Box

Description	Enables you to view the changes that have occurred to the CITs in the selected jobs. To access: Click the Details button in the View Discovery dialog box.
Included in Tasks	“Run an Ad-Hoc Discovery to Rediscover CIs” in <i>Discovery</i> .
Wizard Map	The View Discovery Wizard contains: View Discovery Wizard > Choose Jobs for View Dialog Box > View Discovery Dialog Box > Discovered Changes Details Dialog Box

The Discovered Changes Details dialog box includes the following elements (listed alphabetically):

GUI Element	Description
CIT	The name of the CIT that changed.
Insert/Update Count	The number of new or updated CIs since the previous Discovery.
Deleted Count	The number of CIs that have been deleted since the previous Discovery run.

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View Manager User Interface

This chapter includes the pages and dialog boxes that are part of the View Manager user interface.

This chapter describes:	On page:
Add Rule/Edit Rule Dialog Box	226
Condition Dialog Box	226
Create New View/View Properties Dialog Box	227
Group By Dialog Box	230
Instance View Editor	232
Relationship Rules Dialog Box	237
Set View Parameters/Set View Element Parameters Dialog Box	238
View Manager Window	239

Add Rule/Edit Rule Dialog Box

Description	Enables you to add a new folding rule or edit an existing folding rule. To access: In View Manager, click Add or Edit from the Relationship Rules dialog box.
Important Information	You can define sibling and child rules for the same relationship between two CITs. However, you cannot define parent and child rules for the same relationship, or left sibling and right sibling rules.
Included in Tasks	“Pattern View Workflow” on page 74
Useful Links	“Relationship Rules Dialog Box” on page 237



The Add Rule/Edit Rule dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Node 1	Select the required Node1 node in the Node1 list.
Node 2	Select the required Node2 node in the Node2 list.
Relationship	From the Relationship list, select an available relationship connecting the Node1 node to the Node2 node. (Enabled only after you define both CITs.)
Rule	From the Rule list, select a folding rule: Parent , Right Sibling , Left Sibling , or Child . For details, see “Adding Folding Rules to Relationships” on page 57.

Condition Dialog Box

Description	Displays the different CI groupings you have defined for the Topology Map. To access: In View Manager, select View Node Definition or Relationship Definition from the context menu in the Editing pane.
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The Condition dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Moves selected row up.
	Moves selected row down.
Add	Opens the Group By dialog box which enables you to define a new CI group. For details, see “Group By Dialog Box” on page 230.
Data	Displays the attribute used to define the group, for a group defined by attribute.
Delete	Deletes the selected CI group.
Edit	Opens the Group By dialog box which enables you to edit the selected CI group. For details, see “Group By Dialog Box” on page 230.
Group By	The criteria by which the CI group is defined.
Label	The label of the CI group.
Minimum	The minimum number of matching CIs required to create the group.

Create New View/View Properties Dialog Box

Description	Enables you to define a new view or edit the properties of an existing view. To access: In View Manager, click the New icon from the toolbar or select Properties from the context menu available in the Views pane.
Important Information	TQL queries should only be created by administrators with an advanced knowledge of the TQL system.
Included in Tasks	“Create and Populate an Instance View” on page 73

The Create New View dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Advanced	Click to open the Advanced area of the dialog box.
Based on TQL	<p>Select the check box to base the view on an existing TQL. Select the TQL query from the drop-down list. Only queries of type view appear in the list. If the query you want does not appear in the list, go to Query Manager and save it as a type view query. For details, see Chapter 30, “Query Manager User Interface.”</p> <p>Clear the check box to define a new TQL with the same name as the view. The TQL name appears in the Based on TQL window when you enter it in the View Name window.</p> <p>Note: This field is only relevant for pattern views.</p>
Description	A description of the view.
Instance View	Select to create an instance view.
Pattern View	Select to create a pattern view.
View Name	The name of the view.

Advanced Area

The Advanced area of the dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Ad Hoc View	When the check box is selected, the view is defined as an Ad-hoc view. An Ad-hoc view is not updated automatically as changes occur in the system. The view is updated only when you schedule an update using the Scheduler. For details, see Chapter 21, “Scheduler User Interface.”
Merge Identical Instances	When the check box is selected, identical instances that appear on the same layer in this view are automatically merged into one symbol in the editing pane. This helps you remove redundant information and sharpen the view’s focus. For details, see “Merge Identical Instances” on page 77.
Organization Name	The name of the organization related to the query.
Persistent View	Defines whether you want the selected view to always remain in the system memory. You should use this option only for views that are used frequently.
Service Name	The name of the service related to the query.
Simple	Click to collapse the Advanced area of the dialog box.
Track Changes	Select to be notified when CIs are added or removed. The changes are tracked in the system by creating daily snapshots of the view.
TQL Description	A description of the query. This field is only relevant for pattern views.
TQL Priority	From the TQL Priority list, select a priority level for the new query (Low, Medium, High, Express). This setting determines how often the query should be rerun automatically by the system to include updated information from the CMDB. Note: This field is only relevant for pattern views.

Group By Dialog Box

Description	Enables you to define a new grouping of CIs or to edit an existing one. To access: In View Manager, click Add or Edit from the Condition dialog box.
Important Information	Grouped CIs appear in the View Explorer pane in IT Universe Manager in parentheses.

The Group By dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Attribute	Select to group CIs of multiple CI types in the Topology Map, according to the attribute selected from the list. A CI can be a member of multiple groups.
Attribute Name	If you are grouping by attribute, select the appropriate Attribute Name.
Configuration Item Type	Select to group CIs in the Topology Map by their CI type.
Group Label	Enter the label of the group. Note: This field is optional.
Group List	If you are grouping by attribute, define the specific groups of the selected attribute to be created. For example, to display two groups of IP addresses that end between 0 and 100, enter 0-50, 51-100. Any IPs that fall outside this group are placed automatically into the Others group.

GUI Element	Description
Mask to group by	<p>If you are grouping by attribute, enter a regular expression, as follows:</p> <ul style="list-style-type: none"> ▶ In the first field, enter the regular expression pattern. This is the structure of the selected attribute. ▶ In the second field, enter the group number. This is the part of the regular expression pattern to focus on when creating the group. <p>For details, see “Grouping By Attribute Properties” on page 77.</p>
Minimum in group	<p>Enter the minimum number of matching CIs required to create the group. By default there must be at least one CI in the group.</p> <p>Note: This field is optional.</p>
TQL Node	<p>Select to group all CIs of the same CI type that fulfill the node definition criteria. By default, these CIs appear in the Topology Map under a folder containing the name of the selected TQL node and an automatically added identification number.</p>

Instance View Editor

Description	<p>Enables you to add or remove existing CIs from instance views and to define new CIs to be added to the view.</p> <p>To access: In the Views pane of View Manager, select the instance view you want to edit. The Instance View Editor opens in the Editing pane. You can also select Go To View Definition from within the view in IT Universe Manager.</p>
Important Information	<p>In the editing pane, a context menu is available for views and CIs. The menu for views includes the Create New CI option only. The context menu for CIs includes the following options:</p> <ul style="list-style-type: none"> ▶ Create New CI ▶ Edit CI ▶ Display All CMDB Children ▶ Hide All CMDB Children ▶ Delete Relationship to Parent CI <p>When you make a change in the Instance View Editor, it affects the entire CMDB. For example, if you create a relationship between two CIs, they are now related and this is reflected in other views that match the new pattern. All changes made in the Instance View Editor only take effect when the view is saved.</p>
Included in Tasks	"Create and Populate an Instance View" on page 73






Left Pane



Description	<p>The left pane of the Instance View Editor provides the list of CIs that can be selected to add to your view using the buttons described below. You can select multiple CIs using the CTRL key. The left pane functionality follows the standard View Explorer functionality. For details, see "View Explorer User Interface" in <i>Reference Information</i>.</p>
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Right Pane

Description	In the edit pane (the right pane of the Instance View Editor), select the CI to which you want to add the selected CIs. You can select multiple CIs using the CTRL key – the added CIs are repeated under each selected CI.
Important Information	<p>The Instance View Editor enables you to add the selected CIs to the view being edited:</p> <ul style="list-style-type: none">▶ Add the CIs with Display all CMDB children status, so that the CIs are added to the edited view together with all recursive child CIs from the CMDB.▶ Add the CIs to the edited view together with all recursive child CIs from the selected view only.▶ Add the CIs with Display only manually added children status, so that the CIs are added to the edited view without any child CIs.

The right pane of the Instance View Editor includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Click to add the selected CIs in the left pane to the CIs in the edit pane along with all the children of the selected CIs in the current view. In this case, CIs added to the view later do not appear in the Instance View Editor. However, if a child CI is deleted from the view, it is deleted from the entire universe and no longer appears in the Instance View Editor. Similarly, if the relationship between a parent and child CI is deleted, it is also updated in the Instance View Editor (the child CI appears on the same level as the parent CI).</p> <p>Note: This option is only active when the View Explorer pane of the Instance View Editor is in Browse mode. In Search mode, the option is disabled.</p>
	<p>Click to add the selected CIs in the left pane to the CIs in the edit pane along with all the children of the selected CIs in the CMDB. In this case, the view is dynamically updated whenever any change is made in the CMDB (addition of CIs, deletion of CIs or deletion of relationships).</p>
	<p>Click to add the selected CIs in the left pane to the CIs in the edit pane without adding the children of the CI.</p>
	<p>The View name is the root of the CI tree in the right pane. You can expand the tree to see all the CIs in the view.</p>
	<p>Hold the pointer over the Tip button to display a tooltip with useful information about the Instance View Editor.</p>



GUI Element	Description
<CIs>	<p>The CIs listed under the view name represent the CIs appearing in that view. Select the relevant CI in order to perform the selected action for that CI by clicking the buttons or selecting from the context menu.</p> <p>Each CI in the edit pane has a tooltip showing:</p> <ul style="list-style-type: none"> ▶ the CI type, for example, Application. ▶ the child CI rule in effect for the CI. This states Display all CMDB children if the CI is set to include all its child CIs, or Display only manually added children if the CI is set to exclude all child CIs apart from those added to it within the current view. For more information, see “Child CI Rule Functionality” on page 68. ▶ the total number of CIs in the subtree under the CI, within the current view (the total is recalculated when the view is saved).
<p>Create New CI</p> 	<p>Select the Create New CI option from the CI context menu or click the Create New CI button to create a new CI. The Define General Properties dialog box opens.</p>
<p>Delete Relationship to Parent CI</p> 	<p>Select the Delete Relationship to Parent CI option from the CI context menu or click the Delete Relationship to Parent CI button to delete the relationship to the parent CI. Using this option disconnects the child CI from the parent and removes the CI from the view (unless it appears elsewhere in the view). When you save your changes in the Instance View Editor, the relationship is deleted from the CMDB, so the CI no longer appears as a child of the parent CI in any view.</p> <p>Any child CIs in the subtree under the disconnected CI are also removed from the view, (without affecting their relationship with the disconnected CI). If there are other instances of the disconnected CI (or any of its children) anywhere else in the view, these other instances are not affected, they remain in the view.</p> <p>If you create a CI during the current Instance View Editor session, but then use the Delete Relationship to Parent CI option to remove it before saving it to the CMDB, the new CI is never created in the CMDB.</p>

GUI Element	Description
<p data-bbox="311 222 525 279">Display All CMDB Children</p> 	<p data-bbox="554 222 1216 413">Select Display All CMDB Children from the CI context menu or click the Display All CMDB Children button to display all the child CIs of the selected CI. All child CIs that exist in the CMDB under the parent CI are added to the view. (If the parent CI is then deleted from the view, all the child CIs are deleted as well.)</p> <p data-bbox="554 430 1216 517">All the child CIs are shown with faded icons and in italicized text, including any that were manually added to the parent before its status changed.</p>
<p data-bbox="311 543 396 565">Edit CI</p> 	<p data-bbox="554 543 1216 630">Select the Edit CI option from the CI context menu or click the Edit CI button to edit the selected CI. The Edit CI Properties dialog box opens.</p>
<p data-bbox="311 656 525 713">Hide All CMDB Children</p> 	<p data-bbox="554 656 1216 873">Select Hide All CMDB Children from the CI context menu or click the Hide All CMDB Children button to hide all child CIs of the selected CI. All child CIs in the subtree under the parent CI are hidden, whether they were added manually or recursively. If the subtree includes a CI created during the current Instance View Editor session and not yet saved, that CI is removed completely and is never created in the CMDB.</p>

Relationship Rules Dialog Box

Description	Enables you to define multiple relationship rules. To access: In View Manager, select Relationship folding rules from the context menu in the Views pane of View Manager.
Important Information	As an alternative to adding folding rules, you can choose to define multiple relationship rules. You define relationship rules to define the structure between CITs in a view. This is in contrast to folding rules where you define the structure of two nodes connected to a specific relationship. For example, if one of the view's nodes is a host, you can specify different relationships for Windows, UNIX, router, and so on. By assigning different folding rules to different CITs, views can encompass and represent additional query data. Note: If both folding and relationship rules are defined, the definitions for the folding rules override the definitions for relationship rules.
Included in Tasks	"Pattern View Workflow" on page 74
Useful Links	"Add Rule/Edit Rule Dialog Box" on page 226

The Relationship Rules dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Moves selected row up.
	Moves selected row down.
Add	Opens the Add Rule dialog box where you can add a rule. For details, see "Add Rule/Edit Rule Dialog Box" on page 226.
Delete	Deletes the selected rule.

GUI Element	Description
Edit	Opens the Edit Rule dialog box where you can edit the selected rule. “Add Rule/Edit Rule Dialog Box” on page 226.
Node 1	The node at one end of the relationship.
Node 2	The node at the other end of the relationship.
Relationship	The type of relationship.
Rule	The relevant folding rule.

Set View Parameters/Set View Element Parameters Dialog Box

Description	<p>Enables you to edit the predefined parameters of conditions of nodes in a view.</p> <p>To access: In View Manager, right-click a view in the Views pane and select Set View Parameters from the context menu or right-click a node in the Editing pane and select Set View Element Parameters from the context menu.</p>
Important Information	<p>When you select Set View Element Parameters from the right-click menu for a node in the editing pane, the dialog box displays only the conditions for the selected node. When you select Set View Parameters from the right-click menu in the Views pane, the dialog box displays any conditions that are defined for all nodes in the view.</p>

The Set View Parameters/Set View Element Parameters dialog box includes the following elements:

GUI Element	Description
<Element name>	For each element, every condition appears on a separate line. You can edit the parameter by clicking on it to open the editing window.









View Manager Window

Description	<p>Enables you to create, edit, and save a view.</p> <p>The View Manager window contains the following panes:</p> <ul style="list-style-type: none"> ▶ Views pane. Displays a hierarchical tree structure of the views that you defined. ▶ Editing pane. Displays the currently selected view, which consists of nodes and the relationships between them. ▶ CI Types Pane. Displays a hierarchical tree structure of the available CI types. ▶ Information Pane. Displays properties, conditions, and cardinality for the selected node or relationship. <p>To access: Select Admin > Modeling > View Manager.</p>
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Views Pane

Description	Enables you to select a view to edit.
Important Information	The Views Pane contains a hierarchical file folder system to help you organize your views, displayed in the Folders pane. Predefined folders are provided for the out-of-the-box views; you can modify these folders, or add additional folders according to your organization's requirements.

The Views pane includes the following elements (listed alphabetically):

GUI Element	Description
	Create a new folder.
	Define a new view. For details, see “Create New View/View Properties Dialog Box” on page 227.
	Delete the selected folder or view.
	Refresh the data content of the hierarchical tree structure that may have been modified by other users.
	Open the View Properties dialog box. For details, see “Create New View/View Properties Dialog Box” on page 227.
	Import XML files that contain saved views to View Manager.
	Denotes a pattern view. When you select a pattern view, the Editing pane displays a Topology Map of the selected view.
	Denotes an instance view. When you select an instance view, the Editing pane displays the Instance View Editor.
<Folder>	Denotes a view folder.
Root	Denotes the top level folder, containing all other view folders and the First Service View.

Context Menu Options

The View Manager Window includes the following elements (listed alphabetically) available by right-clicking a folder or view in the Views pane:

GUI Element	Description
Activate/Deactivate View	If the view is active, you can select Deactivate View to make it inactive. If the view is inactive, you can select Activate View to activate it. Inactive views are not recalculated and cannot be selected in IT Universe Manager (they appear in red in the view list).
Delete	Deletes a selected folder or view.
Export	Displays a standard Save As dialog box, enabling you to save the view as an XML script.
Go to IT Universe	Takes you to IT Universe Manager and opens the selected view.
New	Displays the Create New View dialog box which enables you to define a new view. For details, see “Create New View/View Properties Dialog Box” on page 227.
New Folder	Creates a new view folder.
Properties	Displays the View Properties dialog box which enables you to change the description of the view, the TQL priority, the TQL description and other details. For details, see “Create New View/View Properties Dialog Box” on page 227.
Relationship folding Rules	Displays the Relationship Rules dialog box which enables you to define multiple relationship rules. For details, see “Relationship Rules Dialog Box” on page 237.
Rename Folder	Enables you to rename the view folder.

GUI Element	Description
Save/Save As	Saves the view to the CMDB after you have modified it. Note: If you exit View Manager without saving, a confirmation dialog box is displayed, requesting that you save your view.
Set View Parameters	Appears if at least one node in the view has a parameterized node condition. Displays the Set View Parameters dialog box where you can edit the parameter of each condition. For details, see “Set View Parameters/Set View Element Parameters Dialog Box” on page 238.

Editing Pane

Description	Displays the selected view, which consists of nodes and the relationships between them. <ul style="list-style-type: none"> ▶ When you select a folder in the Views pane, the Editing pane is empty. ▶ When you select a view in the Views pane, the Editing pane displays the selected view, which consists of nodes and the relationships between them.
Important Information	After defining a view in the Editing pane, you save it by clicking the Save button in the toolbar or by selecting Save from the context menu in the Views pane.
Useful Links	For information on defining a TQL query, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i> .

The Editing pane includes the following elements (listed alphabetically):

GUI Element	Description
<Node>	A component from which TQL queries are built.
<Relationship>	The entity that defines the relationship between two nodes.

