HP Client Automation Enterprise

Reporting Server

for the Windows® operating system

Software Release Version: 7.20

Installation and Configuration Guide

hp ®

i n v e n t

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Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
  - The number before the period identifies the major release number.
  - The first number after the period identifies the minor release number.
  - The second number after the period represents the minor-minor release number.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition, visit the following URL:

http://h20230.www2.hp.com/selfsolve/manuals

This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Table 1 lists new features added for the HP Client Automation v 7.2 release.

Table 1   New features added for this release

Chapter	Version	Changes
All	7.20	HP Configuration Management was renamed to HP Client Automation for this release. Note that not all components and products were re-branded.
All	7.20	Added information for Vulnerability Management data.
2	7.20	New reports were added for this release. See Inventory Reporting Auditing Requirements on page 20 for instructions for adding the required WBEM instances. Refer to the release notes for additional details.
2	7.20	Reporting Server Requirements on page 16:Added database changes for Vulnerability Management tables (in Inventory db)
3	7.20	Windows Experience Index Reports on page 45: Added a description of Windows Experience Index reports.

Chapter	Version	Changes
3	March 2009	Leaf Node Filtering on page 50: added new section.
B	7.20	Reporting Server Configuration File on page 85: Added section for Vulnerability Management Configuration file.

Support

You can visit the HP Software support web site at:

www.hp.com/go/hpsoftwaresupport

This Web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online software support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Contents

1 Introduction

At the end of this chapter, you will:

- Be familiar with the HP Client Automation Reporting Server (Reporting Server) reports.

- Be able to create a Reporting Server environment.

- Understand the contents of this guide.

Overview

As part of the HP Client Automation (HPCA) extended infrastructure, the web-based Reporting Server allows you to query the combined data in existing HPCA Configuration Server Databases (CSDB) and create detailed reports. In addition, you have the option of mounting an existing LDAP directory, which allows you to filter your data using your LDAP directory levels.

The Reporting Server interface provides a dynamic and intuitive way to use HPCA data for reporting and overall environmental assessment. The Reporting Server home page displays summary information based on the reports that are enabled. See Modifying the Reporting Server Configuration File on page 28 for information on enabling reports.

Using this Guide with Core and Satellite Servers

If your environment uses Core and Satellite servers, first read the Core and Satellite Servers Getting Started Guide as the installation, configuration, troubleshooting and Administrator tools access information in that guide may override the information in this guide.

The HPCA Reporting Environment

Figure 1 below illustrates a Reporting environment.

Figure 1   Sample HPCA Reporting Server environment
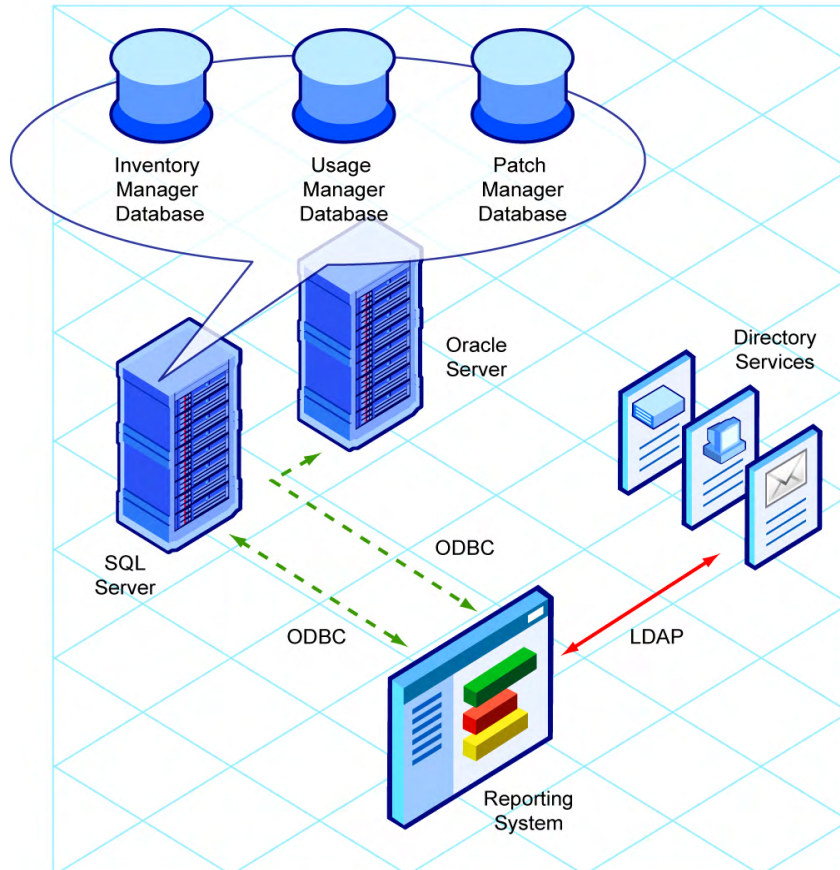
The Reporting environment includes the following required and optional components:

- **Reporting System Modules**
  The Reporting System modules do not require the HP Client Automation Portal (Portal). They can be installed on any Win32 machine, which includes the required Web server, discussed below.

- **Web Server**
  The Reporting Server requires Apache HTTP Server 2.0 or later (2.2x recommended) installed and running on the device you plan on installing Reporting Server. Apache is available free from **http://httpd.apache.org**. For more information, refer to the Apache web site.

- **Connections to HPCA Databases**
  Reporting Server can access any HPCA SQL or Oracle database, such as those for HPCA Inventory, Vulnerability Management, Patch, and Application Usage. Each database accessed can exist on its own server with its own ODBC DSN connection.

- **Connections to LDAP Directory** (optional)
  The Reporting Server supports optional access to an existing LDAP directory in your enterprise. Access to an LDAP directory allows you to filter report data according to the directory entries.

Terminology

Become familiar with the following terms used throughout this guide.

bulletin

A bulletin is a vulnerability reported by Microsoft about one of their products.

patch

The patch is the actual file to be deployed and executed to fix a vulnerability. A bulletin may have multiple patches depending on platform, number of bits, and language.

qnumber

A qnumber is equivalent to the ticket opened by Microsoft Support. One bulletin can have multiple qnumbers.

2 Creating the Reporting Server Environment

At the end of this chapter, you will:

- Know the prerequisites for obtaining reports with the Reporting Server.

- Be able to apply the prerequisites required for using the Reporting Server.

- Be able to add all WBEM components needed for the Reporting Server to your Inventory Manager reporting audit package.

- Be able to configure the Reporting Server to connect to your databases.

- Optionally, be able to configure the Reporting Server to connect to an existing LDAP directory.

- Be able to access the Reporting Server web site.

> ⚠ If your environment uses Core and Satellite servers, first read the Core and Satellite Servers Getting Started Guide as the installation, configuration, troubleshooting and Administrator tools access information in that guide may override the information in this guide.

Reporting Server Requirements

As always, be sure to test any recommended or required environment changes before they are implemented into production.

The Reporting Server provides unified access to your existing SQL Server or Oracle HP Client Automation (HPCA) databases. These include the following:

- **Inventory** — For inventory reporting. Refer to the *HP Client Automation Inventory Manager Installation and Configuration Guide (Inventory Manager Guide)* for information on creating and connecting to this database.

- **Vulnerability Management** – For vulnerability management reporting. Refer to the *HP Client Automation Enterprise Manager User Guide (Enterprise Manager Guide)* for information on creating and connecting to this database.

- **Patch** – For patch reporting, a patch database created with the latest Patch Manager is required. Refer to the *HP Client Automation Patch Manager Installation and Configuration Guide (Patch Manager Guide)* for latest version information.

- **Application Usage** – For usage reporting, a usage database created with the latest Application Usage Manager is required. Refer to the *HP Client Automation Application Usage Manager Installation and Configuration Guide (Application Usage Manager Guide)* for latest version information.

The Reporting Server software is located on the installation media in the `\infra\extended_infrastructure\reporting_server` directory.

The Reporting Server can be installed on a computer system that includes the following:

- Apache HTTP Server 2.0 or later (2.2x or later is recommended). Apache is available free for download at **http://httpd.apache.org**.

- Access to either a SQL Server or Oracle server where your extended infrastructure databases are defined. Refer to the individual product guides for supported SQL Server and Oracle database version information.

- If needed, access to your enterprise's LDAP directory, such as Active Directory. LDAP access allows you to filter Reporting Server queries according to the directory information.

In order to view the Reporting Server graphical reports using Windows Server 2003, Java Runtime or Virtual Java Machine is required. For more information, go to **http://java.com/en/index.jsp.**

Platform Support

For detailed information about supported platforms, see the release note document that accompanies this release.

HPCA Database Prerequisites

Modifications must be made to your HPCA databases to accommodate the Reporting Server. The following sections describe which modifications must be made whether you are using Oracle or SQL Server to store your databases.

Reporting users must have INSERT, DELETE, SELECT, and UPDATE access to the tables created by each pre-requisite script (RRS_DEVICETABLE, RRS_DEVICECACHE and RRS_SESSION) in order for Reporting Server to work correctly.

HPCA SQL Server Database Prerequisites

The following modifications must be applied to each SQL Server database the Reporting Server accesses.

A set of SQL scripts was supplied with your Reporting Server media, located in the \Prereq\SQL\ directory. The scripts are located within the RIM, RUM, and RPM subdirectories. Depending on the databases you will be using, run the appropriate script using the Microsoft SQL Server Enterprise Manager Query Analyzer tool. If you need assistance running these scripts, see your database administrator.

SQL Creation Scripts are as follows:

- **Inventory:**
  Prereq\SQL\RIM\RIM PreReq Creation Script.sql

- **Application Usage:**
  Prereq\SQL\RUM\RUM PreReq Creation Script.sql

- **Patch:**
  ```
  Prereq\SQL\RPM\RPM PreReq Creation Script.sql
  ```

Before running these scripts, first review them using a text editor and make sure the default table owner names are correct. Make any changes and save the files.

Inventory Database Updates for SQL Server

Before updating the Inventory SQL database:

- Make sure the HPCA agent 7.20 is installed.

- Be sure the HP Client Automation Messaging Server (Messaging Server) 7.20 is installed. The Messaging Server installation creates required tables in the Inventory database. Refer to the *HP Client Automation Messaging Server Installation and Configuration Guide (Messaging Server Guide)* for details.

A database administrator needs to make the following change to an existing Inventory SQL database to support HPCA Reporting.

- Use the Microsoft SQL Server Enterprise Manager Query Analyzer and run the script RIM PreReq Creation Script.sql against your Inventory database. One view is created called DevicesPrimary. This will add a User Defined Function object called fn_DATALIAS.

Application Usage Database Update for SQL Server

A database administrator needs to make the following change to an existing Application Usage SQL database to support HPCA Reporting.

- Use the Microsoft SQL Server Enterprise Manager Query Analyzer and run the script RUM PreReq Creation Script.sql against your Application Usage database. This will add a User Defined Function object called **fn_USAGESTATUS**, to calculate usage status.

Patch Database Update for SQL Server

A database administrator needs to make the following change to an existing Patch SQL database to support HPCA Reporting.

- Use the Microsoft SQL Server Enterprise Manager Query Analyzer and run the script RPM PreReq Creation Script.sql against your Patch Manager database. This will add a User Defined Function object called **fn_PATCHSTATUS**.

Oracle Database Prerequisites

The following modifications must be applied to each Oracle database the Reporting Server accesses.

A set of scripts was supplied with your Reporting Server media, located in the `\Prereq\Oracle\` directory. The scripts are located in the `RIM`, `RUM`, and `RPM` subdirectories. Depending on the CSDBs you will be using, run the appropriate script. If you need assistance running these scripts, see your database administrator.

SQL Creation Scripts are as follows:

- **Inventory:**
  `Prereq\Oracle\RIM\RIM PreReq Creation Script.oracle`

   (Supports Oracle 10G and 11G. Refer to the notes section of the script for additional information)

- **Application Usage:**
  `Prereq\Oracle\RUM\RUM PreReq Creation Script.oracle`
  `Prereq\Oracle\RUM\RUM PreReq Creation Script – 10G.oracle`

- **Patch:**
  `Prereq\Oracle\RPM\RPM PreReq Creation Script.oracle`

Before running these scripts, first review them using a text editor and make sure the default schema names are correct. Make any changes and save the files. When finished, verify that the scripts completes without error. Consult your Oracle DB administrator if changes to the script are required regarding table ownership. Refer to the notes section of the script for additional information.

Inventory Database Updates for Oracle

Before updating the Inventory Oracle database:

- Make sure the HPCA agent 7.20 is installed.

- Be sure the Messaging Server 7.20 is installed. The Messaging Server installation creates required tables in the Inventory database. Refer to the *Messaging Server Guide* for details.

A database administrator needs to make the following change to an existing Inventory Oracle database to support HPCA Reporting.

- Use the SQL Plus Worksheet application and execute the script `RIM PreReq Creation Script.oracle`, making sure to include the correct

path to the script locations. One view is created, called DevicesPrimary. In addition, a DataAlias table is created and populated.

Application Usage Database Update for Oracle

A database administrator needs to make the following change to an existing Application Usage Oracle database to support HPCA Reporting.

- Use the Oracle DBA Studio application (for Oracle version 8i and below) or the SQL Plus Worksheet application (for Oracle version 9i and above) and execute the script `RUM PreReq Creation Script.oracle`, making sure to include the correct path to the script locations. For Oracle version 10G, execute `RUM PreReq Creation Script – 10G.oracle`. This will add a User Defined Function object called **fn_USAGESTATUS**, to calculate usage status.

Patch Database Update for Oracle

A database administrator needs to make the following change to an existing Patch Oracle database to support HPCA Reporting.

- Use the Oracle DBA Studio application (for Oracle version 8i and below) or the SQL Plus Worksheet application (for Oracle version 9i and above) and execute the script `RPM PreReq Creation Script.oracle`, making sure to include the correct path to the script locations. This will add a User Defined Function object called **fn_PATCHSTATUS**.

Inventory Reporting Auditing Requirements

When using the Reporting Server to view an Inventory database, the WBEM instances listed in Table 2 on page 21 should be enabled for the Inventory Manager Reporting Package in the AUDIT Class of your CSDB. These fields are relied upon to produce the primary reporting table or detailed reports shown in later chapters.

For details on how to enable these options, see Adding Components to Inventory Audits on page 22.

