OPSWARE®
SERVER AUTOMATION SYSTEM

Opsware® OMDB 1.0.1 User's Guide

Opsware SAS Version 6.5

Opsware OMDB Version 1.0.1

Table Of Contents

Chapter 4: Creating Custom Reports   53

Index   87

  5

Preface

Welcome to the Opsware Operational Management Database (OMDB), the first configuration management database (CMDB) that offers seamless change automation. Leveraging the Opsware System consisting of the Opsware Server Automation System (SAS), Opsware Network Automation System (NAS), and the Opsware Application Storage Automation System (ASAS), the OMDB automatically populates and maintains all the infrastructure configuration items (CIs), their detailed attributes, and interdependencies. After the OMDB is populated with the data, customers can easily execute changes to configure and remediate the IT infrastructure.

Overview of this Guide

This guide describes how to use Opsware OMDB, starting with an introduction to the system and how to navigate the user interface. It provides information about Search, Reports, Dashboard, and Custom Reports.

Contents of this Guide

This guide contains the following chapters and appendices:

Chapter 1: OMDB Overview: Provides an overview of Opsware OMDB, the OMDB user interface, the OMDB Client, and the Search feature.

Chapter 2: OMDB Reports: Provides an overview of the OMDB Reports feature, and how to run, print, export and schedule reports.

Chapter 3: **OMDB Dashboard**: Provides an Overview of the OMDB Dashboard and how to set the Dashboard options.

Chapter 4: **Creating Custom Reports**: Provides instructions for saving a search as a report, using BIRT RCP Designer to design custom reports, and adding custom reports to OMDB.

Conventions in this Guide

This guide uses the following typographical and formatting conventions.

NOTATION	DESCRIPTION
Bold	Identifies field menu names, menu items, button names, and inline terms that begin with a bullet.
`Courier`	Identifies text that is entered or displayed at the command-line prompt, such as Unix commands, Opsware SAS commands, file names, paths, directories, environment variable names, contents of text files that are viewed or edited with a text editor, source code in a programming language, and SQL (database) commands.
Italics	Identifies document titles, DVD titles, web site addresses. Used to introduce new terms when they are first defined in a document and for emphasis.

Icons in this Guide

This guide uses the following icons.

ICON	DESCRIPTION
	This icon represents a note. It identifies especially important concepts that warrant added emphasis.
	This icon represents a requirement. It identifies a task that must be performed before an action under discussion can be performed.
	This icon represents a tip. It identifies information that can help simplify or clarify tasks.

ICON	DESCRIPTION
⚠	This icon represents a warning. It is used to identify significant information that must be read before proceeding.

Guides in the Documentation Set and Associated Users

- The *Opsware® SAS User's Guide: Server Automation* is intended for system administrators responsible for all aspects of managing servers in an operational environment. It describes how to use Opsware SAS, introducing the system and the user interface. It provides information about managing servers, remediating servers, script execution, configuration tracking, deploying and rolling back code, and agent deployment. It also explains how to use the Opsware Global Shell and open a Remote Terminal on managed servers.

- *Opsware® SAS User's Guide: Application Automation* is intended for system administrators responsible for performing the day-to-day functions of managing servers. It reviews auditing and compliance, software packaging, visual application management, application configuration, and software and operating system installation on managed servers.

- The *Opsware® SAS Administration Guide* is intended for administrators responsible for monitoring and diagnosing the health of the Opsware SAS core components. It also documents how to set up Opsware user groups and permissions.

- The *Opsware® SAS Planning and Installation Guide* is intended for advanced system administrators responsible for planning all facets of an Opsware SAS installation. It documents all the main features of Opsware SAS, scopes out the planning tasks necessary to successfully install Opsware SAS, explains how to run the Opsware Installer, and details how to configure each of the components. It also includes information on system sizing and checklists for installation.

- The *Opsware® SAS Policy Setter's Guide* is intended for system administrators responsible for setting up OS provisioning, configuration tracking, code deployment, and software management.

- The *Opsware® SAS Content Utilities Guide* is intended for advanced system administrators responsible for importing content such as software packages into

Opsware SAS. It documents the following command-line utilities: OCLI 1.0, IDK, and DET (CBT).

• The *Opsware® Automation Platform Developer's Guide* is intended for software developers responsible for customizing, extending, and integrating Opsware SAS. It documents how to create Web Services, Java RMI, Python, and CLI clients that invoke methods on the Opsware API.

Opsware, Inc. Contact Information

For more information, see the Opsware, Inc. main web site and phone number:

• *http://www.opsware.com/index.htm*

• +1 (408) 744-7300

For links to the latest product documentation and software downloads, see the Opsware Customer Support site:

• *https://download.opsware.com/opsw/main.htm*

For troubleshooting information, see the Opsware Knowledge Base:

• *https://download.opsware.com/kb/kbindex.jspa*

To contact Opsware Customer Support, see the following email address and phone number:

• support@opsware.com

• +1 (877) 677-9273

Chapter 1: Introduction to the OMDB Client

Overview of OMDB

Opsware Operational Management Database (OMDB) is a configuration management database designed to create and maintain a record of the infrastructure data in your IT environment. It has the ability to store information from Opsware SAS, Opsware NAS, and as well as other third party systems. You can use the OMDB Search, Reports, and Dashboard features to view and analyze IT infrastructure such as applications, servers, networks, and storage.

The OMDB feature enables you to perform the following tasks:

• Search and browse for configuration items in your IT environment.

• Create reports and view report results on infrastructure data in your IT environment.

• Run existing reports and schedule reports.

• Aggregate report results to your dashboard.

• Create custom reports.

- Perform historical reporting and compare the results with the current report results.

- Perform actions on search and report results.

- Configure the data stored in third party systems with the OMDB data using the Opsware Connector Development Kit.

- Define security boundaries around the configuration items. You can thus constraint OMDB feature access based on user permissions.

The OMDB Client provides the following features

- **Search**: Enables you to search and browse for configuration items in your IT Environment. See "Overview of Search" on page 16 for more information.

- **Reports**: Enables you create reports, view report results, run existing reports, and schedule reports. See "OMDB Reports" on page 31 for more information.

- **Dashboard**: Enables you to aggregate report results to the dashboard. See "Overview of Dashboard" on page 45 for more information.

- **Opsware Administration**: Enables you to set the options for Scheduled Reports and Dashboard. See "Setting Dashboard Options" on page 48 for more information.

Launching the OMDB Client

To launch the OMDB Client, perform the following steps:

1 Launch the SAS Client. See the *Opsware® SAS User's Guide: Server Automation* for information on how to launch the SAS Client.

2 In the SAS Client, from the **Tools** menu, select **Opsware OMDB Client**. See

Figure 1-1. This launches the OMDB Client.

Figure 1-1: Launching the OMDB Client
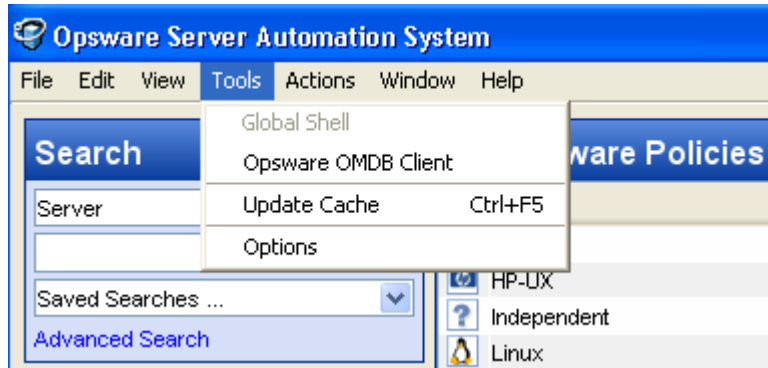
3 (Optional) To display Search in the Navigation pane, select **Search Pane** from the **View** menu in the OMDB Client.

OMDB Client

The OMDB Client user interface provides an easy access to a OMDB features and functionality. The OMDB Client user interface has the following main areas:

• Menus

• Navigation Pane

• Content Pane

• Status Bar

Figure 1-2: OMDB Client

Menus

The OMDB Client includes the following menus:

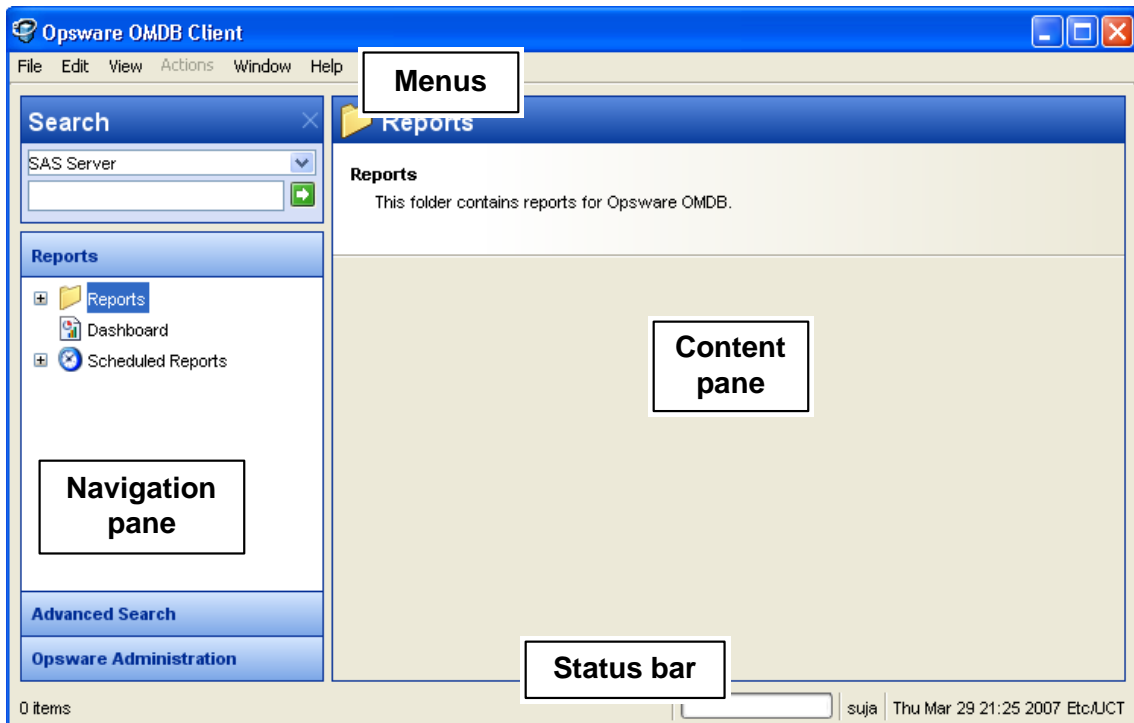- **File**: This enables you to open a new OMDB Client window, close the current window, or exit all open OMDB Client windows.

- **Edit**: This enables you to cut, copy, paste, and delete text.

- **View**: This refreshes the current view and shows the latest information from the core that you are currently logged into . You can also access OMDB features in the Navigation pane, such as Reports (Reports, Dashboard, Scheduled Reports), Advanced Search (Search, Quick Search), and Opsware Administration (Schedule Report options, Dashboard options). This also allows you to show or hide the Search pane.

- **Actions**: Depending on the feature that you have selected in the Navigation pane, this menu enables you to perform OMDB functions.

- **Window**: This enables you to access multiple instances of OMDB Client windows, if more than one window is open.

- **Help**: This menu provides help for the OMDB Client. Help F1 provides context-sensitive help relevant to the current feature window selected or opened (same as F1). The contents and index will open the SAS Client help system to the main table of contents.

Navigation Pane

To access OMDB features, select a feature in the Navigation pane. When you select a feature, the details of it appears in the Content pane. You can access functions related to it through the Actions menu.

Content Pane

Depending on the selection in the Navigation pane (Advanced Search, Quick Search, Reports, Dashboard, Scheduled Report Options, Dashboard Options), the Content pane lists the corresponding information.

Status Bar

At the bottom of the OMDB Client Application window, the status bar provides the following information:

- Informational text (left hand side) about the selected object

- A progress bar active when retrieving information from the core

- The user ID

- The time zone set in the user profile

Key Terms and Concepts

The following terms and concepts are used in the OMDB feature:

- **Configuration Item (CI)**: An object which can be viewed and managed with Opsware OMDB. For example SAS Server, NAS Device, SAS Patch Policy.

- **Attribute**: A single property of a configuration item, the value of which describes the behavior of the configuration item. Configuration items can have one or more attributes. For example, some of the attributes for the configuration item SAS Server includes hostname, life cycle, agent status, and management IP.

Overview of Search

In the OMDB Client, the Search feature allows you search for any information about your operational environment that is available in Opsware SAS, Opsware NAS, and any third party systems. In the OMDB database using the Connector Development Kit, you can also include additional configuration items and attributes from third party systems such as storage management, change management, and ticketing. This allows you to search for information about your IT infrastructure other than Opsware SAS and Opsware NAS. See *Opsware Connector Development Kit* for information on how to add configuration items and attributes from third party systems.

The OMDB Search feature enables you to perform the following actions:

- Perform a search by using keywords.

- Perform an advanced search by creating search queries.

- Browse for configuration items in your IT environment.

- Search for historical data by selecting the date and time for the search query.

- Save a search query.

- Perform actions on search results. You must have Opsware SAS 6.5 installed to perform actions on SAS results and Opsware NAS 6.0 or later installed to perform actions on NAS results.

- Export search results.

- Customize search results formatting using the Results Options window.

- View Item Browser for search results.

Performing a Search

In the OMDB Client, you can search for configuration items by entering a keyword in the search text field. The search is carried out against the default displayable attributes defined for the configuration item in the OMDB data catalog.

The search operation returns only configuration items on which you have the data access permissions. See Opsware® *OMDB 1.0.1 Installation Guide* for information on OMDB permissions.

To carry out a search, perform the following steps:

1 From the Navigation pane, select **Search**. To display Search in the Navigation pane, select **Search Pane** from the **View** menu.

2 From the drop-down list, select the type of item that is the target of the search. Figure 1-3 shows a search for the NAS User named Bob.

Figure 1-3: Simple Search in the OMDB Client
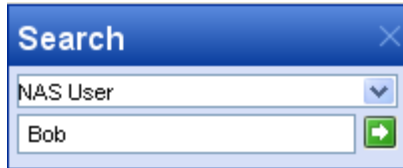
3 Enter the search text in the text field. The OMDB Client search feature does not support a wildcard search and the search is not case sensitive.

4 Click [→] to search. The search results appear in the Content pane.

5 (Optional) Click on any column heading to sort the search results. You can also change the order of the columns by dragging the column heading and dropping it into the desired location.

6 (Optional) Click Results Options to specify the attribute to be displayed as column headings for the search results. Perform the following steps to customize the column headings:

1. In the Results Options window, from the All Available Attribute list, select the attributes you want to display as column headings for the search results. Click **Add**. The attributes now appear on the right pane. See Figure 1-4.

Figure 1-4: Results Option Window
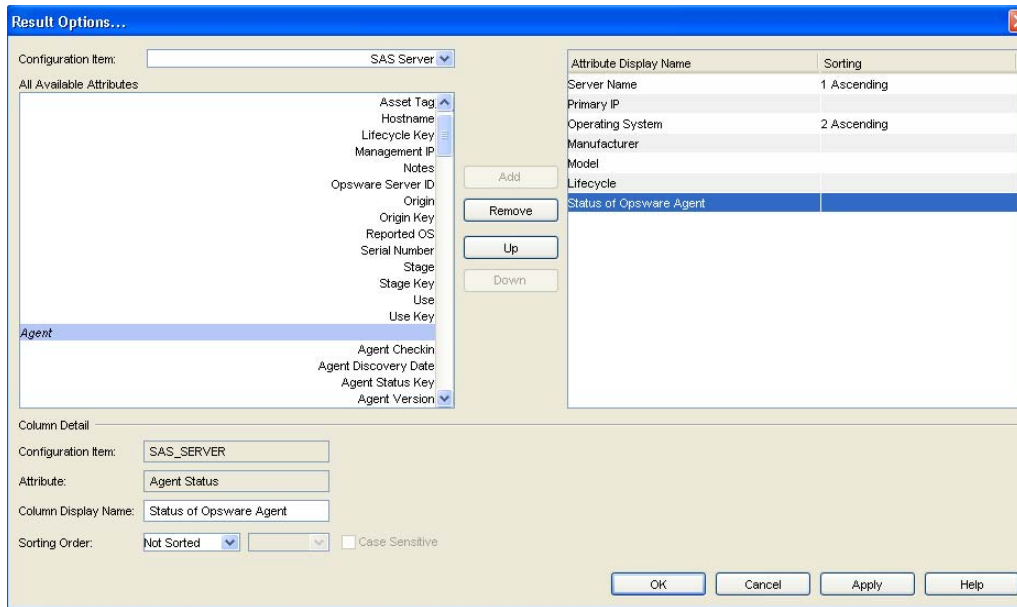
2. To reorder the attributes, select the attribute and then click **Up** or **Down**. To remove the attribute, select the attribute and then click **Remove**.