GUI Element	Description
<Right-click options>	For details, see “Topology Query Language Context Menu Options” in <i>Reference Information</i> .
<Toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i> .
<Tooltip>	<p>Hold the cursor over a node or relationship to view its tooltip.</p> <p>The tooltips contain the following information:</p> <ul style="list-style-type: none"> ▶ Element name. The name of the node. ▶ CI Type. The CIT of the CI as defined in the CI Type Manager. For details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>. ▶ Visible. Indicates whether the selected node is visible in the Topology map. ▶ Cardinality. Relevant for nodes with relationships. Defines how many nodes you expect to have at the other end of the relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only the hosts that are connected 1 to 3 IPs. ▶ Folding Rule. Relevant for relationships. Indicates the folding rule defined for the relationship. ▶ Condition. Appears only if a condition has been defined for the node or relationship.
Definition tab	In Definition mode, you define the view by adding nodes and relationships.
Preview tab	In Preview mode, you view the CIs which match the pattern of the view, in a list on the left side of the page and in graphical format on the right side. You can right-click a CI to view its properties.

CI Types Pane



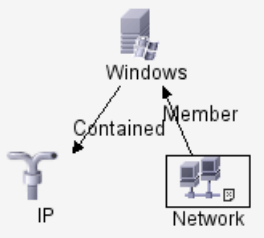
Description	<p>Displays a hierarchical tree structure of the CI Types found in the CMDB. For more details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The number of instances of each CIT in the CMDB is displayed to the right of each CIT.</p> <p>To create or modify a TQL query, click and drag nodes to the Editing pane and define the relationship between them. Your changes are saved to the CMDB. For details, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>
Important Information	<p>The CI Types pane is part of the following managers: View Manager, Enrichment Manager, Query Manager, Correlation Manager, Report Manager, and Trigger TQL Editor.</p>
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

Information Pane

Description	<p>Displays the properties, conditions, and cardinality for the selected node and relationship.</p>
Important Information	<p>The Information pane is part of the following managers and user interfaces: View Manager, Correlation Manager, Report Manager, Enrichment Manager, and Trigger TQL Editor.</p>
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

The Information pane includes the following elements (listed alphabetically):

GUI Element	Description
Cardinality	Cardinality defines how many nodes you expect to have at the other end of a relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only those hosts that are connected to between one and three IPs. For details, see “Cardinality Tab” in <i>Reference Information</i> .
Condition	The attribute conditions defined for the node or the relationship. For details, see “Attribute Tab” in <i>Reference Information</i> .
Folding Rule	Displays the folding rule defined for the selected relationship. For details about folding rules, see “Adding Folding Rules to Relationships” in <i>IT World Model Management</i> . Note: This pane appears only when a relationship is selected in View Manager.

GUI Element	Description
<p>Properties</p>	<ul style="list-style-type: none"> ➤ To open the Node/Relationship Condition dialog box, select a node or relationship in the Editing pane and click the Edit Condition  button. For details, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ➤ CI Type. The CIT of the selected node/relationship. ➤ Visible. A tick signifies that the selected node/relationship is visible in the topology map. When the node/relationship is not visible, a box  appears to the right of the selected node/relationship in the Editing pane: <div data-bbox="539 604 856 899" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  </div> <ul style="list-style-type: none"> ➤ Include subtypes. Display both the selected CI and its descendents in the topology map.

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Correlation Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Correlation Manager interface.

This chapter describes:	On page:
Affected Nodes Dialog Box	247
Correlation Definition Dialog Box	248
Correlation Manager Window	251
Create New Correlation Rule/Properties Dialog Box	258
Details Dialog Box	259

Affected Nodes Dialog Box

Description	Define which node in the TQL query is the trigger Correlation node and which nodes are affected by the changes that occurred in the system. Note: This information should be known beforehand, when first creating the TQL query, but the definition is performed here. To access: Right-click the node or relationship that functions as a trigger and select Define Affected . The Affected Nodes dialog box opens to display the nodes in the TQL.
Included in Tasks	“Define Trigger and Affected Nodes” on page 83.

The Affected Nodes dialog box includes the following element:

GUI Element	Description
Affected Nodes pane	Contains a list of the Correlation nodes in the Correlation rule. Select the nodes to be affected by the trigger node.

Correlation Definition Dialog Box

Description	Set conditions for defining affected nodes. To access: Click Add in the Details dialog box.
Included in Tasks	“Set Conditions for Defining Affected Nodes” on page 84

The Correlation Definition dialog box includes the following element:

GUI Element	Description
Description	A description of the Correlation rule you are defining.

The Correlation Definition dialog box also includes the following areas:

- “Conditions Area” on page 249
- “Scope Area” on page 249
- “Affected Severity Area” on page 250

Conditions Area

Description	<p>Define a condition for the node's attributes. When this condition is met, the simulated change in the system is triggered.</p> <p>For example, you can determine a Correlation condition that states that the operational state of the node is other than Normal. When the operational state of the node instance changes and is no longer Normal, the condition is met and the simulated changes in the system are triggered.</p> <p>To access: Click Add in the Details dialog box.</p>
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The Conditions area includes the following elements (listed alphabetically):

GUI Element	Description
State	<p>Choose the required state. The states that appear in the list are the states that are defined in the State Manager. For details, see "State Manager User Interface" on page 191.</p>
Operator	<p>Select the required operator. For a list of the operators you can use for defining an attribute condition, see "Attribute Operator Definitions" in <i>Reference Information</i>.</p>
Value Comparison	<p>Select the required attribute.</p>

Scope Area

Description	<p>Define how many instances of the trigger node should fulfill the conditions for triggering the changes in the system.</p> <p>You can apply the trigger conditions not only to one of the instances of a trigger node, but also to a certain percentage of the trigger instances, or to all of them.</p> <p>For example, you can define that impact is calculated when at least 10% of the system's hosts are down.</p> <p>To access: Click Add in the Details dialog box.</p>
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The Scope area includes the following elements (listed alphabetically):

GUI Element	Description
All	All instances should fulfill the conditions.
Any	One instance or more should fulfill the conditions.
Range	A certain percentage of all instances should fulfill the conditions. For example, if you enter a range of 50% to 100%, the changes are triggered when 50% or more of the instances meet the conditions.

Affected Severity Area

Description	Define the severity of the Correlation impact. To access: Click Add in the Details dialog box.
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The Affected Severity area includes the following elements (listed alphabetically):

GUI Element	Description
Fixed severity	Define a fixed severity level for every system change generated. Then, select the required severity level from the list.
Function	Select Function (displayed when you selected the All and Range options in the Scope area) to define a severity level for the system changes, as a function of the severity levels of all the trigger node instances that are included in the range. From the list, select either Average or Max . For example, if you select Average , the severity level of the system changes is the average severity of all the trigger instances.

GUI Element	Description
Severity relative to trigger severity (%)	Select Severity relative to trigger severity (%) (displayed when you selected the Any option in the Scope area) to define a severity level for each system change that is relative (as a percentage) to the severity of the trigger event. Enter the percentage in the box provided.

Correlation Manager Window

Description	Define Correlation rules. To access: Select Admin > Modeling > Correlation Manager .
Important Information	When selecting nodes to function as Correlation triggers, they must comply with certain restrictions. For details, see “TQL Query Validation Restrictions” in <i>Reference Information</i> .
Included in Tasks	“Create a Correlation Rule” on page 81
Useful Links	“Correlation Manager Overview” on page 79









The Correlation Manager window includes the following panes:

- “Correlation Rules Pane” on page 252
- “Editing Pane” on page 254
- “CI Types Pane” on page 255
- “Information Pane” on page 256

Correlation Rules Pane

Description	<p>Displays a hierarchical tree structure of predefined folders and Correlation rules. Each Correlation rule is associated with a TQL query.</p> <p>You can create your own query, or work with the out-of-the-box (factory) queries provided with your HP Universal CMDB installation.</p> <p>The predefined folders are provided for the out-of-the-box queries; you can modify these folders, or add additional folders according to your organization's requirements.</p>
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The Correlation Rules pane includes the following elements:

GUI Element	Description
	Creates a new folder.
	Creates a Correlation rule. Opens the Create New Correlation Rule/Properties dialog box.
	Deletes the selected folder or Correlation rule.
	Refreshes the data content of the hierarchical tree structure that may have been modified by other users.
	Opens the Create New Correlation Rule/Properties dialog box. Enables you to change the description of the rule.
	Imports XML files that contain saved Correlation rules to the Correlation Manager.
	Represents a folder.
	Represents a Correlation rule.




The Correlation Rules pane includes the following options (listed alphabetically), which are available by right-clicking a folder or Correlation rule:

GUI Element	Description
Delete	Delete the selected folder or Correlation rule.
Export	Displays a standard Save As dialog box, enabling you to save the Correlation rule as an XML script. This option can be used to move a Correlation rule from one workstation to another, provided the related TQL query is also relocated.
New	Creates a Correlation rule. Opens the Create New Correlation Rule/Properties dialog box.
New Folder	Creates a new folder.
Properties	Opens the Create New Correlation Rule/Properties dialog box. Enables you to change the description of the rule.
Save	(Enabled only when a new Correlation rule is created or when changes are made to an existing one.) Saves the Correlation rule to the CMDB.
Save As	Displays the Save As dialog box, enabling you to define a new name and description for a query. This option can be used for creating new Correlation rules based on an existing one.

Editing Pane

Description	<p>Displays the selected Correlation rule, which consists of nodes that are defined in the TQL query and the relationships between them.</p> <ul style="list-style-type: none"> ▶ When you select a folder in the Correlation Rules pane, the Editing pane is empty. ▶ When you select a Correlation rule in the Correlation Rules pane, the Editing pane displays the selected rule, which consists of TQL nodes that are defined in the TQL query and the relationships between them.
Useful Links	“Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>
Important Information	When selecting nodes to function as Correlation triggers, they must comply with certain restrictions. For details, see “TQL Query Validation Restrictions” in <i>Reference Information</i> .

The Editing pane includes the following elements (listed alphabetically):

GUI Element	Description
	Indicates a trigger node. Located to the right of the trigger node's icon.
	Indicates an affected node. Located to the right of the affected node's icon.
	Indicates nodes that are both affected and trigger nodes.
<Node>	A component from which TQL queries are built.
<Relationship>	The entity that defines the relationship between two nodes.
<Right-click> options	For details, see “Topology Query Language Context Menu Options” in <i>Reference Information</i> .
<Toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i> .

GUI Element	Description
<Tooltip>	<p>Hold the cursor over a node or relationship to view its tooltip.</p> <p>The tooltips contain the following information:</p> <ul style="list-style-type: none"> ▶ Element name. The name of the node. ▶ CI Type. The CIT of the node as defined in the CI Type Manager. For details, see <i>CI Attribute Customization</i>. ▶ Definitions of the selected nodes and relationships. The attribute conditions, as described in “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ▶ Names of the trigger and the affected nodes. This is only relevant if the node over which the cursor is hovering is the trigger node.
Define Affected	Displays the Affected Nodes dialog box.

CI Types Pane

Description	<p>Displays a hierarchical tree structure of the CI Types found in the CMDB. For more details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The number of instances of each CIT in the CMDB is displayed to the right of each CIT.</p> <p>To create or modify a TQL query, click and drag nodes to the Editing pane and define the relationship between them. Your changes are saved to the CMDB. For details, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>
Important Information	The CI Types pane is part of the following managers: View Manager, Enrichment Manager, Query Manager, Correlation Manager, Report Manager, and Trigger TQL Editor.


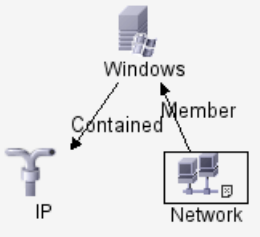
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86
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Information Pane


Description	Displays the properties, conditions, and cardinality for the selected node and relationship.
Important Information	The Information pane is part of the following managers and user interfaces: View Manager, Correlation Manager, Report Manager, Enrichment Manager, and Trigger TQL Editor.
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

The Information pane includes the following elements (listed alphabetically):

GUI Element	Description
Cardinality	Cardinality defines how many nodes you expect to have at the other end of a relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only those hosts that are connected to between one and three IPs. For details, see “Cardinality Tab” in <i>Reference Information</i> .
Condition	The attribute conditions defined for the node or the relationship. For details, see “Attribute Tab” in <i>Reference Information</i> .

GUI Element	Description
Folding Rule	<p>Displays the folding rule defined for the selected relationship. For details about folding rules, see “Adding Folding Rules to Relationships” in <i>IT World Model Management</i>.</p> <p>Note: This pane appears only when a relationship is selected in View Manager.</p>
Properties	<ul style="list-style-type: none"> ➤ To open the Node/Relationship Condition dialog box, select a node or relationship in the Editing pane and click the Edit Condition  button. For details, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ➤ CI Type. The CIT of the selected node/relationship. ➤ Visible. A tick signifies that the selected node/relationship is visible in the topology map. When the node/relationship is not visible, a box <input type="checkbox"/> appears to the right of the selected node/relationship in the Editing pane: <div data-bbox="576 826 893 1121" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  <pre> graph TD IP[IP] -- Contained --> Windows[Windows] Network[Network] -- Member --> Windows subgraph NetworkBox [] Network end </pre> </div> <ul style="list-style-type: none"> ➤ Include subtypes. Display both the selected CI and its descendents in the topology map.

Create New Correlation Rule/Properties Dialog Box

Description	<p>Create or modify a Correlation rule.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Right-click anywhere in the Correlation Rules pane and click New or click the New  button. or ▶ Right-click a Correlation rule and select Properties.
Important Information	<ul style="list-style-type: none"> ▶ Any major changes made to the TQL query after creating a Correlation rule causes the system to delete the rule. These changes include deleting a root cause or affected node or changing the Min and Max relationship definitions (for details, see “Cardinality Tab” on page 169). ▶ Minor changes, such as adding a node to the TQL, do not cause the deletion of the rule. ▶ The Correlation TQL that serves as the basis of the Correlation rule, must comply with the restrictions described “TQL Query Validation Restrictions” on page 127. If the TQL is not valid, it cannot be used for the creation of a Correlation rule.
Included in Tasks	“Create a Correlation Rule” on page 81
Useful Links	“Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i> .

The Create New Correlation Rule dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Advanced	Includes the following elements: <ul style="list-style-type: none"> ▶ TQL Priority list. From the Priority list, select a priority level for the new TQL query (Low, Medium, High, Express). This setting determines how often the query is rerun automatically by the system to include updated information from the CMDB. ▶ TQL Description. (Optional) Enter a description of the TQL query. ▶ UCMDB. Enables you to run a Correlation rule in the Topology View Application tab in Universal CMDB. For details, see “Topology View Application Functionality” on page 120. ▶ Others. Currently not supported.
Simple	Hide the options that appear when you click the Advanced button.
Based on TQL	Select this check box if you want to link a Correlation rule to an existing TQL query. From the Attach TQL list, select the Correlation TQL to which you want to link the rule.
Description	(Optional) Enter a description of the rule.
Rule Name	Enter a unique name for the Correlation rule.

Details Dialog Box

Description	Displays the new Correlation rule you created in the Correlation Definition dialog box. To access: Click Next in the Affected Nodes dialog box.
Included in Tasks	“Define Trigger and Affected Nodes” on page 83.

The Details dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Description	The description of the new Correlation rule.
State	The category you chose from the Category list in the Correlation Definition dialog box.


29

Report Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Report Manager user interface.

This chapter describes:	On page:
Add Attributes Dialog Box	262
Add/Edit Function Dialog Box	263
Attribute Columns Dialog Box	264
Create New Report Definition/Properties Dialog Box	264
Edit Attribute Dialog Box	266
Filter CIs Dialog Box	266
Gold Master Report Pane	267
Report Manager Window	269
Report Node Definition Dialog Box	277
Set Node Order Dialog Box	279


Add Attributes Dialog Box

Description	Enables you to define the content of the selected Report node's columns. To access: Click the Add Attributes  button in the Report Node Definition dialog box.
Included in Tasks	"Define a Report Rule" on page 86
Important Information	Attributes that have already been selected in the Report Node Definition dialog box, do not appear on the list.

The Add Attributes dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<Click a column header>	For details, see "Working with Tables" in <i>Reference Information</i> .
<Right-click a column header>	For details, see "Working with Tables" in <i>Reference Information</i> .
Add	Select the check box of the attributes you want to appear in the report. The selected attributes appear in the Report Node Definition dialog box. Each attribute you add represents a column in the report.
Attribute	The name of the attribute.
Column Title	The column title, by default, takes the same name as the selected attribute. You can change the title of the column in the Edit Attribute dialog box.
Select All	Include all the node's attributes in the report.
Unselect All	Remove all the attributes from the report.

Add/Edit Function Dialog Box

Description	Enables you to define which of the node's functions and parameters you want to include in the report. To access: Click the Add Function  button in the Report Node Definition dialog box.
Included in Tasks	"Define a Report Rule" on page 86
Useful links	"Sample System Report" on page 90

The Add/Edit Function dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Attribute	Define the necessary parameters.
Function	From the Function list, select the function you want to use to calculate the results on these columns. Following are the available options: <ul style="list-style-type: none"> ▶ average. The average value of all the attributes of the connected nodes. ▶ count. Calculate the number of node instances connected to the selected node. ▶ max. The maximum value of all the attributes of the connected nodes. ▶ min. The minimum value of all the attributes of the connected nodes. ▶ sum. The sum of all the attributes of the connected nodes.
Related	The node on which you want to perform the function.
Title	The name of the function attribute displayed in the report.


Attribute Columns Dialog Box

Description	Determine the order of the information displayed for each Report node, and the method by which the data is sorted in each column. To access: Click Sort in the Report Node Definition dialog box.
Included in Tasks	“Define a Report Rule” on page 86
Useful links	“Sample System Report” on page 90

The Attribute Columns dialog box includes the following elements (listed alphabetically):

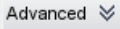

GUI Element	Description
Ascending	Sort the information in ascending order.
Descending	Sort the information in descending order.
Sort Items by	Select the primary sort column from the Sort Item by list.
Then by	Define up to three secondary sort columns from the Then by lists.