Table 2   Inventory Manager reporting WBEM instances

WBEM Class Instance	WBEM Class Instance
Win32_Bios	Win32_PointingDevice
Win32_ComputerSystem	Win32_Printer
Win32_ComputerSystemProduct	Win32_Processor
Win32_DesktopMonitor	Win32_Product
Win32_DiskDrive	Win32_SerialPort
Win32_DiskPartition	Win32_Service
Win32_Environment	Win32_Share
Win32_Group*	Win32_SoundDevice
Win32_Keyboard	Win32_TimeZone
Win32_LogicalDisk	Win32_USBController
Win32_LogicalMemoryConfiguration	Win32_UserAccount*
Win32_MotherboardDevice	Win32_VideoController
Win32_NetworkAdapter	Win32_CDROMDrive
Win32_NetworkAdapterConfiguration	Win32_Process
Win32_OperatingSystem	Win32_SystemEnclosure
Win32_PhysicalMemory	Win32_WinSAT
MSStorageDriver_FailurePredictStatus**	
* Queries may require additional changes. See caution below.	
** Query is stored in Name Space root\wmi	

> ⚠️ When auditing for Win32_UserAccount or Win32_Group, large amounts of data may be returned. Failure to limit the scan may result in high network traffic. In order to limit the amount of data returned by these queries, modify the class.
>
> In order to restrict the results to LOCAL user accounts and LOCAL groups only, modify the CNDITION field of the Win32_UserAccount and Win32_Group classes by adding the following value:
>
> ```
> Domain = "&(zconfig.zhdwcomp)"
> ```
>
> Be sure to check the HP support web site for the most recent information on this topic.

> ▶ The Win32_WinSAT table from root\cimv2 should be queried in order to populate data for the Windows Experience Index report. Note that the query should have a CNDITION value of TimeTaken = "MostRecentAssessment"

Adding Components to Inventory Audits

To obtain the reports available through the Reporting Server features, we highly recommend that you audit your HPCA agents for the Win32 components previously listed in Table 2 on page 21. If you are missing some of the components, you can use these procedures to add them to your Inventory Manager reporting audit package.

For additional information, refer to the *Inventory Manager Guide*.

The following example adds the Win32_MemoryDevice component to the Inventory Manager Reporting Package. Use the same procedure to add any component to the Inventory Manager Reporting Package or to another audit package that is used to collect Inventory Manager data at your site.

> ⚠️ Before adding any components, make sure they do not already exist within the reporting audit package. Adding duplicate components will cause errors.

To add components to Inventory Manager reporting audit packages

1   Use the Admin CSDB Editor and browse to the PRIMARY.AUDIT.PACKAGE class.

2   Locate the Inventory Manager reporting package and expand all connections to show all component instances.

3   Right-click the Inventory Manager Reporting Package instance (**RIM Reporting**), and select **Add Components** from the shortcut menu.
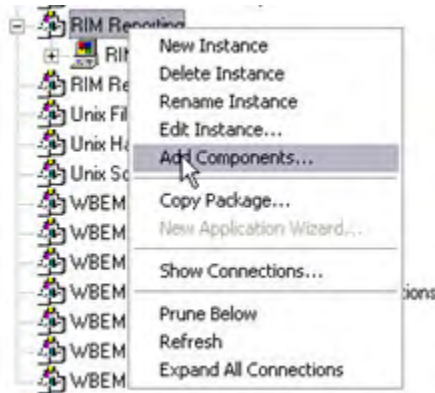
4   The Add Components dialog box opens. Select **WBEM** from the Available Components drop-down list, and type the component name in the New Component Name text box. For this example, we will type:

    Win32_MemoryDevice.

5   Click **Add+Edit**.

6   The Edit Instance dialog box opens. Click the **CLASS** entry, and type the value of the WBEM class. Use the same name as the component name, e.g., **Win32_MemoryDevice**.
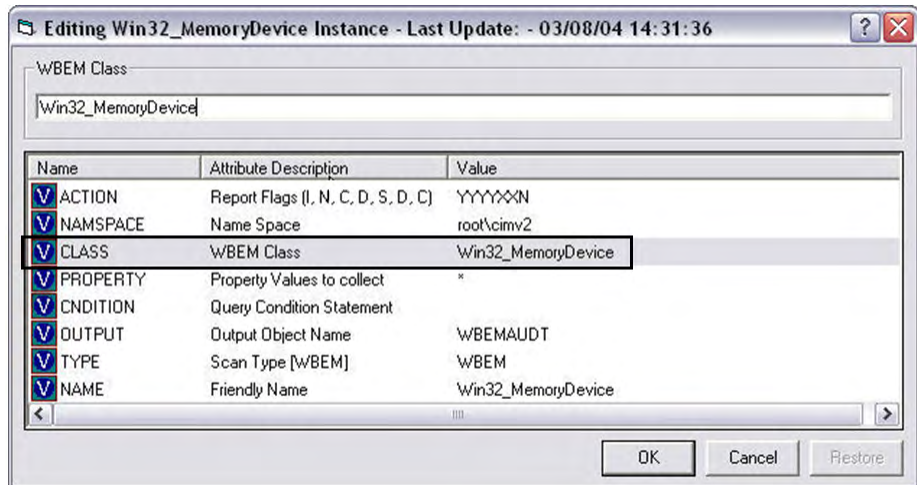
> When adding MSStorageDriver_FailurePredictStatus, you must also edit the NAMESPACE attribute and change the value to: root\wmi.

7   Click **OK** to save your changes.

8   As shown in the next image, the Win32_MemoryDevice instance is added to the Inventory Manager Reporting Package.

Database Tree View:				
Application (ZSERVICE)				
Audit Packages (PACKAGE)				
_BASE_INSTANCE_				
Audit Execute Behavior				
Audit System DLL				
Audit To Find and Capture a Local File				
Audit To Find and Capture MULTIPLE FILES				
Audit to Find and Remove Local File				
CE PDA XML Inventory				
NVDM Discovery of Applications				
Palm PDA XML Inventory				
RIM Reporting				
RIM Reporting:<all>				
RIM Reporting:Win32_Bios				
RIM Reporting:Win32_ComputerSystem				
RIM Reporting:Win32_ComputerSystemProduct				
RIM Reporting:Win32_DesktopMonitor				
RIM Reporting:Win32_DiskDrive				
RIM Reporting:Win32_DiskPartition				
RIM Reporting:Win32_Environment				
RIM Reporting:Win32_Group				
RIM Reporting:Win32_Keyboard				
RIM Reporting:Win32_LogicalDisk				
RIM Reporting:Win32_LogicalMemoryConfiguration				
RIM Reporting:Win32_MemoryDevice				
RIM Reporting:Win32_MotherboardDevice				
RIM Reporting:Win32_NetworkAdapter				
RIM Reporting:Win32_NetworkAdapterConfiguration				
RIM Reporting:Win32_OperatingSystem				
RIM Reporting:Win32_PointingDevice				
RIM Reporting:Win32_Printer				
RIM Reporting:Win32_Processor				
RIM Reporting:Win32_Product				

WBEM class RIM Reporting:Win32_MemoryDevice Instance Attributes:

Name	Attribute Description	Value
ACTION	Report Flags (I, N, C, D, S, D, C)	YYYYXXN
NAMSPACE	Name Space	root\cimv2
CLASS	WBEM Class	win32_memorydevice
PROPERTY	Property Values to collect	*
CNDITION	Query Condition Statement	
OUTPUT	Output Object Name	WBEMAUDT
TYPE	Scan Type [WBEM]	WBEM
NAME	Friendly Name	Win32_MemoryDevice

PRIMARY\AUDIT\Audit Packages (PACKAGE)\RIM Reporting\RIM Reporting:Win32_MemoryDevice\   3/8/2004   2:34 PM

9 Repeat this Add Component procedure for each entry in Table 2 on page 21 that is missing from your inventory auditing package.

> ⚠ When auditing for Win32_UserAccount or Win32_Group, large amounts of data may be returned. Failure to limit the scan may result in **high network traffic**. In order to limit the amount of data returned by these queries, modify the class.
>
> In order to restrict the results to LOCAL user accounts and LOCAL groups only, modify the CNDITION field of the Win32_UserAccount and Win32_Group classes by adding the following value:
>
> ```
> Domain = "&(zconfig.zhdwcomp)"
> ```
>
> Be sure to check the HP support web site for the most recent information on this topic.

Reporting Server System Implementation Tasks

The Reporting Server software and components are located on the installation media in the `\infra\extended_infrastructure\reporting _server\win32\`.

To use Reporting, complete the following system implementation tasks:

1   Review the SQL Server ODBC connections and DSNs for each database

2   Install the Reporting Server.

3   Modify the Reporting Server configuration file.

Reviewing your SQL Server Access and Database DSNs

All SQL databases accessed by the Reporting Server must exist on the same SQL Server. In order to complete the Reporting Server configuration in the tasks that follow, you will need to know the DSNs and access credentials assigned to each database in the SQL Server.

> If you are using Reporting Server to view DDM Inventory reports, you will need to configure MySQL. Refer to the DDM Inventory documentation for more information.

Installing the Reporting Server

Identify a Win32 computer with Apache HTTP Server 2.0 or later (2.2x recommended) installed to act as your Reporting web server. This computer must be able to communicate with your SQL Server where the HPCA Databases are defined, the Internet, and your LDAP Directory, if desired.

> The Reporting Server runs independently of the Portal. It may be installed on any Win32 machine whether or not that machine is running the Portal.

To install the Reporting Server

1   Double-click the Reporting Server installation executable, `setup.exe`. The Welcome window opens.

2   Click **Next**. The HP Software License Terms window opens.

3   Read the end-user licensing agreement and click **Accept**. The Reporting Server installation location window opens.

4   Type the installation location of the Reporting Server, or click **Browse** to navigate to a location.

5   Click **Next**. The Apache web server installation window opens.

6   Select the detected Apache install you want to use.

7   Click **Next**. The Reporting Server Apache Alias window opens.

8   Type a web site alias to use for Reporting Server (reportingserver, for example). This is used when accessing Reporting Server in a web browser. The Apache configuration file, httpd.conf is backed up then updated to point to the Reporting Server configuration file, httpd-rrs.conf.

9   Click **Next**.

10 If an existing Reporting Server Alias exists, you are prompted to select whether or not to overwrite the configuration file (httpd-rrs.conf).

11 Click **Next**. The installation settings window opens.

12 Click **Install**. The Reporting Server is installed.

13 Click **Finish**. The Reporting Server configuration file opens in your default web browser.
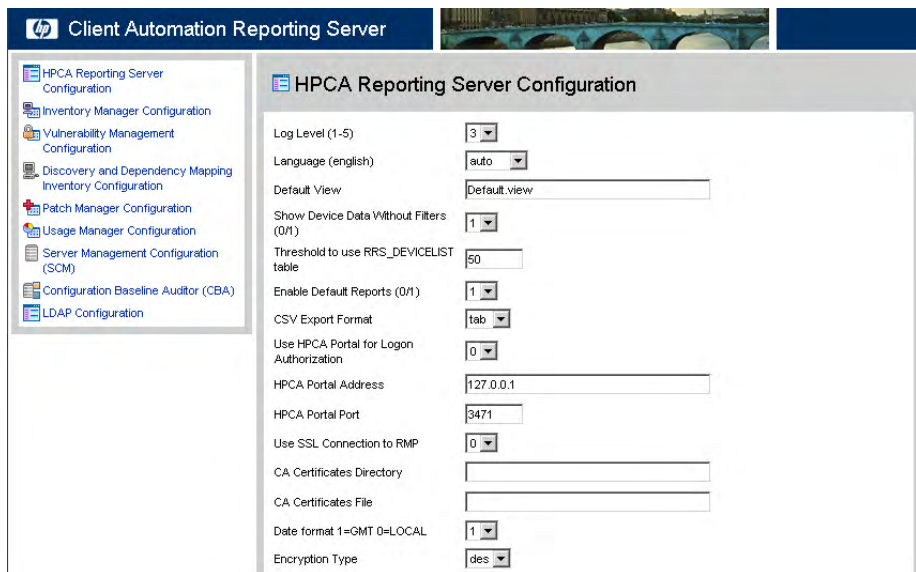
Use the configuration file to configure Reporting Server for access to your SQL Server databases, enable reports, and, optionally configure an LDAP

directory. See the next section, Modifying the Reporting Server Configuration File on page 28.

For additional information about each configuration file section, see the appendix Reporting Server Configuration File on page 85.

Modifying the Reporting Server Configuration File

The Reporting Server configuration file, setup.tcl, includes settings such as the ODBC DSN information and access credentials for each SQL database you are using, as well as LDAP Directory access root and credentials. Use the configuration file to enable or disable specific report types and features.

The configuration file, setup.tcl, populates multiple configuration files stored in the ReportingServer\etc folder. These files are generated after the first time you view setup.tcl. You can edit each configuration file manually using any text editor, if you desire. Remember to make a backup copy of any files before you make any changes. See Appendix B, Reporting Server Configuration File for a detailed description of each available setting and parameter.

> If you need encrypted passwords, use the web browser to edit the configuration file. Passwords are automatically encrypted when the configuration file is generated. Using a text editor to edit the individual configuration files does not allow for creating encrypted passwords.

> When you click **Apply** to submit your changes, be sure you have entered any DSN password information (if needed) or else the DSN password will be reset to blank.

To modify the configuration file using a web browser, open the setup.tcl file located in your Reporting Server directory with any web browser. This page is opened automatically after the first time you install Reporting Server.

To modify the Reporting Server configuration file

1 Open a web browser and type:

        http://localhost/*reportingserver*/setup.tcl

where *reportingserver* is the alias created during the Reporting Server installation.

The configuration file page opens.

2   To modify each configuration file section, click the configuration option link from the left column to display a set of configuration options.

    Refer to the appendix Reporting Server Configuration File on page 85 for a detailed description of each available section and parameter.

3   After you are finished making modifications, click **Apply**.

The following sections detail specific configuration tasks available with the Reporting Server configuration file.

Enabling Reports and Defining ODBC DSN Settings

For each database you want to use for reporting, you must enable the specific report types then define the ODBC DSN settings using the Reporting Server configuration file.

The configuration file contains a section for each available database and report type settings:

- Reporting Server Configuration
- Vulnerability Management Configuration
- Inventory Manager Configuration
- DDM Inventory Configuration
- Patch Manager Configuration
- Usage Manager Configuration
- Server Management Configuration (SCM)
- Configuration Baseline Auditor (CBA)
- LDAP Configuration

> HP DDM Inventory Software discovers devices in a network, scans for hardware and inventory, and collects software utilization data. See the HP Support web site for additional details.