3. To change the display name of the attribute in the column heading, enter a new name in the Column Display Name field.

4. To select the sort order of the attribute on the search results, select the order number from the Sorting Order drop-down list.

5. To sort the search results for a each attribute, select Ascending or Descending from the Sorting Order drop-down list.

6. To make the sorting order case sensitive, select the Case Sensitive check box.

7. Click **OK** to display the selected attributes as column headings. Click **Apply** to save.

8. To add additional attributes, select the relationship from the Configuration Item drop-down list as shown in Figure 1-5. The additional attributes appear in the All Available Attribute list. Perform the instructions listed in step 1-7 to add or remove additional attributes.

Figure 1-5: Adding Additional Attributes to the Results Option Window
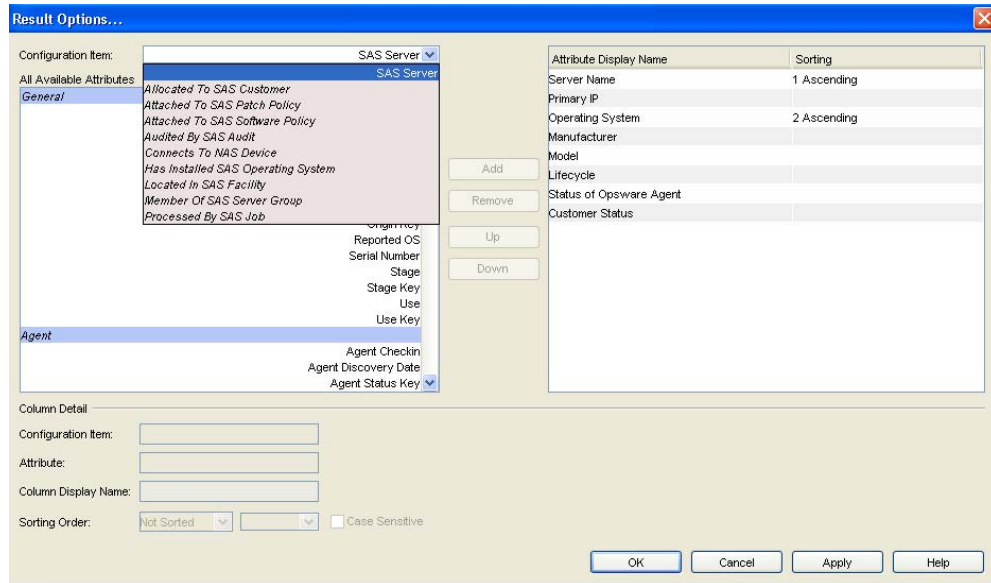
▐7▌ (Optional) Click **Save** to save your search query. The Save Search window appears. Enter the name of the search and click **Save**. The name of the saved search cannot be more than 64 characters. The search is saved in a folder corresponding to the configuration item types in the Advanced Search location in the navigation pane.

▐8▌ (Optional) In the Save Search window, select Save Search as Report Definition to create custom reports. See "Creating Custom Reports" on page 53 for more information.

▐9▌ (Optional) Click **Export** at the bottom of the screen to export search results. The Export Results window appears. Enter the location, the file name and the file type and then click **Export Results**. You can export OMDB search results as .csv or .html files.

▐10▌ (Optional) After you export the search results, you can email the search results by attaching the exported file to the email. You can also print the search results by printing the exported file from an application that supports .csv or .html files.

11 (Optional) To perform an action on the search results, select an item from the Content pane and then from the **Actions** menu, select the appropriate action.

Overview of Quick Search

Quick Search allows you to browse all the configuration items available in OMDB by selecting the configuration item and then the attribute and value for that item.

Performing a Quick Search

The search operation returns only configuration items on which you have the data access permissions. See Opsware® *OMDB 1.0.1 Installation Guide* for information on OMDB permissions.

To carry out a quick search, perform the following steps:

1 From the Navigation pane, select **Advanced Search ➤ Quick Search**. Quick Search is displayed in the Content pane as shown in Figure 1-6.

Figure 1-6: Quick Search in the OMDB Client
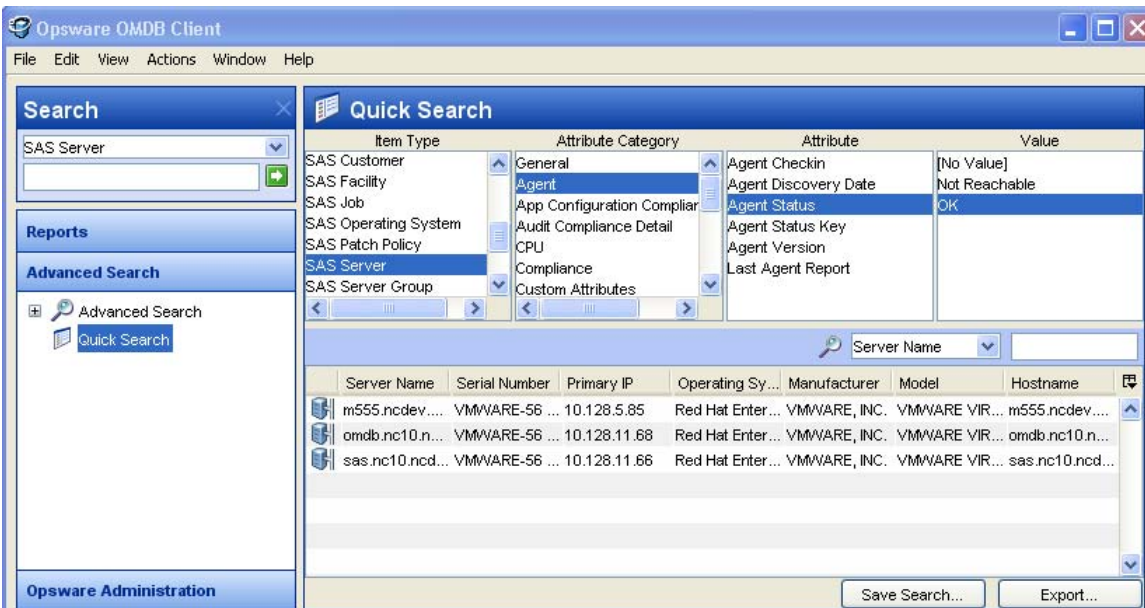
2 From the Item Type list in the Content pane, select the configuration item you would like to browse. The list of attribute category for the selected configuration item appear in the Attribute Category list.

3 Select the attribute from the Attribute list and then select the value for that attribute from the Value list. The search results appear in the content pane.

4 (Optional) Click on any column heading to sort the search results. You can also change the order of the columns by dragging the column heading and dropping it into the desired location.

5 (Optional) Click **Save** to save your search query. The Save Search window appears. Enter the name of the search and click **Save**. The name of the saved search cannot be more than 64 characters. The search is saved in a folder corresponding to the configuration item type in the Advanced Search location in the navigation pane.

6 (Optional) In the Save Search window, select Save Search as Report Definition to create custom reports from your search results. See creating custom reports for more information.

7 (Optional) Click **Export** at the bottom of the screen to export search results. The Export Results window appears. Enter the location, the file name and the file type and then click **Export Results**. You can export OMDB search results as csv or .html files.

8 (Optional) After you export the search results, you can email the search results by attaching the exported file to the email. You can also print the search results by printing the exported file from an application that supports .csv or .html files.

9 (Optional) To perform an action on the search results, select an item from the Content pane and then from the **Actions** menu, select the appropriate action.

Overview of Advanced Search

In the OMDB Client, an Advanced Search enables you to create queries on search items. In the search query, you can specify rules and combine each rule with a logical "And" or "Or" operator. You can use both the "And" and "Or" operator in a single search query. Each rule is a combination of an attribute/operator/value that enables you to search for a specific attribute value for the selected search item. For the search item, depending on the attribute that you select, the options for the operator and value are displayed. You can

specify the attribute values by entering text or a numerical value in the text field, or by selecting a value from the drop-down list, or by selecting multiple values from a list of values in the Select Values window. See Figure 1-7.

Figure 1-7: Advanced Search

The Select Values window appears when you need to specify multiple values for a rule containing a "is one of" or "is not one of" operator. In this window, you can select multiple values from the list or add values to the Additional field. See Figure 1-8.

In OMDB when you perform a search of any configuration item and the in the operator field you select " Equals" or "Does not equal" or "Is one of" or "Is not one of", then the values listed in the Value field depends on the values existing in the OMDB atabase as of the selected date. If the other values in the OMDB database are not relevant for the selected date then those values will not be listed in the Value field.

Figure 1-8: Select Values Window
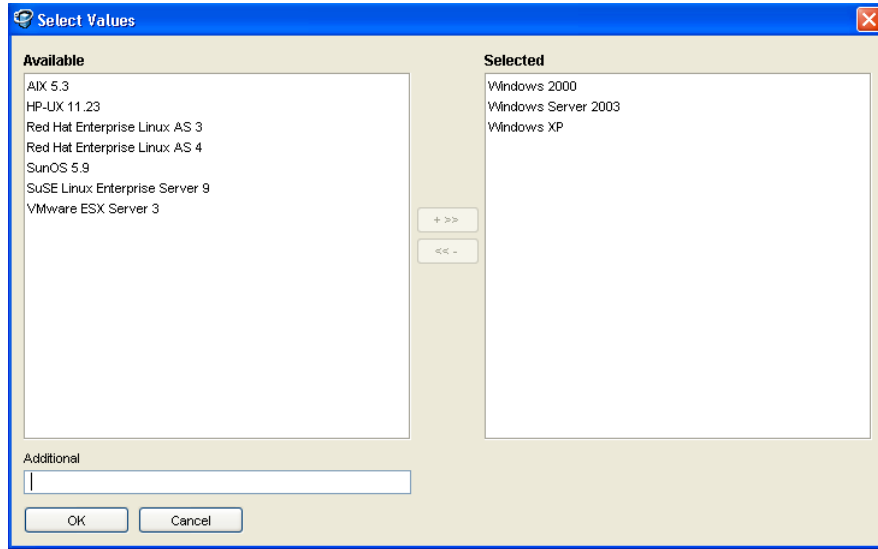
You can create complex queries by selecting multiple relationships or In-Line blocks for a configuration item and also multiple rules for each relationship. See Figure 1-10.

Figure 1-9: Complex Query Containing Multiple Relationships
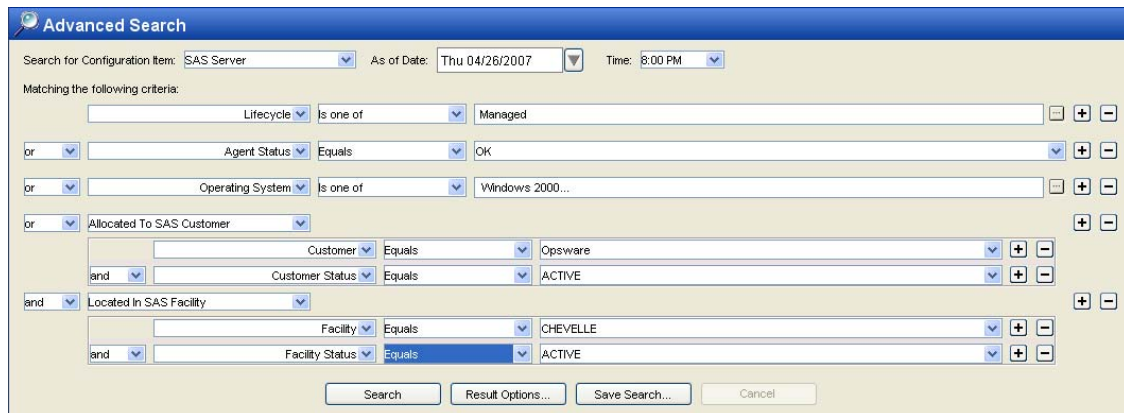
In a complex query, you can also set the precedence on the Or/And logic for the different rules in that query. In any query, by default the Or logic takes precedence over the And logic. In Advanced search, you can use the In-Line Search Block to prioritize the And/Or logic for rules in a query. See Figure 1-10.

Figure 1-10: Complex Query Containing In-Line Block

Using Advanced Search you can search for historical data by selecting the date and time for the search query. You can then compare the historical data with the current results or create custom reports for both the current search results and the historical search results. See "Creating Custom Reports" on page 53 for information on how to create custom reports.

Performing an Advanced Search

The search operation returns only configuration items on which you have the data access permissions. See Opsware® *OMDB 1.0.1 Installation Guide* for information on OMDB permissions.

To carry out an advanced search, perform the following steps:

1 From the Navigation pane, select **Advanced Search ➤ Advanced Search**. The Advanced Search page appears in the Content pane.

2 From the Search for Configuration Item drop-down list, select the item you want to search. From the As of Date drop-down list select the date and from the Time drop-down list select the time to carry out the search.

Figure 1-11: Advanced Search in the OMDB Client

3 Create a rule by selecting the attribute from the first drop-down list. Depending on the attribute that you select, options available for the operator and values for the rule could change.

4 Select the operator from the second drop-down list. The operator selected defines how the search text is treated.

5 Enter a value in the field or select a value from the drop-down list or click ⬚ to select multiple values from the **Select Values** window.

6 Click ⊕ to add additional rules and repeat steps 3 to 5. Click ⊖ to delete any rules.

7 Select the logic (And/Or) to be applied for every rule in the query.

8 (Optional) To add relationships to the search query, select the relationship (indicated in italics) from the first drop-down list. Create rules by following instructions listed in step 3 -7.

9 (Optional) To set precedence for any rules in a query, select In-Line Search Block from the first drop-down list. Then create rules for the query by following instructions listed in step 3 -7.

10 Click **Search** to run the search query. The search results appear in the Content pane.

11 (Optional) Click on any column heading to sort the search results. You can also change the order of the columns by dragging the column heading and dropping it into the desired location.

12 (Optional) Click Results Options to specify the attribute to be displayed as column headings for the search results. Perform the following steps to customize the column headings:

1. In the Results Options window, from the All Available Attributes list, select the attributes you want to display as column headings for the search results. Click **Add**. The attributes now appear on the right pane.

2. To reorder an attribute, select the attribute and then click **Up** or **Down**. To remove an attribute, select the attribute and then click **Remove**.

3. To change the display name of the attribute in the column heading, enter a new name in the Column Display Name field.

4. To select the display order of the attribute on the search results, select the order number from the Sorting Order drop-down list.

5. To order the search results for a each attribute, select Ascending or Descending from the Sorting Order drop-down list.

6. To make the sorting order case sensitive, select the Case Sensitive check box.

7. Click **Apply** to display the selected attributes as column headings. Click **OK** to close the window.

8. To add additional attributes, select the relationship from the Configuration Item drop-down list as shown in Figure 1-5. The additional attributes appear in the All Available Attribute list. Perform instructions listed in step 1-7 to add or remove attributes.

13 (Optional) Click **Save** to save your search query. The Save Search window appears. Enter the name of the search and click **Save**. The name of the saved search cannot be more than 64 characters. The search is saved in a folder corresponding to the configuration type in the Advanced Search location in the navigation pane.

14 (Optional) In the Save Search window, select Save Search as Report Definition to create custom reports. See creating custom reports for more information.