Create New Report Definition/Properties Dialog Box


Description	Create or modify a System or Gold Master report definition. To access: <ul style="list-style-type: none"> ▶ To create a System or Gold Master report definition, right-click anywhere in the Reports pane and click New or click the New  button. or ▶ To modify a System or Gold Master report definition, right-click a Report definition and select Properties.
Included in Tasks	“Define a Report Rule” on page 86

Important Information	For information on how to add nodes and relationships to a query, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i> .
Useful links	“Sample System Report” on page 90

The Create New Report Definition/Properties dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	TQL Description. (Optional) Enter a description of the Report TQL query.
	Hide the TQL Description box that appears when you click the Advanced button.
Based on TQL	Select this check box if you want to link a report to an existing TQL query. From the Attach TQL list, select the required TQL to which you want to link the report.
Description	(Optional) Enter a description of the report.
Gold Master	Create a Gold Master report. For details on how to define a Gold Master report, see “Gold Master Report Pane” on page 267.
Name	The name of the System report or the Gold Master report.
Sub Title	Enter the subtitle of the report. This title appears underneath the title at the head of the report.
Title	Enter the title of the report. This title appears at the head of the report.
Topology	Create a System report.


Edit Attribute Dialog Box

Description	Modify the name of the column title. To access: Select the required attribute in the Report Node Definition dialog box and click the Edit/Attribute Function  button.
Included in Tasks	“Define a Report Rule” on page 86
Useful links	“Sample System Report” on page 90

The Edit Attributes dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Attribute	Displays the node’s selected attribute. This box cannot be edited.
Column Title	Modify the column title as required. The name that appears in the Column Title box is, by default, the same name as the attribute. The modified column title appears in the Field column in the Report Node Definition dialog box.


Filter CIs Dialog Box

Description	Enables you to exclude the CITs you do not want to appear in the Gold Master report. To access: Click the Filter CIs  button in the Gold Master Report pane.
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The Filter CIs dialog box includes the following elements (listed alphabetically):



GUI Element	Description
<List of CITs>	The CITs you select are excluded from the report.

Gold Master Report Pane

<p>Description</p>	<p>Define a Gold Master report definition that compares the configuration of a Gold Master CI to other CIs of the same CIT, or a CIT that is derived from it. You choose the CI you want to use as the Gold Master CI and then the CIs whose configuration you want to compare to the Gold Master template. You can choose the CIs from existing views or from the CMDB. The report that is generated specifies which of the selected CIs are configured differently.</p> <p>To access:</p> <ol style="list-style-type: none"> 1 Select Admin > Modeling > Report Manager. 2 Right-click anywhere in the Reports pane and click New or click the New  button to open the Create New Report Definition dialog box. 3 Define the report and select Gold Master.
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ You can also define a schedule that generates and saves Gold Master reports on a periodic basis. For details, see “Scheduler User Interface” on page 157. ▶ The CIs that appear in this report under the following circumstances: <ul style="list-style-type: none"> ▶ Their attributes are marked as Comparable in the Add Attribute dialog box in the CI Type Manager. ▶ The CIs have descendants that are defined as Comparable. <p>For details, see “Add/Edit Attribute Dialog Box” on page 556.</p>

The Gold Master report includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Determines which CITs are not included in the Gold Master report. Opens the Filter CITs dialog box.</p>
	<p>Generates a Gold Master report. For details, see “Gold Master Report User Interface” on page 343.</p>

GUI Element	Description
	Moves the required CIs back and forth between the left pane and the Master CIs pane and the Compared CIs panes.
	Saves the Gold Master definition.
Include Similar Items	Select this check box if you want to include the compared CIs whose configuration is identical to that of the Gold Master CI.

Compared CIs Pane

Description	Contains the CIs that you want to compare to the Gold Master CI .
Important Information	You can select multiple CIs.


Master CI Pane

Description	Contains the CI you want to use as a Gold Master CI.
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Left Pane

Description	<p>The left pane contains the following tabs:</p> <ul style="list-style-type: none"> ▶ Select CI. Select the required CI from different levels of the view hierarchy. For details, see “Select CI Tab” on page 340. ▶ Search. Search for a specific CI in existing views or in the entire CMDB. For details, see “Search Tab” on page 340.
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The left pane includes the following element:

GUI Element	Description
	Display the selected CI's attributes. For details, see “Properties Tab” on page 210.

Report Manager Window

Description	<p>The Report Manager enables you to:</p> <ul style="list-style-type: none"> ➤ Define System reports about selected Report nodes in the managed world. Each report is based on a specific Report TQL query, which is created especially for it. (If required, you can define multiple reports for each query.) The Report Manager enables you to define exactly what information appears in each report, including the order in which Report nodes are listed and their placement relative to other Report nodes, and how the information within each report is sorted. ➤ Define a report that compares the configuration of a Gold Master CI to other CIs of the same CIT, or a CIT that is derived from it. For details, see “Gold Master Report Pane” on page 267. <p>To access: Select Admin > Modeling > Report Manager.</p>
Important Information	<p>You can also define a schedule that creates system reports based on a specific Report query, on a periodic basis. For details, see “Scheduler User Interface” on page 157.</p>
Included in Tasks	<ul style="list-style-type: none"> ➤ “Define a Report Rule” on page 86 ➤ “Compare a CI Configuration to a Gold Master Template” on page 90
Useful Links	<p>“Sample System Report” on page 90</p>









The Report Manager window includes the following panes:

- “Reports Pane” on page 270
- “Editing Pane” on page 272
- “CI Types Pane” on page 274
- “Information Pane” on page 275

Reports Pane

Description	<p>Displays a hierarchical tree structure of predefined folders and Reports. Each Report is associated with a TQL query. You can create your own query, or work with the out-of-the-box (factory) queries provided with your HP Universal CMDB installation.</p> <p>The predefined folders are provided for the out-of-the-box queries; you can modify these folders, or add additional folders according to your organization's requirements.</p>
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The Reports pane includes the following elements:

GUI Element	Description
	Create a new folder.
	Create a report definition. Opens the Create New Report Definition/Properties dialog box.
	Delete the selected folder or report.
	Refresh the data content of the hierarchical tree structure that may have been modified by other users.
	Open the Create New Report Definition/Properties dialog box. Enables you to change the description and activation state of the report.
	Import XML files that contain saved Report queries to the Report Manager.
	Represents a folder.
	Represents a Report definition.

The Reports pane includes the following options (listed alphabetically), which are available by right-clicking a folder or report:

GUI Element	Description
Delete	Delete the selected folder or report definition from the CMDB.
Export	Displays a standard Save As dialog box, enabling you to save the report as an XML script. This option can be used to move a report from one workstation to another, provided the related TQL Report query is also relocated.
Generate	Generate the selected report.
New	Create a report definition. Opens the Create New Report Definition/Properties dialog box.
New Folder	Create a new folder.
Properties	Open the Create New Report Definition/Properties dialog box. Enables you to change the description and activation state of the report.
Save	(Enabled only when a new TQL report query is created or when changes are made to an existing one.) Save the Report TQL to the CMDB.
Save As	Displays the Save As dialog box, enabling you to define a new name and description for a TQL Report query. This option can be used for creating a new report based on an existing one.

Editing Pane

Description	<p>Create and define Report nodes and relationships.</p> <ul style="list-style-type: none"> ▶ When you select a folder in the Reports pane, the Editing pane is empty. ▶ When you select a Report in the Reports pane, the Editing pane displays the TQL Report query, which consists of TQL nodes that are defined in the TQL query and the relationships between them.
Useful Links	<p>“Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>

The Editing pane includes the following elements (listed alphabetically):

GUI Element	Description
<Node>	A component from which TQL queries are built.
<Relationship>	The entity that defines the relationship between two nodes.
<Right click> options	For details, see “Topology Query Language Context Menu Options” in <i>Reference Information</i> .
<Toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i> .
<Tooltips>	<p>Hold the cursor over a node or relationship to view its tooltip.</p> <p>The tooltips contain the following information:</p> <ul style="list-style-type: none"> ▶ Node Report Order: The order in which the Report node appears in the report. ▶ Node Report Label: A title for the selected Report node definition. For details, see Report Node Definition dialog box. ▶ Column Title: The title of each column for that node. For details, see Edit Attribute dialog box.

The Editing Rule pane includes the following options (listed alphabetically), which are available by right-clicking a relationship. These options define how nodes are displayed in a generated report in relation to one another.

GUI Element	Description
Child	<p>Define one Report node as a child of the Report node to which it is linked. In the report, the child Report nodes are displayed indented beneath the parent nodes in the report.</p> <p>In this example, the relationship between a parent Host node and a child IP node is defined as Child, so the IP node is indented beneath the Host node.</p> <pre> YAK (Windows) Host DNS Name: YAK count: 1 State: 16.59.42.218 (IP) (Path: YAK (Windows)) Created By: Class C IPs by ICMP IP Network Address: 16.59.42.0 </pre>
Child Grid	<p>Groups all the leaf instances in a table under their parent's node.</p> <p>Note: This option applies to leaf nodes only.</p>

GUI Element	Description
None	Does not define any rules for this relationship. In the system report, the Report nodes appear in different tables.
Sibling	<p>Define one Report node as a sibling of the Report node to which it is linked. In the report, the two Report nodes appear aligned under one another.</p> <p>In this example, the relationship between a parent Network node and a child Host node is defined as Sibling, so both nodes are displayed aligned underneath one another.</p> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p>☐ 16.59.42.0 (Network)</p> <p>Network Address: 16.59.42.0 State:</p> <p>Network Class: C count: 58</p> <p>Network Domain Name: DefaultDomain</p> </div> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p>☐ YAK (Windows)</p> <p>Host DNS Name: YAK count: 1</p> <p>State:</p> </div>

CI Types Pane

Description	<p>Displays a hierarchical tree structure of the CI Types found in the CMDB. For more details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The number of instances of each CIT in the CMDB is displayed to the right of each CIT.</p> <p>To create or modify a TQL query, click and drag nodes to the Editing pane and define the relationship between them. Your changes are saved to the CMDB. For details, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>
Important Information	<p>The CI Types pane is part of the following managers: View Manager, Enrichment Manager, Query Manager, Correlation Manager, Report Manager, and Trigger TQL Editor.</p>



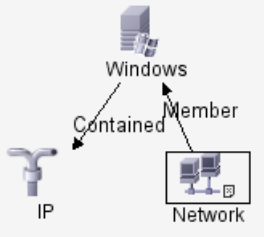
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86
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Information Pane

Description	Displays the properties, conditions, and cardinality for the selected node and relationship.
Important Information	The Information pane is part of the following managers and user interfaces: View Manager, Correlation Manager, Report Manager, Enrichment Manager, and Trigger TQL Editor.
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

The Information pane includes the following elements (listed alphabetically):



GUI Element	Description
Cardinality	Cardinality defines how many nodes you expect to have at the other end of a relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only those hosts that are connected to between one and three IPs. For details, see “Cardinality Tab” in <i>Reference Information</i> .
Condition	The attribute conditions defined for the node or the relationship. For details, see “Attribute Tab” in <i>Reference Information</i> .




GUI Element	Description
<p>Folding Rule</p>	<p>Displays the folding rule defined for the selected relationship. For details about folding rules, see “Adding Folding Rules to Relationships” in <i>IT World Model Management</i>.</p> <p>Note: This pane appears only when a relationship is selected in View Manager.</p>
<p>Properties</p>	<ul style="list-style-type: none"> ➤ To open the Node/Relationship Condition dialog box, select a node or relationship in the Editing pane and click the Edit Condition  button. For details, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ➤ CI Type. The CIT of the selected node/relationship. ➤ Visible. A tick signifies that the selected node/relationship is visible in the topology map. When the node/relationship is not visible, a box  appears to the right of the selected node/relationship in the Editing pane: <div data-bbox="539 826 856 1119" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  </div> <ul style="list-style-type: none"> ➤ Include subtypes. Display both the selected CI and its descendents in the topology map.

Report Node Definition Dialog Box

Description	<p>Displays the node attributes that are included in the report, that is, the report's columns. Each row in the table represents a column that appears in the report.</p> <p>You select the required attributes from the Add Attributes dialog box.</p> <p>To access: Right-click a node and select Report Node Definition.</p>
Included in Tasks	<p>"Define a Report Rule" on page 86</p>
Important Information	<p>Only defined nodes are included in the final report. However, other nodes are included in the report calculations, since they are part of the TQL that the report reflects, and they can influence the data that is displayed in it. For example, in a Report TQL, which consists of a linked Host and IP, the IP has an attribute condition that states that only IPs that are in a critical state are included in the query results. Consequently, the report includes only hosts that are connected to IPs in a critical state, even if the IPs themselves are not included in the report.</p> <p>Note: The nodes to be included in the reports must be connected to each other through the TQL scenario. You cannot define nodes that are not linked to at least one other node that is included in the report.</p>

The Report Node Definition dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Select the attributes you want to appear in the report template. Opens the Add Attributes dialog box.</p>
	<p>Define the function you want to perform on the Report node. Opens the Add Function dialog box.</p>



GUI Element	Description
	<p>Modify the attributes, functions and parameters, defined for each Report node.</p> <p>Enables you to:</p> <ul style="list-style-type: none"> ▶ Modify the name of the column title for that attribute. Select an attribute that displays attribute in the Function column. Opens the Edit Attribute dialog box. For more details, see the Add Attributes dialog box. ▶ Modify the functions and parameters you defined for the selected report node. Select an attribute that displays the parameters included for each node and the function (such as sum or max) performed on them in the Function and Parameter columns. Opens the Add/Edit Function dialog box.
	<p>Delete the selected report node definition. A column for the node definition you deleted does not appear in the report.</p>
	<p>Use the up and down arrows to determine the order of each node included in the report.</p>
<p><click a column header></p>	<p>For details, see “Working with Tables” in <i>Reference Information</i>.</p>
<p><right-click a column header></p>	<p>For details, see “Working with Tables” in <i>Reference Information</i>.</p>
<p>Field</p>	<p>Displays the nodes that are included in the report, that is, the report’s columns.</p> <p>The title of the column as displayed in the Field box is the way the column title appears in the report template. By default, column titles take the same name as the selected attribute. You can change the title of the column in the Edit Attribute dialog box.</p>
<p>Parameters</p>	<p>Displays the parameters you defined for the Report node. For details, see the Add/Edit Function dialog box.</p>
<p>Sort</p>	<p>Define the sort order of the information reported for each Report node. Opens the Attribute Columns dialog box.</p>

GUI Element	Description
Title	A title for the selected Report node definition.
Type	Displays the functions you defined for the Report node. For details, see the Add/Edit Function dialog box.

Set Node Order Dialog Box

Description	<p>Determine the order in which the Report nodes appear in the report.</p> <p>To access: Right-click any node displayed in the Topology Map and select Node Order to open the Set Node Order dialog box.</p> <p>The Set Node Order dialog box displays a row for each node that is included in the report.</p>
Included in Tasks	“Define a Report Rule” on page 86

The Set Node Order dialog box includes the following elements (listed alphabetically):

GUI Element	Description
 	Use the up and down arrows to determine the order of each node included in the report.
Nodes	The list of nodes contained in the selected Report query.


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Query Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Query Manager user interface.

This chapter describes:	On page:
Create New TQL/TQL Properties Dialog Box	281
Query Manager Window	284

Create New TQL/TQL Properties Dialog Box

Description	Create or modify a TQL query. To access: <ul style="list-style-type: none">▶ Right-click anywhere in the TQLs pane and click New or click the New  button.or▶ Right-click a TQL query and select Properties.
Important Information	For TQL queries to be valid, they must comply with the restrictions described in “TQL Query Validation Restrictions” in <i>Reference Information</i> . If the TQL is not valid, you cannot save it.
Included in Tasks	“Define a TQL Query” on page 101

The Create New TQL dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Description	(Optional) Enter a description of the TQL query.
Persistent	(Optional) Define whether the selected TQL should always remain in the system memory. Use this option only for frequently used TQLs.
Priority	Select a priority level for the new TQL query (Low , Medium , High , or Express). This setting determines how often the query should be rerun automatically by the system to include updated information from the CMDB.
TQL Name	Enter a unique name for the TQL query.

GUI Element	Description
Type	<p>You can create a TQL query of the following types:</p> <ul style="list-style-type: none"> ▶ View. Creates pattern and instance views whose results are displayed in IT Universe. For details, see “View Manager User Interface” on page 225. ▶ Correlation. Creates queries containing Correlation nodes that influence other Correlation nodes in the system, as defined using the Correlation Manager. For details, see “Correlation Manager User Interface” on page 247. ▶ Enrichment. Creates queries containing Enrichment nodes and relationships. For details, “Enrichment Manager User Interface” on page 291. ▶ Report. Creates queries whose results are compiled into reports using the Report Manager. For details, see “Report Manager User Interface” on page 261. ▶ Discovery. Creates queries for use by the Discovery system. For details, see, “Trigger TQL Editor” in <i>Discovery</i>. ▶ Integration. Creates queries for use with the CMDB API. For details, see “Working with the HP Universal CMDB API” on page 253 in <i>Reference Information</i>. <p>Note: Discovery TQLs should be created only by users who are thoroughly familiar with the Discovery patterns used by the Discovery system. For details, contact Customer Support.</p>

Query Manager Window

Description	<p>Query the CMDB by defining TQL queries of the type Integration or change the type of an existing TQL.</p> <p>To access: Click Admin > Modeling > Query Manager.</p>
Important Information	<ul style="list-style-type: none"> ▶ It is recommended to use the relevant Managers (Correlation Manager, Enrichment Manager, View Manager, Report Manager, Trigger TQL Editor) to create your TQL queries, rather than the Query Manager. All TQLs that are created in the other managers automatically appear in the Query Manager. You can use the Save As option in the Query Manager to change the type of TQL, so you do not have to recreate it. For details, see “TQLs Pane” on page 285. ▶ Once you create and save a TQL query of the types View, Correlation, Enrichment, and Report, you cannot edit it. To edit a TQL of these types, you can go to the relevant manager, for example, the View Manager, and create a new view based on the TQL query that you created in the Query Manager. You can then edit the TQL query (which was created in the Query Manager) in the View Manager. Any changes you make to the query in the View Manager appear in the TQL query in the Query Manager. You can edit queries of the Integration or Discovery types only in the Query Manager. ▶ For TQL queries to be valid, they must comply with the restrictions described in “TQL Query Validation Restrictions” in <i>Reference Information</i>.
Useful Links	<p>“Topology Query Language” on page 125</p>








The Query Manager window includes the following panes:

- ▶ “TQLs Pane” on page 285
- ▶ “Editing Pane” on page 287
- ▶ “CI Types Pane” on page 288
- ▶ “Information Pane” on page 288

TQLs Pane

Description	<p>Displays a hierarchical tree structure of predefined folders and TQL queries.</p> <p>You can create your own query, or work with the out-of-the-box (factory) queries provided with your HP Universal CMDB installation.</p> <p>The predefined folders are provided for the out-of-the-box queries; you can modify these folders, or add additional folders according to your organization's requirements.</p>
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The TQLs pane includes the following elements:

GUI Element	Description
	Creates a new folder.
	Enables you to: <ul style="list-style-type: none"> ▶ Create a TQL query of the types View, Correlation, Enrichment, Report, Discovery, or Integration. You can only edit queries of the types Integration or Discovery in the Query Manager. ▶ Open the Create New TQL/TQL Properties dialog box.
	Deletes the selected folder or TQL query.
	Refreshes the data content of the hierarchical tree structure that may have been modified by other users.
	Opens the Create New TQL/TQL Properties dialog box. Enables you to change the description and activation state of the query.
	Imports XML files that contain saved TQL queries to the Query Manager.
	Represents a folder.