Enabling reports and defining ODBC DSN settings is similar for each database. The following example describes how to define settings for an Inventory Manager SQL database.

To enable reports and define ODBC DSN settings for Inventory database

1   Access the Reporting Server configuration file.

2   Click **Inventory Manager Configuration**.

3   Set **Enable RIM Reports (0/1)** to 1 using the drop-down box.

4   If you want to make reports available for caching, set **Enable RIM Report Caching (0/1)** to 1 and adjust the cache lifetime as desired.

5   Enter the **RIM DSN**, **RIM DSN User**, and **RIM DSN Password**.

6   Click **Apply**.

For additional information about configuration file settings and parameters, see Appendix B, Reporting Server Configuration File.

Adjusting the Reporting Server Display Language

Use the **Language (english)** parameter,to determine the language in which Reporting Server pages are displayed.

Selecting **auto** will allow the Reporting Server to display in the language to which your browser is set.

> Any language that is not available in a browser language catalog is displayed in English, by default.

Enabling the Reporting Server Cache Feature

Similar to an HTTP proxy, the Reporting Server has the ability to save report data in a cache file. When a user requests a report, that report data is saved in a file on the Reporting Server. Then, if any subsequent users request the same reports, the data is readily available in the cache, returning the report much faster by avoiding the processing time used to retrieve the data from the Oracle or SQL database. The cache file is saved in a folder within the Reporting Server installation directory, such as
`C:\HP\ReportingServer\cache`.

Use the configuration file to enable caching and to determine how long a cache is available.

To configure caching

1   Within the configuration file, click the configuration section for which you want to enable and configure report caching. For example, to adjust the caching parameters for Inventory Manager reports, click **Inventory Manager Configuration** in the left pane.

2   Caching is disabled by default. To turn on caching for Inventory Manager reports, for example, set **Enable RIM Report Caching (0/1)** to **1.**

3   To set the amount of time cached Inventory Manager reports will be
    stored, for example, adjust the value for **RIM Cache Lifetime (seconds)**.
    The default is 1200 seconds, or 20 minutes.

4   Click **Apply** to commit your changes. Report caching has been enabled
    and configured.

Enabling Portal Logon Authorization

If you want to enable authorization through the HP Client Automation
Portal (Portal) when logging in to the Reporting Server, set the **Use
HPCA Portal for Logon Authorization** parameter to **1** in the configuration
file.

This will prompt for user name, password and directory source each time
you visit the Reporting Server web page.

To disable logon authorization, set the value to **0**.

Normalizing Case Sensitive Databases

The configuration file contains an option for normalizing character case when
applying filters to your databases: **Normalize case when using filters** or
NORMALIZECASE in the individual .cfg files.

By default, Oracle is a case-sensitive database. So for example, 'A' is not
equal to 'a' while SQL databases are *not* case-sensitive, so 'A' is equal to 'a.'
Microsoft SQL Server databases, by default, are *not* case-sensitive.

When the normalize case option is off (set to 0), Reporting Server does no post
processing on any filters. This means for an Oracle database, if you are
looking for a device called DeviceA, but in the Oracle database it is listed as
DEVICEA, no match is found. In this example, a SQL database *would* return
a match.

If the case-sensitive option is turned on (set to 1), searching for DeviceA in
the Oracle database will return a match, DEVICEA. Turning the option on
for a SQL database will turn on case sensitivity and, in this example, no
match would be found.

> When this option is turned on (set to 1), indexes are not used which
> will result in reporting queries taking much longer to generate
> results.

Configuring LDAP

Use the LDAP Configuration section to enable LDAP and configure Reporting Server to use LDAP as a filtering source for report data.

To enable and configure LDAP

1 Within the configure page, click **LDAP Configuration**.

2 Set **Enable LDAP (0/1)** to 1.

3 Enter the remaining LDAP information. Refer to LDAP Configuration on page 101, for additional information.

4 Click **Apply**.

When you next use Reporting Server, the Search Options will contain Directory/Group Filters you can add based on the information stored in LDAP.

3 Reporting Server Features

At the end of this chapter, you will:

- Be familiar with the HP Client Automation Reporting Server (Reporting Server) user interface.

- Know how to use the features of the Reporting Server.

- Know how to customize the Reporting Server interface.

Accessing the Reporting Server

The Reporting Server runs as an independent application hosted by Apache. Once installed and configured, users have access to the reports from any web browser connected to the Internet.

To access the Reporting Server

- Open any Web browser and type the following address:

      http://<hostname>/reportingserver

  Where <hostname> is the host name of the Apache web server on which the Reporting Server was installed and where reportingserver is the Alias assigned to Reporting during installation.

  > Reporting is optimized for display screen area setting 1024 x 768 or greater.

Logging in

If you have enabled Portal logon authorization in the configuration file, you will be required to log in the Reporting Server. By default, the username is admin and the password is secret. Select the Portal Directory Source and click **Sign In**.

About the Reporting Server Interface

The Reporting Server user interface contains several distinct areas, as described below.

- **Search Options**. Use the Directory/Group Filters or Data Filters area to apply one or more filters to the dataset being accessed for the current View. Any filters you apply are listed as Search Criteria above the reports.

  — **Directory/Group Filters**. Click on a Directory/Group entry to filter the current dataset to that level. The Directory/Group area is discussed on page 35.

— **Data Filters**. Use this area to generate or select a filter to be applied to the current dataset. See Using Search Options to Select Filters below for details on how to use this area.

- **Display Options**. Use the Reporting Views area to control your current session and display.

  — **Reporting Views**. A Reporting View defines the set of reporting windows to display for the current dataset and initial settings related to each window (such as minimized or maximized, and the number of items per window). When you first access the Reporting Server, the Default View is applied. The current view is listed on the right of the Global Toolbar.

    Use the Reporting Views area to change or customize your Reporting View. For details, see Using Display Options to Select Reporting Views on page 41.

- The **Search Criteria** above the report windows list the filters that have been applied to the dataset using one of the Search Controls.

  To remove a filter, click the ✖ to the left of a filter name.

- **Report Windows** display the current View.

  Click minimize ☐ on the Window title bar to collapse a report window.

  Click maximize ⊞ on the Window title bar to expand a report window.

  See About Reporting Windows on page 46 for details about using the Report Window Action Bar icons, as well as browsing, sorting, and viewing details for the items in a report.

- Each window contains an **Action Bar** that includes icons allowing you to create CSV files from current datasets or switch to graphical views.

Using Search Options to Select Filters

The Search Options areas give you two ways to filter datasets within the Reporting Server. You can:

- Select a group entry from the Directory/Group Filter area. This limits the results to the group entry level.

- Use the Data Filter area to create or apply a filter. This limits the results to the specific filter you applied.

Figure 2   Sample Search Options area
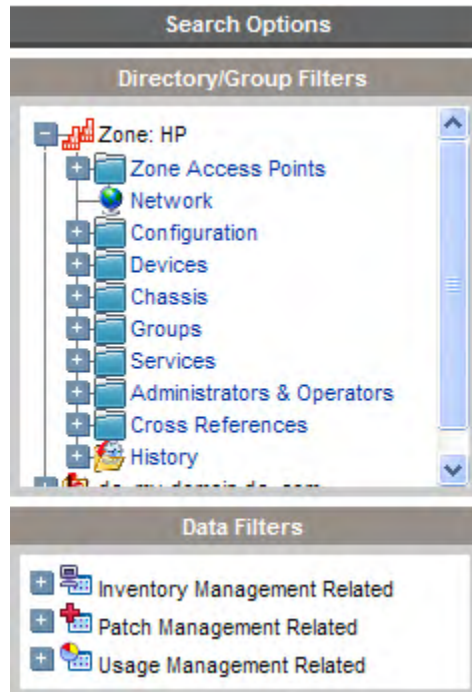
When you select a Directory/Group Filter or apply a Data Filter, your filter is automatically listed as a Search Criteria entry.

The Directory/Group Filters Area

Use the Directory/Group Filter to browse to a group. As you click a group entry, the Reporting Server automatically filters the reporting data displayed for that entry. For example, if you click the **Sales** group entry, the reporting area limits the display to only the devices that are associated with the Sales group.

Navigating Within the Directory/Group Filters Area

To drill down further into the group click any image within the Directory/Group Filters area allows you. To apply the associated filter to your data click any text.

Once you expand the tree view in the Directory/Group Filters area, the expanded branch becomes the root branch.

The Data Filters Area

The **Data Filters Area** is always available as a Search Option (along the left side of the Reporting Server page). Use it to select a filter to apply to the current dataset. Once a filter is applied, you will see it added to the Search Criteria list above the report windows.

The Data Filters that are available depend on what you enabled in the Reporting Server configuration page. See Enabling Reports and Defining ODBC DSN Settings on page 29 for additional information.

### To select and apply a filter using the Data Filter area

1   From the Data Filter area, use the Filter Group tree-view and select a group. The example shown in the figure below selected **Inventory Management Related** then **Hardware Related**.

2   Open the Filter tree-view and select a filter. The example shown in the figure below, selected **Device Related** then **Device Classification**.

3   In the Filter Value text box, type a specific value. For example, ***Notebook***. You can use wildcards, including * for multiple characters, or ? or _ (underscore) for single characters.

4   Click **Apply** to add this filter to the report. After applying the filter, you will see it added to the Search Criteria list above the report windows.

> The Reset button clears the Filter Value field and resets the Filter Group and Filter selections to their default values.

Figure 3 on page 38 displays an example of the Data Filter entries used to limit the report to only Notebook devices.

Figure 3   Applying a search criterion to limit a report to Notebook devices
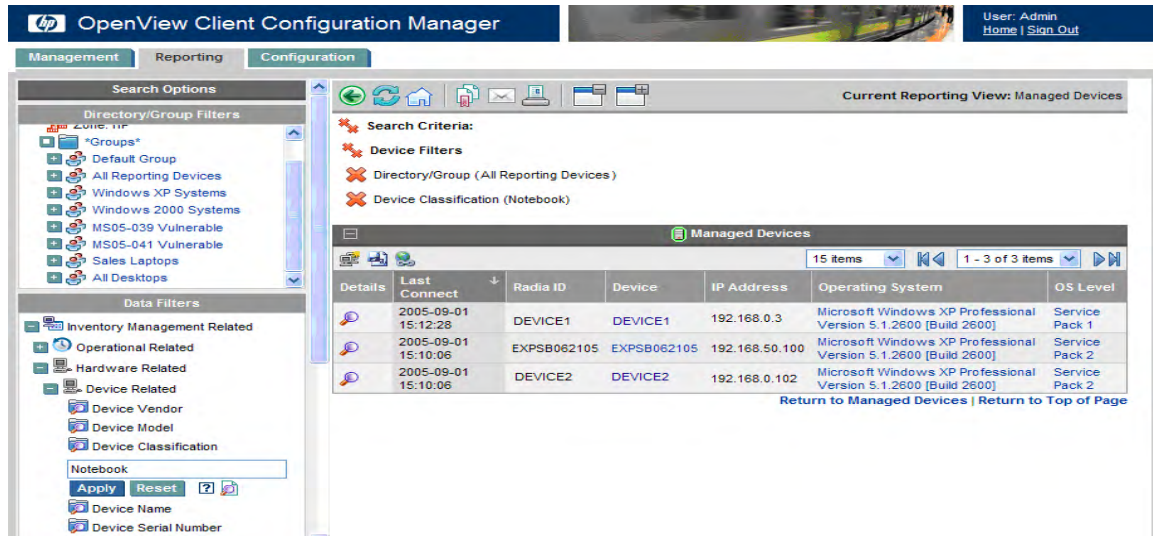
Special Filter Value Characters and Wildcards

Finding the right records can be made easier by using special characters and wildcards within your search strings. Use these special characters in conjunction with the text you enter into the Filter Value text box. Table 3 below explains each special character.

Table 3   Special Characters and Wildcards

| Character	Description
* or %	Return all records of specific text string.
	Example:
	Device Vendor Filter
	HP* returns all HP records.
	%HP% returns all records including HP.

| Character	Description
? or _	Return any single character Example: Device Classification Filter Not?book returns all records beginning with 'Not' and ending with 'book'. Note_ook returns all records beginning with 'Note' and ending with 'ook'.
!	Negates filter. The ! must be placed before the text string. Example: Device Vendor Filter !HP* will return all non-HP records.

Using Filter Lookup

In order to help fine tune searches, especially within filters that may contain a lot of data (for example, Usage Manager Product Lists), filters with the **Show available options** capability (denoted by 🔍) will use the entered data as lookup criteria.

For example, entering "Compaq%" in the data field as displayed in Figure 4 below, and then clicking the **Show available options** button 🔍 will open the lookup window displayed in Figure 5 on page 40.

Figure 4   Filter Lookup button.
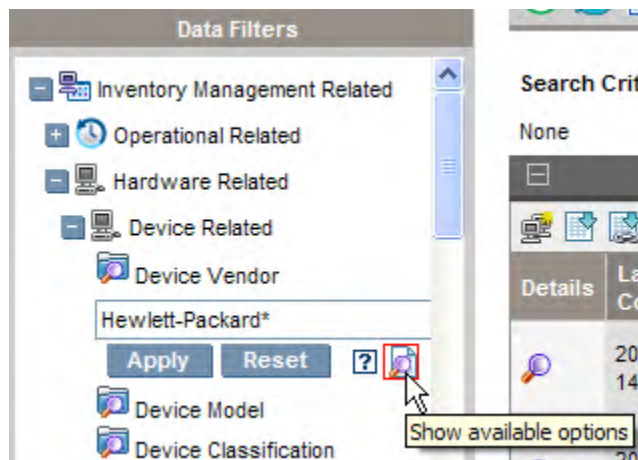
Figure 5   Lookup window
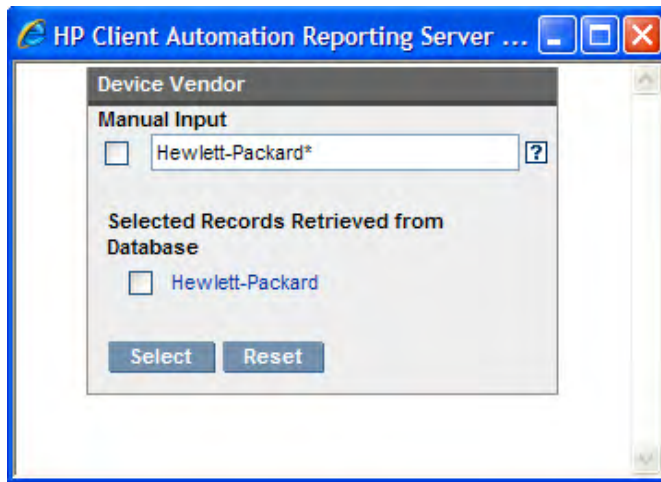
> If no value is entered into the data field then all available lookup criteria records in the database are displayed when you click the **Show available options** button.