15 (Optional) Click **Export** at the bottom of the screen to export search results. The Export Results window appears. Enter the location, the file name and the file type and then click **Export Results**. You can export OMDB search results as .csv or .html files.

16 (Optional) After you export the search results, you can email the search results by attaching the exported file to the email. You can also print the search results by printing the exported file from an application that supports .csv or .html files.

17 (Optional) To perform an action on the search results, select an item from the Content pane and then from the **Actions** menu, select the appropriate action.

Exporting Search Results

To export search results, perform the following steps:

1 Perform a search in the OMDB Client. The search results appear in the Content pane.

2 Click **Export** at the bottom of the screen to export search results. The Export Results window appears.

3 Enter the location, the file name and the file type and then click **Export Results**. You can export OMDB search results as .csv or .html files

Running a Saved Search Query

To run a saved search query, perform the following steps:

1 From the Navigation pane, select **Advanced Search ➤ Advanced Search**.

2 Navigate the folder hierarchy to select the search query. The search results will appear in the Content pane.
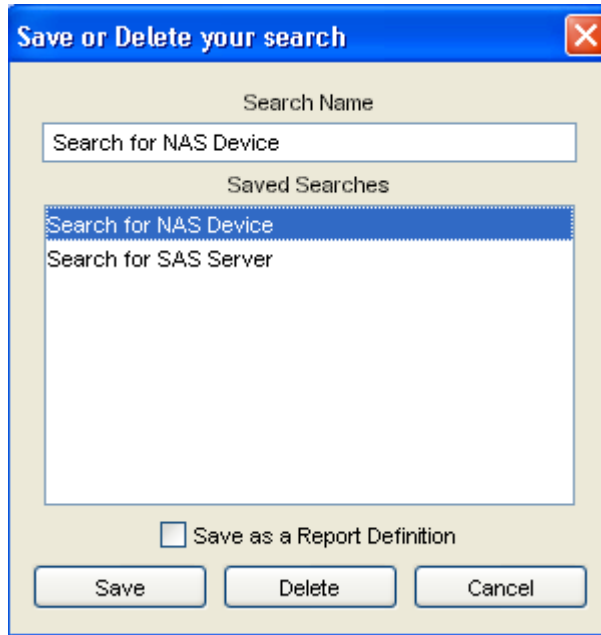
Deleting a Saved Search

To delete a saved search query, perform the following steps:

1 From the Navigation pane, select **Advanced Search ➤ Advanced Search**.

2 Navigate the folder hierarchy to select the search query. The search results will appear in the Content pane.

27

3   Click **Save**. The Saved Search window appears as shown in figure Figure 1-12.

Figure 1-12: Delete Search

4   Select the saved search and click **Delete**. Click **Delete** on the Confirmation window
to delete a saved search.

Item Browser

The Item Browser in the OMDB Client allows you to view all the available attributes for the
selected configuration item. The Item Browser enables you to view additional information
about the configuration item and its relationships.

The Item Browser consists of two main components: the Views pane and the Content pane. The Views pane lists all the available attribute categories for the selected configuration item, and the Content pane displays the details of the selected attribute. When you select an attribute in the Views pane, its corresponding details appears in the Content pane. See Figure 1-13.

Figure 1-13: Item Browser
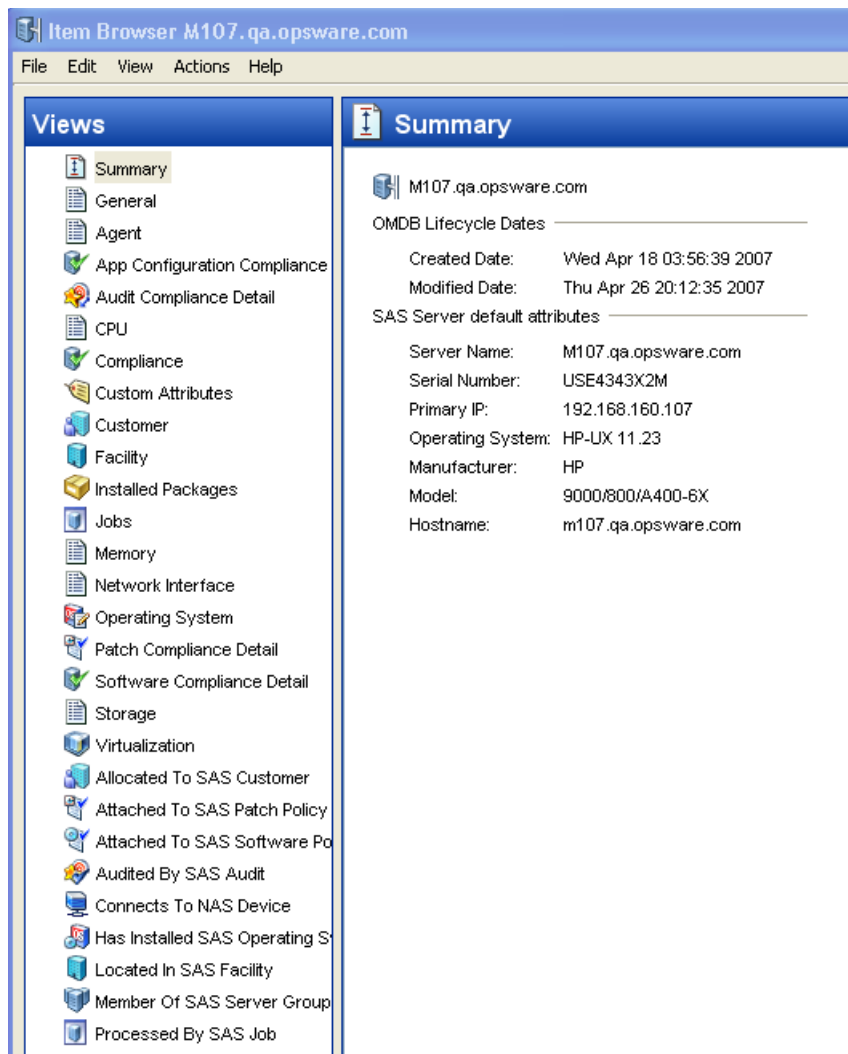
The list of attribute categories in the Item Browser varies depending on the configuration item returned in the search or report results. For example, Figure 1-13 is an Item Browser for the configuration item SAS server, and Figure 1-14 is an Item Browser for the configuration item NAS device switch.

Figure 1-14: Item Browser for NAS Switch
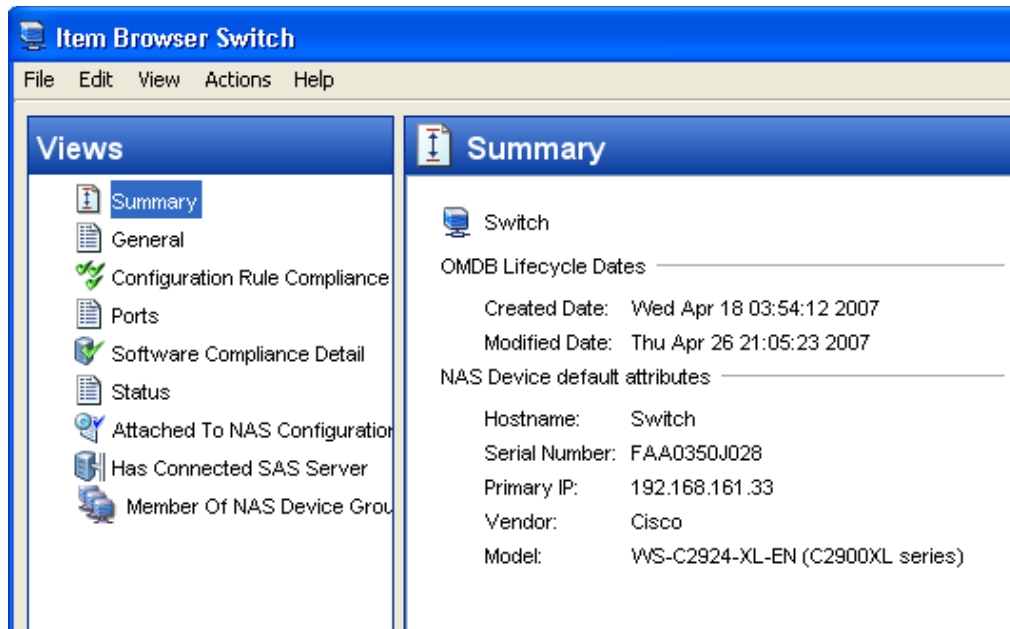
Accessing the Item Browser

Perform the following steps to access the Item Browser:

1 In the OMDB Client, perform a search or run a report.

2 Select an item from the search or report results and then from the **Actions** menu, select **View**. The Item Browser for the selected configuration item appears.

Chapter 2: OMDB Reports

Overview of OMDB Reports

The Opsware OMDB Client Reports feature provides comprehensive information about managed servers, network devices, software, patches, customers, facilities, operating systems, compliance policies, and users and security in your environment. These parameterized reports are presented in graphical and tabular format, and are actionable– which means that you can perform appropriate actions on objects, such as a policy or an audit, within the report. These reports are also exportable to your local file system (as .pdf, .html and .xls files) to facilitate use within your organization.

This section contains information about the types of OMDB Client reports, how to modify report parameters, how to run the reports, and how to perform actions in the report results.

Reports Features

OMDB Client Reports enable you to perform enterprise health assessments by providing the following features:

• Actionable reports that enable you to take the appropriate action on objects within the reports. For example, in the list view of a compliance report, you can select a server and open a Remote Terminal or Server Explorer to browse it, perform an audit, create a snapshot, create a package, and so on.

• The OMDB Client Dashboard provides a display of selected reports. See "OMDB Dashboard" on page 45.

• Reports that are data-secured—controlled by the user's permissions to the data.

• Reports that can be run on either current or historical data.

• Reports that are printable and also exportable to .pdf, .html, and .xls formats. You can export reports to your local file system for use within your organization.

• Custom reports can be created and imported. See "Creating Custom Reports" on page 53.

• Reports that can be scheduled to run automatically and to email the results to you and others.

Opsware OMDB Client Reports

Table 2-1 lists the OMDB Client Reports by report folders.

Table 2-1: OMDB Client Reports

REPORT FOLDER	REPORT TITLE
Compliance History	Historical Compliance Summary - Groups the compliance history of measured servers
	Historical Compliance Detail - Provides device compliance detail for a specified customer, facility, or group
	Device Compliance History - Provides a detailed compliance state history for all servers, or for one or more selected servers
	Device Group Compliance History - Summarizes the compliance history of devices in a specified device group
	Customer Compliance History - Summarizes the compliance history of devices assigned to a specified customer
	Facility Compliance History - Summarizes the compliance history of devices in a specified facility
Deployment Life Cycle	Devices By Type - Filters network devices by group, and non-network devices by customer, facility, or group
	Network Devices By Device Type - Provides a deployment trend history for the network devices in a specified group, organized by device type
	Servers By Operating System - Provides a deployment trend history for the servers in a specified customer, facility or group, organized by operating system and version
	Servers By Architecture - Groups the servers in a specified customer, facility or group organized by architecture

33

User Permissions

Reports are controlled by the user's permissions to access the data. If a user does not have permissions to view a set of servers, those servers will not display in a report run by that user.
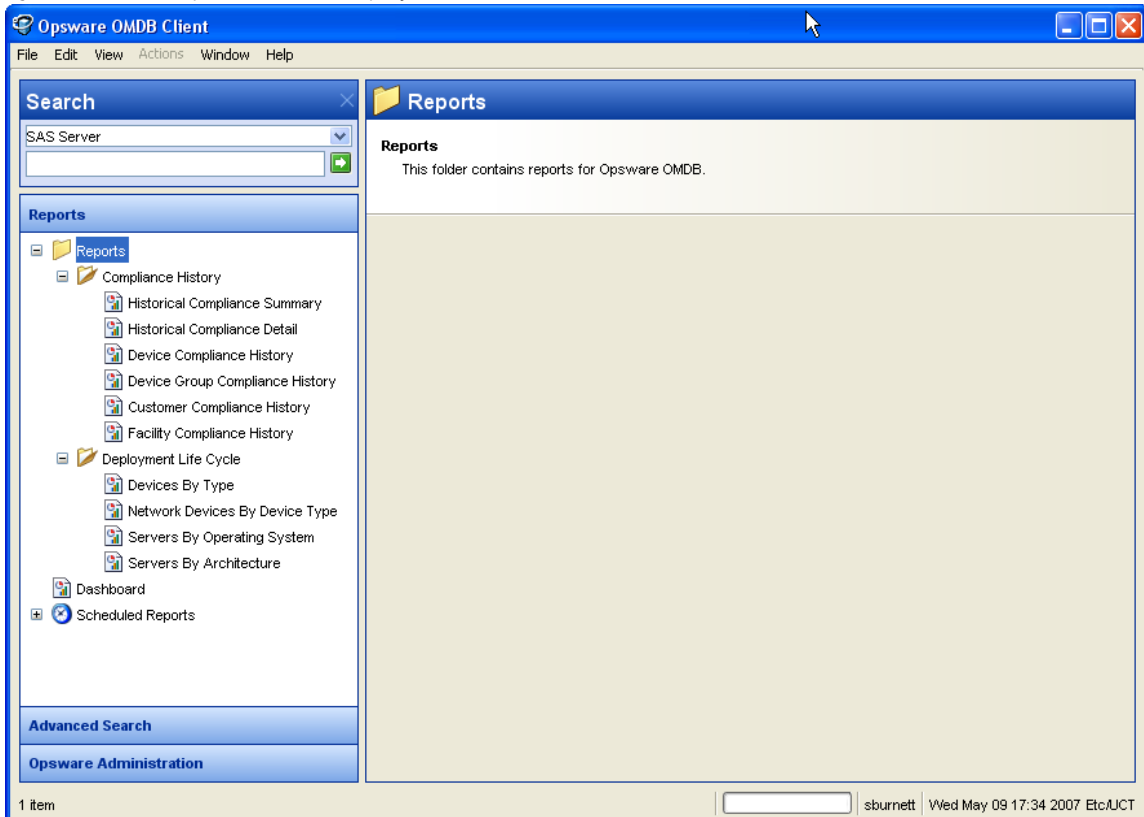
Launching the Reports Feature

To launch the Reports feature, perform one of the following steps:

• From the Navigation pane, select Reports.

• From the **View** menu, select **Reports ➤ Dashboard**.

• From the **View** menu, select **Reports ➤ Reports**.

• From the Navigation pane, select Scheduled Reports.

Reports Display

The Reports feature display consists of a Search pane, a Dashboard, Scheduled Reports, report folders, and report parameters.

Figure 2-1: The Reports Feature Display

Search Pane

In the Reports feature, you can use the OMDB Client Search feature to find reports by defining specific filter criteria. You can save a search as a report definition and create custom reports.

Dashboard

The Dashboard provides a display of selected reports. See "Overview of Dashboard" on page 45 for more information.

Report Folders

Reports are organized in the following folders according to regulatory or IT best practice standards:

- **Compliance History**: This folder contains reports about compliance for software policies, audit policies, and patch policies by servers, customer, and facility.

- **Deployment Life Cycle**: This folder contains reports about attributes of servers and network devices.

- **Custom Reports**: This folder contains any custom reports you have created. For more information on creating custom reports, see ""Creating Custom Reports for OMDB" on page 55.

- Figure 2-2 illustrates the Report folders in the Navigation pane, including the reports you will find in each folder.