The TQLs pane includes the following options (listed alphabetically), which are available by right-clicking a folder or TQL query:

GUI Element	Description
Delete	Delete the selected folder or TQL query.
Export	Displays a standard Save As dialog box, enabling you to save the TQL query in XML script format. This option can be used to move TQL queries from one workstation to another.
New	Create a TQL query. For details, see “Create New TQL/TQL Properties Dialog Box” on page 281.
New Folder	Create a new folder.
Properties	Opens the Create New TQL/TQL Properties dialog box. Enables you to change the description, the priority of the selected TQL query, and define whether the selected TQL should always remain in the system memory (Persistent).
Save	(Enabled only when a new TQL is created or when changes are made to an existing TQL) Save the query to the CMDB after you have defined the specific attribute conditions of the nodes and relationships in the query. Note: If you exit the TQL Builder without saving, a confirmation dialog box is displayed, requesting that you save your query.
Save As	Displays the Save TQL As dialog box, enabling you to create a query by copying an existing one. You can change the type of the query. For a description of the available query types, see “Type” on page 283.

Editing Pane

Description	<p>Displays the currently selected TQL, which consists of nodes and the relationships between them.</p> <ul style="list-style-type: none"> ▶ When you select a folder in the TQLs pane, the Editing pane is empty. ▶ When you select a TQL query in the TQLs pane, the Editing pane displays the selected query, which consists of TQL nodes that are defined in the TQL query and the relationships between them.
Useful Links	<p>“Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>

The Editing pane includes the following elements (listed alphabetically):

GUI Element	Description
<Node>	A component from which TQL queries are built.
<Relationship>	The entity that defines the relationship between two nodes.
<Right click> options	For details, see “Topology Query Language Context Menu Options” in <i>Reference Information</i> .
<toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i> .
<tooltips>	<p>Hold the cursor over a node or relationship to view its tooltip.</p> <p>The tooltips contain the following information:</p> <ul style="list-style-type: none"> ▶ Element name. The name of the node. ▶ CI Type. The CIT of the node as defined in the CI Type Manager. For details, see <i>CI Attribute Customization</i>. ▶ Definitions of the selected nodes and relationships. The attribute conditions, as described in “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>.

CI Types Pane



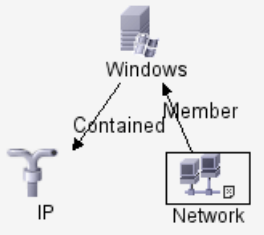
Description	<p>Displays a hierarchical tree structure of the CI Types found in the CMDB. For more details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The number of instances of each CIT in the CMDB is displayed to the right of each CIT.</p> <p>To create or modify a TQL query, click and drag nodes to the Editing pane and define the relationship between them. Your changes are saved to the CMDB. For details, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>
Important Information	<p>The CI Types pane is part of the following managers: View Manager, Enrichment Manager, Query Manager, Correlation Manager, Report Manager, and Trigger TQL Editor.</p>
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

Information Pane

Description	<p>Displays the properties, conditions, and cardinality for the selected node and relationship.</p>
Important Information	<p>The Information pane is part of the following managers and user interfaces: View Manager, Correlation Manager, Report Manager, Enrichment Manager, and Trigger TQL Editor.</p>
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

The Information pane includes the following elements (listed alphabetically):

GUI Element	Description
Cardinality	Cardinality defines how many nodes you expect to have at the other end of a relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only those hosts that are connected to between one and three IPs. For details, see “Cardinality Tab” in <i>Reference Information</i> .
Condition	The attribute conditions defined for the node or the relationship. For details, see “Attribute Tab” in <i>Reference Information</i> .
Folding Rule	Displays the folding rule defined for the selected relationship. For details about folding rules, see “Adding Folding Rules to Relationships” in <i>IT World Model Management</i> . Note: This pane appears only when a relationship is selected in View Manager.

GUI Element	Description
<p>Properties</p>	<ul style="list-style-type: none"> ➤ To open the Node/Relationship Condition dialog box, select a node or relationship in the Editing pane and click the Edit Condition  button. For details, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ➤ CI Type. The CIT of the selected node/relationship. ➤ Visible. A tick signifies that the selected node/relationship is visible in the topology map. When the node/relationship is not visible, a box  appears to the right of the selected node/relationship in the Editing pane: <div data-bbox="539 604 856 899" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  </div> <ul style="list-style-type: none"> ➤ Include subtypes. Display both the selected CI and its descendents in the topology map.


31

Enrichment Manager User Interface

This chapter includes the pages and dialog boxes that are part of the Enrichment Manager user interface.

This chapter describes:	On page:
Create New Enrichment Rule/Properties Dialog Box	292
Enrichment Manager Window	294
Node Definition – Attributes Dialog Box	301
Node Definition – Advanced Attribute Dialog Box	301

Create New Enrichment Rule/Properties Dialog Box

Description	<p>Create or modify an Enrichment rule.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Right-click anywhere in the Enrichment Rules pane and click New or clicking the New  button. or ▶ Right-click an Enrichment rule and select Properties.
Included in Tasks	<p>“Define an Enrichment Rule” on page 108</p>
Important Information	<p>When creating a new Enrichment rule, bear in mind that the application does not allow you to make any changes in the TQL that are necessary for the rule. These changes include the following:</p> <ul style="list-style-type: none"> ▶ Deleting, from the Enrichment TQL, the nodes or relationships connected to the Enrichment node, causing a node to become unattached to any relationship. ▶ You cannot change the cardinality definition to 0 (not required) of a node or relationship that is used in an Enrichment rule. For details on relationship cardinality, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. <p>Note: The Enrichment TQL that serves as the basis for the Enrichment rule, should comply with the validation restrictions. For details, see “TQL Query Validation Restrictions” in <i>Reference Information</i>. If the TQL is not valid, it cannot be used for the creation of an Enrichment rule.</p>
Useful links	<p>“Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>

The Create New Enrichment Rule dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<input type="button" value="Advanced"/>	<p>Includes the following elements:</p> <ul style="list-style-type: none"> ▶ TQL Priority list. From the Priority list, select a priority level for the new TQL query (Low, Medium, High, Express). This setting determines how often the query is rerun automatically by the system to include updated information from the CMDB. ▶ TQL Description. (Optional) Enter a description of the TQL query.
<input type="button" value="Simple"/>	<p>Hide the TQL Priority list and TQL Description box that appear when you click the Advanced button.</p>
Active	<p>(Optional) Verify that Active is selected to activate the rule in the system as soon as it is saved.</p> <p>Notes:</p> <ul style="list-style-type: none"> ▶ If an active Enrichment rule is later deactivated (by clearing Active in the Properties dialog box), all events related to the rule are deleted from the system. ▶ If you do not activate the rule now, you can do it later. Select the rule in the Enrichment Rules pane and right-click the rule. From the shortcut menu, select Properties. In the Properties dialog box, select Active.
Based on TQL	<p>Select this check box if you want to link an Enrichment rule to an existing TQL query.</p> <p>From the Attach TQL list, select the Enrichment TQL to which you want to link the rule.</p>
Description	<p>(Optional) Enter a description of the rule.</p>
Name	<p>Enter a unique name for the Enrichment rule. The name you enter automatically appears in the box to the right of the Based on TQL check box if you do not select the Based on TQL check box.</p>

Enrichment Manager Window

Description	<p>Create and define Enrichment rules. These rules, which are based on a specific TQL query, can be used for several purposes:</p> <ul style="list-style-type: none"> ▶ Adding new CIs and relationships to the CMDB. ▶ Deleting specific CI instances from the CMDB. ▶ Updating the attribute values of specific CI instances in the CMDB. <p>To access: Select Admin > Modeling > Enrichment Manager.</p>
Important Information	<p>Enrichment Manager has two modes in which you can work. Always check the Enrichment/TQL mode list to verify the currently selected mode. For details, see “TQL and Enrichment mode” on page 297.</p>
Included in Tasks	<p>“Define an Enrichment Rule” on page 108</p>









The Enrichment Manager window includes the following panes:

- ▶ “Enrichment Rules Pane” on page 294
- ▶ “Editing Pane” on page 296
- ▶ “CI Types Pane” on page 298
- ▶ “Information Pane” on page 299

Enrichment Rules Pane

Description	<p>Displays a hierarchical tree structure of predefined folders and Enrichment rules. Each Enrichment rule is associated with a TQL query.</p> <p>You can create your own query, or work with the out-of-the-box (factory) queries provided with your HP Universal CMDB installation.</p> <p>The predefined folders are provided for the out-of-the-box queries; you can modify these folders, or add additional folders according to your organization’s requirements.</p>
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The Enrichment Rule pane includes the following elements:

GUI Element	Description
	Create a new folder.
	Create an Enrichment rule. Opens the Create New Enrichment Rule/Properties dialog box.
	Delete the selected folder or Enrichment rule.
	Refresh the data content of the hierarchical tree structure that may have been modified by other users.
	Opens the Create New Enrichment Rule/Properties dialog box. Enables you to change the description and the activation state of the Enrichment rule.
	Imports XML files that contain saved Enrichment queries to the Enrichment Manager.
	Represents a folder.
	Represents an Enrichment rule.

The Enrichment Rule pane includes the following options (listed alphabetically), which are available by right-clicking a folder or Enrichment rule:

GUI Element	Description
Delete	Delete the selected folder or Enrichment rule.
Export	Displays a standard Save As dialog box, enabling you to save the Enrichment rule as an XML script. This option can be used to move an Enrichment rule from one workstation to another, provided the related TQL query is also relocated.
New	Create an Enrichment rule. Opens the Create New Enrichment Rule dialog box.
New Folder	Create a new folder.




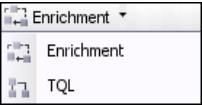
GUI Element	Description
Properties	Opens the Create New Enrichment Rule/Properties dialog box. Enables you to change the description and the activation state of the rule.
Save	(Enabled only when a new Enrichment query is created or when changes are made to an existing one.) Save the Enrichment rule to the CMDB.
Save As	Displays the Save As dialog box, enabling you to define a new name and description for a query. This option can be used for creating a new Enrichment rule based on an existing one.

Editing Pane

Description	<p>Create and define Enrichment nodes and relationships.</p> <ul style="list-style-type: none"> ▶ When you select a folder in the Enrichment Rules pane, the Editing pane is empty. ▶ When you select an Enrichment rule in the Enrichment Rules pane, the Editing pane displays the selected rule, which consists of TQL nodes that are defined in the TQL query and the relationships between them, and the Enrichment nodes and relationships that are created and added to the rule.
Important Information	<ul style="list-style-type: none"> ▶ The Enrichment Manager has two modes in which you can work: Enrichment mode and TQL mode. The right-click options that appear when you click a node or relationship depends on the which mode in which you are working. For details, see the Editing pane description below. ▶ You can calculate the number of instances that were created as a result of an Enrichment rule and remove the instances created from an Enrichment rule from the CMDB. For details, see “Additions Count” and “Remove Enrichment Results” in <i>Reference Information</i>.

Included in Tasks	“Define an Enrichment Rule” on page 108
Useful Links	For details on how to create a TQL query, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i> .

The Editing pane includes the following elements (listed alphabetically):

GUI Element	Description
	Indicates an added Enrichment node or relationship.
	Indicates a node or relationship that has been deleted from the CMDB.
	Indicates an updated node or relationship.
 <p>TQL and Enrichment mode</p>	<p>The Enrichment Manager has two modes in which you can work: Enrichment mode and TQL mode.</p> <p>Working in:</p> <ul style="list-style-type: none"> ▶ TQL mode enables you to define regular (non-Enrichment) relationships and nodes and add them to the TQL query you defined. ▶ Enrichment mode enables you to define Enrichment relationships and nodes and add them to the TQL query you defined.
<Node>	A component from which TQL queries are built.
<Relationship>	The entity that defines the relationship between two nodes.
<Right-click> options	For details, see “Topology Query Language Context Menu Options” in <i>Reference Information</i> .

GUI Element	Description
<Toolbar>	For details, see “Toolbar Options” in <i>Reference Information</i> .
<Tooltips>	<p>Hold the cursor over a node or relationship to view its tooltip.</p> <p>The tooltips contain the following information:</p> <ul style="list-style-type: none"> ▶ Element name. The name of the node. ▶ CI Type. The CIT of the node as defined in the CI Type Manager. For details, see <i>CI Attribute Customization</i>. ▶ Definitions of the selected nodes and relationships. The attribute conditions, as described in “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>.

CI Types Pane



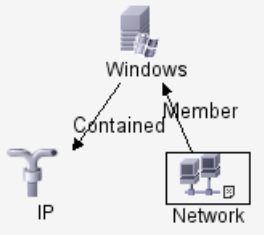
Description	<p>Displays a hierarchical tree structure of the CI Types found in the CMDB. For more details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>Note: The number of instances of each CIT in the CMDB is displayed to the right of each CIT.</p> <p>To create or modify a TQL query, click and drag nodes to the Editing pane and define the relationship between them. Your changes are saved to the CMDB. For details, see “Adding Nodes and Relationships to a TQL Query” in <i>Reference Information</i>.</p>
Important Information	<p>The CI Types pane is part of the following managers: View Manager, Enrichment Manager, Query Manager, Correlation Manager, Report Manager, and Trigger TQL Editor.</p>
Included in Tasks	<ul style="list-style-type: none"> ▶ “Create a Correlation Rule” on page 81 ▶ “Define an Enrichment Rule” on page 108 ▶ “Define a TQL Query” on page 101 ▶ “Pattern View Workflow” on page 74 ▶ “Define a Report Rule” on page 86

Information Pane

Description	Displays the properties, conditions, and cardinality for the selected node and relationship.
Important Information	The Information pane is part of the following managers and user interfaces: View Manager, Correlation Manager, Report Manager, Enrichment Manager, and Trigger TQL Editor.
Included in Tasks	<ul style="list-style-type: none"> ➤ “Create a Correlation Rule” on page 81 ➤ “Define an Enrichment Rule” on page 108 ➤ “Define a TQL Query” on page 101 ➤ “Pattern View Workflow” on page 74 ➤ “Define a Report Rule” on page 86

The Information pane includes the following elements (listed alphabetically):


GUI Element	Description
Cardinality	Cardinality defines how many nodes you expect to have at the other end of a relationship. For example, in a relationship between host and IP, if the cardinality is 1:3, the TQL retrieves only those hosts that are connected to between one and three IPs. For details, see “Cardinality Tab” in <i>Reference Information</i> .
Condition	The attribute conditions defined for the node or the relationship. For details, see “Attribute Tab” in <i>Reference Information</i> .
Folding Rule	Displays the folding rule defined for the selected relationship. For details about folding rules, see “Adding Folding Rules to Relationships” in <i>IT World Model Management</i> . Note: This pane appears only when a relationship is selected in View Manager.

GUI Element	Description
<p>Properties</p>	<ul style="list-style-type: none"> ➤ To open the Node/Relationship Condition dialog box, select a node or relationship in the Editing pane and click the Edit Condition  button. For details, see “Node/Relationship Condition Dialog Box” in <i>Reference Information</i>. ➤ CI Type. The CIT of the selected node/relationship. ➤ Visible. A tick signifies that the selected node/relationship is visible in the topology map. When the node/relationship is not visible, a box  appears to the right of the selected node/relationship in the Editing pane: <div data-bbox="539 604 856 899" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  </div> <ul style="list-style-type: none"> ➤ Include subtypes. Display both the selected CI and its descendents in the topology map.