Applying a Forced Filter

A forced filter is a filter applied to every report that is displayed in Reporting Server. To apply a forced filter, modify the rrs.cfg file.

> The forced filter parameters are not visible when viewing the configuration file using a browser (setup.tcl).

For example, to filter all reports to display data for Hewlett-Packard devices only, add the FORCEDFILTERNAME and FORCEDFILTERVALUE parameters with the following values to the packconfig section of rrs.cfg:

```
# Core configuration

::rrs::packconfig "" {

        -DEFAULTVIEW       "Default.view"

        -LOGLEVEL          5

        -LANGUAGE          "auto"

        -DEVICELIST        1
```

```
                    -DEVICELISTCOUNT           50

                    -DEFENABLE          1

                    -EXPORTMODE                    tab

                    -RMPLOGON           0

                    -RMPIP              "rmphost"

                    -RMPPORT            3471

                    -RMPUSESSL                           0

                    -SSL_CADIR                       ""

                    -SSL_CAFILE                      ""

                    -dl_datefmt         ""

                    -dl_timefmt         ""

                    -dl_gmt             1

                    -ENCRYPTIONTYPE     des

                    -FORCEDFILTERNAME "RIM Device Vendor.filter"

                    -FORCEDFILTERVALUE "%HP%"

}
```

Any Reporting Server filter can be used as a valid value for
FORCEDFILTERNAME.

Using Display Options to Select Reporting Views

Within the Display Options area, Reporting Views specify which windows are
to be displayed on the report page, as well as their initial state (maximized or
minimized).

View Groups and Views are stored as objects.

Figure 6   Display Options

Applying a View from the Reporting View Area

To apply a View

1 From the Reporting Views area, open the View Group drop-down list and select a group. The example shown in Figure 7 below has Inventory Management Reports, Software Reports expanded.

2 Next, select a view for that group. The example shown in Figure 7 below, has Service Details selected for Managed Service Reports.

3 After selecting the view, you will see the appropriate report windows displayed for the selected View.

> ▶ The Reset button resets the View Group and view selections to their default values.

Figure 7   Software Reports

Use the back button ⬅ to return to any of the previous reporting windows. When you reach the top of the history, the back button disappears.

Reporting View Types

Depending on the type of data you want to view, select the appropriate
Reporting View. The Reporting Views that are available depend on what you
enabled in the Reporting Server configuration page. See Enabling Reports
and Defining ODBC DSN Settings on page 29 for additional information.

Inventory Management Reports

Inventory Management Reports display hardware and software information
for all devices.

Usage Manager Reports

Usage Manager Reports show usage information for devices that have the
Application Usage Manager Agent installed.

- **Device Reports –** Display collected usage information by the individual
  devices or users.

- **Monthly Usage Reports –** Display usage information by vendor,
  product, or application.

Usage Management Reports may contain some of the following data columns:

- **Usage Time** – the amount of time an application is running.

- **Focus Time** – the amount of time an application is the active window.

- **Usage Count** – tracks the number of times an application is run on a
  user's device.

- **Usage Status** – represents the relation of Used versus Unused instances
  for an individual application or a group of applications.

> After the Application Usage Manager Agent is deployed, Usage Time
> collection begins right away. Focus Time collection does not begin
> until the next time the user logs on.

> Most logical folders, Program Files, for example, are machine-related
> and not associated with an individual user. Therefore, Usage
> Management Reports, Device Reports, Usage by User report may
> contain [undefined] in the User Name column.

DDM Inventory Reports

If you are using Reporting Server along with DDM Inventory (DDMI), use
the DDM Inventory Reports to view the available ED data. ED reports

include data for Network Documentation, Scanned Devices, Mobiles Devices, and Device reports. Refer to the DDM Inventory documentation and the HP web site for additional information on using and configuring ED.

Vulnerability Management Reports

Vulnerability Management Reports display vulnerability assessments for devices in your environment. Vulnerability information is collected by scanners that are deployed to devices through policy. For information on obtaining and configuring these scanners, refer to the *Enterprise Manager Guide*.

Patch Management Reports

Patch Management Reports display patch compliance information for managed devices and acquisition information for patches and Softpaqs.

- **Compliance Reports -** The Patch Manager Agent sends product and patch information to the Patch Manager Database. This information is compared to the available patches to see if managed devices require certain patches to remove vulnerabilities. Compliance reports show only the information applicable to detected devices in your environment.

- **Patch Acquisition Reports –** Acquisition based reports show the success and failures of the patch acquisition process from the vendor's web site.

- **Research Reports –** Research-based reports display information about the patches acquired from the software vendor's web site. Research based reports offer a Filter bar.

Windows Vista Reports

The following sections describe Windows Vista-related reports:

Windows Vista Readiness Reports

Use the Display Options to show Windows Vista readiness reports. These reports contain information you can use to determine individual device readiness for an upgrade to Windows Vista. The Reporting Server determines Vista readiness based on the following criteria:

- CPU Speed
- System Memory
- System Drive Total Space
- System Drive Free Space

Vista-readiness criteria are displayed at the top of the report page. Refer to Microsoft's specifications on their web site for up to date Vista readiness information.

To display Windows Vista Readiness reports

1   In the **Display Options** area, select **Inventory Management Reports**.

2   Select **Readiness Reports**.

3   Select **Windows Vista**.

4   View the reports and charts available to determine the Windows Vista upgrade readiness of your devices. The Readiness Status and Additional Information columns contain information about the current level of readiness for each device.

Windows Experience Index Reports

Use the Display Options to show Windows Experience Index reports. The Windows Experience Index is used to determine how Windows Vista and other software will perform on a device. For a detailed explanation of the Windows Experience Index ratings, refer to Microsoft's web site.

To display Windows Experience Index reports

1   In the **Display Options** area, select **Inventory Management Reports**.

2   Select **Readiness Reports**.

3   Select **Windows Experience Index**.

▶   Windows Experience Index Reports require the Win32_WinSAT wbem instance. For details, see Inventory Reporting Auditing Requirements on page 20.

About Reporting Windows

The Report Page displays the windows specified in the applied view. The figure below shows an example of report windows displayed on the Report Page: **Managed Devices** and **Managed Services**. The Managed Devices window is minimized and the Managed Services window is maximized to show report data.

Figure 8   Sample Reporting Window
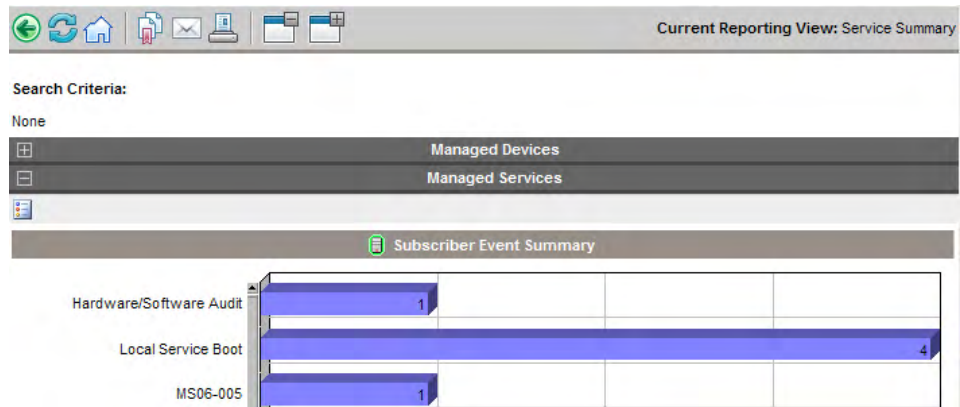
Using the Windows Action Bar Icons

Each Window contains an **Action Bar** with the following possible icons:

Export to CSV – creates a comma-separated list of the report query that you can open or save.

Export to IQY – creates an Internet query list of the report query that you can open or save as a Microsoft Excel file. A live link to the source report is created allowing you to refresh the Reporting data from within the Excel spreadsheet by retrieving the data directly from the Reporting Server.

Switch to Graphical View
Click this icon to switch to a graphical view of the data.

Figure 9   Sample Devices on a Reporting page

Browsing Items in a Report

There may be very large numbers of items in any report. The Action Bar lets you customize how many items to view in a given window area. To browse to records outside your current window area, use the Browse buttons or drop-down list, as illustrated in Figure 10 on page 48.

Maximum items per window.
Use this drop-down list box to limit how many items to display in the current window. For example, if you select a maximum of 30 items, you will be able to scroll 30 items in the current window.

Browse Back and Forward Buttons.
If you set the maximum items per window smaller than the total items in the report, you will have the ability to browse through multiple windows. Use the browse buttons to go to the First, Previous, Next, or Last window for the current report.

Browse to a specific window.
Alternatively, select which set of items to view from the list of available windows. For example, select **1 - 15 of 46** items from drop-down list box to view that set of items.

Figure 10   Report Display Settings: 15 Items per Window, Sort by Class
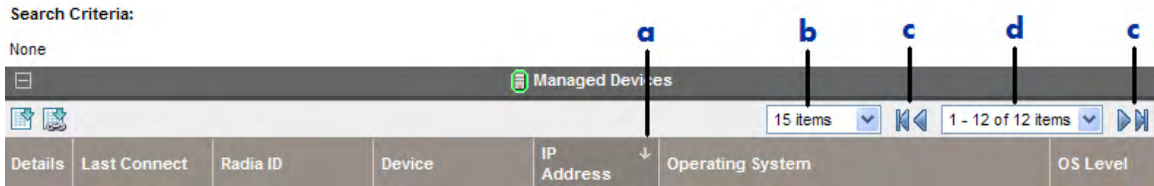
Legend

a   Current sort field and order

b   Maximum items to display per window

c   Browse buttons

d   Current display and total

Sorting Columns

Click the column heading name to sort items in a report by that column either in ascending or descending order.

To toggle between ascending and descending sorts, click a currently selected column (indicated by the arrow). An up arrow indicates the active sort column and ascending order. A down arrow indicates the items are displayed in descending order.

For example, the figure above shows a report sorted on the IP Address column in descending order. Notice the down arrow to the right of the IP Address column heading.

Switching to a Graphical View of Reporting Data

Click **Switch to Graphical View** in the action bar area of any report window to switch to a graphical view of the report data. Figure 11 on page 49 shows a sample graphical view.

Figure 11   Sample report in graphical view
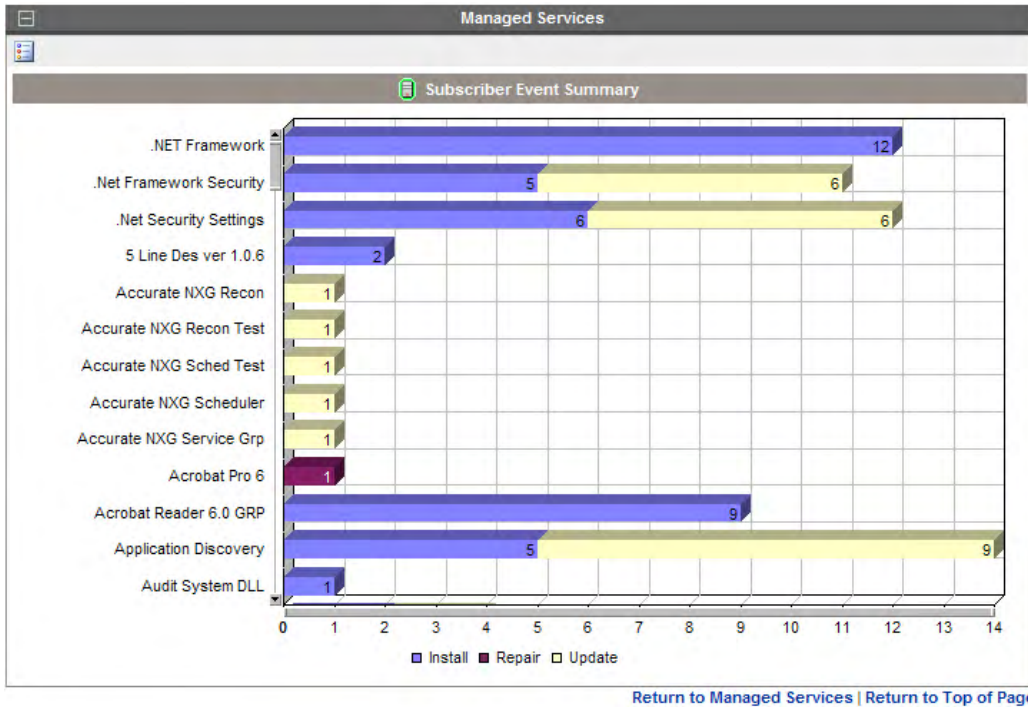
Double-click any individual graph object to add a new Search Criteria. A new set of graphs is displayed based on the specific information you selected.

To return to the detailed view at any time, click **Switch to Detailed View** ▦ in the action bar.

Displaying Device Details

From the Managed Devices report window, click **Show Details** 🔍 next to any item to display the details for that device.

The Device Summary window opens, as shown in the following figure. Notice that in addition to the standard global icons, the green arrow icon allows you to return to the previous window.

Figure 12   Device Summary window
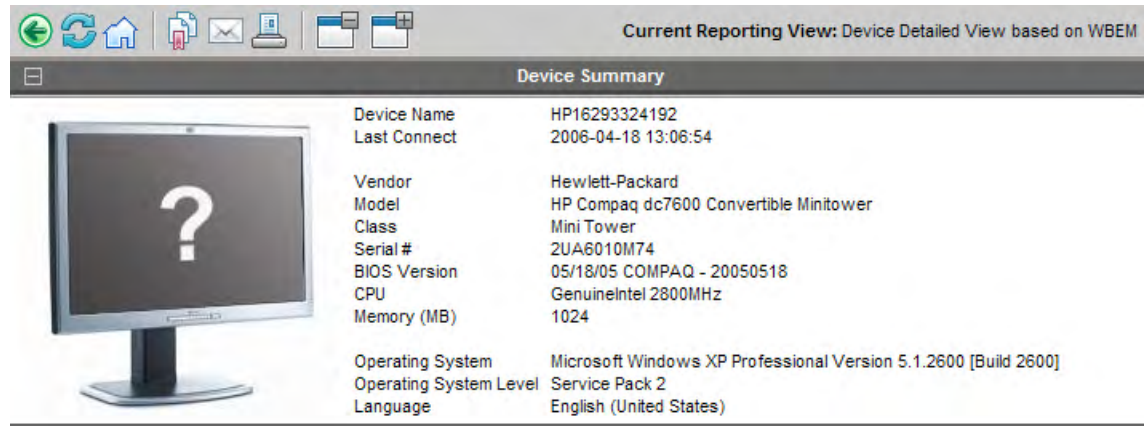
Click any heading at the bottom of the page to expand its listing. For example, if you click **Services**, you will see the list of Windows Services installed on the system.