Figure 2-2: Report Folders
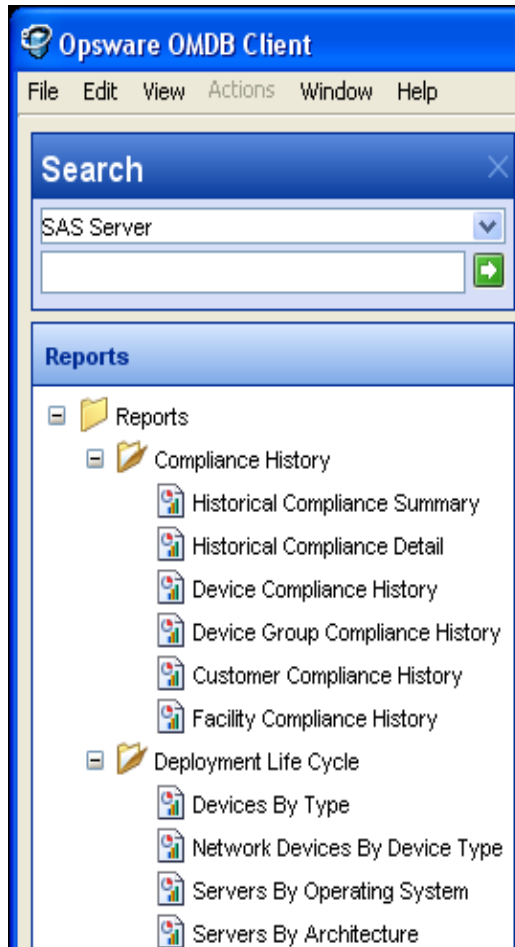
Report Parameters

Many reports require input parameters in order to be run. For reports that require parameters, you can run the report with its default parameter values or modify the parameter values. If you want to run a report that includes or excludes certain servers, customers, or hardware models, you need to specify this criteria in the report parameters. See "Running a Report" on page 38.

Running a Report

To run a report, perform the following steps:

1 From the Navigation pane, select Reports.

2 Expand the Reports folder and then expand Compliance History.

3 Select one of the reports listed in the folder.

4 If there are no report parameters in the Content pane, click **Run**.

5 If there are report parameters in the Content pane, you can either use the default parameters or change them:

- To use the default report parameters, click **Run** to run the report.

- To change the report parameters, see "Modifying Report Parameters" on page 38.

Modifying Report Parameters

You can modify the default parameters of a report. If you modify the parameters of a report, your changes become your default settings for that report. To modify the default parameters and run a report that includes certain servers, customers, hardware models, and so on, perform the following steps:

1 (Optional) Select the date and interval.

2 In the drop-down list for (the Server, Customer, Model, and so on), select Contains, Equals, Begins With, or Ends With.

3 (Optional) Select the ellipsis (...) button to the right of the [Any Value] fields to open the Select Values window.

4 In the Select Values window, select a value in the Available or Selected pane and then use the directional buttons to include it in or exclude it from your search criteria.

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

6 Click **Run** to run the report.

If data cannot be found to run the report, a "No records to display!" error displays.

Report Results

Report results initially appear in a graphical or list view. The graphical report is an overview of available data for this report displayed in a pie chart or in a bar graph.

Graphical Report

A graphical report is a bar graph or a pie chart. See Figure 2-3 for an example.

Figure 2-3: Bar Graph
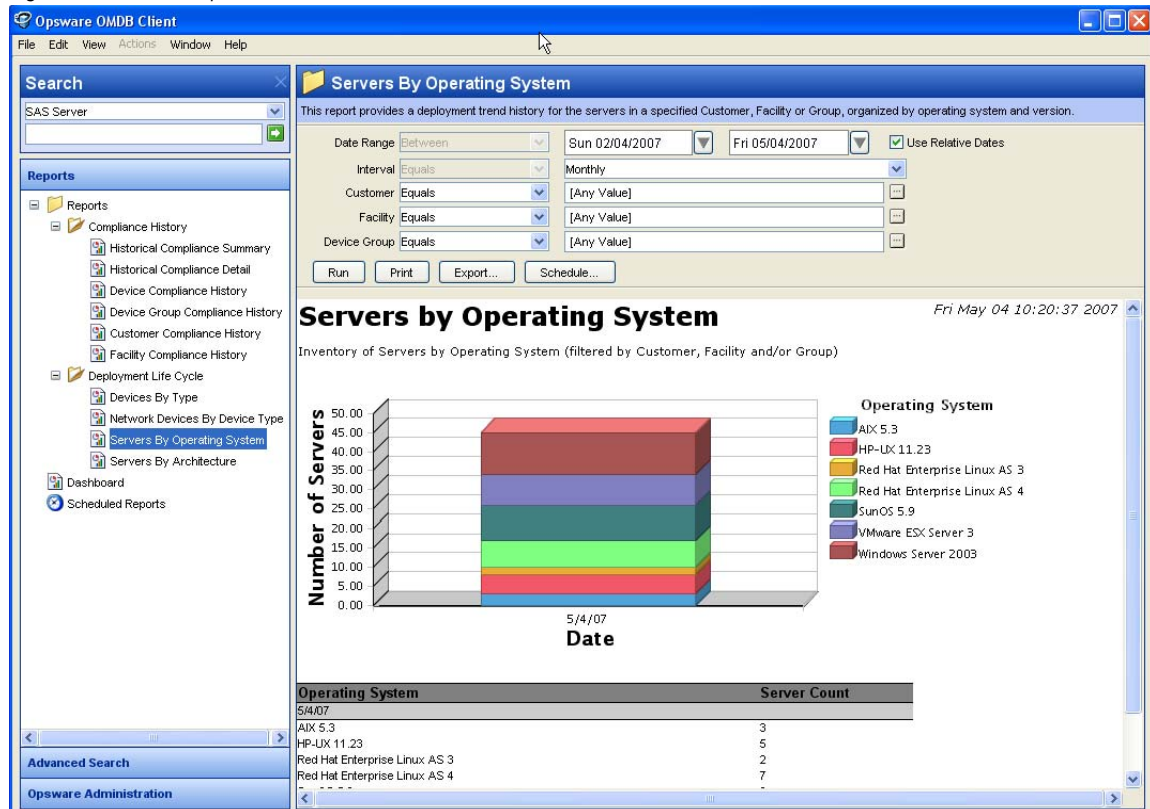
List Report

A list report is a tabular display of information. Double-click on a row in the list, such as a server, audit, or policy, for more detail or to perform an action. See Figure 2-4 for an example.

Figure 2-4: List Report

Exporting a Report

You can export a report for use in other applications in your environment and attach a report for email distribution. Depending on the report format, you can export a report to your local file system as a .pdf file, an .html file, or an .xls file.

To export a report, perform the following steps:

1 From the report, click **Export** to open the Save window.

2 In the Save in field, enter a location that identifies where you want to save the file to, or select from the drop-down list.

3   Select the file type, such as .html or .xls.

4   Enter a file name.

5   Click **Save**.

Printing a Report

To print a report, perform the following steps:

1   From the report, click **Print** to open the Print window.

2   Use the default print options or modify them, and then click **OK**.

Scheduling a Report

You can schedule a report to run at a specified time, and to repeat at intervals. The report can be emailed to one or more recipients when it runs.

To schedule a report, perform the following steps:

1   From the report, click **Schedule** to open the Scheduled Report Options window shown in Figure 2-5.

2   In the Schedule Name field, enter the name. The default value is the report type name.

3   Select the frequency, either Once, Daily, Weekly, or Monthly.

4   (Optional) Select the options available for Daily, Weekly, and Monthly, as appropriate.

5   Set the Start Time.

6   Set the Start Date.

7   (Optional) Select End recurring schedule by, and then set the end date.

8   In the Recipients field, enter one or more email addresses. If you are entering, multiple addresses, the addresses can be separated by a space, comma, semicolon, or a Return.

9   Select a format for the report output.

10 Click **OK**.

Figure 2-5: Scheduled Report Options
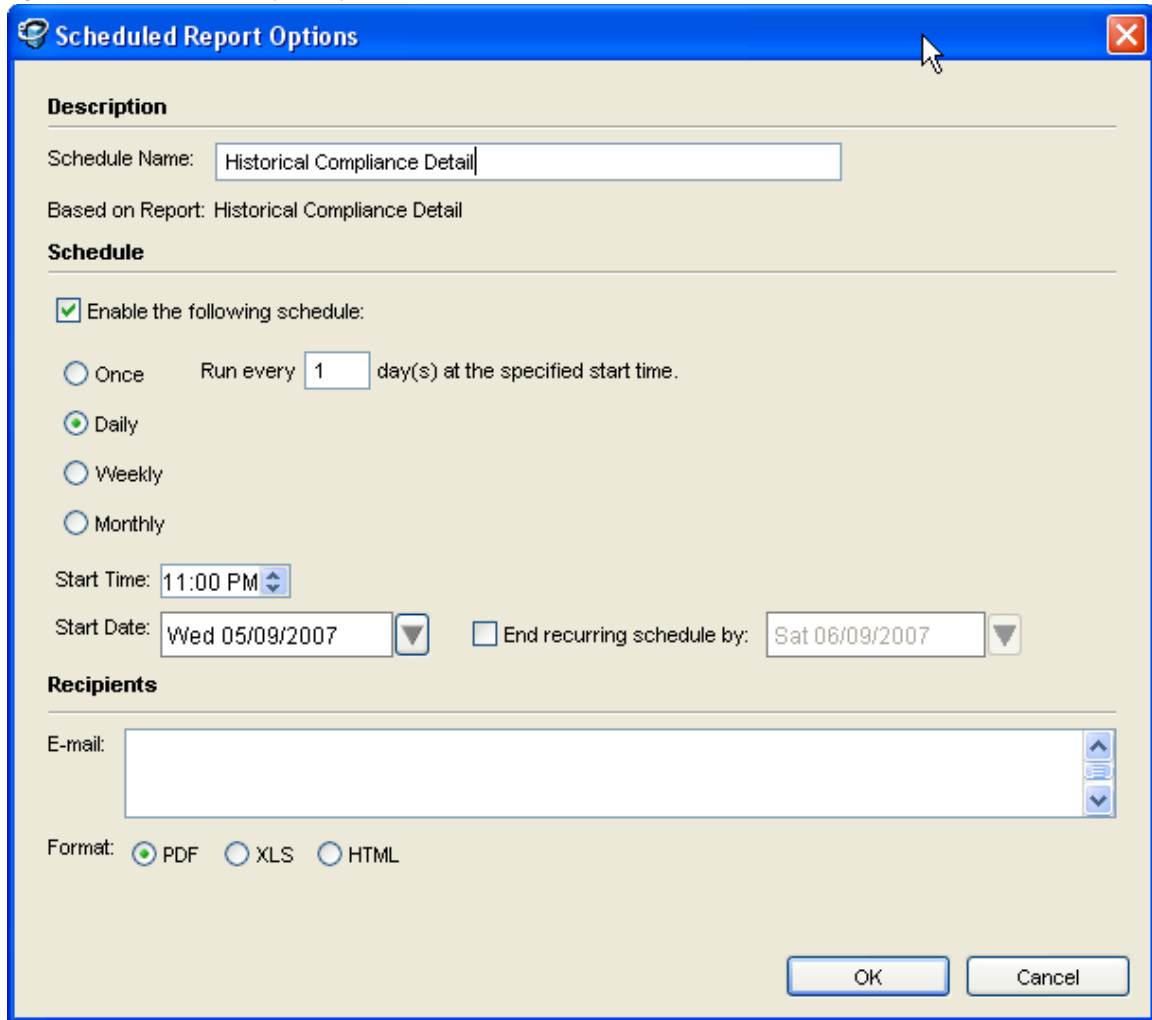
Setting Scheduled Report Options

For scheduled reports an Administrator can set the following options:

• Maximum number of scheduled reports each user can enable

• Number of scheduled reports concurrently processed by server

The 'Maximum number of scheduled reports each user can enable" option allows an user only to enable the number of reports as set by the administrator. This option does not prevent the user from creating unlimited number of scheduled reports.

If the administrator lowers the number of scheduled reports that a user can have enabled, then the next time the user updates or creates a scheduled report, they may have to also disable a number of their reports until they no longer exceed the maximum number of scheduled reports. This option also will not allow the user to save changes to a scheduled report if they have already enabled the maximum number of scheduled reports.

The "Number of scheduled reports concurrently processed by server" option enables an Administrator to monitor that the server that processes scheduled reports are running smoothly. This setting is designed to keep the server from crashing due to an excessive number of reports being scheduled at the same time.

In the event that there are more scheduled reports scheduled to run at a specific time than specified in this value, then the server will process the scheduled reports in batches of the size specified in this value. Therefore, sometimes reports may not run at the time as specified by the user. Running some reports may be delayed due to server load.

To set the options for scheduled reports, perform the following steps:

1 In the OMDB Client, from the Navigation pane, select **Opsware Administration ➤ Scheduled Report Options**. The Scheduled Report Options options appears in the Content pane.

2 Enter the value for the Maximum number of scheduled reports each user can enable option.

3 Enter the value for the Number of scheduled reports concurrently processed by server.

4 Click **Save** to save the Scheduled Report options.

Chapter 3: OMDB Dashboard

Overview of Dashboard

The OMDB Dashboard displays useful summary type OMDB reports allowing you to view important reports on a daily basis. It contains one or more of the following summary reports in a graphical format:

• Historical Compliance Summary

• Devices by Type

• Servers by Architecture

• Network Devices by Type

• Servers by Operating System

You can drill down to the summary report to view the complete report in detail. In the Dashboard, you can perform the following actions on the summary reports:

• Print reports

• Export OMDB report results as .xls, .html, or .pdf files

• Drill down the summary report to view the complete report in detail

• Perform action on report results

By default, the Dashboard contains the following five summary reports as shown in Figure 3-1:

- **Compliance % Over the Last 30 Days**: This report displays the compliance history of servers and network devices over the last 30 days at daily intervals.

- **Devices by Type Over the Last 30 Days**: This report displays the devices (servers and network devices) deployed over the last 30 days at daily intervals.

- **Servers by Operating System Over the Last 30 Days**: This report displays the servers organized by operating system and version over the last 30 days at daily intervals.

- **Network Devices by Type Over the Last 30 Days**: This report displays the network devices (such as routers, switches) deployed over the last 30 days at daily intervals.

- **Servers by Architecture Over the Last 30 days**: This report displays the servers organized by CPU architecture over the last 30 days at daily intervals.

Figure 3-1: OMDB Dashboard
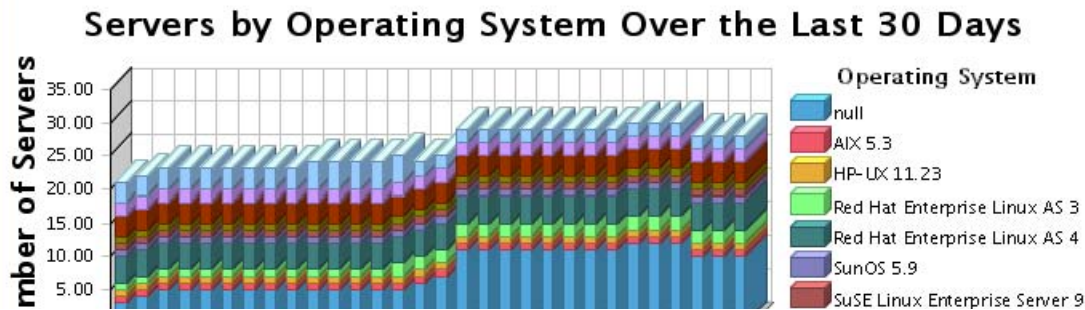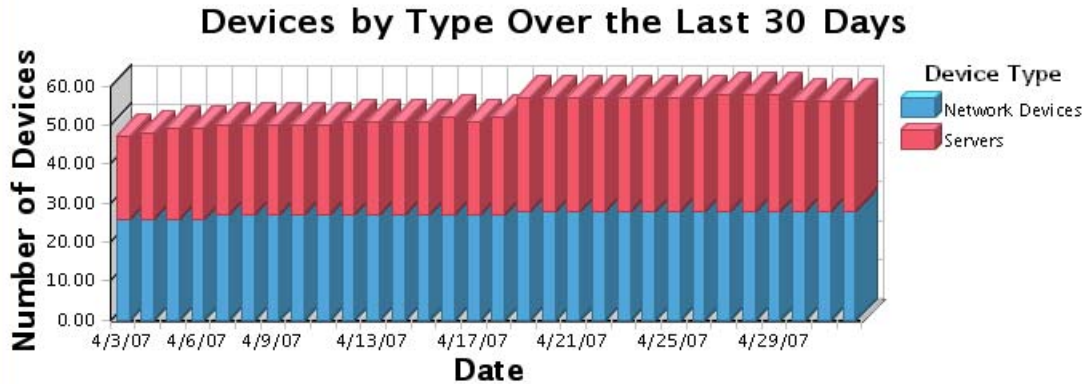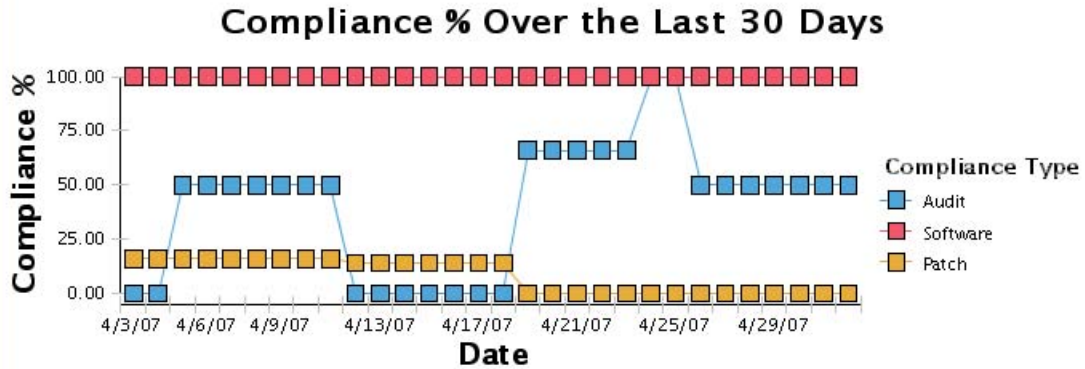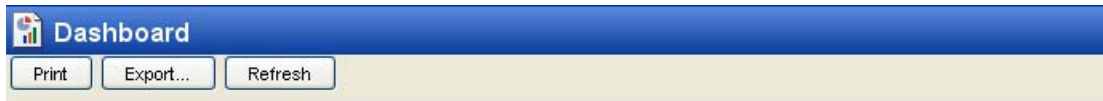
In the OMDB Client, you can also create and configure your own personal Dashboard. You can select up to eight reports to be displayed in your personal Dashboard from the list of reports mentioned above. You can also configure your personal Dashboard to be in either a one-column or two-column layout. See "Setting Dashboard Options" on page 48 for more information.