Node Definition – Attributes Dialog Box

Description	<p>Displays the attributes of the selected relationship/node. The key attributes and the required attributes of the selected node appear in bold.</p> <p>Use an Enrichment rule to update the value of CI attributes in the CMDB, or to add data to attributes that currently do not have values. You can use this option, for example, for adding a note simultaneously to all CI instances.</p> <p>To access: Right-click a node or relationship when in Enrichment mode (select Enrichment from the TQL/Enrichment list at the top of the Enrichment Manager window) and select Update Relationship/Node.</p>
Important Information	<p>You must fill in the value of the key attributes and the required attributes of the Enrichment node. The method you use to define these values determines the number of instances created.</p> <p>If you enter a dynamic value, you can create numerous instances. For example, entering the dynamic value of a host_key for the CIT Host or an IP address attribute for the CIT IP.</p>
Included in Tasks	<p>“Define an Enrichment Rule” on page 108</p>


The Node Definition - Attributes dialog box includes the following elements (listed alphabetically):

GUI Element	Description
 (In the Set Attributes area)	<p>(Appears only if you selected an attribute of the field type string.) Opens the Node Definition - Advanced Attribute dialog box.</p> <p>Define node and relationship attributes of the type string using simple or complex expressions. You can also create complex expressions using regular expression format.</p>
Advanced (in the Set Attributes area)	<p>(Appears only if you selected an attribute of the field type string.) Displays the attribute value you defined in the Node Definition - Advanced Attribute dialog box.</p>







GUI Element	Description
By Attribute (in the Set Attributes area)	<p>Define an attribute using attributes from other nodes in the TQL query.</p> <ul style="list-style-type: none"> ➤ In the box to the left, select the required node. ➤ In the box to the right, select the node's required attribute. <p>The attribute definition appears in the Value column in the Attributes area.</p>
Group (in the Set Attributes area)	<p>(Appears only when you select an attribute of the field type string.) Enter the group number only if you are adding a regular expression using regular expression syntax. This is the part of the regular expression pattern to focus on when creating the attribute. A set of parentheses () constitutes a group.</p>
Name (in the Attributes area)	<p>The attribute name.</p>
Regular Expression (in the Set Attributes area)	<p>(Appears only when you select an attribute of the field type string.) Add a regular expression using regular expression syntax. Enter the regular expression pattern.</p>
Type (in the Attributes area)	<p>The field type of the selected attribute.</p>

GUI Element	Description
Value (column in the Attributes area)	<p>The value as defined in one of the following:</p> <ul style="list-style-type: none"> ▶ The Value box in the Set Attributes area. ▶ The combination of the values in the By Attribute boxes in the Set Attributes area. ▶ The Value column if you selected Simple in the Type column in the Node Definition - Advanced Attribute dialog box. ▶ The combination of the values in the Value column and the column to the right of the Value column if you selected By Attribute in the Type column in the Node Definition - Advanced Attribute dialog box.
Value (in the Set Attributes area)	<p>Define a constant value. Enter the required value in the Value box or select a value from the Value list.</p> <p>Note: The value definition appears in the Value column in the Attributes area.</p>

Node Definition – Advanced Attribute Dialog Box

Description	<p>Define node and relationship attributes of the type String using simple or complex expressions. You can also create complex expressions using regular expression format.</p> <p>To access:</p> <ol style="list-style-type: none"> 1 Select an attribute of the type string in the Attributes area of the Node Definition - Attributes dialog box. 2 In the Set Attributes area, select Advanced and then click the Advanced Attribute Definition  button.
Included in Tasks	“Define an Enrichment Rule” on page 108

The Node Definition – Advanced Attribute dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Define an attribute value using simple or complex expressions. Creates a new entry in the Type column. Click the new entry and select either Simple or By Attribute . For details, see the description for the Type column below.
	Delete an attribute value.
	Move a selected row up.
	Move a selected row down.
The column that appears between the Value and Regular Expression columns	(This list is only available if you select By Attribute in the Type column.) Click the entry inside the box and select the required attribute.
Concatenate	Use all the attribute values listed in this dialog box.
RegExp Group	(This list is only available if you select By Attribute in the Type column.) Click the entry inside the RegExp Group column, click the  button, and enter the group number. This is the part of the regular expression pattern to focus on when creating the attribute. A set of parentheses () constitutes a group.
Regular Expression	(This list is only available if you select By Attribute in the Type column.) Click the entry inside the Regular Expression column, click the  button, and enter the regular expression pattern in the Editing Regular Expression dialog box that opens.

GUI Element	Description
Type	<p>Click the entry inside the Type column and select one of the following options:</p> <ul style="list-style-type: none"> ▶ Simple. Define a constant value using a simple expression. ▶ By Attribute. Define an attribute using attributes from other nodes in the TQL. <p>Default is: Simple.</p>
Use first attribute with value	<p>Use the first attribute value listed in this dialog box that is not empty.</p>
Value	<ul style="list-style-type: none"> ▶ If you select Simple in the Type column, click the entry inside the Value column, click the Add Value ... button, and enter the required value in the Editing Simple dialog box. ▶ If you select By Attribute in the Type column, click the entry inside the Value column, and select the required element from the list.

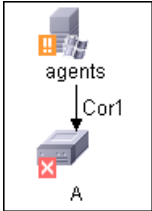
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Topology View Application User Interface

This chapter includes a description of the pages and dialog boxes that are part of the Topology View application user interface.

This chapter describes:	On page:
Correlation Rules Window	308
Run Correlation Dialog Box	310
Save Snapshot Dialog Box	313
Topology View Application Window	314

Correlation Rules Window

<p>Description</p>	<p>Opens a window that displays the statuses of the trigger CI as well as all statuses of the CIs that are affected by it. The relationships in the map represent the Correlation rules. The name of the relationship is the name of the Correlation rule you defined in the Correlation Manager.</p> <div data-bbox="576 413 725 624" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">  <p>The diagram shows a box labeled 'agents' at the top with a warning icon (exclamation mark in a triangle). An arrow labeled 'Cor1' points down to a box labeled 'A' which has a red 'X' icon, indicating a failed or error state.</p> </div> <p>To access: In the Run Correlation Dialog box, click Show Map.</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ You can only see Correlation results if you defined a Correlation rule for that view in Correlation Manager. For details, see “Correlation Manager User Interface” on page 247. ▶ To view information about specific CIs that are triggered or affected by the Correlation rule, double-click the relationship connecting the CIs. A map is displayed.
<p>Included in Tasks</p>	<p>“Retrieve Correlation Results” on page 120</p>




The Correlation Rules window includes the following elements (listed alphabetically):

GUI Element	Description
<Relationship>	The relationships represent the Correlation rule you defined in the Correlation Manager. For details, see “Correlation Definition Dialog Box” on page 248.
<The statuses and the colors that represent each one>	The statuses that appear and the colors that represent each status are the ones that are defined in the severity list for that state in the System Type Manager. For details, see “Create/Update List/Enumeration Definition Dialog Box” on page 573.

Run Correlation Dialog Box

<p>Description</p>	<p>Enables you to run the Correlation rule you defined in Correlation Manager for that view.</p> <p>You can:</p> <ul style="list-style-type: none"> ▶ Display in a new window all the CIs that are affected by the trigger CI. The relationships in the map represent the Correlation rules. The name of the relationship is the name of the Correlation rule you defined in the Correlation Manager. For details, see “Show Map” on page 312. ▶ Simulate how the statuses of the affected CIs are impacted. For details, see “Show in Views” on page 311. ▶ Generate a report that displays a list of CIs that are impacted in the system as a result of the simulated changes. For details, see “Generate Report” on page 311. <p>To access: Select Application > Topology View. Right-click a trigger node in the Topology Map and select Run Correlation.</p>
<p>Important Information</p>	<p>This dialog only appears if a Correlation rule is defined for that view. For details, see “Correlation Manager User Interface” on page 247.</p>
<p>Included in Tasks</p>	<p>“Retrieve Correlation Results” on page 120</p>

The Run Correlation dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<p>Generate Report</p>	<p>Generates an Impact Analysis report, which displays information that is divided as follows:</p> <ul style="list-style-type: none"> ▶ Impacted CIs by CIT. All the impacted CIs (the CIs that are impacted in the system as a result of the simulated changes), sorted by CIT. ▶ Impacted CIs by Application. All the impacted CIs that belong to a specific business service. For details, see “Link Nodes to Application CI” on page 70. ▶ Trigger CIs. The CIs that represents the changes you want to make to the system. <p>Note: When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of Infrastructure Settings manager. For details, see “Printing Reports” in <i>Reference Information</i>.</p>
<p>Show in Views</p>	<p>Simulates how the statuses of the affected CIs are impacted for the selected state. The Topology Map displays the statuses of the trigger CIs as well as all statuses of the CIs that are affected by it.</p> <p>The Topology Map also displays the Correlation indicators:</p> <ul style="list-style-type: none"> ▶ A trigger CI is marked by this  indicator. ▶ A CI that is both an affected and a trigger CI is marked by this  indicator. ▶ An affected CI is marked by this  indicator. <p>Note: The statuses that appear and the colors that represent each status are the ones that are defined in the severity list for that state in the System Type Manager. For details, see “Create/Update List/Enumeration Definition Dialog Box” on page 573.</p>

GUI Element	Description
<p>Show Map</p>	<p>Enables you to select a Correlation rule, and then display in a new window, a simulation of all the CIs that are affected by the trigger CI for the selected state. If only one Correlation rule is defined for this CI, the Correlation Rules window is displayed directly. For more details, see “Correlation Rules Window” on page 308.</p> <p>The relationships in the map represent the Correlation rules and the name of the relationship is the name of the Correlation rule you defined in the Correlation Manager.</p> <p>Note: Show Map enables you to view the results of multiple triggers.</p>
<p>State</p>	<p>Select the required State. For details about States, see “State Manager User Interface” on page 191.</p>
<p>Triggers Severity</p>	<p>Select the required severity.</p> <p>Note: The severity list was defined for the state in the System Type Manager. For details, see “System Type Manager User Interface” in <i>CI Attribute Customization</i>.</p> <p>For example, you can create a Correlation rule in the Correlation Manager (see the “Correlation Definition Dialog Box” on page 248), that defines the severity of the trigger node as other than No Change. If you select a severity other than No Change, for example, Plan, the condition is met and the simulated changes in the system are triggered.</p>

Save Snapshot Dialog Box

Description	Enables you to take a snapshot of a view and save it. To access: Right-click a view in View Explorer and select Save Snapshot from the context menu.
Important Information	You can compare snapshots of the same view taken at different times using Compare Snapshots in Application > Compliancy > Compare Snapshots . For details, see “Compare Snapshots Window” on page 328.
Included in Tasks	“Take a Snapshot of a View” on page 122

The Save Snapshot dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Description	A description of the snapshot (optional).
Note	A note about the snapshot (optional).
View Name	The name of the view as it appears in View Explorer. This field cannot be edited.

Topology View Application Window

Description	<p>Displays the CIs of the currently selected view in graphical format.</p> <p>To access: Select Application > Topology View.</p>
Important Information	<p>The Topology View application window contains the following panes:</p> <ul style="list-style-type: none"> ▶ View Explorer. Displays the CIs of a selected view. You can select the view from a dropdown list. For details, see “View Explorer” on page 119. ▶ Editing pane. Select one of the following tabs: <ul style="list-style-type: none"> ▶ Topology Map. For details, see “Topology Map” on page 216. ▶ Properties. For details, see “Properties Tab” on page 210. ▶ Related CIs. For details, see “Related CIs Tab” on page 213. <p>Note: The Topology View Application window has the same functionality as IT Universe Manager, with the exception of the context menu options.</p>
Included in Tasks	<p>“Retrieve Correlation Results” on page 120</p> <p>“Take a Snapshot of a View” on page 122</p>

The Topology View Application window includes the following elements (listed alphabetically):

GUI Element	Description
<Node>	<p>The nodes in the topology map represent CIs.</p> <p>Hold the pointer over a node to display its tooltip which describes the type of the CI.</p>
<Relationship>	<p>The links in the topology map represent relationships.</p> <p>Hold the pointer over a relationship to display its tooltip, which describes the type of the relationship.</p>
<Toolbar>	<p>For details, see “Toolbar Options” in <i>Reference Information</i>.</p>

Context Menu

The Topology View Application window includes the following elements (listed alphabetically) available by right-clicking a CI or view in the View Explorer pane or the Topology Map:

GUI Element	Description
CI History	Displays the CI/Relationship History dialog box. For details, see “CI/Relationship History Dialog Box” on page 199.
Properties	Displays the Properties page for the selected CI. For details, see “Properties Tab” on page 210.
Run Correlation	Enables you to run the Correlation rule you defined in the Correlation Manager. Displays the Run Correlation dialog box. For details, see “Correlation Manager User Interface” on page 247. Note: You can only see Correlation results if you defined a Correlation rule for that view in Correlation Manager.
Set View Parameters	Appears if at least one node in the view has a parameterized node condition. Displays the Set View Parameters dialog box where you can edit the parameter of each condition. For details, see “Set View Parameters/Set View Element Parameters Dialog Box” on page 238.
Save Snapshot	Opens the Save Snapshot dialog box, which enables you to save a snapshot of the view. For details, see “Save Snapshot Dialog Box” on page 313.

GUI Element	Description
<p>Show Impact</p>	<p>Enables you to select a CI, which is defined by a Correlation rule as a root cause CI, and to display all the CIs that are affected by it, and their statuses, in a separate window.</p> <p>This option appears only after the following has occurred:</p> <ul style="list-style-type: none"> ▶ You defined a Correlation rule for the selected view in the Correlation Manager (for details see, “Correlation Manager User Interface” on page 247). ▶ You clicked Show in Views in the Run Correlation dialog box. ▶ Correlation results appear in the Topology Map. <p>For example, suppose a Correlation rule is defined for an IP CI, which specifies that the rule affects hosts, ports, and client-servers that are linked to the IP.</p> <p>By using the Show Impact option, you can display all CIs that are affected by the IP CI.</p>

GUI Element	Description
<p>Show Root Cause</p>	<p>This option enables you to retrieve root cause information for CIs that are affected by a chain of Correlation rules. The output of Show Root Cause displays a logical map that describes a chain of trigger/affected CITs that affect the CI.</p> <p>The root cause CI is displayed in a separate window. If only one Correlation rule is defined for this CI, the Correlation window is directly displayed.</p> <p>This option appears only after the following has occurred:</p> <ul style="list-style-type: none"> ▶ You defined a Correlation rule for the selected view in the Correlation Manager (for details see, “Correlation Manager User Interface” on page 247). ▶ You clicked Show in Views in the Run Correlation dialog box. ▶ Correlation results appear in the Topology Map. <p>A window, as illustrated below, is displayed containing the root cause CI and all the other CITs in the Correlation rule chain.</p> <div data-bbox="615 918 762 1130" data-label="Diagram"> <pre> graph TD A[agents] -- Cor1 --> B[A] </pre> </div> <p>Use the Show Root Cause option on the A CI to view, in one step, that the source of the failure is the agents CI. The CI that the arrow points to is the affected CI.</p> <p>To view the information about specific CIs that are triggered or affected by the Correlation rule, double-click the relationship connecting the CIs. A map is displayed.</p>

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CI Lifecycle User Interface







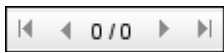
This chapter includes the pages and dialog boxes that are part of the CI Lifecycle user interface.

This chapter describes:	On page:
CI Lifecycle Report	319
CI Lifecycle Window	321
Filter Dialog Box	323
Select Columns Dialog Box	324

CI Lifecycle Report

Description	Enables you to present filtered CI Lifecycle results in report format and print or export them. To access: Click Report Export from the CI Lifecycle window.
Important Information	The CI Lifecycle report is generated for the period selected in the CI Lifecycle window. From the CI Lifecycle report dialog box, you can adjust the period and regenerate the results within the dialog box.

The CI Lifecycle Report dialog box includes the following elements (listed alphabetically):




GUI Element	Description
	Click to select a printing option for the report.
	Click to select a formatting option for the report data.
	Click to select an option for exporting the report.
	Click the forward and back arrows to change the period of the report by the time period selected in the View window.
	Click the Reset Columns Width button to reset the report columns to their original width.
	Click the Select Columns button to open the Select Columns dialog box, which enables you to determine which columns appear in the report.
	Click to navigate through the results page by page or to jump to the first or last page.
Actual Delete Time	The date and time when the CI or relationship is deleted.
Configuration Item Type	The type of CI or relationship.
End1	The node at one end of the relationship (only relevant for relationships).
End2	The node at the second end of the relationship (only relevant for relationships).
From	Indicates the beginning of the period for the generation of the report. Click on the link to open a calendar which enables you to change the date and time.
Generate	Click Generate to generate the data for the selected period.
Label	The name of the CI or relationship as it appears in the Topology Map.









GUI Element	Description
Last Access Time	The last time the CI or relationship was accessed, whether it was updated or just discovered by the discovery process.
To	Indicates the end of the period for the generation of the report. Click the link to open a calendar that enables you to change the date and time.
View	Sets the time period of the report from the beginning time. Select a time period from the drop-down list.
Updated By	The administrator or process that updated the CI or relationship.

CI Lifecycle Window

Description	Enables you to filter CIs and relationships which are candidates for deletion. To access: Select Application > CI Lifecycle .
Included in Tasks	“Generate CI Lifecycle Data and Filter the Results” on page 124

The CI Lifecycle window includes the following elements (listed alphabetically):

GUI Element	Description
	Click Calendar to open the calendar for selecting the beginning and end dates and times for the CI Lifecycle report.
	Click Postpone Deletion to delay the deletion of a CI. It disappears from the list of candidates for deletion.
	Click Mark as Deletion Proof to prevent a CI or relationship from being deleted. It disappears from the list of candidates for deletion.

GUI Element	Description
	Click Delete to delete a selected CI or relationship.
	Click Filter to open the Filter dialog box, which enables you to customize the filter. For details, see “Filter Dialog Box” on page 323.
	Click Clear to clear the filter and display the full results.
	Click Customize Columns to open the 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 “Columns Dialog Box” in <i>Reference Information</i> .
	Click Select All to select all rows of data on the current page.
	Click Refresh to update the data displayed.
	Click Set Rows Per Page to define the number of rows of data per page.
	Click to navigate through the results page by page or to jump to the first or last page.
<Right-click a column header>	For details, see “Customizing Columns” in <i>Reference Information</i> .
Actual Delete Time	The date and time when the CI or relationship is deleted.
CIs tab	Select to see lifecycle results for CIs.
CI Type	The type of the CI or relationship.
Display Label	The name of the CI or relationship as it appears in the Topology Map.
End1	The node at one end of the relationship (only relevant for relationships).
End2	The node at the second end of the relationship (only relevant for relationships).

GUI Element	Description
Generate	Click Generate to generate the data for the selected period.
Last Access Time	The last time that the CI or relationship was accessed, whether it was updated or just discovered by the discovery process.
Relationships tab	Select to see lifecycle results for relationships.
Report Export	Click Report Export to open the CI Lifecycle Report dialog box, which presents the data in the format of a report.
Select	Click the box in the Select column for a CI to select a CI or relationship before performing an operation on it (such as Delete or Postpone Deletion).
Updated By	The administrator or process that updated the CI or relationship.


The following options are available by right-clicking a CI or relationship in the results table (listed alphabetically):

Menu Item	Description
CI/Relationship History	Opens the CI/Relationship History dialog box. For details, see “CI/Relationship History Dialog Box” on page 199.
Properties	Displays the Properties page for the selected CI. For details, see “Properties Tab” on page 210.

Filter Dialog Box

Description	Enables you to customize the filter. To access: Click Filter from the CI Lifecycle screen.
Included in Tasks	“Generate CI Lifecycle Data and Filter the Results” on page 124




The Filter dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Condition	Click in the Condition column and select one of the options from the drop-down list.
Display Name	The attribute columns displayed for the CIs or relationships.
Value	<p>Click in the Value column to set a value for the selected attribute. Depending on the attribute 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.</p> <p>When the conditions Like or Like ignore case are selected in the Condition column, you can use a wildcard (%) before and after the string you are searching for.</p> <p>Note: You must select a condition for a given attribute before entering a value.</p>

Select Columns Dialog Box

Description	<p>Enables you to select the columns appearing in the CI Lifecycle Report.</p> <p>To access: Click Select Columns from the CI Lifecycle Report.</p>
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The Select Columns dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Displays a column. Moves the selected column from the Available Columns pane to the Visible Columns pane.
	Hides a selected column. Moves the selected column from the Visible Columns pane to the Available Columns pane.
	Displays all hidden columns. Moves all the columns from the Available Columns pane to the Visible Columns pane.
Available Columns	The columns in this pane do not appear in the table. Select the columns to be included in the report.
Default	Restores the report columns to their original status.
Visible Columns	The columns in this pane are visible in the table.