The Device Summary contents will vary according to the starting Report Window.

Applying Filters from Report Data

Click hyperlinked data within a report to filter by that specific criterion. A filter is applied and displayed in the Search Criteria.

Using Remote Control (VNC)

If you would like to begin a VNC session for an individual device, click

Remote Control (VNC) next to the appropriate device row.

Leaf Node Filtering

You can limit what LDAP classes are browsed when using Reporting Server by applying a filter to the Reporting Server configuration file. By limiting the LDAP classes Reporting Server will browse to only those you require, you can greatly improve tree navigation response times when browsing through the directory tree.

To apply a leaf node filter

2   Edit the Reporting Server configuration file, rrs.cfg. This is located in the Reporting Server's \etc directory, by default.

2   Within the LDAP Configuration section, add the BROWSEFILTER attribute and the classes that should be filtered.

The following example will filter out the *user* and *computer* sample classes, allowing Reporting Server to browse only the LDAP classes that remain.

```
# LDAP Configuration
::rrs::mount LDAP LDAP {
 -ENABLE            0
 -CACHEENABLE       0
 -CACHELIFE         300
 -TYPE              "ldap"
 -SERVER            ""
 -PORT              389
 -BROWSEFILTER      "!(|(objectclass=user)(objectclass=computer)))"
```

4 Customizing Reports

At the end of this chapter, you will:

- Understand the different reporting object types, including views, view groups, filters, filter groups, and windows.

- Understand how to modify the reporting object files to create custom reports.

- Be presented with an example scenario showing how to customize reporting objects.

The Reporting Server allows extensive report customization by modifying any of the reporting object files. Reporting object files must be extracted or created manually and added to the Reporting Server directory structure.

Using Report Packs

Report packs are included in the Reporting Server's \reportpacks directory. Each file contains Reporting Server object files for specific report types.

Table 4   Report Packs

Report Pack File	Reports
cba.kit	Configuration Baseline Auditor
ccm.kit	HPCA Starter and Standard
rim.kit	Inventory Manager
rpm.kit	Patch Manager
rrs.kit	Reporting Server and LDAP
rum.kit	Application Usage Manager
scm.kit	Server Management
ed.kit	DDM Inventory
vm.kit	Vulnerability Management

When extracted, report packs create the file structure necessary to modify reporting objects. Use the **extract** utility to extract reporting object files.

To extract files from a report pack

1   From a command prompt, switch to your Reporting Server's \bin directory.

3   Type the following command (This example will extract the contents of rum.kit. Replace **rum** with the report pack you want to extract. The file extension, .kit, is not required.):

    extract rum

4   Press **Enter**.

The reporting files are extracted to the Reporting Server `\reportpacks` directory in a new folder. The example above created the folder, `\reportpacks\rum\objects`, which contains all reporting object files needed to make any modifications for Application Usage Manager reports.

> ▶ Extracted files take precedence over files contained within a reporting pack. For example, if you've created the directory structure, `\reportpacks\rum\objects`, which contains modified reporting object files, these modifications take precedence over the reporting objects contained within `rum.kit`. This helps maintain any customization you may have made in the event of an update to Reporting Server where a newer `rum.kit` is supplied.

Reporting Object Files

Reporting object files determine what data you will see and in what format it is presented on the Reporting Server Web page.

There are multiple reporting object file types that you can modify. Each type is located within a separate sub-directory within the appropriate objects folder. For example, an extracted `rum.kit` will create the `\reportpacks\rum\objects` directory.

> ▶ Customizing Reporting Server reporting object files requires a basic knowledge of XML. Familiarity with tcl and HTML is also beneficial.

When generating a reporting page, the Reporting Server looks for all files of a specific extension type, ***.views**, for example, within the directories mentioned above.

Backing up Your Reporting Object Files

Before you begin modifying any reporting object files, make sure to backup the original files. We recommend that you rename any of the files you will modify with an easily identifiable designator, your company name or initials, for example. If your company initials are ABC, then you could copy and rename the View Group object, Hardware Reports.viewgroup to ABC_HardwareReports.viewgroup.

Since the Reporting Server only looks for specific extensions, renaming your modified files allows easy incorporation into your reporting environment. Also, any updates to the Reporting Server files will be easily incorporated into your existing configuration without undoing any of your report customizations.

Understanding the Reporting Object Files

Before you customize any reporting object files, become familiar with the purpose of each file and how they are constructed.

Reporting Object File Construction

Each reporting object file is designed using XML (Extendable Markup Language) as well as tcl (Tool-Command Language) and HTML. You should have a basic understanding of each of these programming languages before you attempt to make any modifications to your reporting object files. Use any text editor to modify and save new reporting object files.

Reporting Object File Types

Several reporting object file types can be modified to generate custom report pages. These include:

- View Groups
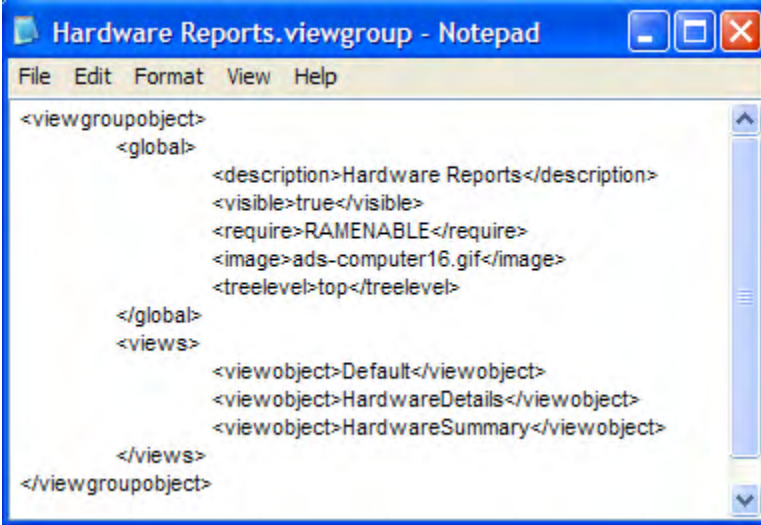- Views
- Filter Groups
- Filters

- Windows
- Datasources

View Group Objects and View Objects

View Group (`*.viewgroup`) objects contain a selectable list of View objects available for that category. Each View Group contains a specific set of available Views. A view group can include another view group in its list to allow for multiple levels in the tree view.
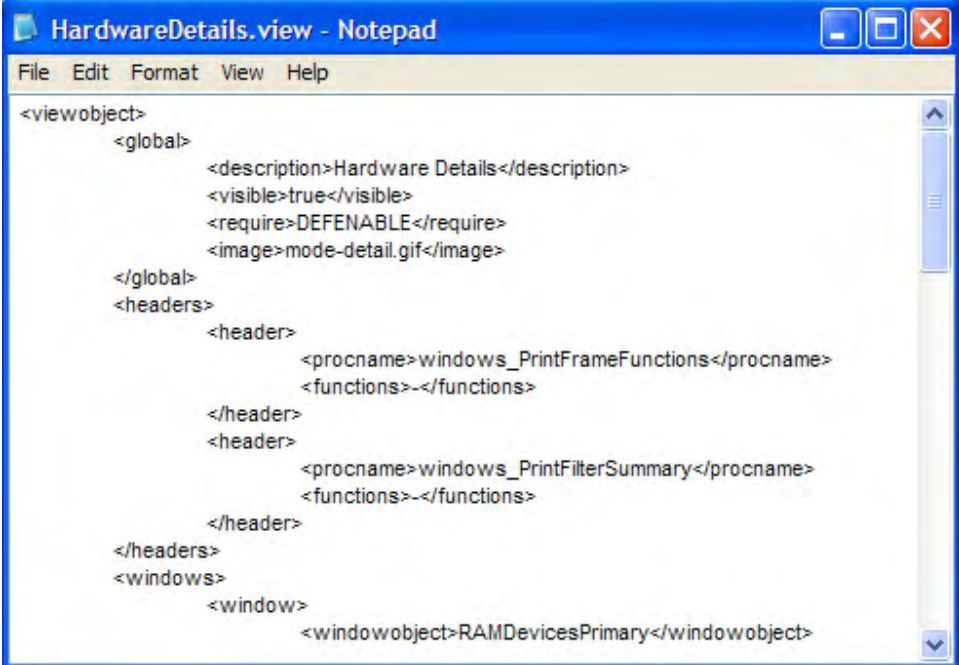
Figure 13   Sample View Group object file

View (`*.view`) objects determine the currently active window object displayed on the right side of the Reporting Server web page.

Figure 14   Part of a sample View object file

Modifying View Group objects and View object files will determine what is displayed on the left-hand side of the Reporting Server Web page in the two drop-down list boxes within the Display Controls/Reporting Views section.

The currently active View object is displayed in the top-right corner of the page after **Current Reporting View**.

Figure 15   View Groups, Views and the Current Reporting View
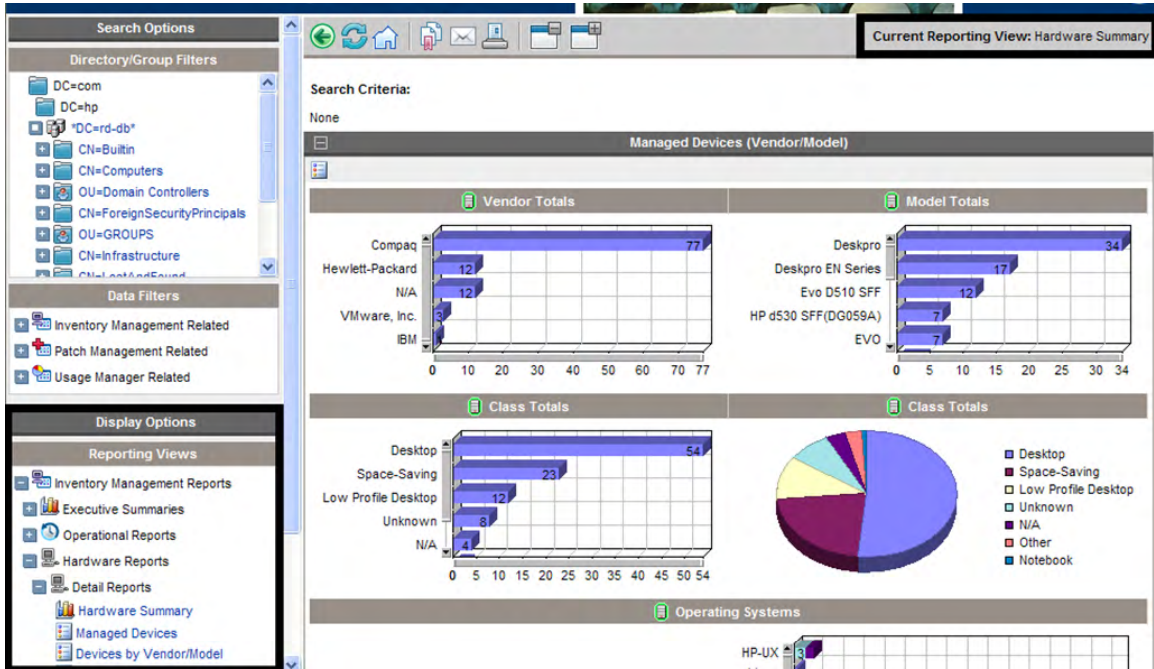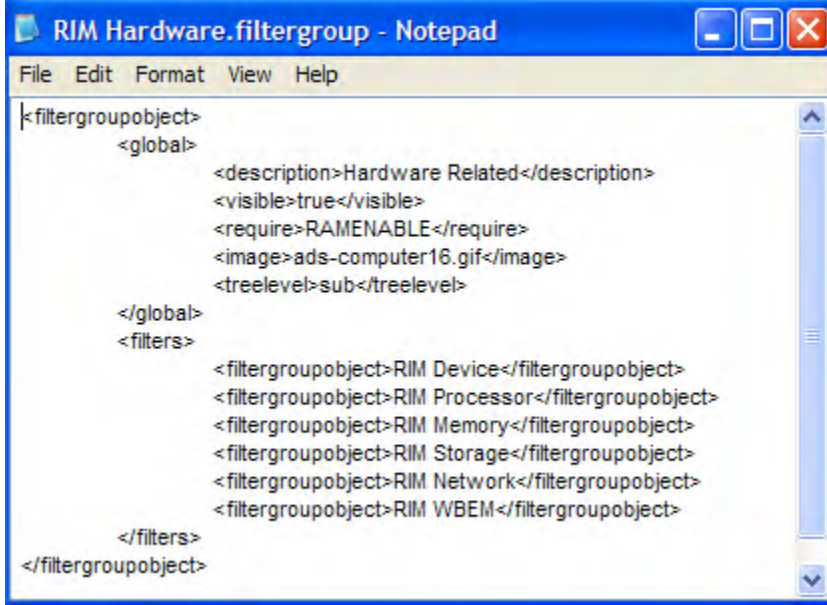
In addition to adding or altering Display Controls, View object files are used to determine which window objects are present. View objects can also determine specific Window object settings using the Window Object Overrides section. The parameter values within this section take precedence over any parameter values within a Window object file.

Filter Group Objects and Filter Objects

Filter Group (`*.filtergroup`) objects determine a selectable list of Filter objects. Like View Groups and Views, Filter Groups contain a specific set of available Filters. Depending on the Filter Groups selected, different Filter objects can be made available. Filter group objects can contain other Filter Group objects to allow for multiple levels in the tree view.