When you launch the OMDB Client, by default the Search feature is displayed in the Content pane. You can also configure the dashboard options to display the Dashboard feature in the Content pane when you first launch the OMDB Client. See "Setting Dashboard Options" on page 48 for more information.

Viewing the OMDB Dashboard

To view the Dashboard in OMDB, perform the following steps:

1 In the OMDB Client, from the Navigation pane, select **Reports ➤ Dashboard**. The default Dashboard appears in the Content pane.

2 To create your personal Dashboard, see "Setting Dashboard Options" on page 48.

3 (Optional) To view the complete report in detail, click on any report in the Dashboard. The complete report appears in the Content pane.

4 (Optional) Click **Export** to export the reports displayed in the Dashboard. The Export Results window appears. Enter the location, the file name and the file type and then click **Save**. You can export OMDB report results as .xls, .html, or .pdf files.

5 (Optional) Click **Print** to print the reports displayed in the Dashboard.

6 (Optional) To perform an action on the report results, select an item from the Content pane and then right-click to select the appropriate action.

Setting Dashboard Options

In the OMDB Client, you can create and configure your own personal Dashboard. You can select up to eight reports to be displayed in your personal Dashboard and specify the parameter values for those reports. You can also configure your personal Dashboard to be in either a one-column or two-column layout.

To configure the Dashboard options, perform the following steps:

1 In the OMDB Client, from the Navigation pane, select **Opsware Administration ➤ Dashboard Options**. The Dashboard options appears in the Content pane.

Figure 3-2: Dashboard Options Window

2 From the Startup Location list, select an option. This option allows you to select the OMDB Search, Report, or Dashboard feature to be displayed every time you launch the OMDB Client. Selecting the Dashboard option allows you to display the Dashboard feature when you launch the OMDB Client.

3 From the Dashboard Selector list, select Custom Dashboard to configure your Dashboard using the reports that are available.

4 From the Custom Dashboard Column Selector list, select One Column to display the reports in a one-column format in the Dashboard. Select Two Columns to display the reports in a two-column format in the Dashboard.

5 To configure a report in the Dashboard, perform the following steps:

Different reports have different report parameters to configure. For example, for the report "Network Devices by Device Type," you can configure the parameters such as Device Group, Vendor, and Model. For the report "Servers by Operation System", you can configure the parameters such as Customer, Facility, and Device Group.

1. From the Custom Dashboard Configuration Panel in Report 1, select a report from the Report File drop-down list.

2. (Optional) Enter the report title in the Title field or else the default report name will be used.

3. Click **Configure**. The Report Dialog window appears.

Figure 3-3: Report Dialog Window
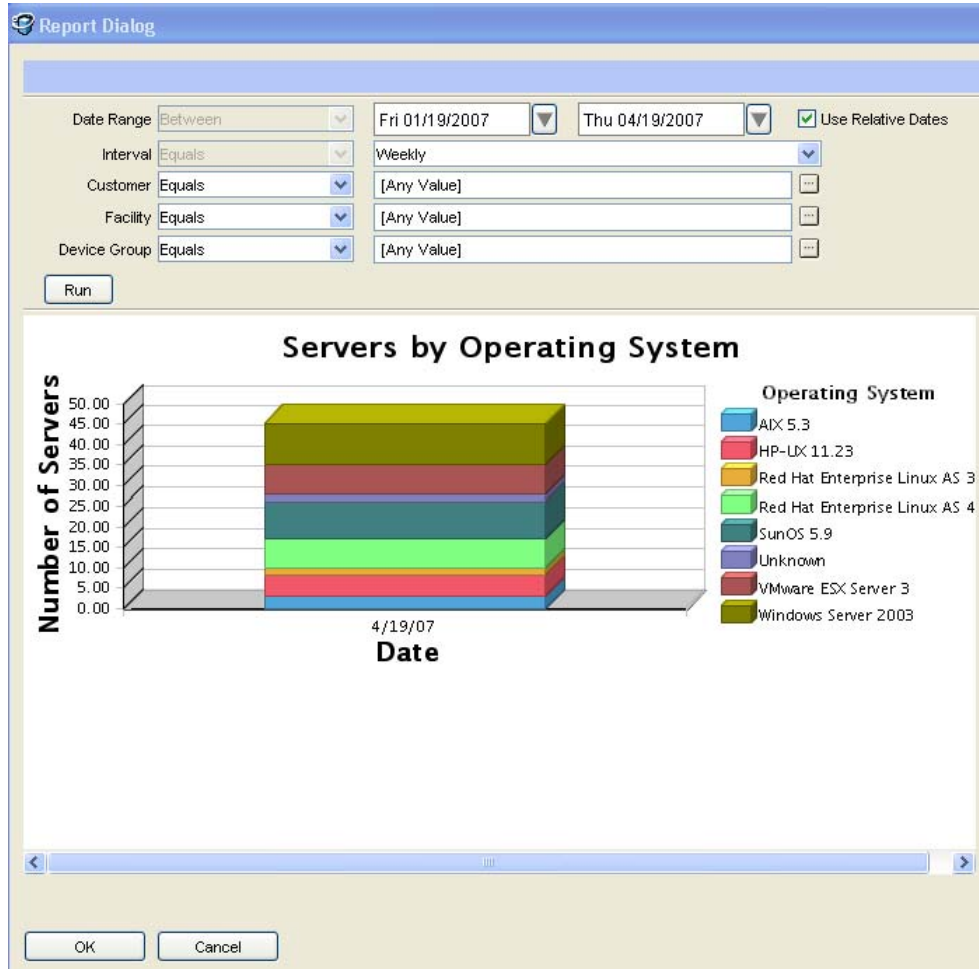
4. From the Date Range drop-down list, select a date range to run the report.

5. From the Interval drop-down list, select the time interval to run the report. The Interval drop-down list allows you to group the data on a daily, weekly, or monthly time interval.

6. From the Customer drop-down list, specify the customer to be included or excluded in the report.

7. From the Facility drop-down list, specify the facility to be included or excluded in the report.

8. From the Device Group drop-down list, specify the device group to be included or excluded in the report.

9. Click **Run**. The report with the specified parameters is displayed in the Content pane.

10. Click **OK** to save your changes or click **Cancel** to close the window.

6 To configure more reports, repeat the steps listed in Step 5.

7 Click **Save Layout** to save the Dashboard options.

Chapter 4: Creating Custom Reports

Introduction

Opsware SAS enables you to create and design reports and integrate them into the SAS Client and the Opsware Operational Management Database (OMDB) Client.

The Opsware family of products is comprised of a cluster of Oracle databases, typically running on a Sun Microsystems minicomputer. These databases are continuously refreshed and updated by agents residing on the managed servers and workstations in the network.

This chapter presents how to use content selected from these databases and create custom reports. It explains how to create a simple SQL query, how to design a report, and how to integrate it into the Opsware OMDB user interface.

Report Design

Begin your report design by defining its content. You should determine the report's purpose, the type of information displayed, and the logical grouping of the data set. After you have defined the content, you map the content definition into the product-specific database schema by determining how Opsware should represent the data needed, the names of the tables where the data is stored, and the names of all of the fields within those tables.

Using this information you can write the SQL query that Opsware will use to generate the report.

Writing the correct SQL query is the most difficult part of report creation. The standard reports contain a set of queries that are good candidates to borrow work from. The report (.rptdesign) files can be found in an installed core at `/opt/opsware/omdb/reports`. Whether borrowing from existing reports or creating original content, use a good tool like PL/SQL Developer to refine and optimize your SQL.

When you have optimized the SQL, you should test your SQL query to ensure that the SQL is valid and returns the expected data.

No AAA-specific considerations need to be made in your SQL. The report engine will automatically transform the SQL that you have created at runtime to constrain the report results to what the current user can see.

Creating Custom Reports for OMDB

This section shows you how to create custom reports for the Opsware OMDB Client. The recommended authoring environment for custom OMDB reports includes the following items:

• A file transfer tool

• An SQL Query Tool

• Business Intelligence and Reporting Tools (BIRT) RCP Designer (http://www.eclipse.org/birt) BIRT release 2_1_1

• BIRT library file `cmdb-data-sources.rptlibrary`

• JDBC driver file `ojbc14.jar`

Turning OMDB Searches into Reports

The OMDB search engine makes it easy to generate rich SQL queries, and save them as BIRT reports. In this example, we are using the OMDB search engine to look at the SAS Server configuration items in the enterprise.

1 In the OMDB Client, in the Search pane, expand Advanced Search, and then select New Search.

2 Select the SAS Server configuration item from the Search for Configuration Item drop-down list.

3 To find all servers with a reported OS value of either Linux or Windows, perform the following steps:

    1. Select the Reported OS criteria and Contains from the drop-down lists.

    2. Enter `Linux` in the next field and click the plus (+) button.

    3. Select or from the drop-down list.

    4. Select Reported OS criteria from the drop-down list.

    5. Select Contains criteria from the drop-down list.

    6. Enter `wind` in the next field.

4 Click **Search** to generate the screen illustrated in Figure 4-1.

Figure 4-1: Search Screen
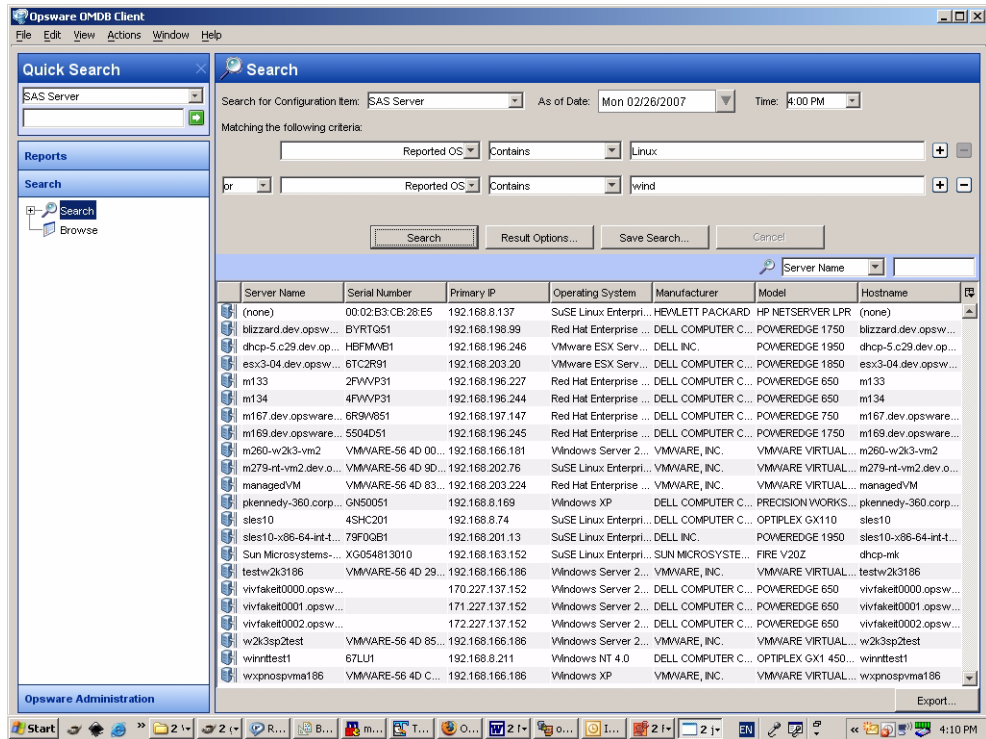
These results are sorted by the first column Server Name.

5 Click **Result Options** to specify a different sort priority.

The screen illustrated in Figure 4-2 allows you to select Attributes to sort, and the order in which each is considered.

Figure 4-2: Sort Order
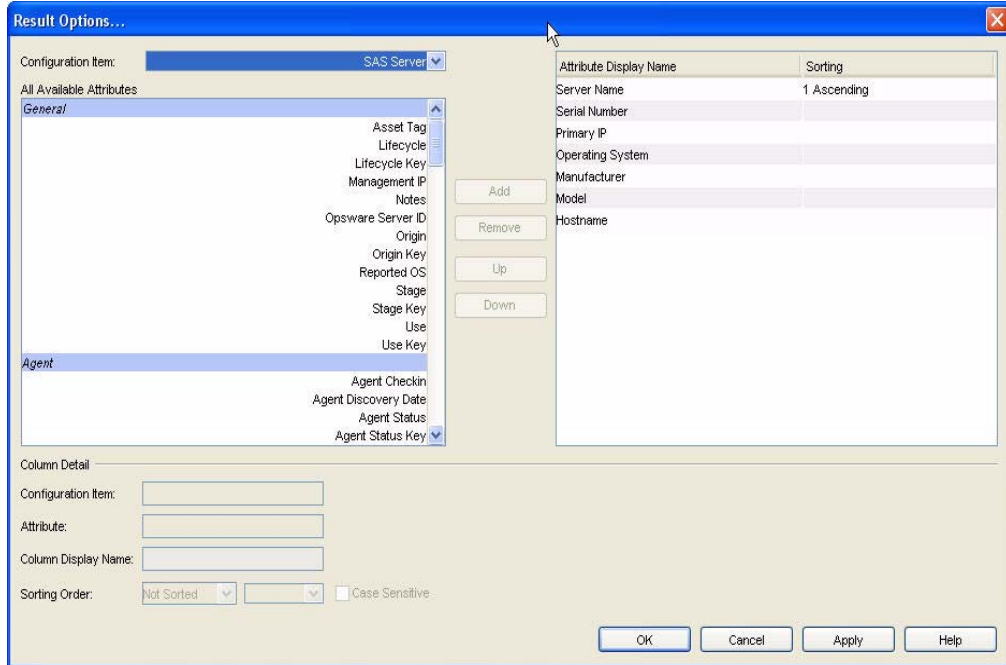
6   From the Navigation pane, select Operating Systems from the list of Attribute Display Name choices.

7   Select order number 1 from the Sorting Order drop-down list.

8   Click **OK**.

The sorted results of this modified search appear in Figure 4-3 below. Red Hat comes before SuSE, which comes before VMware, which comes before the Windows family.