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Compare Snapshots User Interface









This chapter includes the pages and dialog boxes that are part of the Compare Snapshots user interface.


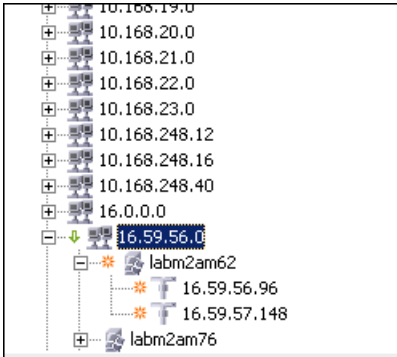

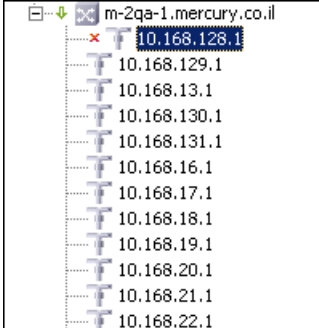
This chapter describes:	On page:
Compare Snapshots Window	328
Find CI by Label Dialog Box	333
Snapshots of <View> Dialog Box	333


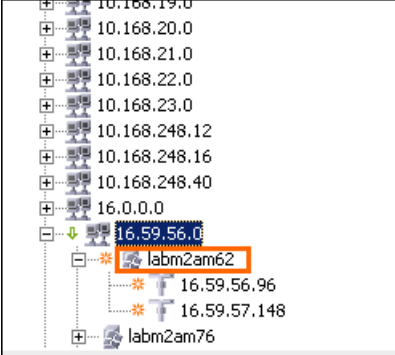

Compare Snapshots Window

<p>Description</p>	<p>Enables you to compare two snapshots of a specific view taken at different times. This feature enables you to visualize the differences between the views by comparing the statuses of the view at the times the snapshots were taken.</p> <p>You can compare a current snapshot to a previous snapshot or two snapshots both taken in the past.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Select Applications > Compliancy > Compare Snapshots. or ▶ Click View Snapshot in a Change report if a snapshot was taken of that view. For details, see “View Snapshot” on page 355. Only views with changes that reflect the differences between two snapshots, one taken before the From date and another snapshot taken before the To date in Change Report (for details, see “Change Report User Interface” on page 353), appear in the report.
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ You can also define a schedule that takes snapshots of a specific view and saves them on a periodic basis. For details, see “Scheduler User Interface” on page 157. ▶ Snapshots of views that are marked as Track Changes (for details, see “Track Changes” on page 229), are created on a daily basis.
<p>Included in Tasks</p>	<p>“Snapshot Comparison” on page 127</p>

The Compare Snapshots window includes the following elements (listed alphabetically):

GUI Element	Description
	Expand the entire hierarchical tree structure of the CIs you selected.
	Collapse the hierarchical tree structure of the CIs you selected.
	Search for a CI within the selected view whose label contains the searched text. Opens the Find CI by label dialog box.
	Find the next occurrence of an item marked as changed.
	Find the previous occurrence of an item marked as changed.
	<p>Show the difference between two configuration files. Compare what the configuration file looked like at the time each snapshot was taken.</p> <p>Click Select Snapshots to compare and select a view that contains a CI of the CIT configfile. Select a CI of the CIT Configuration File. A window opens displaying the differences in the configuration files, which are marked in blue.</p>
	<p>Select a view that contains a CI of the CIT Configuration File and click Select Snapshots to compare. Select two snapshots and click Compare. Select a CI of the CIT Configuration File.</p> <p>Note: This button is only enabled if you selected a CI of the CIT Configuration File from the tree.</p>
	<p>Display the selected CI's attributes. For details, see "Properties Tab" on page 210.</p> <p>Note: The Properties functionality is sometimes displayed in a window and not in a tab.</p>

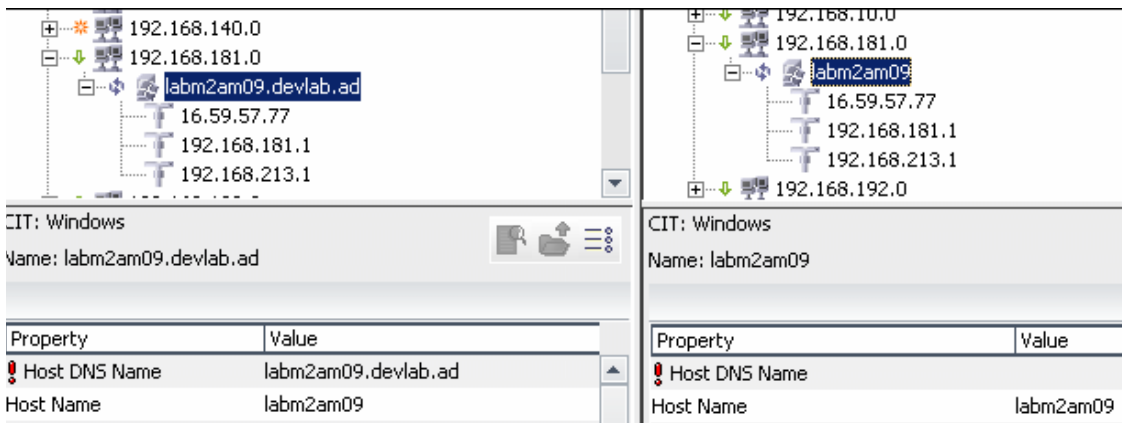
GUI Element	Description
	<p>The Contains an Updated Item icon indicates that either a new child CI was created for a CI or an existing child CI was updated or deleted.</p> <p>For example, the 16.59.56.0 CI in the figure below has a Contains an Updated Item icon due to the child CIs that were added to it.</p> 
	<p>The Deleted Item icon indicates that a CI has been deleted from the view. For example, the figure below shows that the CI 10.168.128.1 has been deleted from the view.</p> 

GUI Element	Description
	<p>The New Item icon indicates that a new CI has been added to the view. The example below shows that a Host and two IP CIs were added to the 16.59.56.0 Network CI.</p> 
	<p>The Updated Item icon indicates that the attribute value of a CI has changed. For more information, see the Example on page 332.</p>
<p><At top of panes></p>	<p>The Compare Snapshots window is divided into two panes. Each side displays an hierarchical tree structure of all the CIs in the Topology Map for that snapshot version. The left side always represents the newer of the two versions. When you select a CI on one side, the corresponding CI on the other side is automatically selected (provided the Synchronize Selection check box is selected).</p>
<p>CIT</p>	<p>The name of the CIT to which the CI belongs as defined in the CI Type Manager, as described in <i>CI Attribute Customization</i>.</p>
<p>Name</p>	<p>The name of the CI as defined in the CI's label.</p>
<p>Properties pane</p>	<p>Displays the attributes of the selected CI.</p> <p>The Properties pane contains the following two fields:</p> <ul style="list-style-type: none"> ➤ Property. Displays the attributes for the selected CI. ➤ Value. Displays the attribute value for the currently selected CI.


GUI Element	Description
Select Snapshots to compare	Select the two snapshots you want to compare. Opens the Snapshots of <view> dialog box.
Select View Name	Displays the name of the view whose snapshots you want to compare. Note: Only views for which snapshots have been taken are available.
Synchronize Selection	Enables you to select a CI on one side and have its corresponding CI automatically selected on the other side. The default for the Synchronize Selection check box is selected. Clearing this check box allows you to select two different CIs from each of the two trees. This allows you to compare two different CIs and see their different properties.

Example

The **Updated Item** icon indicates that the attribute value of a CI has changed. For example, the figure below shows that the CI **labm2am09.devlab.ad** has the **Updated Item** icon because it was updated with a new **Host DNS Name** value (see the **Property** and **Value** columns in the bottom panes underneath the tree structure).



Find CI by Label Dialog Box

Description	Search for a CI within the selected view whose label contains the searched text. You can specify a whole word or part of it. If a match is found, it selects the CI in the hierarchical tree structure in the Compare Snapshots window. To access: Click the Find  button in the Compare Snapshots window.
Included in Tasks	“Snapshot Comparison” on page 127

The Find CI by label dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Backward	Do a backward search.
Case Sensitive	Distinguish between uppercase and lowercase characters. When you select Case Sensitive , search results only find those instances in which the capitalization matches the text you typed in the Text to find box.
Forward	Do a forward search.
Text to find	Enter the text of the CI you want to find. You can specify a whole word or part of it.

Snapshots of <View> Dialog Box

Description	This dialog box contains a list of all the different snapshots taken of the selected view. To access: Click Select Snapshots to compare in Compare Snapshots window.
--------------------	---

Important Information	This dialog box opens only if you have taken snapshots of the view in the “Save Snapshot Dialog Box” on page 313.
Included in Tasks	“Snapshot Comparison” on page 127

The Snapshots of <view> dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Description	The description you wrote for the snapshot in “Save Snapshot Dialog Box” on page 313.
Note	The note you wrote for the view in “Save Snapshot Dialog Box” on page 313.
Owner	The name of the user who took the snapshot.
Size	The number of CIs that were in the view when the snapshot was taken.
Time	The time at which the snapshot was saved.

35

Compare CIs User Interface




This chapter includes the pages and dialog boxes that are part of the Compare CIs user interface.






This chapter describes:	On page:
Compare CIs Window	336
Select CI Dialog Box	339


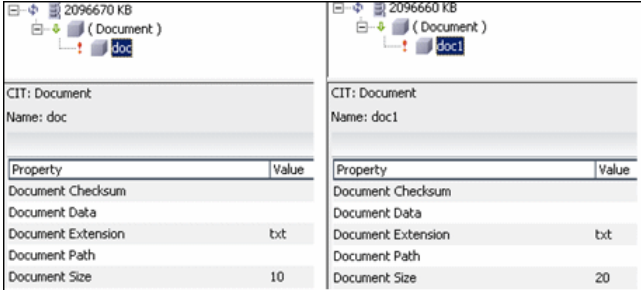

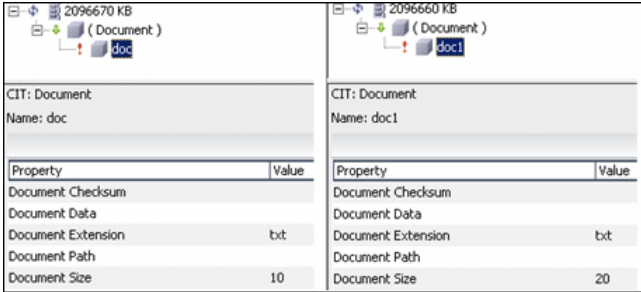
Compare CIs Window

Description	<p>Compare the hierarchies of two compound CIs. A compound CI is a CI that is linked to another CI by a Container link relationship. For example, a comparison might show that Host A contains only one disk whereas Host B contains three disks.</p> <p>The Compare CIs window is divided into two panes. Each side displays an hierarchical tree structure of the CIs you selected. When you select a CI on one side, the corresponding CI on the other side is automatically selected, provided the Synchronize Selection check box is selected.</p> <p>You can see differences in the attributes of the CI whose values have been defined as Comparable in the CI Type Manager. For example, there might be a difference in the operating system or disk capacity.</p> <p>For information on the Comparable option, see “Add/Edit Attribute Dialog Box” on page 556.</p> <p>To access: Select Applications > Compliancy > Compare CIs.</p>
Important Information	<p>You can compare only two CIs of the same CIT or one of the child CITs.</p>
Included in Tasks	<p>“CI Comparison” on page 130</p>

The Compare CIs window includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Expand the entire hierarchical tree structure of the CIs you selected.</p>
	<p>Collapse the hierarchical tree structure of the CIs you selected.</p>
	<p>Search for a CI within the selected view whose label contains the searched text. Opens the Find CI by label dialog box.</p>

GUI Element	Description
	Find the next occurrence of an item marked as changed. For information on the change indicators, see No Matching CI and Has a Non-Matching Child.
	Find the previous occurrence of an item marked as changed. For information on the change indicators, see No Matching CI and Has a Non-Matching Child.
	<p>Show the difference between the content of the two configuration files. Configuration files use the .xml, .txt or .ini extensions.</p> <p>Select a CI of the CIT Configuration File in both panes and click the Show Differences button. A window opens displaying the differences in the configuration files, which are marked in blue.</p>
	<p>View the content of a Configuration File CI. Select a CI of the Configuration File CI and click the Open button.</p> <p>Note: This button is only enabled if you selected a CI of the CIT Configuration File from the tree.</p>
	Display the selected CI's attributes. For details, see "Properties Tab" on page 210.

GUI Element	Description
 No Matching CI	<p>Indicates that a CI on one side does not match any corresponding CI on the other side. The example below shows that the No Matching CI icon is displayed next to the CIs doc and doc1.</p>  <p>The reason they do not match is due to a difference in document size. The value for Document Size for the doc CI on the left side is 10 while the Document Size for the doc1 CI on the left side is 20.</p>
 Has a Non-Matching Child	<p>Indicates that the child of the CI does not have a matching child on the other side. The Document CI in the illustration below has a Has a Non-Matching Child icon because they have different child CIs.</p> 
<p><Left and right panes></p>	<p>Displays a tree of the compared CIs and their child CIs that appear in the selected view or in the CMDB, depending on whether you selected the View or the CMDB options.</p>
<p><At top of panes></p>	<p>Displays the CIs you selected in the Select CI dialog box.</p>

GUI Element	Description
CIT	The CIT (as defined in the CI Type Manager) of the selected CI at the top of the pane. For details, on the CI Type Manager, see <i>CI Attribute Customization</i> .
CMDB	Display the selected CIs and their child CIs that appear in the CMDB.
Name	The name of the CI as defined in the CI's label.
Property	Displays the attribute name for the selected CI, which was marked as Comparable in the CI Type Manager. For details, see "Create Configuration Item Type Wizard" on page 561.
Select	Select the two CIs you want to compare. Opens the Select CI dialog box. The CI you select from the Select option on the left is displayed in the left pane and the CI you select from the Select option on the right is displayed in the right pane.
Synchronize Selection	Enables you to select a CI on one side and have its corresponding CI automatically selected on the other side. The default for the Synchronize Selection check box is selected. Clearing this check box allows you to select two different CIs from each of the two trees. This allows you to compare two different CIs and see their different properties.
Value	Displays the attribute value for the currently selected CI.
View	Display the selected CIs and their child CIs that appear in the view.

Select CI Dialog Box

Description	Select the required CI for comparison from the hierarchical tree or search for a CI for comparison. To access: Click Select CI in the Compare CIs window.
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The Select CI dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Select CI tab	Select the required CI for comparison from a hierarchical tree. For details, see “Select CI Tab” on page 340 below.
Search tab	Search for a CI for comparison. For details, see “Search Tab” on page 340.

Select CI Tab

Description	Select the required CI from a hierarchical tree. To access: Click Select CI to open the Select CI dialog box and click the Select CI tab.
-------------	---




The Select CI tab includes the following elements (listed alphabetically):

GUI Element	Description
	Display the selected CI's properties. For details, see “Properties Tab” on page 210.
	Select a view from the folder's tree.
<Hierarchical tree>	Displays the CIs from the selected view.
View	Select the required view from the list.

Search Tab

Description	Enables you to search for CIs for comparison either in specific views or in the entire CMDB. To access: Click Select CI to open the Select CI dialog box and click the Search tab.
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The Search tab includes the following elements (listed alphabetically):

GUI Element	Description
	Click this to view the search results. The search results are displayed at the bottom of the Search tab.
(Search in:) All views	Conduct the search in all the views that belong to your user profile.
Case Sensitive	Distinguishes between uppercase and lowercase characters. When you select Case Sensitive , the search returns only those instances in which the capitalization matches the text you typed in the Search for box.
CI Type	Search for a CI of a specified CI type. Click the  button to the right to open the Select Configuration Item Type dialog box to open a list of CITs.
(Search in:) Current view	Conduct the search only in the currently selected view.
Derived CI type	Find CIs of the selected CIT as well as those CITs descending from the selected CIT.
Ends with	Search for occurrences that end with the entered text.
(Search in:) Entire CMDB	Conduct the search in the entire CMDB.
Find whole words only	Search for occurrences that are whole words and not part of a larger word.
Related to	Select a CI that is connected to the selected CI. Click the  button to the right to open the Select Configuration Item dialog box. A list appears containing all the CIs that are connected to the selected CI. Select the required CI.
Search for	Enter the text you want to find.
Starts With	Search for occurrences that begin with the entered text.

36

Gold Master Report User Interface

This chapter includes the pages and dialog boxes that are part of the Gold Master Report user interface.

This chapter describes:	On page:
Gold Master Report Page	343

Gold Master Report Page

Description	<p>Compares the configuration of a Gold Master CI to other CIs of the same CIT, or a CIT that is derived from it. The report contains the results of the Gold Master report definition defined in the Report Manager. For details, see “Gold Master Report Pane” on page 267.</p> <p>The report specifies which of the selected CIs are configured differently from the Gold Master CI.</p> <p>To access: Select Applications > Compliancy > Gold Master.</p>
Important Information	<ul style="list-style-type: none">▶ Verify that popups are not blocked in your browser.▶ For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>.