Figure 16   Sample Filter Group object file


```
RIM Hardware.filtergroup - Notepad
File  Edit  Format  View  Help

<filtergroupobject>
        <global>
                <description>Hardware Related</description>
                <visible>true</visible>
                <require>RAMENABLE</require>
                <image>ads-computer16.gif</image>
                <treelevel>sub</treelevel>
        </global>
        <filters>
                <filtergroupobject>RIM Device</filtergroupobject>
                <filtergroupobject>RIM Processor</filtergroupobject>
                <filtergroupobject>RIM Memory</filtergroupobject>
                <filtergroupobject>RIM Storage</filtergroupobject>
                <filtergroupobject>RIM Network</filtergroupobject>
                <filtergroupobject>RIM WBEM</filtergroupobject>
        </filters>
</filtergroupobject>
```
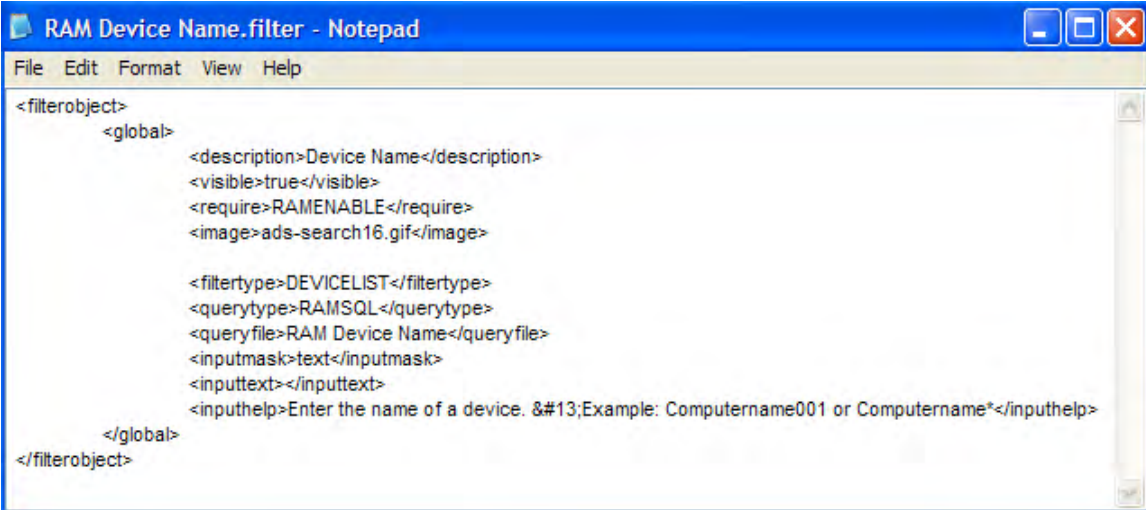
Filter (`*.filter`) object files define which data is displayed within each reporting page.

Figure 17   Sample Filter object file
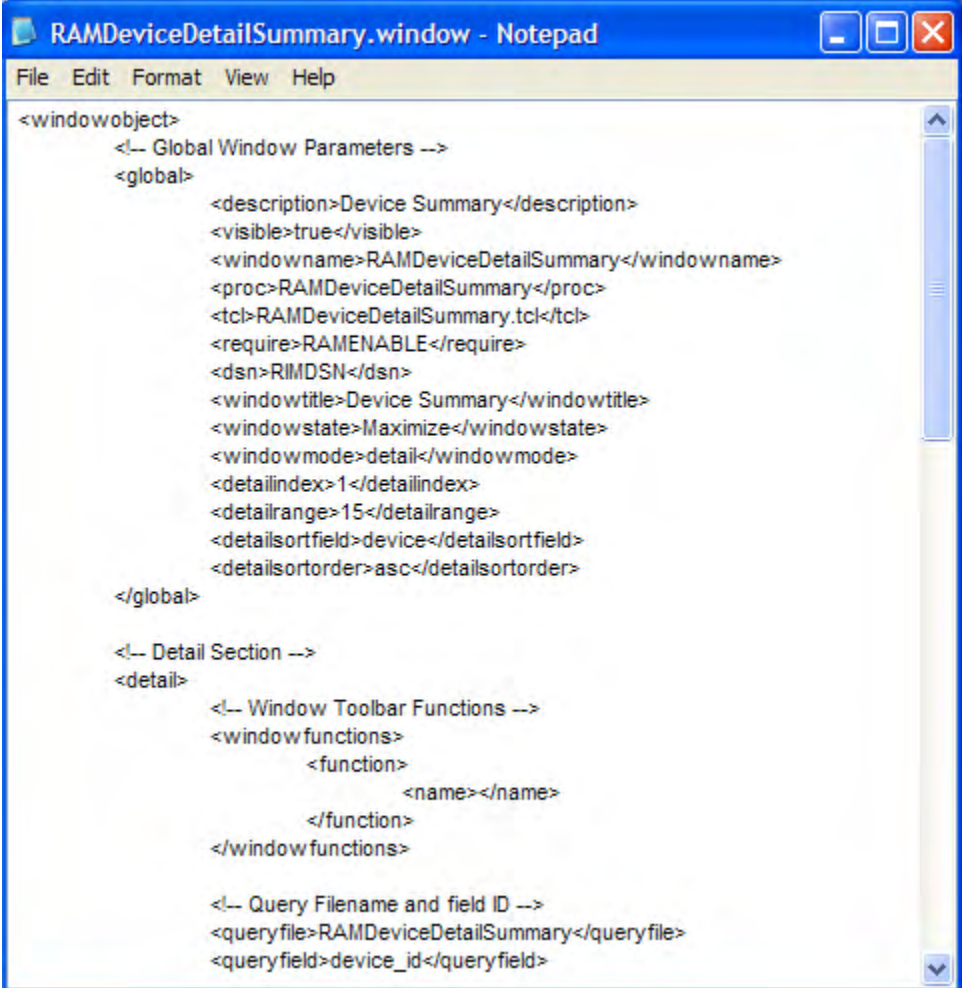

```
RAM Device Name.filter - Notepad
File  Edit  Format  View  Help

<filterobject>
        <global>
                <description>Device Name</description>
                <visible>true</visible>
                <require>RAMENABLE</require>
                <image>ads-search16.gif</image>

                <filtertype>DEVICELIST</filtertype>
                <querytype>RAMSQL</querytype>
                <queryfile>RAM Device Name</queryfile>
                <inputmask>text</inputmask>
                <inputtext></inputtext>
                <inputhelp>Enter the name of a device. &#13;Example: Computername001 or Computername*</inputhelp>
        </global>
</filterobject>
```

Window Objects

Window object files (`*.window`) define the data layout, including column headings, icons, sort fields, default window mode, default window state, drill down elements and column data appearances.

Figure 18   Part of a sample Window object file

Each existing reporting object file type can be modified or copied to create new reporting pages.

Datasource Objects

Datasource object files (`*.datasource`) allow you to add multiple data sources for reporting. For example, you may want to add more SQL data sources or future DSML/LDAP data sources.

Figure 19   Sample Datasource object file
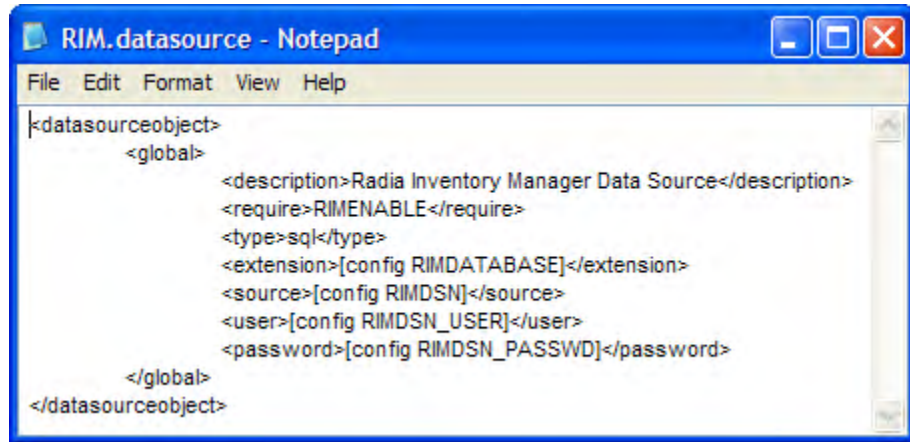
Modifying Reporting Object Files

Use a text editor, like `Notepad.exe`, to modify your reporting object files. Each file is built using XML, tcl and HTML. Make sure you are familiar with these programming languages before you begin to modify these files.

Parameters within the reporting object files are defined using XML. For example, the global section description parameter within the `HardwareDetails.view` object file is defined as:

```
<description>Hardware Details</description>
```

Note the leading and trailing XML descriptor tags.

If you wanted to change the `HardwareDetails.view` object, global description to Hardware Specifics, you would need to change the text between the XML tags to:

```
<description>Hardware Specifics</description>
```

After the file is saved, the next time you view or refresh your Reporting Server Web page, the selectable entry within the Views drop-down list box, Hardware Details, will have been replaced with Hardware Specifics.

The following paragraphs and tables explain each object file section and their associated parameters and values. Modify any of these values to change or create reporting objects.

Modifying View Group Objects

View Group object files (`*.viewgroup`) contain two configurable sections: global and views. View groups can contain other View Groups to allow for multiple tree-view levels.

View Group Object Global Section

The global section is used to define the View Group name within the Display Controls drop-down list box, whether or not this View Group is visible and what settings are required for this View Group to be enabled. A sample `<global>` section follows:

```
<global>
    <description>Hardware Reports</description>
    <visible>true</visible>
    <require>RAMENABLE</require>
    <image>ads-computer16.gif</image>
    <treelevel>top</treelevel>
</global>
```

Table 5   View Group Object Global Section Parameters

Parameter	Description
`<description>`	What is displayed within the View Group drop-down list.
`<visible>`	True = This view group will be present in the View Group drop-down list. False = Hide this view group selection.
`<require>`	Prerequisite files or configuration file settings required for this View Group to be available.
`<image>`	Image used for tree view icon.

Parameter	Description
`<treelevel>`	top = load and show at top level.
	sub = load and show at sub level.

View Group Object Views Section

The views section determines which view objects are available when the view group is selected. A sample `<views>` section follows:

```
<views>

    <viewobject>Default</viewobject>

    <viewobject>HardwareDetails</viewobject>

    <viewobject>HardwareSummary</viewobject>

</views>
```

Table 6   View Group Object Views Section Parameters

Parameter	Description
`<viewobject>`	View object name. Define more than one view objects by adding additional viewobject lines.

Modifying View Objects

View object files (`*.view`) contain the following configurable sections: Global, Header and Windows.

View Object Global Section

The global section is used to define the View name within the Display Controls drop-down list box, whether or not this View is visible and what settings are required for this View to be enabled. A sample `<global>` section follows:

```
<global>

    <description>Hardware Details</description>

    <visible>true</visible>

    <require>DEFENABLE</require>

    <image>mode-detail.gif</image>
```

```
</global>
```

Table 7   View Object Global Section Parameters

Parameter	Description
`<description>`	What is displayed within the Views drop-down list.
`<visible>`	True = This view will be present in the **Views** drop-down list. False = Hide this view selection.
`<require>`	Prerequisite files or configuration file settings required for this View to be available.
`<image>`	Image used for tree-view icon.

View Object Header Section

The View object header section contains parameters used to define what items are available within each window heading. A sample `<header>` section follows:

```
<headers>
    <header>
        <procname>windows_PrintFrameFunctions</procname>
        <functions>-</functions>
    </header>
    <header>
        <procname>PrintFilterSummary</procname>
        <functions>-</functions>
    </header>
</headers>
```

Table 8   View Object Header Parameters

Parameter	Description
`<procname>`	Tcl procedure name to call for the header. The defaults are windows_printframefunctions and windows_printfiltersummary. The default functions draw the respective data displayed.

Parameter	Description
`<functions>`	List of parameters to pass to the function. Currently, most values are set to – (dash) as this is reserved for future use (with the exception of the sub-views, which have the value back to enable the back button).

View Object Windows Section

The windows section determines which window objects are available when the view is selected. The Window Object Overrides section allows you to alter the appearance of any window object by overriding parameter values set within the window object with new values. This allows for conformity between window objects available with a certain view object. A sample `<windows>` section follows:

```
<windows>

        <window>

                <windowobject>RAMDevicesPrimary</windowobject>


                <!-- Window Object Overrides -->

                <windowstate>Maximize</windowstate>

                <windowmode>detail</windowmode>

                <detailindex>1</detailindex>

                <detailrange>15</detailrange>

                <detailsortfield>-</detailsortfield>

                <detailsortorder>-</detailsortorder>

        </window>

</windows>
```

Table 9   View Object Windows Parameters

Parameter	Description
`<windowobject>`	Determines the window object to load.
Window Object Overrides	
`<windowstate>`	Determines the window object state.
`<windowmode>`	Determines window object mode.

Parameter	Description
`<detailindex>`	Starting record number. Usually will be 1 (to start at record number 1).
`<detailrange>`	Number of records to display at one time.
`<detailsortfield>`	Default SQL field name by which to sort data results.
`<detailsortorder>`	Sort order. asc = sort ascending. des = sort descending.

Modifying Filter Group Objects

Filter Group objects (`*filtergroup`) contain two configurable sections, global and filters. Filter Groups can contain other Filter Groups to allow for multiple levels in the tree view.

Filter Group Object Global Section

The global section is used to define the Filter Group name within the Filter Group drop-down list box, whether or not this Filter Group is visible and what settings are required for this Filter Group to be enabled. A sample `<global>` section follows:

```
<global>

    <description>Hardware Related Filters</description>

    <visible>true</visible>

    <require>RAMENABLE</require>

    <image>ads-computer16.gif</image>

    <treelevel>sub</treelevel>

</global>
```

Table 10   Filter Group Object Global Parameters

Parameter	Description
`<description>`	What is displayed within the Filter Group drop-down list.

Parameter	Description
`<visible>`	True = This filter group will be present in the Filter Group drop-down list. False = Hide this filter group selection.
`<require>`	Prerequisite files or configuration file settings required for this filter group to be available.
`<image>`	Image used for tree view icon.
`<treelevel>`	top = load and show at top level. sub = object is a sub-level branch.

Filter Group Object Filters Section

The filters section determines which filter objects are available when the filter group is selected. A sample `<filters>` section follows:

```
<filters>
    <filterobject>RIM Device Vendor</filterobject>
    <filterobject>RIM Device Model</filterobject>
    <filterobject>RAM Device Name</filterobject>
    <filterobject>RIM Device Class</filterobject>
    <filterobject>RIM Device Serial Number</filterobject>
    <filterobject>RAM Device Memory</filterobject>
    <filterobject>RIM Device CPU Count</filterobject>
    <filterobject>RIM Device CPU Speed Less</filterobject>
    <filterobject>RIM Device CPU Speed More</filterobject>
    <filterobject>RAM Drive Space Free</filterobject>
</filters>
```

Table 11   Filter Group Object Filters Section Parameters

Parameter	Description
`<filterobject>`	Filter object name. Define more than one filter objects by adding additional filter object lines.