Figure 4-3: Results Sorted by Operating System
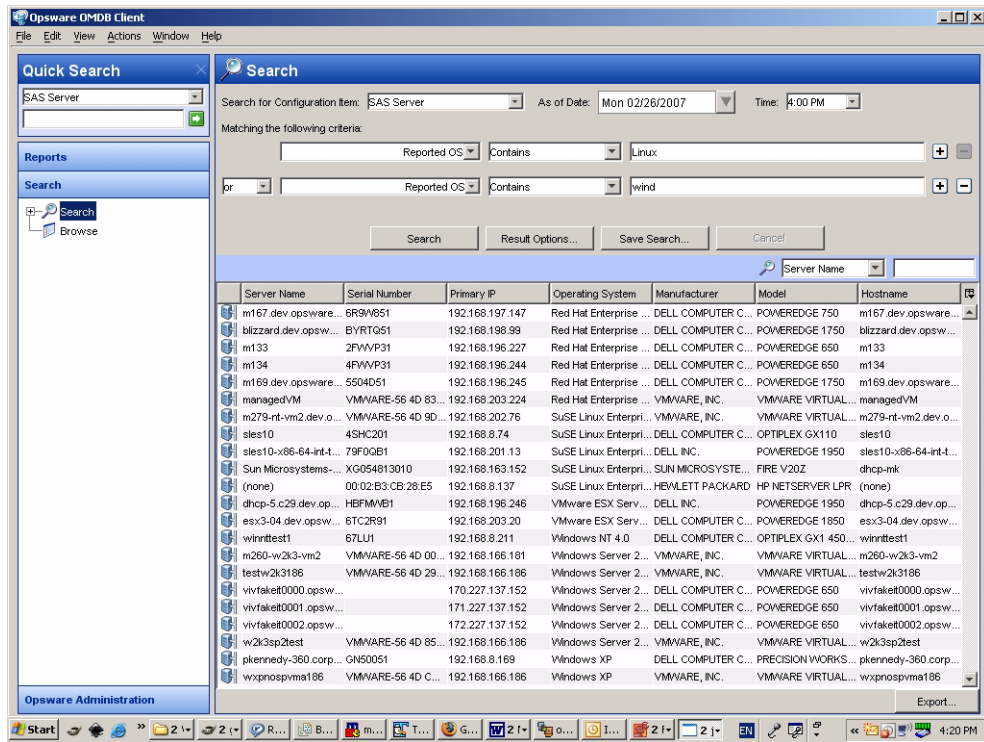
You can assign a name to the selection criteria used for this search, and save it as a search. At a later date, you would be able to select the named search from the OMDB client and run it again.

However, you can also save this search as a BIRT report. Doing so will allow you to open the report in BIRT to improve its appearance and functionality.

9 Click **Save Search**.

10 Save the search with a descriptive name, so that you can run it in the future from the OMDB Client. Enter a Search Name, such as `SAS_Server_Search`.

11 Select the Save as a Report Definition.

Figure 4-4: Save or Delete Your Search
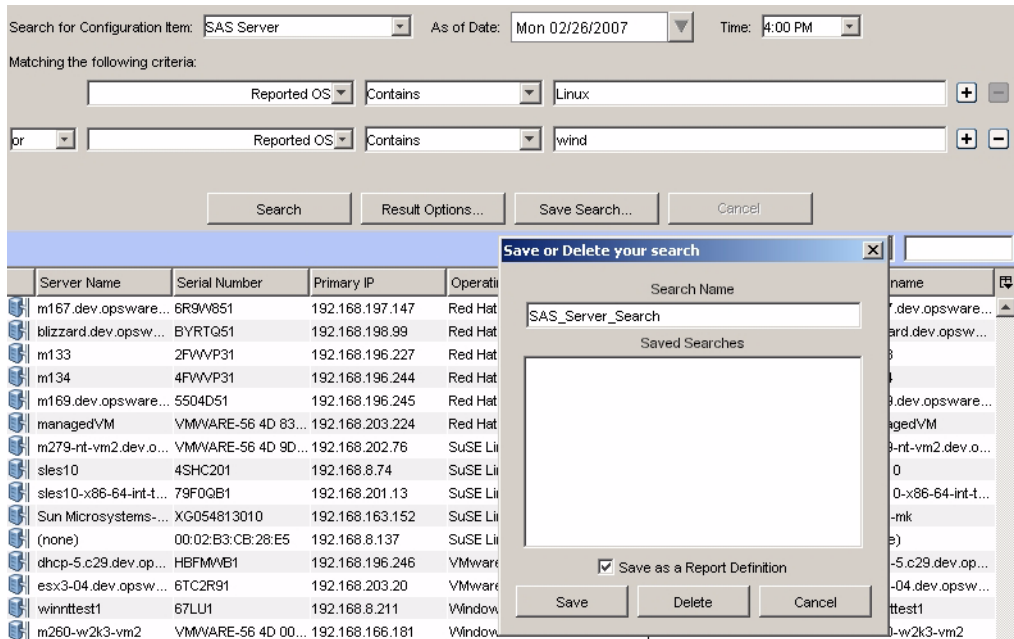
12 Click **Save**, and put the new SAS_Server_Search.rptdesign file in a convenient directory on your local drive.

13 Start BIRT 2.1.1. In a Windows command prompt, run the command birt.exe.

14 Open the SAS_Server_Search.rptdesign file that you just created.

As Figure 4-5 illustrates, the new report contains the form and content of the information you selected when defining the report. The header information is already in place.

Figure 4-5: New Report in BIRT
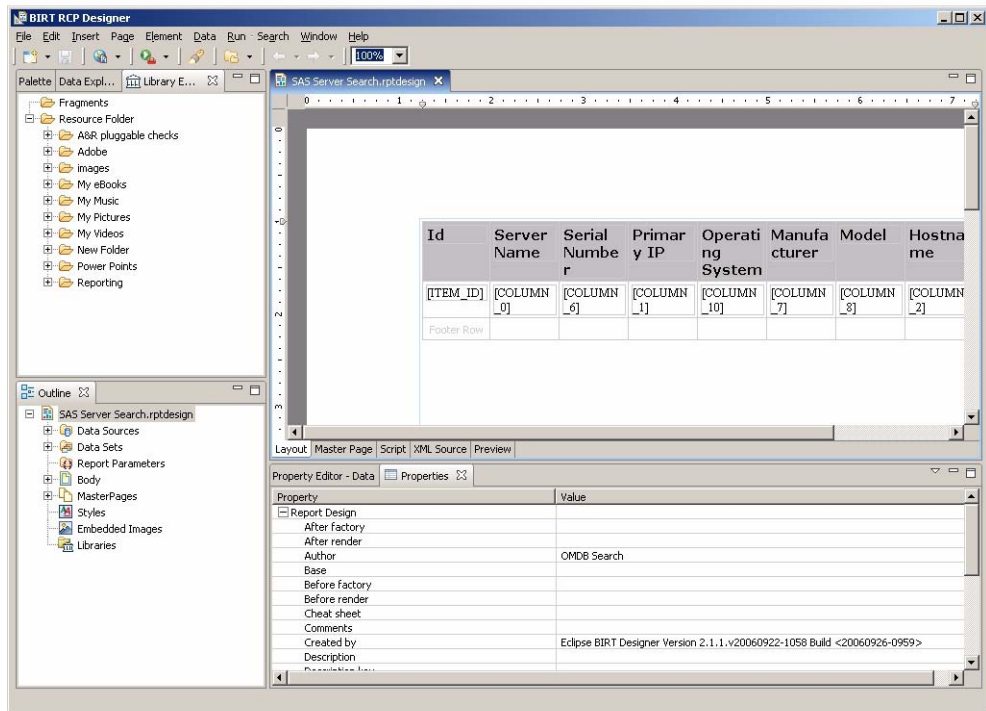
[15] In the Outline pane, expand Data Sources, and then double-click the Data Source icon.

[16] View the information for the new JDBC Data Source as shown in Figure 4-6.

17 Click **Test Connection** to ensure that the report is connected.

Figure 4-6: JDBC Connection
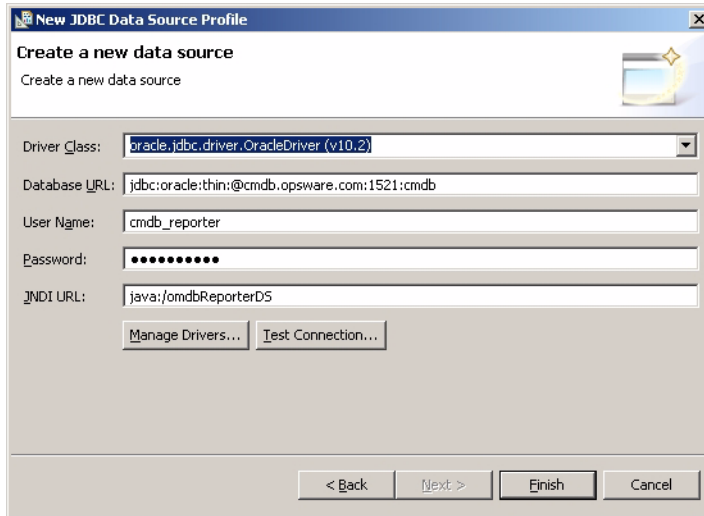
18 Select the Preview tab, and review the report.

Figure 4-7: Preview Tab
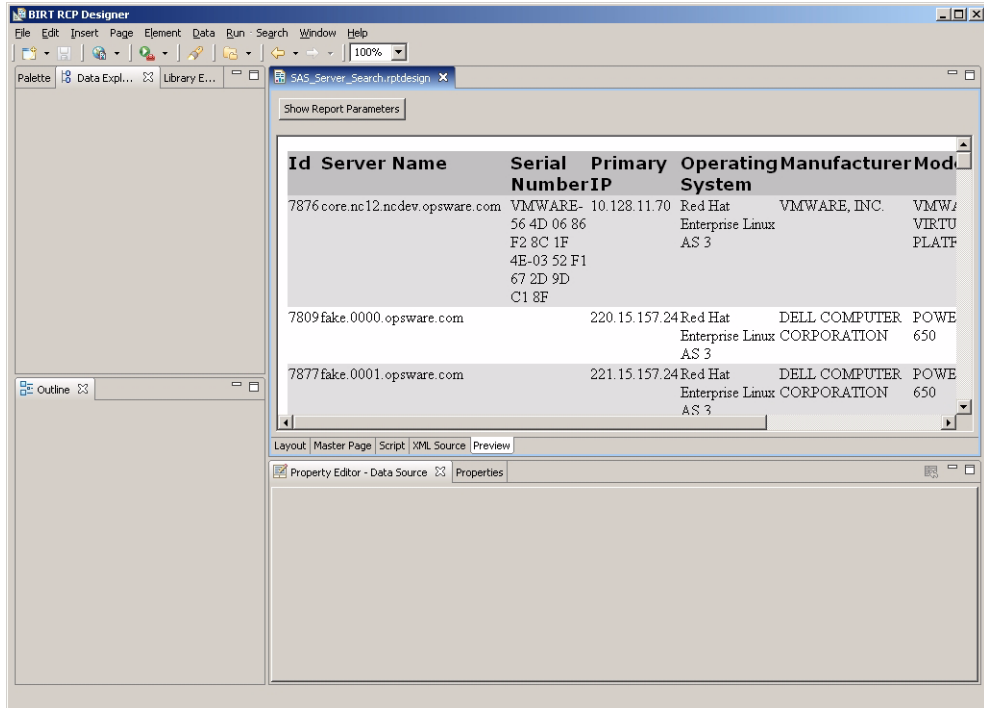
19 Click on the XML Source tab to see the SQL query that the OMDB Client generated.

Figure 4-8: XML Source Tab
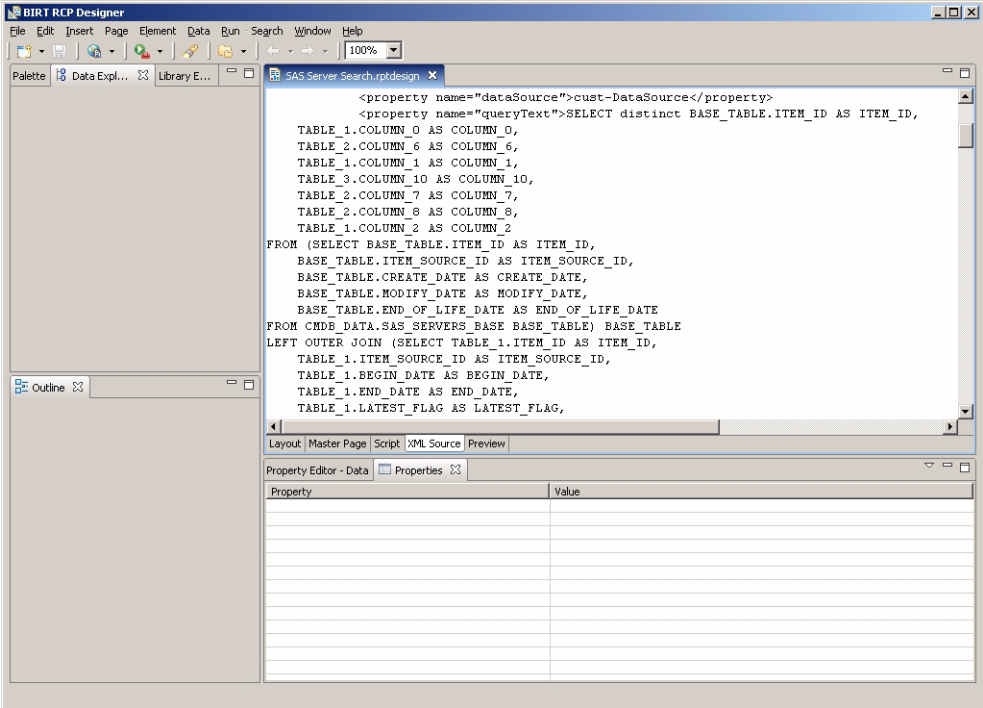
20 To group the output by operating system, select the top cell in the header row, right-click and select Insert Group from the menu as shown in Figure 4-9.

Figure 4-9: Inserting a Group
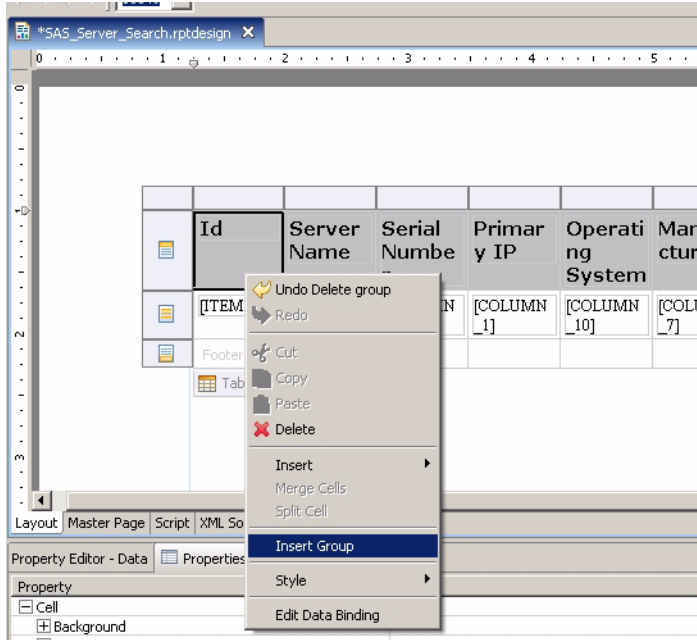
The next window, illustrated in Figure 4-10, allows you to select the column that will provide the group identity.