The Gold Master Report page includes the following panes:

- ▶ “Left Pane” on page 344
- ▶ “Right Pane” on page 345

Left Pane

Description	Select the required Gold Master report definition you want to generate.
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The Left pane includes the following elements:

GUI Element	Description																					
Definitions tab	Displays a hierarchical tree structure of the Gold Master reports defined in the Report Manager. For details, see “Gold Master Report Pane” on page 267.																					
Results tab	<p>The Gold Master report you select in the Definitions pane is automatically selected in the Results pane.</p> <p>If you have defined a task in the Scheduler that generates and saves a Gold Master report on a periodic basis, you can produce a Gold Master report that was generated at a specific time or a by a specific user. For details on how to schedule a task, see “Scheduler User Interface” on page 157.</p> <table border="1" data-bbox="582 864 851 1119"> <thead> <tr> <th>Report</th> <th>Date</th> <th>User</th> </tr> </thead> <tbody> <tr> <td>gold1</td> <td></td> <td></td> </tr> <tr> <td>gold1</td> <td>Sun Jul</td> <td>admin</td> </tr> <tr> <td>gold1</td> <td>Sun Jul</td> <td>admin</td> </tr> <tr> <td>gold1</td> <td>Sun Jul</td> <td>admin</td> </tr> <tr> <td>gold1</td> <td>Sun Jul</td> <td>admin</td> </tr> <tr> <td>gold1</td> <td>Mon Jul</td> <td>admin</td> </tr> </tbody> </table> <p>From the:</p> <ul style="list-style-type: none"> ➤ Report list, select the required Gold Master report. ➤ Date list, select the required time. ➤ User list, select the required user. <p>Note: For details on how to customize columns and divide a table of data or a list of reports into pages, see “Understanding Common Report Elements” in <i>Reference Information</i>.</p>	Report	Date	User	gold1			gold1	Sun Jul	admin	gold1	Sun Jul	admin	gold1	Sun Jul	admin	gold1	Sun Jul	admin	gold1	Mon Jul	admin
Report	Date	User																				
gold1																						
gold1	Sun Jul	admin																				
gold1	Sun Jul	admin																				
gold1	Sun Jul	admin																				
gold1	Sun Jul	admin																				
gold1	Mon Jul	admin																				

Right Pane

Description	<p>Compares the attribute values of the CIs in the Gold Master CI subgraph to the attribute values of the CIs in the subgraph of the Compared CI in the CMDB.</p> <p>Note: Only CIs that have been assigned the Comparable qualifier in the CIT Manager (for details, see “CI Type Manager User Interface” in <i>CI Attribute Customization</i>), can be compared.</p> <p>Each section of the report contains a table comparing the attribute values of the Gold Master CIs to the attribute values of the Compared CI of the same CIT.</p> <p>Note: The Gold Master report only displays a CI attribute comparison if the values are different.</p> <p>If a section is empty, it means that the attribute values of the Gold Master CIs and the Compared CIs for that CIT are identical.</p> <p>For a sample of a Gold Master report, see “Sample Gold Master Report” on page 346.</p>
Important Information	<p>For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>.</p>

The Right pane includes the following elements:

GUI Element	Description
Attributes	The CI attribute.
Compared CI	The display name of the Compared CI.
Element Type	The CIT of the CI.
Label	The display label of the Gold Master CI.
# in Compared CI	The number of CIs for that element type (CIT) the Compared CI subgraph contains.
# in Gold Master	The number of CIs for that element type (CIT) the Gold Master CI subgraph contains.

GUI Element	Description
Report Date	The time and date the report was generated.
Value in Compared CI	The value of the attribute in the Compared CI.
Value in Gold Master CI	The value of the attribute in the Gold Master CI.

Sample Gold Master Report

Gold Master CI - labm1rac01 Report Date - 7/8/07 7:36 PM			
Compared CI - labm1rac02, Element Type - CPU, # in Gold Master - 4, # in Compared CI - 4			
1-8 of 8			
Label ▲	Attributes	Value in Gold Master CI	Value in Compared CI
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Vendor	GenuineIntel	GenuineIntel
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Speed	3000.286	3000.258
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Vendor	GenuineIntel	GenuineIntel
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Speed	3000.286	3000.258
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Vendor	GenuineIntel	GenuineIntel
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Speed	3000.286	3000.258
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Vendor	GenuineIntel	GenuineIntel
Intel(R) Xeon(TM) CPU 3.00GHz	CPU Speed	3000.286	3000.258

The sample Gold Master report shows the following:

- ▶ The Gold Master CI **labm1rac01** is being compared to the Compared CI **labm1rac02**.
- ▶ **CPU** attribute values in the Gold Master subgraph are being compared with the **CPU** attribute values in the Compared CI subgraph.
- ▶ There are four **CPU** CIs in the Gold Master subgraph and four **CPU** CIs in the Compared CI subgraph.

37

Asset Report User Interface

This chapter includes the page that is part of the Asset report user interface.

This chapter describes:	On page:
Asset Report Page	347

Asset Report Page

Description	<p>An Asset report displays a list of all the CIs in a selected view, and their attribute values, as well as their descendants in the CMDB.</p> <p>The report contains only the attributes whose Asset Data check box was selected in the Add Attributes tab in the CI Type Manager. For more details, see “Add/Edit Attribute Dialog Box” in <i>CI Attribute Customization</i>.</p> <p>The Asset report retains the same hierarchical structure as the relevant view in the Topology Map.</p> <p>To access: Select Applications > Reports > Asset Report.</p>
--------------------	--

<p>Important Information</p>	<ul style="list-style-type: none"> ▶ Make sure that popups are not blocked in your browser. ▶ For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>. ▶ When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of the Infrastructure Settings manager. For more details, see “Printing Reports” in <i>Reference Information</i>.
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The Asset report page includes the following elements (listed alphabetically):

GUI Element	Description
<p>CMDB</p>	<p>Includes information from the selected view as well as information from the child CIs in the CMDB.</p> <p>By choosing this option, the report includes CIs that are connected by the Container link relationship to the CIs in selected view. For example, the report would include the CPU and memory of a server that is contained in the view.</p>
<p>Selected view</p>	<p>Select the required view.</p>
<p>Views</p>	<p>Includes only CIs contained in this view.</p>

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Host Dependency Report User Interface

This chapter includes the page that is part of the Host Dependency report user interface.

This chapter describes:	On page:
Host Dependency Report Page	350

Host Dependency Report Page

<p>Description</p>	<p>Dependency reports are based on TQL queries created in the Enrichment Manager, which use the relationship of the type Dependency. Dependency reports list all the relationships of the type Dependency that connect between servers in the selected view, or between the servers in the CMDB and the servers within the selected view.</p> <p>The report includes relationships that:</p> <ul style="list-style-type: none"> ▶ Exist between databases and clients ▶ Exist between clients and servers ▶ Are created as a result of an MQ connection <p>To access: Select Applications > Reports > Host Dependency.</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ You can create new TQLs in Enrichment Manager using the Dependency relationship to describe the connection between hosts. Every new Dependency relationship that is used appears in the Dependency report. ▶ Make sure that popups are not blocked in your browser. ▶ For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>.

The Host Dependency report page includes the following elements (listed alphabetically):

GUI Element	Description
CMDB	Includes additional information from the CMDB.
Selected view	Select the required view.
Views	Includes only CIs contained in this view.

The Host Dependency report includes the following elements (listed alphabetically):

GUI Element	Description
Clients	The list of clients that are linked to the servers.
CMDB	Display all the servers in the CMDB that are dependent on the servers in the selected view.
Counter	The number of clients to which the server is connected.
Host	The servers in the selected view.
Relationship	The display label of the relationship in the Topology Map.
Views	Display all the dependencies between the servers in the selected view.

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Change Report User Interface

This chapter includes the pages and dialog boxes that are part of the Change report user interface.

This chapter describes:	On page:
Change Report Page	354
CI History Page	357
Select CI/View Dialog Box	358

Change Report Page

Description	<p>Displays information about the changes made to the CIs whose properties are marked as either Change Monitored or Comparable. For details, see “Add/Edit Attribute Dialog Box” in <i>CI Attribute Customization</i>.</p> <p>The report displays:</p> <ul style="list-style-type: none"> ▶ Changes that occurred in a selected CI and all its descendants, which are defined with the CONTAINER qualifier. For information about qualifiers, see “Qualifiers Page” in <i>CI Attribute Customization</i>. ▶ Changes that occurred in all CIs in the selected view. In addition, this page displays any CIs that were added or deleted during the defined time frame according to snapshots taken of that view. ▶ CIs with a Container link relationship that were added to or removed from a CI. ▶ CIs whose relationship was defined with a TRACK_LINK_CHANGES qualifier, that were added to or removed from a CI. For information about qualifiers, see “Qualifiers Page” in <i>CI Attribute Customization</i>. <p>To access: Select Applications > Reports > Change Report.</p>
Important Information	<p>For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>.</p>

The Change report page includes the following elements (listed alphabetically):

GUI Element	Description
Select CI/View	<p>Select the required CI or view.</p> <p>Note: For details on how to choose the time range and granularity in which the report is displayed, see “Choosing the Time Range and Granularity” in <i>Reference Information</i>.</p>

The generated Change report includes the following elements (listed alphabetically):

GUI Element	Description
View Snapshot	<p>Opens the Compare Snapshots dialog box. Enables you to perform a snapshot comparison. For details about snapshots, see, “Compare Snapshots User Interface”.</p> <p>Note: This option is displayed only if, for the relevant view context, a snapshot was saved before the From date and another snapshot was saved before the To date, and there was a difference between them.</p>
View Statistics	<p>The statistics include the following:</p> <ul style="list-style-type: none"> ▶ The number of CIs that were added to the view ▶ The number of CIs that were removed from the view ▶ The number of relationships that were added to the view ▶ The number of relationships that were removed from the view

The Change Report page includes the following areas:

- ▶ “CI Changes Area” on page 355
- ▶ “Relationship Changes Area” on page 356

CI Changes Area

The CI Changes area in the Change report screen includes the following elements (listed alphabetically):

GUI Element	Description
Change Date & Time	The date and time at which the update was performed.
Changer	The name of the user that manually modified the CI’s property, or the name of the Discovery Probe that automatically discovered a change made to the CI’s property.
CI Attribute	The name of the CI attribute that was updated.

GUI Element	Description
CI Label	The label of the path from the root to the CI. Note: A backslash (\) in a CI name indicates a parent-child relationship with the format: <parent_CI>\<child_CI>. For example, the entry 16.59.63.0\Windows provides change information for the Windows CI which is the child of the 16.59.63.0 CI. Note: Click to view the change history of a specific CI. For details, see “CI History Page” on page 357.
CIT Name	The name of the CIT (internal).
New Value	The new value of the CI attribute.
Old Value	The previous value of the CI attribute (before the change).
Type	The type of change that occurred.
<view other pages>	To view other pages, use the left and right arrows. The number between the left and right arrows indicate which pages are currently being displayed. For example, 1 - 2 of 3 means that the 1st and 2nd pages out of 3 are being displayed.

Relationship Changes Area

The Relationship Changes area in the Change report screen includes the following elements (listed alphabetically):

GUI Element	Description
Change Date & Time	The date and time at which the update was performed.
Changer	The name of the user that manually modified the CI's property, or the name of the discovery probe that automatically discovered a change made to the CI's property.

GUI Element	Description
Container Label	<p>The label of the path from the root to the container CI. A backslash (\) in a CI name indicates a parent-child relationship with the format: <parent_CI>\<child_CI>. For example, the entry 16.59.63.0\Windows provides change information for the Windows CI which is the child of the dancer.hp.com CI.</p> <p>Note: Double-click an item to view the change history of the container CI. For details, see “CI History Page” on page 357.</p>
Event type	<p>You can have one of the following values:</p> <ul style="list-style-type: none"> ▶ Added CI. A contained CI was added to the container CI using a Container link relationship. ▶ Removed CI. A contained CI that was linked to a container CI using a Container link was removed.
Related label	<p>The label of the path from the root to the contained CI.</p> <p>Note: Double-click an item to view the change history of the related CI. For details, see “CI History Page” on page 357.</p>

CI History Page

Description	<p>Enables you to view all the changes in the properties of a specific CI or for CIs linked by a Container link relationship, from the time they were created.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ In the CI Changes area, click one of the links in the CI label column for the required CI. or ▶ In the Relationship Changes area, click one of the links in the Container label or Related label columns for the required CI.
Important Information	<p>Make sure that popups are not blocked in your browser.</p>

The CI History page includes the following elements (listed alphabetically):

GUI Element	Description
Change Date & Time	The date and time when the update was performed.
Changer	The name of the user that manually modified the CI's property, or the name of the discovery probe that automatically discovered a change made to the CI's attribute.
CI Attribute	The name of the CI attribute that was updated.
New Value	The new value of the CI attribute.

Select CI/View Dialog Box

Description	<p>Select a CI or view using View Explorer functionalities.</p> <p>The Select CI/View dialog box consists of two functional formats: Browse mode and Search mode.</p> <ul style="list-style-type: none"> ▶ In Browse mode you can search for and display a view, and browse through the view to locate a particular CI. You can also perform operations for the CI from a context menu. ▶ In Search mode you can search for one or more CIs in the views or the CMDB, search for all occurrences of a CI, or filter the list of CIs that is displayed. <p>For details, see “View Explorer User Interface” in <i>Reference Information</i>.</p> <p>To access: Select Applications > Reports > Change Report > Select CI/View.</p>
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System Report User Interface

This chapter includes the pages and dialog boxes that are part of the System Report user interface.

This chapter describes:	On page:
Set Parameters Values Dialog Box	359
System Report Page	360

Set Parameters Values Dialog Box

Description	<p>Enables you to edit the predefined parameterized values of node conditions defined for the selected Report definition in the Report Manager.</p> <p>The dialog box displays all the conditions for the selected Report definition. For each element, every condition appears on a separate line.</p> <p>To access: Click the Set parameters values link in the System Report page.</p>
Important Information	<p>This link appears only if you defined a node condition using parameterized values in the Attribute Condition dialog box in Report Manager. For details, see “Attribute Condition Dialog Box” in <i>Reference Information</i>.</p>

The Set parameters values dialog box includes the following elements:

GUI Element	Description
Element name	The node for which the condition was defined using parameterized values.
<Attribute>	The attribute used for the attribute condition definition.
<Operator>	The operator used for the attribute condition definition.

System Report Page

Description	<p>A System report is based on a specific Report TQL query, defined in the Report Manager. It gives you information about the selected Report nodes in the TQL on which it is based.</p> <p>The information that appears in the report, including the order in which Report nodes are listed and their placement relative to other Report nodes, and how the information within each Report node is sorted, is defined in the Report Manager. For details, see “Report Manager User Interface” on page 261.</p> <p>To access: Select Applications > Reports > System Report.</p>
Important Information	<ul style="list-style-type: none"> ➤ For details on how to work with reports, see “Understanding Common Report Elements” in <i>Reference Information</i>. ➤ When producing a report in .pdf format, the size of the .pdf is limited to the number of data units defined in the relevant section of the Infrastructure Settings manager. For details, see “Printing Reports” in <i>Reference Information</i>.

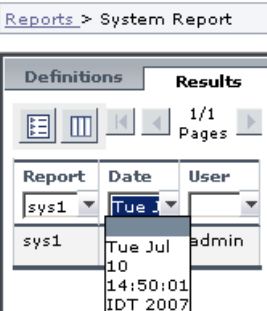
The System Report page includes the following panes:

- “Left pane” on page 361
- “Right pane” on page 362

Left pane

Description	Select the required System report definition you want to generate.
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The Left pane includes the following elements:

GUI Element	Description
Definitions tab	Displays the hierarchical tree structure of the System reports defined in the Report Manager. For details, see “Report Manager User Interface” on page 261.
Results tab	<p>The System report you select in the Definitions pane is automatically selected in the Results pane.</p> <p>If you have defined a task in the Scheduler that generates and saves a System report on a periodic basis, you can produce a System report that was generated at a specific time or a by a specific user. For details on how to schedule a task, see “Scheduler User Interface” on page 157.</p>  <p>From the:</p> <ul style="list-style-type: none"> ➤ Report list, select the required System report. ➤ Date list, select the required time. ➤ User list, select the required user. <p>Note: For details on how to customize columns and divide a table of data or a list of reports into pages, see “Understanding Common Report Elements” in <i>Reference Information</i>.</p>

Right pane

Description	Contains the information that was defined in the Report Manager to be included in the report. This includes which Report nodes should appear in the report, the parameter defined for each Report node, and the function you want to use to calculate the results on the report's columns. For details, see "Report Manager User Interface" on page 261.
Important Information	For details on how to work with reports, see "Understanding Common Report Elements" in <i>Reference Information</i> .

The right pane includes the following element:

GUI Element	Description
Set parameters values	<p>A link that opens the Set parameters values dialog box. Enables you to edit the predefined parameters of node conditions.</p> <p>Note: This link appears only if you defined a node condition using parameterized values in the Attribute Condition dialog box in Report Manager. For details, see "Attribute Condition Dialog Box" in <i>Reference Information</i>.</p>

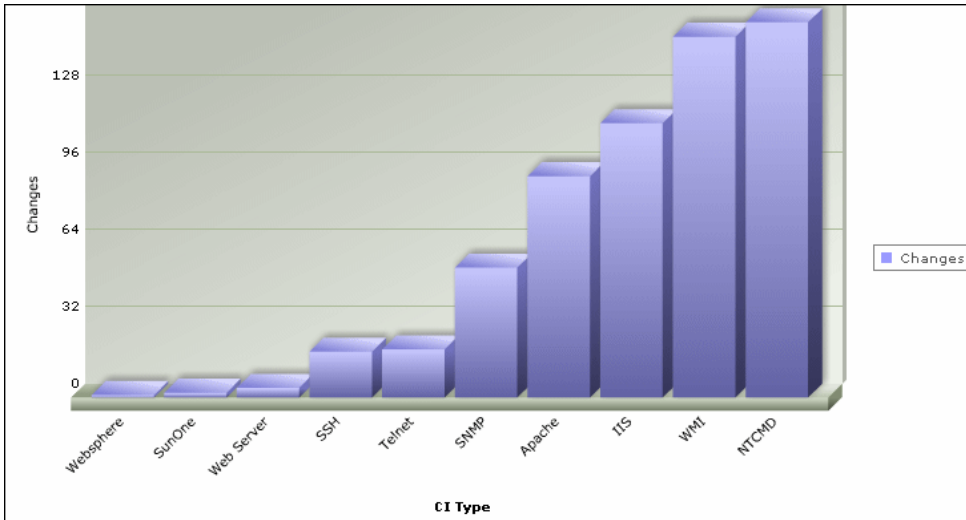
41

Overview Reports

This chapter includes the pages and dialog boxes that are part of the Overview reports, located in **Application > Overview Reports**.