Modifying Filter Objects

Filter object files (`*.filter`) contain a global configurable section.

Filter Object Global Section

The global section determines the filter name displayed, filter type, query type and parameters as well as any required input configurations. A sample `<global>` section follows:

```
<global>
    <description>Device ID</description>
    <visible>true</visible>
    <require>RAMENABLE</require>
    <image>ads-search16.gif</image>
    <querytype>RAMSQL</querytype>
    <queryfile>RAM Device ID</queryfile>
    <inputmask>text</inputmask>
    <inputtext></inputtext>
    <inputhelp>Enter the device_id of a device.</inputhelp>
</global>
```

Table 12   Filter Object Global Section Parameters

Parameter	Description
`<description>`	What is displayed within the Filter drop-down list.
`<visible>`	True = This view will be present in the Filter drop-down list. False = Hide this view selection.
`<require>`	Prerequisite files or configuration file settings required for this Filter to be available.
`<image>`	Image used for tree view icon.
`<querytype>`	Determines from where the data is be retrieved. Either, RAMSQL (for Application Manager database), RIMSQL (for Inventory Manager database), RUMSQL (for Application Usage Manager database) or RPMSQL (for Patch Manager database).

Parameter	Description
<queryfile>	The SQL command used to obtain the data.
<inputmask>	Valid input mask values are as follows: **date** – Inserts a calendar icon allowing the user to select a date. **text** – Simple text input. **dropdown** - Create a selectable dropdown list with predefined filters. Edit inputtext to enter values for the drop-down list. **none** - Disables input field. Requires the filter to be hard coded (for example, Device last connect > 30 days). **numeric** – A numeric value (for example, 256). **numeric_list** – A list of numberic values (for example, @256||384). **decimal** - A decimal value (for example, 5.0). **decimal_list** – A list of decimal values (for example, @5.0||4.0).

<inputtext>	Input mask values.
	
	For text input mask, whatever is entered here will display as the default text input box value.
	
	For date input mask, will display default date. Must be a valid date format.
	
	For dropdown input mask value, use a space-delimited list to create the list values. For example:
	
	`<inputtext>a b c</inputtext>`
	
	Creates a dropdown list with the elements a b and c.
	
	Alternatively, a SQL query can be used to populate the dropdown list. For example:
	
	`<inputtext>[sql execute RIMDSN "select distinct os from deviceconfig"]</inputtext>`
	
	Creates a dropdown list of OS values.

<inputhelp>	Help icon text displayed on mouse-over.

Modifying Window Objects

Window object files (`*.window`) contain three main configurable sections, global, details and graph.

Window Object Global Section

The global section determines the window object description and initial settings. A view object may override some window object settings. A sample `<global>` section follows:

```
<global>

    <description>Device Summary</description>

    <visible>true</visible>

    <windowname>RAMDeviceDetailSummary</windowname>

    <proc>RAMDeviceDetailSummary</proc>

    <tcl>RAMDeviceDetailSummary.tcl</tcl>

    <require>RAMENABLE</require>

    <datasource>RIM</datasource>

    <windowtitle>Device Summary</windowtitle>

    <windowstate>Maximize</windowstate>

    <windowmode>detail</windowmode>

    <detailindex>1</detailindex>

    <detailrange>15</detailrange>

    <detailsortfield>device</detailsortfield>

    <detailsortorder>asc</detailsortorder>

</global>
```

Table 13   Window Object Global Section Parameters

Parameter	Description
`<description>`	Window object description.
`<visible>`	True = This window will be visible. False = Hide this window object.
`<windowname>`	A unique descriptive name, same as the filename without the extension.

Parameter	Description
<proc>	For internal use only.
<tcl>	Tcl script file to be used.
<require>	Prerequisite files or configuration file settings required for this Filter to be available.
<datasource>	Prerequisite data source setting required within the configuration file.
<windowtitle>	Window object title displayed.
<windowstate>	Window object state.
<windowmode>	Window object mode.
<detailindex>	Starting record number. Usually will be 1 (to start at record number 1).
<detailrange>	Number of records to display at one time.
<detailsortfield>	Default SQL field name by which to sort data results.
<detailsortorder>	asc = ascending sort order. des = descending sort order.

Window Object Detail Section

The detail section determines the window toolbar functions, query files and detail column settings. Within the details section are three sub-sections: Windows Toolbar Functions, Query Filename and Field ID and Detail Mode Columns. A sample <detail> section follows:

```
<detail>
    <!-- Window Toolbar Functions -->
    <windowfunctions>
            <function>
                    <name></name>
            </function>
    </windowfunctions>
    <!-- Query Filename and field ID -->
    <queryfile>RAMDeviceDetailSummary</queryfile>
```

```
<queryfield>device_id</queryfield>

<!-- Detail Mode Columns -->
<actions>
      <action>
             <enabled>0</enabled>
             <image></image>
             <columnname></columnname>
             <url></url>
             <urlalt></urlalt>
             <urltarget></urltarget>
      </action>
</actions>
<columns>
      <column>
             <fieldname></fieldname>
             <fieldtype></fieldtype>
             <fieldsettings></fieldsettings>
             <columnname></columnname>
             <columnsettings></columnsettings>
             <url></url>
             <urlalt></urlalt>
             <urltarget></urltarget>
      </column>
</columns>
</detail>
```

Windows Toolbar Functions Sub-Section

This section allows for icons to be added to the window toolbar. In order to be useful, the icon must match the window mode (a graph cannot be exported, for example).

- **ExportCSV** adds the export to CSV Icon (Detail mode only). This button enables you to export the report as a Comma Separated Value (CSV) file.

- **ExportIQY** adds the export to IQY Icon (Detail mode only). This button enables you to export the report as an Internet Query file, which allows a live link to the report when viewed using Microsoft Excel.

- **ViewMode** adds the icon to change to graphical mode or when in graphical mode, adds the icon to change to detail mode. A corresponding mode must exist in the object.

- **NavBar** adds the right side navigation options (detail mode only).

Query Filename and Field ID Sub-Section

This section determines which query file should be used as well as which query field is required. The query filename used automatically appends an extension of .sql or .oracle.

Inventory Manager and Application Manager data require a queryfield of device_id. The Patch Manager and Application Usage Manager data requires a queryfield of device_name.

Detail Mode Columns Sub-Section

The Detail Mode Columns sub-section determines the default layout for each detail column (the first two columns to the left displayed for each window object). Two additional sub-sections, `<actions>` and `<columns>` are included within this section.

Table 14   Action sub-section parameters

Parameter	Description
`<enabled>`	1 = Show detail column. 0 = Hide detail column.
`<image>`	Determines whether an image file is used to portray the data. Image files are stored within the `ReportingServer/html/images` folder.
`<columnname>`	The name displayed for the column.
`<url>`	Hyperlink value. Can be an internal reporting function or an external url. For example, http://[index/ $row 2]:5800, will add a link using the value from row 2 from the SQL query as a symbolic.
`<urlalt>`	Mouse-over text.

Parameter	Description
`<urltarget>`	Determines whether or not a new window is opened. For example, clicking the Remote Control (VNC) icon opens a new window.

Table 15   Columns sub-section parameters

Parameter	Description
`<fieldname>`	Must match SQL field name in the query 1 for 1 match.
`<fieldtype>`	text date numeric image dropdown - create a dropdown list based on space separated values.
`<fieldsetting>`	Manipulate output of data.
`<columnname>`	Friendly name to display on report. If column name is blank, no column will be displayed for that data.
`<columnsetting>`	Manipulate entire column.
`<url>`	Hyperlink value. Can be an internal reporting function or an external url. For example, http://[index/ $row 2]:5800, will add a link using the value from row 2 from the SQL query as a symbolic.
`<urlalt>`	Mouse-over text.
`<urltarget>`	Determines whether a new window is opened. Set to _new to open a new window. For example, clicking the Remote Control (VNC) icon opens a new window.

Window Object Graph Section

The graph section determines the settings for the graphical representation of your data. This includes two sub-sections, one for incorporating functions (Window Toolbar Functions) and another for manipulating the graphical representation of the data (Chart Objects For Graphical Mode). A sample `<graph>` section follows:

```
<graph>
```

```
        <!-- Window Toolbar Functions -->
        <windowfunctions>
                <function>
                        <name>ViewMode</name>
                </function>
        </windowfunctions>


        <!-- Chart Objects for Graphical Mode -->
        <charts>
                <chart>
<queryfile>RUMCoreProductSummary_Graph_UsageTotals</queryfile>
                        <queryfield>devicename</queryfield>
                <charttype>chart_drawBarChartStacked</charttype>
                        <chartwidth>700</chartwidth>
                        <chartheight>400</chartheight>
                        <charttitle>Usage Totals</charttitle>
                        <charturl></charturl>
                        <params>
                        </params>
                </chart>
        </charts>
</graph>
```

5 Troubleshooting

At the end of this chapter, you will:

- Be able to access the HP Client Automation Reporting Server (Reporting Server) log file.

- Be able to resolve typical problems, such as reporting toolbars not loading properly.

About the Reporting Server Logs

Reporting Server log files are stored in the `log` directory located by default:

    <installdir>\ReportingServer\log\

The log files contain the Reporting Server version number and session activity information. To set the log level, use the Reporting Server configuration page (`setup.tcl`).

results.log – records information about query results. `Results.log` contains most of the information that may be required for troubleshooting.

navigate.log – records information about the left pane activity.

setup.log – records information about the setup page.

main.log – records initialization activities.

Use the log files to review or troubleshoot Reporting Server session activity. The most recent entries are located at the bottom of each log.

Common Reporting Server Problems and Solutions

- **Problem: Left Toolbar not loading.**
  The left-side navigation toolbar of the Reporting page is not loading properly.

  Solution: This has been resolved on Compaq machines by disabling TEAMING.

- **Problem: Browser hangs when opening Reporting Page -- navigation bar or reports are not displayed.**
  When browsing to the Reporting page, the page hangs when trying to display the navigation bar (`navigate.tcl`) or reports (`results.tcl`).

  Solution: Change the file permissions of `C:\WINNT\Temp` to allow everyone full control, including subfolders.

- **Problem: SQL Server Credentials Error**
  This error can occur when one of the DSN Username and or DSN Passwords specified in the Reporting Server's `config.tcl` is set incorrectly.

Figure 20   SQL server credentials error

> SQL server credentials error.
>
> Error: 28000 18456 {[Microsoft][ODBC SQL Server Driver][SQL Server]Login failed for user
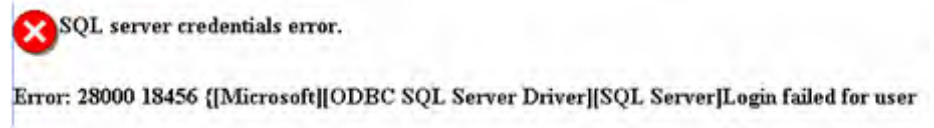
Solution: Check the password for each DSN and save any changes.

- **Problem: Object Not Found in Database**
  This error typically means that either one of the PREFIXES
  (RAMPREFIX, RIMPREFIX, RPMPREFIX or RUMPREFIX) in the
  Reporting Server configuration file is wrong, or one of the Database
  objects (i.e., Tables, Views, Stored Procedures, User Defined Functions)
  has the wrong ownerships.

Figure 21   Object not found in database error.

> Object not found in database.
>
> Error: S0002 208 {[Microsoft][ODBC SQL Server Driver][SQL Server]Invalid object name
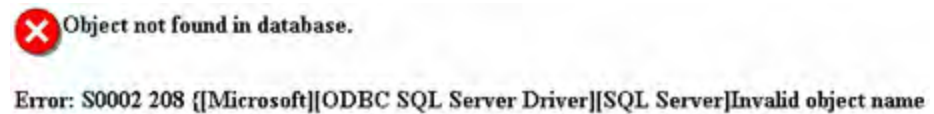
- **Solution:** modify the configuration file and supply the correct prefix
  information or adjust the ownership of your database objects.

Modifying the TimeOut Directive

Complex reports may take more than the five minute default timeout period
allowed for by Apache. Use the Apache TimeOut directive to adjust this
value. The TimeOut directive is documented on the Web at:

http://httpd.apache.org/docs/2.0/mod/core.html#timeout

A Sample Reporting Scenario

This appendix presents a sample reporting scenario that will help you become familiar with Reporting Server features. The scenario demonstrates the use of filter options and view options as well as some of the functions available after a report is generated.

Scenario: Report for Sales Department on Devices Needing Service Pack Updates

The following scenario describes how to use the Reporting Server to obtain a list of all Managed Devices in the Sales Department that have the desired operating system for rolling out a new application, but which do not have the latest service pack level. The final report itemizes those devices that need a service pack update prior to installing the application.

The scenario assumes that the Reporting Server has been configured to access the Active Directory for your enterprise as well as your Inventory Manager SQL database. It has been installed on the Apache server with the hostname: myHostApache.

Task 1   Access Reporting Server

To access the Reporting Server, open a browser window and type:

    http://myhostApache/reportingserver

The Reporting Server Web page opens with the default toolbars and windows.

At the top-left of the page, the Directory/Group Filters area includes the enterprise's Active Directory tree.