21 Select COLUMN_10 to specify the Reported OS column.

Figure 4-10: New Group Creation

22 Click **OK**.

23 Select the Layout tab.

24 Select the Properties tab.

25 Select the Font properties to make this field smaller and darker.

Figure 4-11: Font Properties
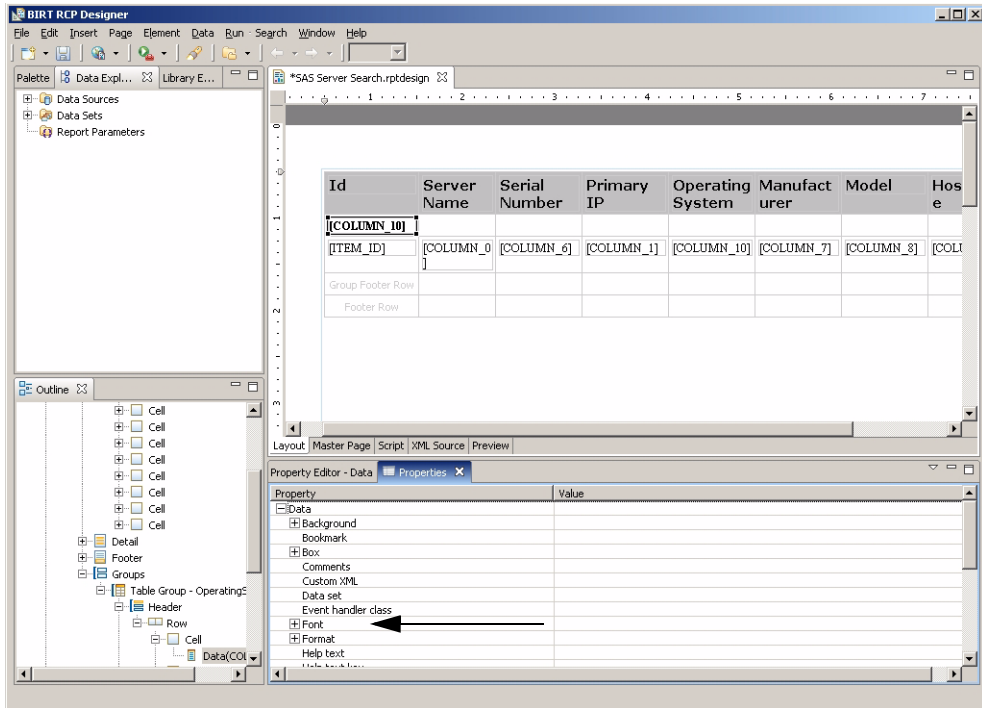
As shown in Figure 4-12, the report now groups the output by operating system.

Figure 4-12: Preview of Grouped Report
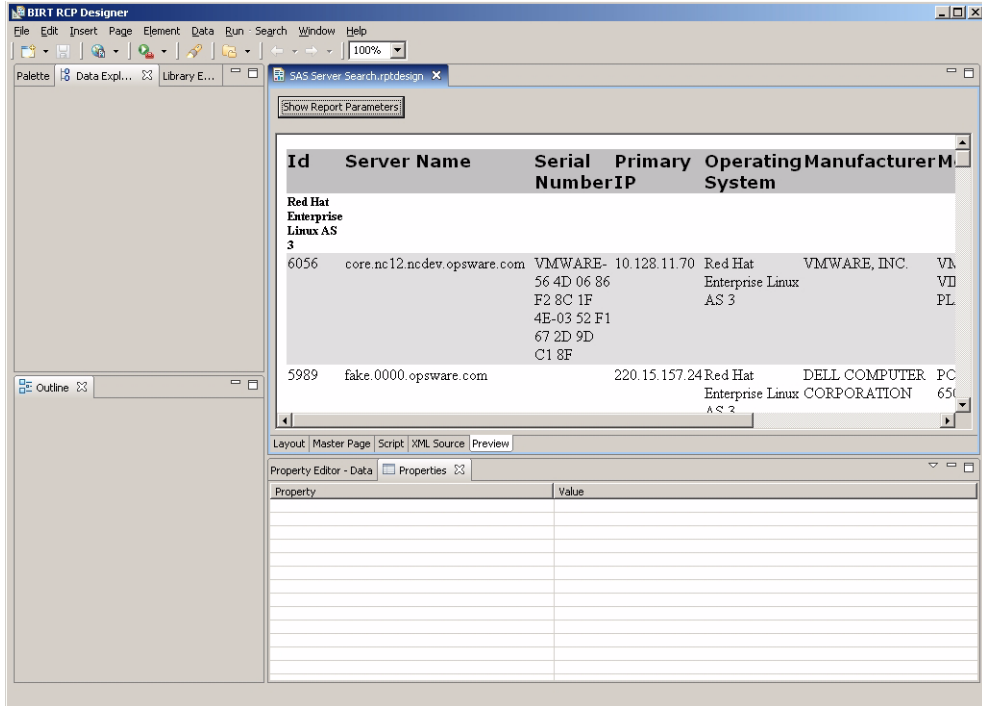
Inserting a Chart

BIRT can generate a chart to visually display selected elements of the output. Figure 4-13 displays the detailed SQL query that the SAS OMDB Client created. This is the search-Result-Dataset based on the cust-DataSource data source.
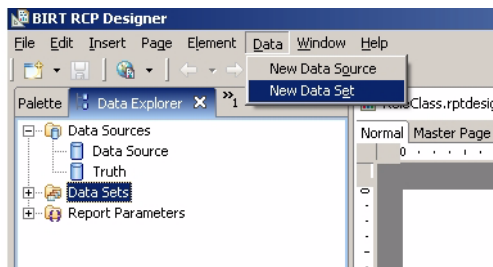
Figure 4-13: SQL Query
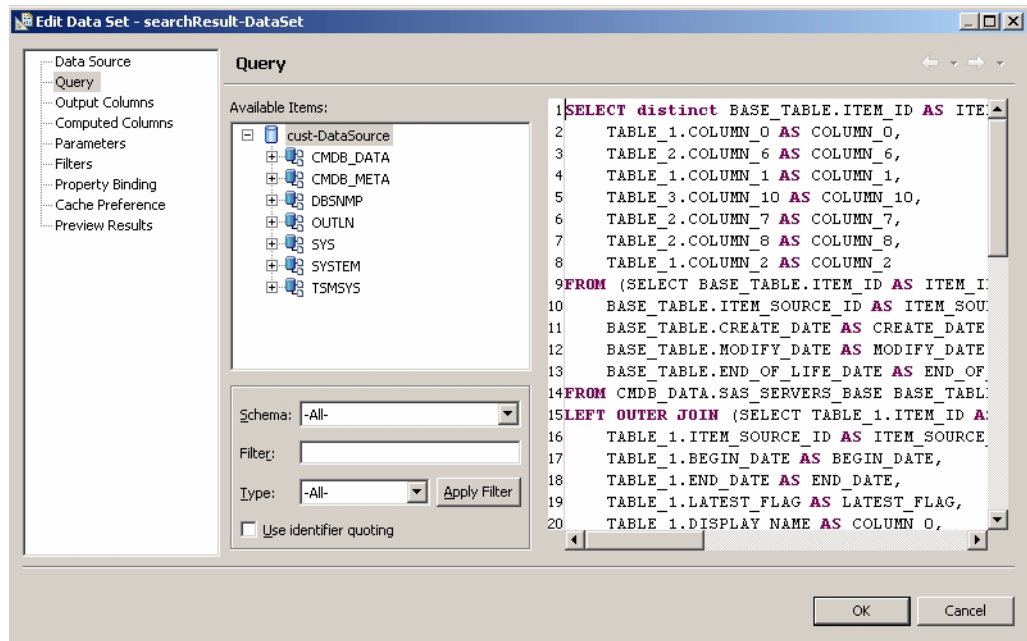
To create a new data set based on the same cust-DataSource data source, perform the following steps.

1 From the **Data** menu, select **New Data Set**.

Figure 4-14: New Data Set

2 To learn how many instances of each operating system are currently online, in the Query pane type the SQL statements Select Count (*) From and Group By. Then, drag the desired Available Items from the middle pane to their places in the query text.

The final SQL statement is:

```
select CMDB_DATA.SAS_SERVERS.REPORTED_OS,
count (*) from CMDB_DATA.SAS_SERVERS
group by CMDB_DATA.SAS_SERVERS.REPORTED_OS
```
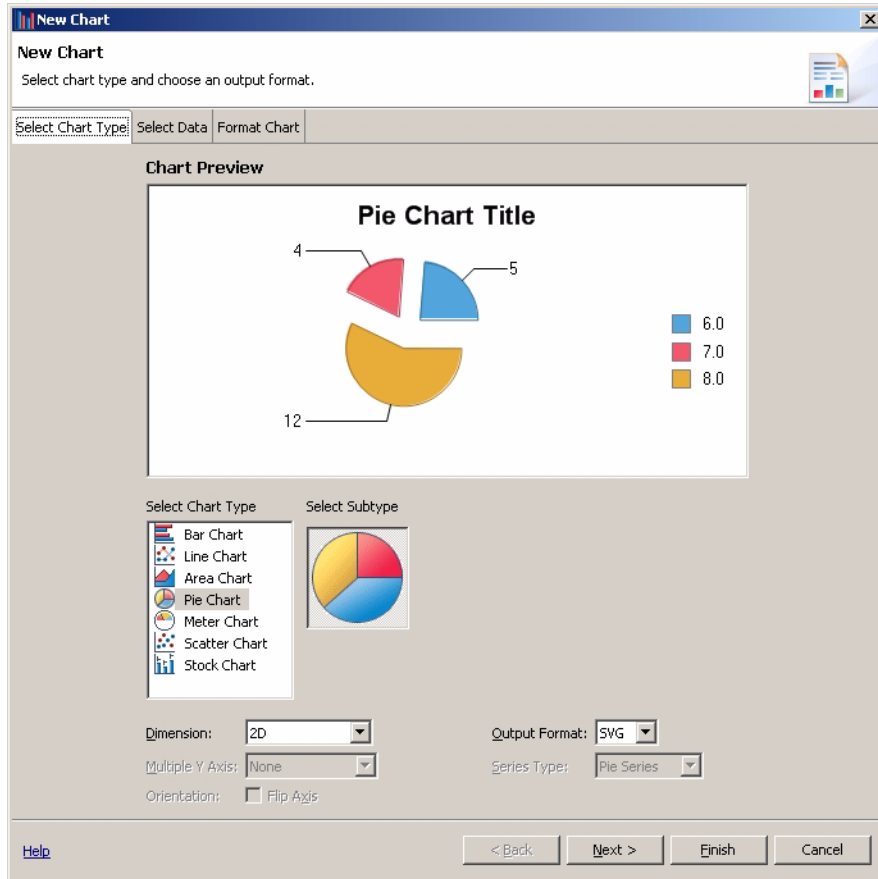
Figure 4-15: Data Set Query
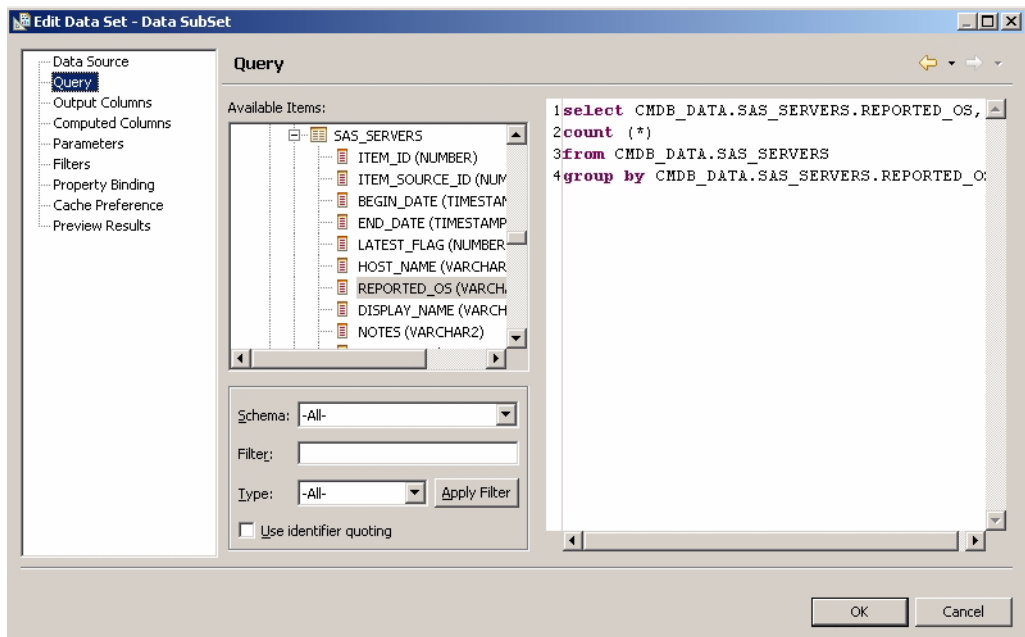
3 Click **OK**.

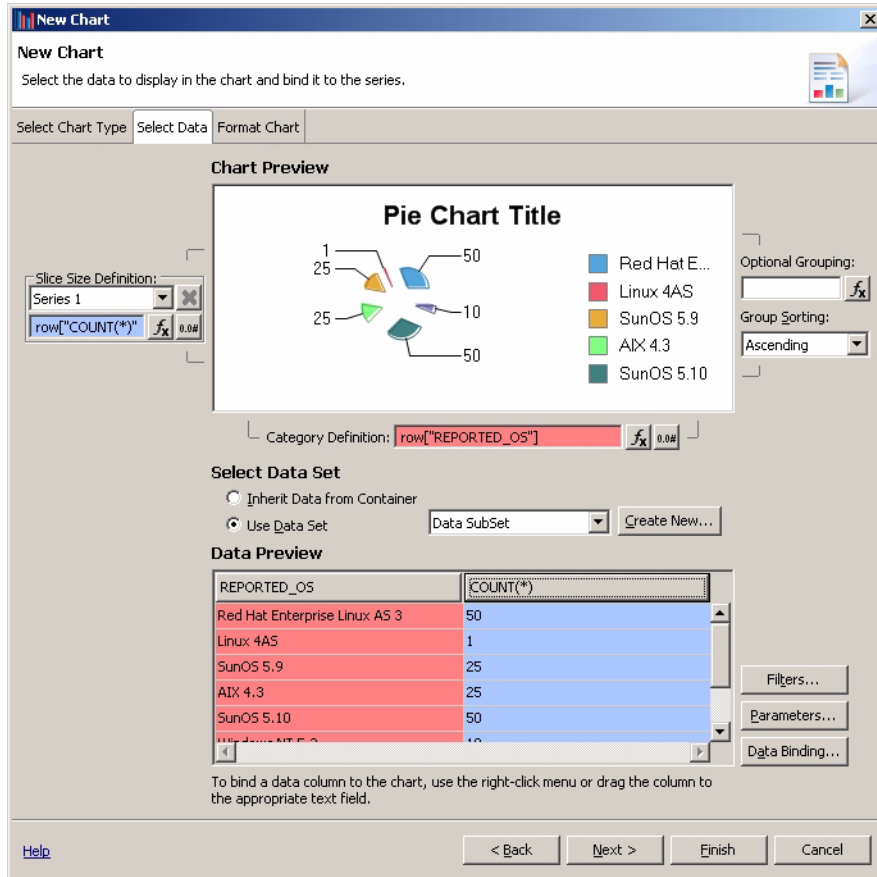**4** Drag the Chart icon from the Palette tab to the Layout panel.

5 From **Select Chart Type** menu, select **Pie Chart**.

Figure 4-16: Chart Type

**6** Click **Next**. A screen similar to Figure 4-17 appears.

Figure 4-17: New Chart

7 From the Select Data Set option, select Use Data Set, and then select Data SubSet from the drop-down list. The Data Preview pane displays the contents of the data set.