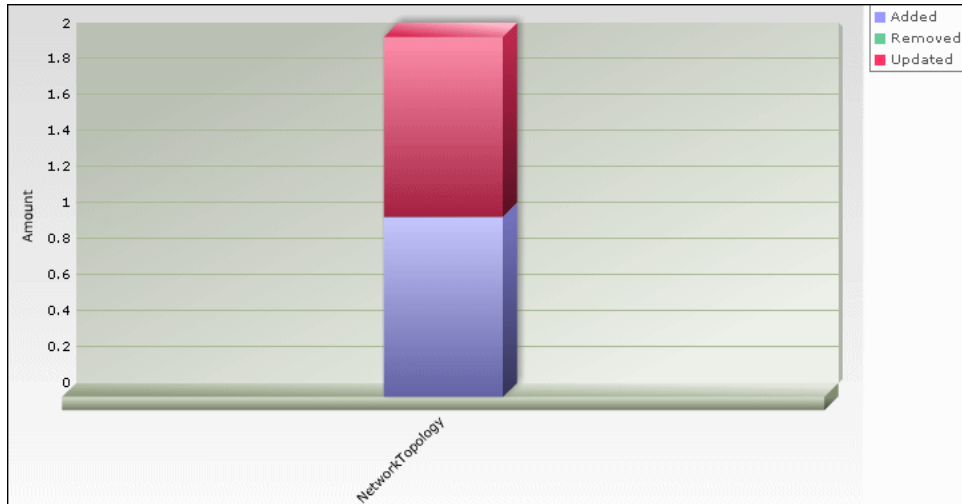
This chapter describes:	On page:
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Changed Applications



<p>Description</p>	<p>This report displays a bar graph showing the number of detected changes in applications within a defined period. Each bar represents a different application. The CI type is displayed under the bar. The legend at the right side of the bar graph shows the color that represents a changed application. You can display the number of changes that occurred by moving the cursor over the relevant application. The tooltip that appears displays the number of changes that occurred for that application.</p> <p>To access: Select Application > Overview Reports > Changed Applications.</p>
<p>Useful Links</p>	<p>For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>.</p>

Changed Views



Description

This report displays a bar graph showing the number of changes that occurred in a specific view within a defined period.

Note: Only views with changes that reflect the differences between two snapshots, one taken before the **From** date and another snapshot taken before the **To** date in Change Report appear in the report.

Each bar represents a different view. The bar graph displays up to ten views with the largest number of changes. The view name is displayed under the bar. The legend at the right side of the bar graph shows which color represents the type of change that occurred. You can display the number of each type of change by moving the cursor over the relevant color. The tooltip that appears displays the name of the view and the number of changes that occurred.

Click a bar to open the Save Snapshot window and display the differences between the views. For details, see “Compare Snapshots User Interface” in *IT World Model Management*.

To access: Select **Application > Overview Reports > Changed Views**.

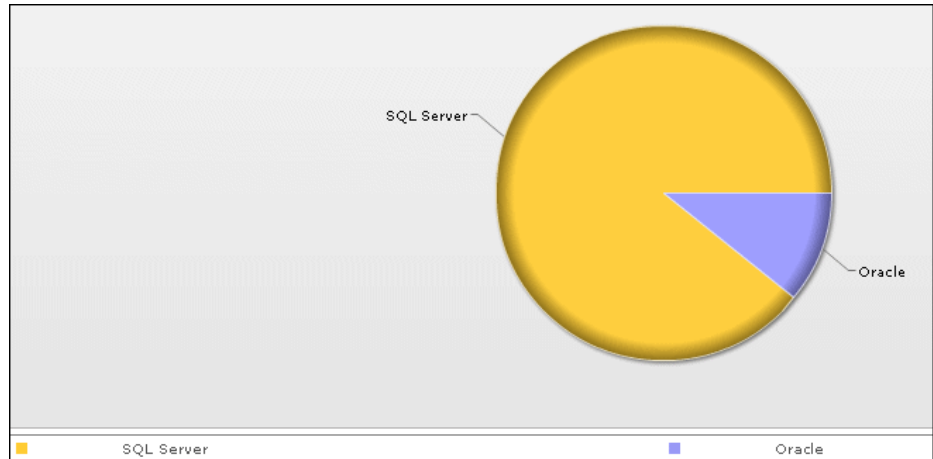
Useful Links	<p>For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>.</p> <p>For details on Change reports, see “Change Report User Interface” in <i>IT World Model Management</i>.</p>
---------------------	---

CMDB Utilization

Type	Amount
CIs and Relationships	203,050
Correlation Rules	2
Enrichment Rules	18
Reports	2
Running Discovery Jobs	34
Snapshots	0
Views	44

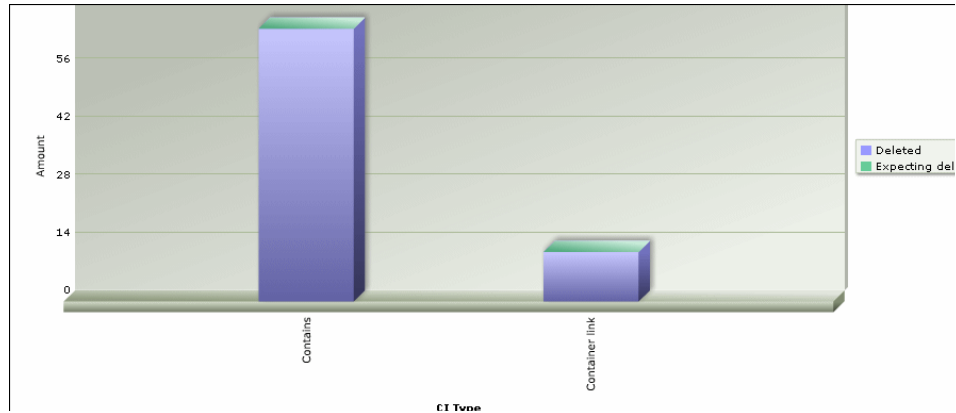
Description	<p>This report displays general CMDB statistics.</p> <p>For example, the statistics can contain the number of Correlation rules created, how many CIs there are in the CMDB, or how many snapshots have been taken.</p> <p>To access: Select Application > Overview Reports > CMDB Utilization.</p>
Useful Links	<p>For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>.</p>

Database Breakdown



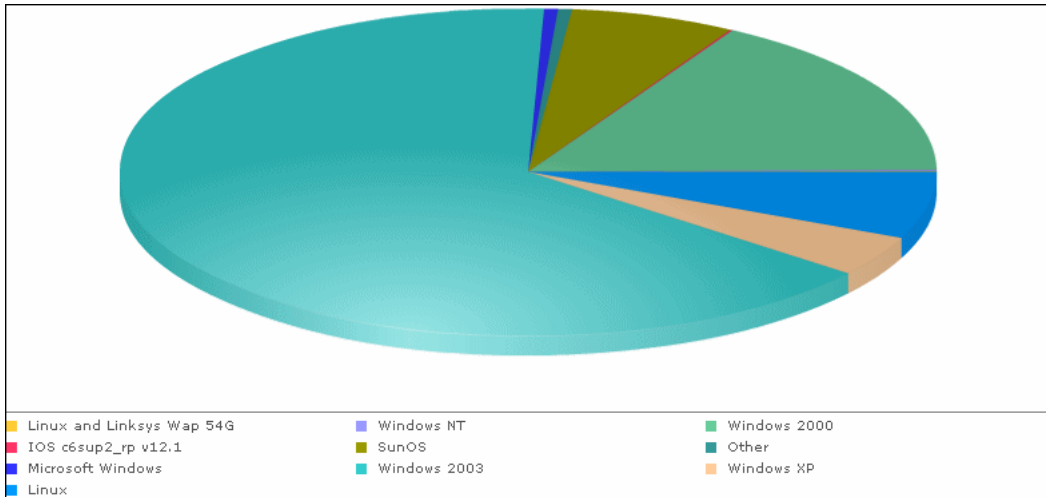
<p>Description</p>	<p>This report displays a pie chart showing the breakdown of database types and versions. You can view all databases deployed in the system or databases at a certain location.</p> <p>To view the available databases at a specific location, select the required country, state, and city in which the hosts that the databases are connected to are located.</p> <p>To verify the database types, use the legend below the pie chart.</p> <p>Click a segment to view a specific database type sorted by version.</p> <p>To verify the database versions, use the legend below the pie chart. You can display the number of each database version by moving the cursor over the related color. The tooltip that appears displays the relevant number.</p> <p>Click a pie slice to drill down to see a Show CI Instances report for each database version.</p> <p>To access: Select Application > Overview Reports > Database Breakdown.</p>
<p>Useful Links</p>	<ul style="list-style-type: none"> ▶ For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>. ▶ For details on how to animate charts using the context menu (opened by right-clicking on the chart), see “Animating Report Charts with Macromedia Flash Player” in <i>Reference Information</i>.

Delete Candidates Overview



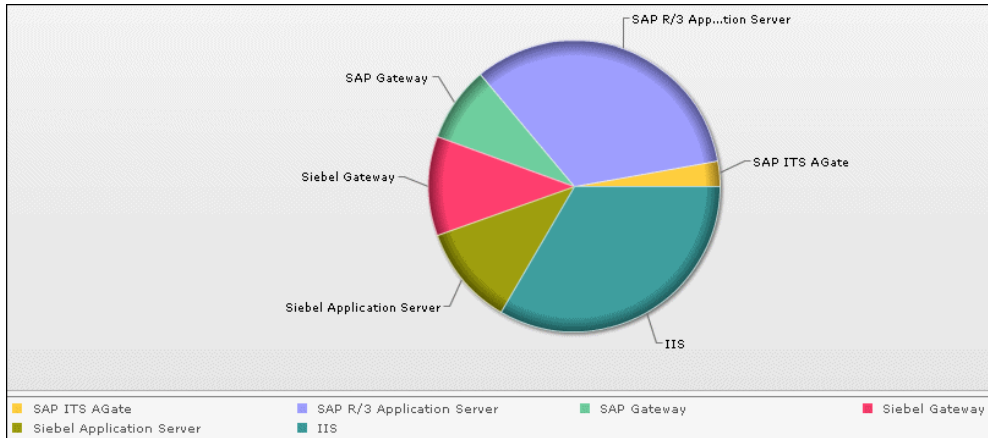
<p>Description</p>	<p>This report displays a bar graph showing the CITs and relationships that were deleted within a defined period, and the ones that are about to be deleted.</p> <p>Each bar represents the CIT of a CI or a relationship. The legend at the right side of the bar graph shows which color represents the CIs and relationships that were deleted and which color represents those that are about to be deleted. The CI type of each CI or relationship is displayed under the bar.</p> <p>You can display the number of CIs and relationships that were deleted and the ones that are about to be deleted by moving the cursor over the related color in the bar. The tooltip that appears displays the relevant number.</p> <p>Click a bar to drill down to see a Show CI Instances report displaying the CITs and relationships that were deleted.</p> <p>To access: Select Application > Overview Reports > Delete Candidates Overview.</p>
<p>Useful Links</p>	<p>For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>.</p>

Host O/S Breakdown



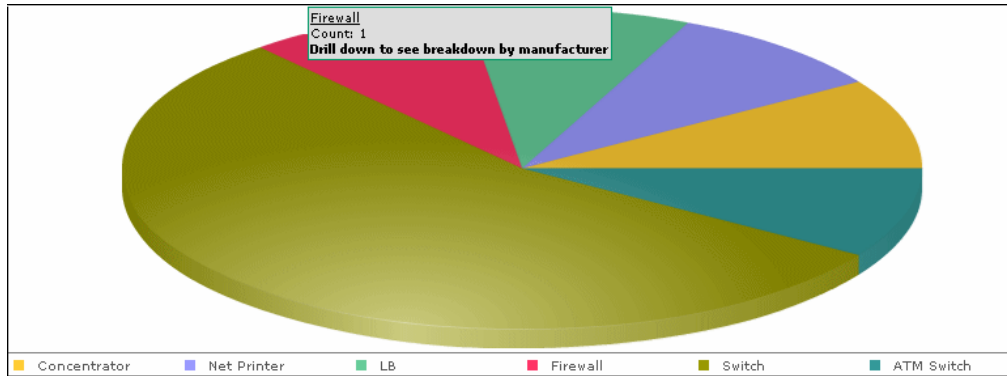
<p>Description</p>	<p>This report displays a breakdown of operating systems. You can view all deployed operating systems or you can view data for operating systems at a certain location or running on a certain subnet.</p> <p>You can display the number of operating systems of each type by moving the cursor over the related color. The tooltip that appears displays the relevant number.</p> <p>Click a pie slice to drill down to see a Show CI Instances report for each operating system.</p> <p>To access: Select Application > Overview Reports > Host OS Breakdown.</p>
<p>Useful Links</p>	<ul style="list-style-type: none"> ▶ For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>. ▶ For details on how to animate charts using the context menu (opened by right-clicking the chart), see “Animating Report Charts with Macromedia Flash Player” in <i>Reference Information</i>.

Major Application Type Breakdown



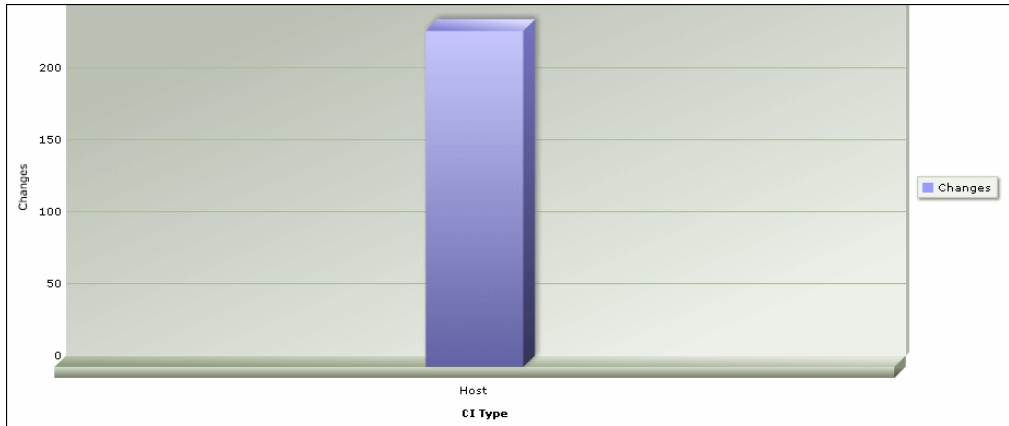
<p>Description</p>	<p>This report displays a breakdown of major applications and their versions. Major applications are CITs that have been assigned the MAJOR_APP class qualifier. For details, see “Qualifiers Page” in <i>CI Attribute Customization</i>.</p> <p>You can view data for all applications deployed in the system, or only those at a specific location. Choose the country, state, and city for which you want to view application breakdown data, or select All to show the entire application breakdown.</p> <p>Use the legend below the pie chart to verify an application.</p> <p>Click a segment to view a specific application sorted by version.</p> <p>Use the legend below the pie chart to verify the different versions.</p> <p>Click a pie segment to drill down to see a Show CI Instances report for each application version.</p> <p>To access: Select Application > Overview Reports > Application Breakdown.</p>
<p>Useful Links</p>	<ul style="list-style-type: none"> ▶ For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>. ▶ For details on how to animate charts using the context menu (opened by right-clicking on the chart), see “Animating Report Charts with Macromedia Flash Player” in <i>Reference Information</i>.

Network Device Breakdown



<p>Description</p>	<p>Displays a breakdown of network devices. Only the network devices that meet the following conditions appear in the report:</p> <ul style="list-style-type: none"> ▶ The CIT of the network device has been assigned the qualifier NETWORK_DEVICES. For details, see “Qualifiers Page” in <i>CI Attribute Customization</i>. ▶ The network device is connected to an IP CI. ▶ The network device is defined with the following attribute condition: Host is complete = True. For details, see “Attribute Tab” in <i>Reference Information</i>. <p>You can view all network devices deployed in the system or at a certain location. Choose the country, state, and city for which you want to view network device breakdown data, or select All to show the entire network device breakdown.</p> <p>Each color in the pie chart represents a different network device. The legend underneath shows which network device each color represents. You can display the name and number of each network device by moving the cursor over the related color. The tooltip that appears displays the relevant information.</p> <p>Click a segment to view a specific network device sorted by manufacturer.</p> <p>Click a segment to generate a Show CI Instances report, displaying the details of the CI instances of that network device for that manufacturer.</p> <p>To access: Select Application > Overview Reports > Network Device Breakdown.</p>
<p>Useful Links</p>	<ul style="list-style-type: none"> ▶ For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>. ▶ For details on how to animate charts using the context menu (opened by right-clicking on the chart), see “Animating Report Charts with Macromedia Flash Player” in <i>Reference Information</i>.

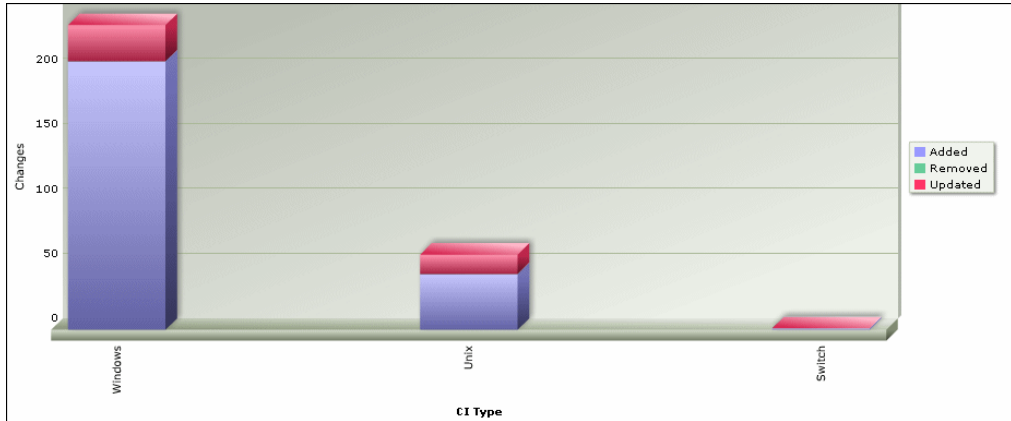
Number of Changes



<p>Description</p>	<p>This report displays a bar graph showing the number of detected changes in a CIT within a defined period. Click the bar to view the breakdown of the types of changes that occurred for the CIT and its child CITs.</p> <p>To access: Select Application > Overview Reports > Number of Changes.</p>
<p>Useful Links</p>	<p>For details on how to work with reports, see “Working in Reports” in <i>Reference Information</i>.</p>

Sample Change Type Breakdown

This example displays the breakdown of the types of changes that occurred for a CIT and its child CITs.



Each bar represents a different CI type. The CI type is displayed under the bar. Each color in the legend at the right of the bar graph represents a different type of change. You can display the number of each type of change by moving the cursor over the related color. The tooltip that appears displays the relevant number of changes that occurred.

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