Figure 22   First Access to the Reporting Server
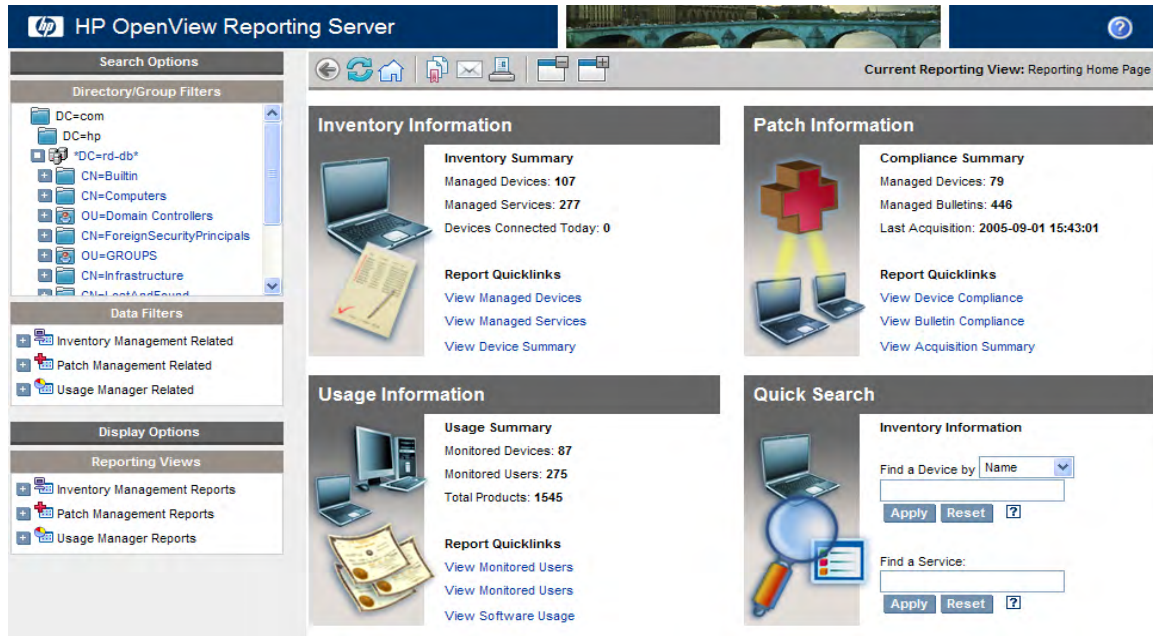
We will select various filters from the Reporting Server interface to limit the report to only those Devices in the Sales Department that need service pack updates for our new application.

Task 2   Search for Sales Department Devices Only

Use the Directory/Group Filters area to select the Sales group from the Active Directory structure. Making a selection in this area adds Directory/Group filter of Sales to the Search Criteria, and returns a list of all devices assigned to Sales.

Click **View Managed Devices** in the Inventory Information section to display the list of Sales devices.

Task 3   Limit Search to Targeted Operating System

From the list of devices in sales, we will click the following hyperlink entry (found in the Operating System column of the Managed Devices Report) to add another search criterion:

• Microsoft Windows 2000 Professional Version 5.0.2195 [Build 2195]

Now our result set shows all devices in Sales that have the Microsoft Windows 2000 Professional Version 5.0.2195 [Build 2195] operating system.

Task 4 Search for Operating Systems without Service Pack 4

Now we want to drill down further to identify devices from this list that do not have Service Pack 4. To do this, we are going to apply a data filter. Data filters are easily applied from the Search Controls toolbar on the left side of the page.

In the Data Filters area, we will select a Filter Group and a Filter. First, select the Filter Group **OS Related Filters**. Second, select the Filter **Operating System Level**.

In the Filter Value text box, type the value **!Service Pack 4** and click **Apply** (the ! denotes "not").

Our report now shows all Devices in Sales, which have an operating system of Microsoft Windows 2000 Professional Version 5.0.2195 [Build 2195] but which *do not* have **Service Pack 4**.

Our report now lists those devices in the Sales department that need to have a Service Pack upgrade applied prior to rolling out the new application.

Task 5 Save or Print the Report

Print any report by clicking the printer icon above the Search Criteria.

Save the report by exporting it to a CSV file. Use **Export to CSV** in the Action bar within the report to export the data to a CSV file.

B Reporting Server Configuration File

This appendix describes the Reporting Server configuration file parameters in detail.

The configuration file is accessed by visiting the Reporting Server Web page, `setup.tcl` file.

`http://localhost/reportingserver/setup.tcl`

Each group of parameters in the `setup.tcl` configuration file is stored in a separate configuration file within the Reporting Server directory. These files are created the first time you visit the configuration file. You can use these files to manually edit all Reporting Server parameters.

Table 16   Configuration files

File	Description
rrs.cfg	Reporting Server Configuration and LDAP Configuration
rim.cfg	Inventory Manager Configuration
vm.cfg	Vulnerability Management Configuration
rpm.cfg	Patch Manager Configuration
rum.cfg	Usage Manager Configuration
scm.cfg	Server Management Configuration (SCM)
cba.cfg	Configuration Baseline Auditor Configuration(CBA)
ed.cfg	DDM Inventory Configuration

The following sections describe each parameter within each `setup.tcl` configuration area.

Reporting Server Configuration

The Reporting Server configuration values are stored in `rrs.cfg`.

Table 17   Reporting Server configuration parameters

Setup.tcl Parameter	rrs.cfg Parameter	Default value	Description
Log Level (1-5)	LOGLEVEL	1	Reporting Server logging level
Language (english)	LANGUAGE	auto	Reporting Server UI language
Default View	DEFAULTVIEW		Default View to load when none is specified
Show Device Data Without Filters (0/1)	DEVICELIST	1	Show report data when no filters are specified
Threshold to use RRS_DEVICELIST table	DEVICELISTCOUNT		Threshold to use RRS_DEVICELIST table.
CSV Export Format	EXPORTMODE	tab	CSV Export Mode
Enable Default Reports	DEFENABLE	1	Enable default reports.
Use HPCA Portal for Logon Authorization	RMPLOGON		Enable Portal Logon Support
HPCA Portal Address	RMPIP		IP/Host Address for Portal
HPCA Portal Port	RMPPORT		Port for Portal
Use SSL Connection to RMP	RMPUSESSL		Use SSL connection to Portal. When SSL enabled, Portal logon verification is done via SSL.

Setup.tcl Parameter	rrs.cfg Parameter	Default value	Description
CA Certificates Directory	SSL_CACERTDIR	etc \CACertificates	CA Certificates directory
CA Certificates File	SSL_CACERTFILE	cacert.pm	CA Certificates file
	dl_datefmt		Date format for reports
	dl_timefmt		Time format for reports
Date format 1=GMT 0=LOCAL	dl_gmt	1	Show report data in GMT Time
	FORCEDFILTERNAME		Forced filter name. Applies a filter to all reports. This option is not visible.
	FORCEDFILTERVALUE		Forced filter value. Applies a filter to all reports. This option is not visible.
Encryption Type		des	Type of encryption to use.

Inventory Manager Configuration

Inventory Manager configuration values are stored within `rim.cfg`.

Table 18   Inventory Manager Configuration Parameters

Setup.tcl Parameter	rim.cfg Parameter	Description
Enable RIM Reports (0/1)	ENABLE	Enable Inventory Manager reports
Enable RIM Report Caching (0/1)	CACHEENABLE	Enable Inventory Manager report caching
RIM Cache Lifetime (seconds)	CACHELIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, dbo.RRS_DEVICETABLE')
RIM Database Type (sql/oracle)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. Options: sql, oracle
RIM Table Prefix	PREFIX	Schema/Owner for tables (for example, 'dbo.')
RIM DSN	DSN	ODBC DSN for Inventory database
RIM DSN User	DSN_USER	ODBC user ID for Inventory database
RIM DSN Password	DSN_PASSWD	ODBC password for Inventory database

Setup.tcl Parameter	rim.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.

Vulnerability Management Configuration

Vulnerability Management configuration values are stored within `vm.cfg`.

Table 19   Vulnerability Management Configuration Parameters

Setup.tcl Parameter	VM.cfg Parameter	Description
Enable VM Reports (0/1)	ENABLE	Enable Vulnerability Management reports
Enable VM Report Caching (0/1)	CACHEENABLE	Enable Vulnerability Management report caching
VM Cache Lifetime (seconds)	CACHELIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, dbo.RRS_DEVICETABLE')
VM Database Type (sql/oracle)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. Options: sql, oracle
VM Table Prefix	PREFIX	Schema/Owner for tables (for example, 'dbo.')
VM DSN	DSN	ODBC DSN for Inventory database
VM DSN User	DSN_USER	ODBC user ID for Inventory database
VM DSN Password	DSN_PASSWD	ODBC password for Inventory database

Setup.tcl Parameter	VM.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.

DDM Inventory Configuration

DDM Inventory configuration values are stored within `ed.cfg`.

Table 20   Enterprise Discover Configuration Parameters

Setup.tcl Parameter	ED.cfg Parameter	Description
Enable ED Reports (0/1)	ENABLE	Enable DDM Inventory reports
Enable ED Report Caching (0/1)	CACHEENABLE	Enable DDM Inventory report caching
ED Cache Lifetime (seconds)	CACHELIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, aggregate.RRS_DEVICETABLE)
ED Database Type (mysql)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. The only option available for DDM Inventory is mysql.
ED Table Prefix	PREFIX	Schema/Owner for tables (for example, 'aggregate.')
ED DSN	DSN	ODBC DSN for Inventory database (for example, EDDB).
ED DSN User	DSN_USER	ODBC user ID for Inventory database
ED DSN Password	DSN_PASSWD	ODBC password for Inventory database

Setup.tcl Parameter	ED.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.
Use Aggregate Data (0/1)	AGGREGATE	Enable Aggregate Reporting. If enabled (1), all reports will use aggregate data. If disabled (0), all reports will use local data only.

Patch Manager Configuration

Patch Manager configuration values are stored in `rpm.cfg`.

Table 21   Patch Manager configuration parameters

Setup.tcl Parameter	rpm.cfg Parameter	Description
Enable RPM Reports (0/1)	ENABLE	Enable Patch Manager reports
Enable RPM Report Caching (0/1)	CACHEENABLE	Enable Patch Manager report caching.
RPM Cache Lifetime(seconds)	CACHLIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, 'dbo.RRS_DEVICETABLE')
RPM Database Type (sql/oracle)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. Options: sql, oracle
RPM Table Prefix	PREFIX	Schema/Owner for tables (for example, 'dbo.')
RPM DSN	DSN	ODBC DSN for Patch Database
RPM DSN User	DSN_USER	ODBC User ID for Patch Database
RPM DSN Password	DSN_PASSWD	ODBC Password for Patch Database
Enable SQL No Lock (0/1)	NOLOCK	SQL Option to disable locking on query

Setup.tcl Parameter	rpm.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.

Application Usage Manager Configuration

Application Usage Manager configuration values are stored in `rum.cfg`.

Table 22   Usage Manager Configuration Parameters

Setup.tcl Parameter	rum.cfg Parameter	Description
Enable RUM Reports (0/1)	ENABLE	Enable Usage Manager reports
Enable RUM Report Caching (0/1)	CACHEENABLE	Enable Usage Manager report caching.
RUM Cache Lifetime (seconds)	CACHELIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, 'dbo.RRS_DEVICETABLE')
RUM Database Type (sql/oracle)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. Options: sql, oracle
RUM Table Prefix	PREFIX	Schema/Owner for tables (for example, 'dbo.')
RUM DSN	DSN	ODBC DSN for Usage Database
RUM DSN User	DSN_USER	ODBC User ID for Usage Database
RUM DSN Password	DSN_PASSWD	ODBC Password for Usage Database

Setup.tcl Parameter	rum.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.

Server Management Configuration (SCM)

Server Management configuration values are stored within scm.cfg.

Table 23   Server Management configuration parameters

Setup.tcl Parameter	scm.cfg Parameter	Description
Enable SCM Reports (0/1)	ENABLE	Enable Server Management reports
Enable SCM Report Caching (0/1)	CACHEENABLE	Enable Server Management report caching.
SCM Cache Lifetime(seconds)	CACHLIFE	Lifetime (in seconds) for cached files.

Configuration Baseline Auditor (CBA)

Configuration Baseline Auditor configuration values are stored in cba.cfg.

Table 24   Configuration Baseline Auditor Configuration Parameters

Setup.tcl Parameter	cba.cfg Parameter	Description
Enable CBA Reports (0/1)	ENABLE	Enable Configuration Baseline Auditor reports
Enable CBA Report Caching (0/1)	CACHEENABLE	Enable Configuration Baseline Auditor report caching.
CBA Cache Lifetime(seconds)	CACHLIFE	Lifetime (in seconds) for cached files.
Temporary Table Name for Device List	DEVICETABLE	Temporary Table in SQL to store the device list, format schema/owner.table (for example, 'dbo.RRS_DEVICETABLE')
CBA Database Type (sql/oracle)	DATABASE	Database Type, if blank or missing, Reporting Server will detect. Options: sql, oracle
CBA Table Prefix	PREFIX	Schema/Owner for tables (for example, 'dbo.')
CBA DSN	DSN	ODBC DSN for Configuration Baseline Auditor Database
CBA DSN User	DSN_USER	ODBC User ID for Configuration Baseline Auditor Database
CBA DSN Password	DSN_PASSWD	ODBC Password for Configuration Baseline Auditor Database

Setup.tcl Parameter	cba.cfg Parameter	Description
Normalize case when using filters.	NORMALIZECASE	Database is case sensitive when doing searches. Default is set to 0 (disabled). When enabled, all filters will convert input and searched fields to lower case for queries. **Note**: This may cause a performance issue with regard to indexes.

LDAP Configuration

The LDAP configuration values are stored within rrs.cfg.

Table 25   LDAP Configuration Parameters

Setup.tcl Parameter	rrs.cfg parameter	Default value	Description
Enable LDAP (0/1)	ENABLE	0	Enable LDAP browsing and filtering
Enable LDAP Caching (0/1)	CACHEENABLE	0	Enable LDAP browsing and filtering caching
LDAP Cache Lifetime (seconds)	CACHELIFE	60	Lifetime (in seconds) for cached files.
LDAP Server Type	TYPE	ldap	Type of LDAP Connection • ldap = Standard LDAP Connection. If SSL is enabled, requires SSL Certificate File. • dsml = Directory Service Markup-Language Connection • rmp-ws = RMP Webservices (Used to connect to Portal)
Server Address	SERVER		IP/Host of LDAP Server (for example, ldap.hp.com)
Port	PORT		LDAP port (for example, 389)
Base DN	BASE		Base DN to start browsing at in UI (for example, ou=groups,dc=hp,dc=com)

Setup.tcl Parameter	rrs.cfg parameter	Default value	Description
Bind DN	BIND		BIND DN (for example, dc=hp,dc=com)
Use Service Account for Browsing (only available on type RMP-WS)	WSSERVICEACT		Use service account for type rmp-ws. If true, then will use the user credential configured in this configuration file. If false, will use the logged on user credentials. Service account credentials are still required in either case.
User	USER		LDAP User ID (for example, administrator@ldap.hp.com)
Password	PASS		LDAP Password
Paging Support (0/1)	PAGING	1	LDAP paging support
Page Size	PAGESIZE	1000	LDAP page size
Show Friendly Names	SHOWFRIENDLY	0	Show friendly names when browsing LDAP
Use SSL (only available on type LDAP)	SECURE	0	Use SSL connection to LDAP
SSL Certificate File	CERTFILE		Path and filename to SSL certificate. Required when LDAP Server Type set to ldap.

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