8 Drag the COUNT(*) header to the Slice Size Definition field.

9 Drag the REPORTED_OS header to the Category Definition field.

10 Click **Next**.

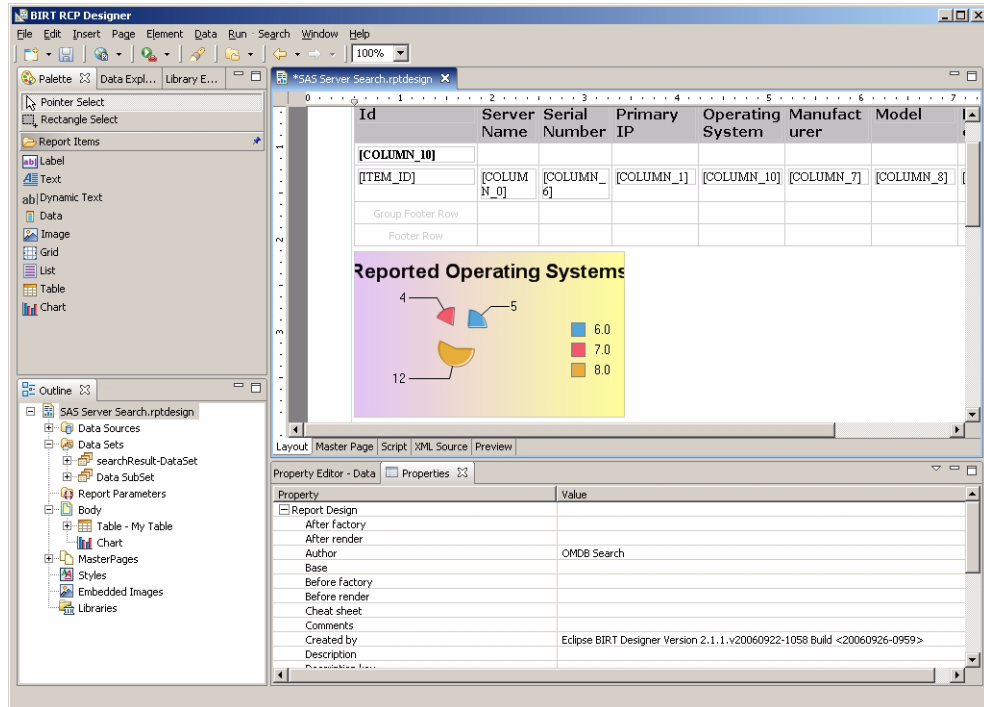*Figure 4-18: Report Operating Systems*
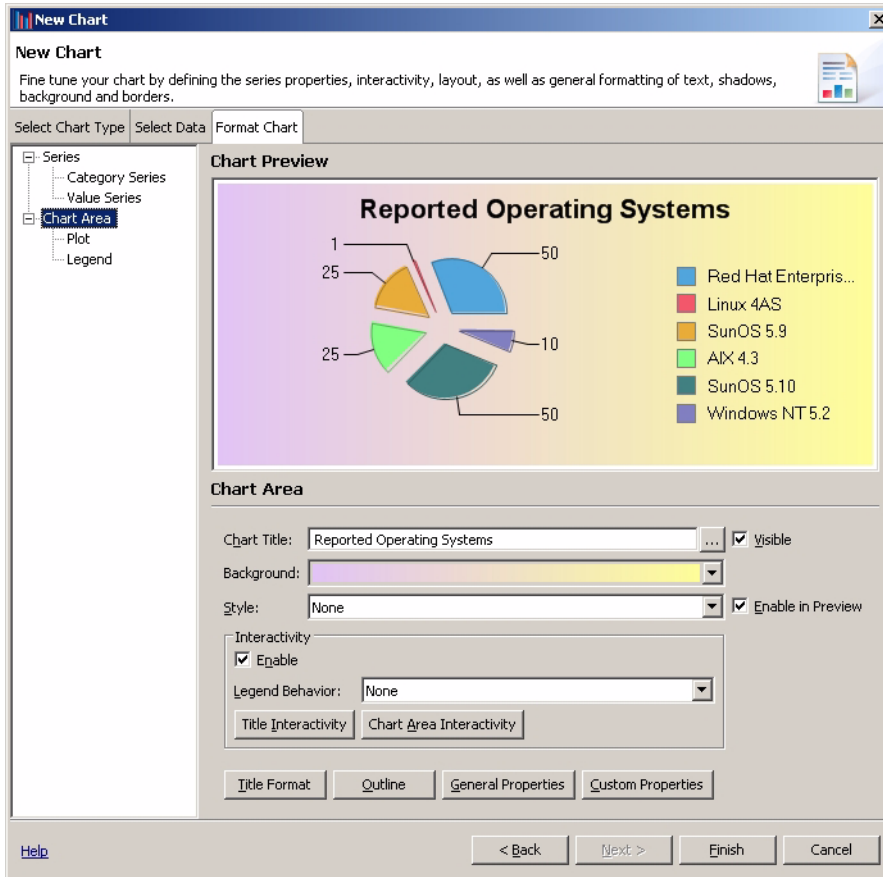
11 Select the Chart Area line to call up the input fields. You can use these to assign a chart title and to define the background.

12 Click **Finish**.

As Figure 4-19 shows, the Layout view displays an icon of the chart, rather than the chart itself.
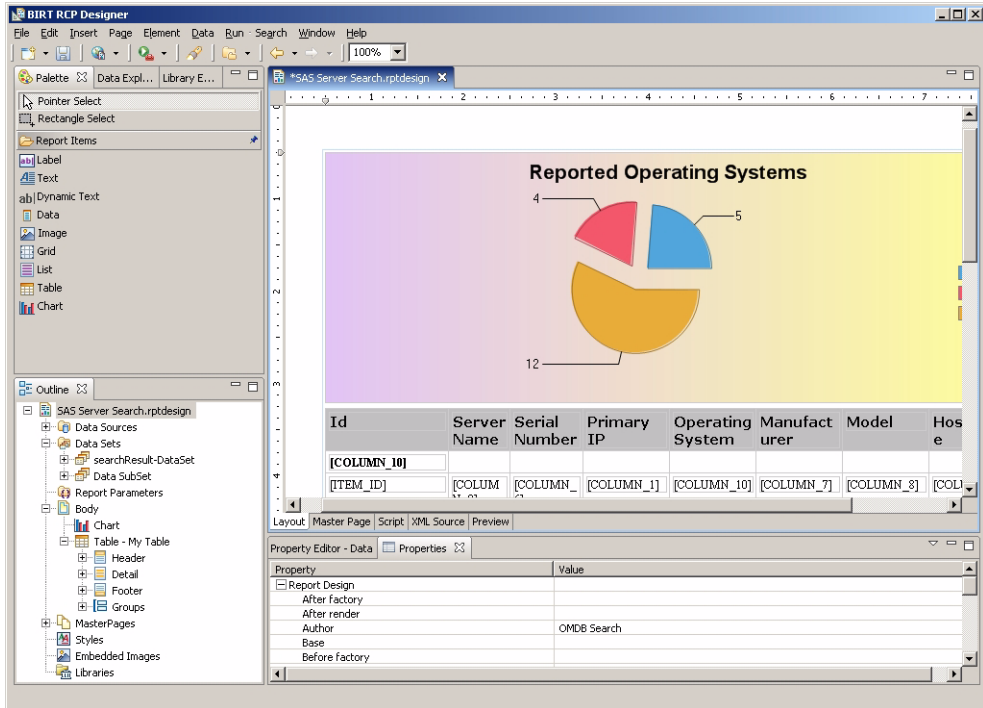
Figure 4-19: Layout View of Chart

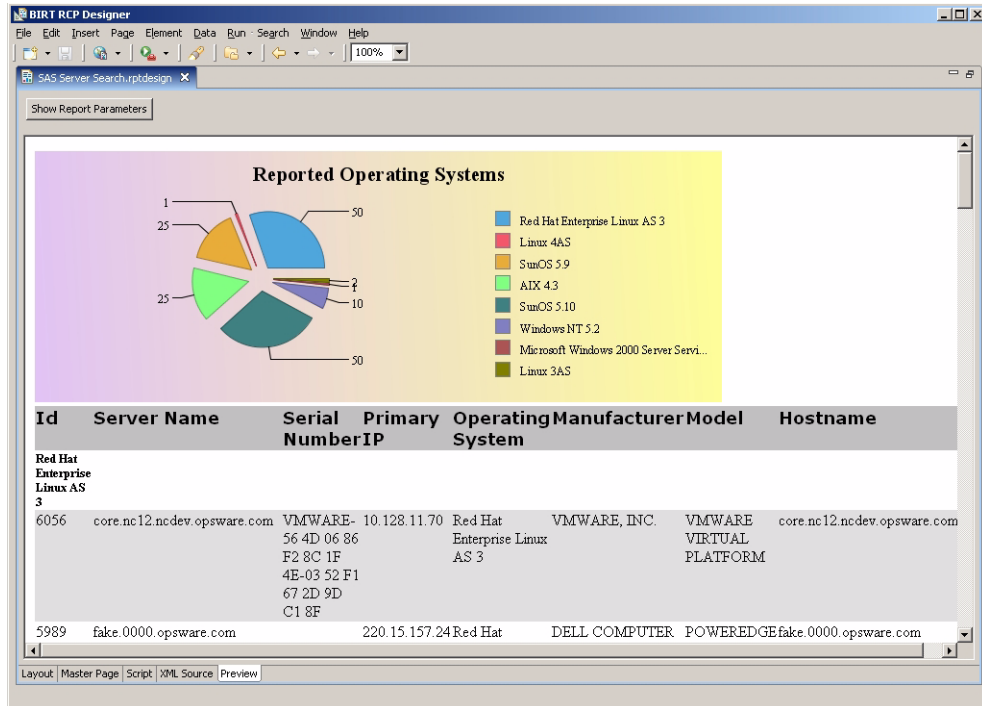**13** Drag the chart icon to the top of the report.

14 Pull the handles on the icon to expand it.

Figure 4-20: Chart Icon

15 Click **Preview**.

Figure 4-21: Report Preview

Integrating a Custom Report into the OMDB Client

To integrate the report into the OMDB Client, perform the following steps:

1 Copy the custom report to the `/opt/opsware/omdb/reports` directory. Repeat this step for additional cores as needed; report files aren't automatically replicated.

2 To see this report listed in the OMDB Client, add it to `report_def.xml`.

3 Modify the report_def.xml file in the `/opt/opsware/omdb/deploy/birt.war` directory that the OMDB Client uses to recognize, display, and invoke the reports stored on each core. If you are using WinSCP, you can double-click on the `report_def.xml` file name to open the document for editing.

4 Insert a description of your report in the top part of the .`xml` file. The easiest way to do that is to copy an existing report definition, paste it in, then modify the report name, display name, and description to match your new custom report.

In the following sample text, the new report is defined in the bold text.

```
<reporting>
    <reports>
        <location>/etc/opt/opsware/occ/reports</location>
      <report name="ServerByOSChart.rptdesign">
            <display_name>ServerByOSChart_Title</display_
name>
        <description>ServerByOSChart_Desc</description>
            <parameters>
            </parameters>
        </report>
      <report name="SAS_Server_Search.rptdesign">
            <display_name>SAS_Server_Search</display_name>
            <description>SAS_Server_Search</description>
            <parameters>
            </parameters>
        </report>
```

5 In the `report_def.xml` file, modify the folder section to specify where the new report will go. In the following example, we are telling the SAS Client to make the sample report available in the Compliance Reports folder.

```
   <folder name="compliance_reports">
            <display_name>complianceReportsFolderDesc</
display_name>
            <folder_reports>
    <report_name>
ServerConfigurationPolicyComplianceChart.rptdesign</report_
name>
    <report_name>SAS_Server_Search.rptdesign</report_name>
...
    <report_
name>ApplicationPolicyComplianceChart.rptdesign</report_
name>
    <report_name>
ApplicationPolicyComplianceTableByCustomer.rptdesign</
report_name>
    <report_
name>ApplicationPolicyComplianceByFacility.rptdesign</
report_name>
            </folder_reports>
            <subfolders>
    <subfolder_name>sox</subfolder_name>
        </subfolders>
      <parent>reports</parent>
   </folder>
```

Be careful when you edit the `report_def.xml` file. Make a backup copy of the file before you edit it. A typographical error can prevent all reports, custom or otherwise, from being displayed.
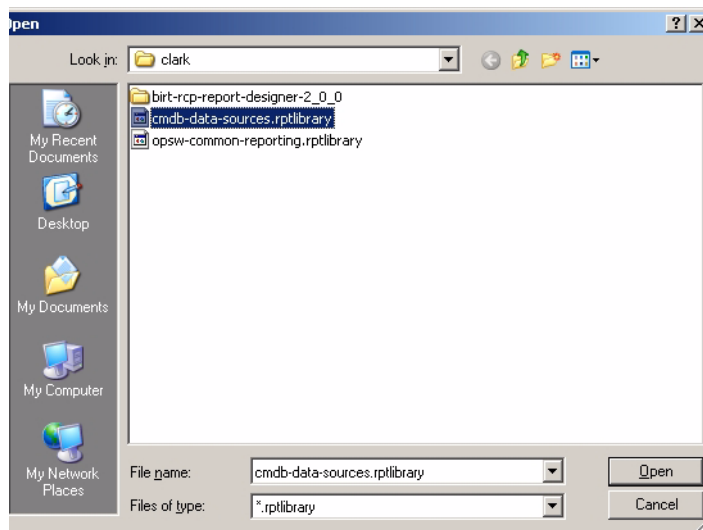
When you use the OMDB Client, you can view and run your new report.

Creating OMDB-Derived Reports

To create an OMDB report, perform the following steps:

1 Launch BIRT RCP Designer.

2 In the Outline pane, right-click Libraries, and then select **Use Library**. The Open window shown in Figure 4-22 displays.

*Figure 4-22: Assigning a Library to the Report*

3 Browse to the directory where `omdb-data-sources.rptlibrary` can be found, select it, and click **Open**.

After you assign the library, you do not need to create a new data source. This library automatically points the user to the JDBC source.

4 View the data connection in the Edit Data Source window shown in Figure 4-23.

5 To test the data connection, click **Test Connection**.

Figure 4-23: Edit Data Source
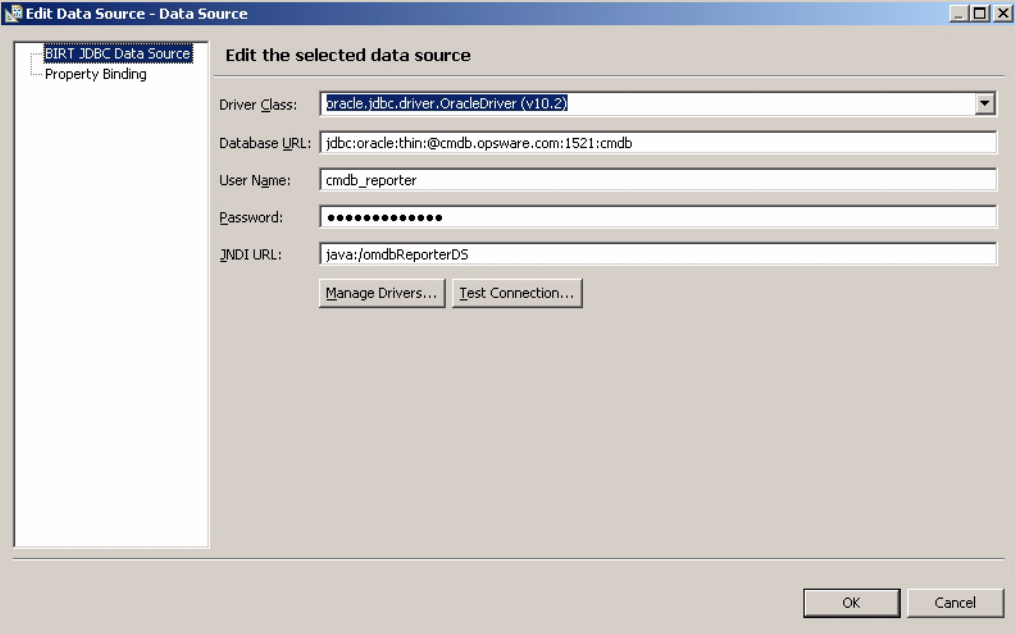
6 Create and name a new data set as shown in Figure 4-24 and Figure 4-25.
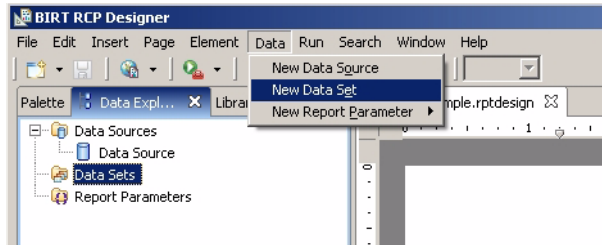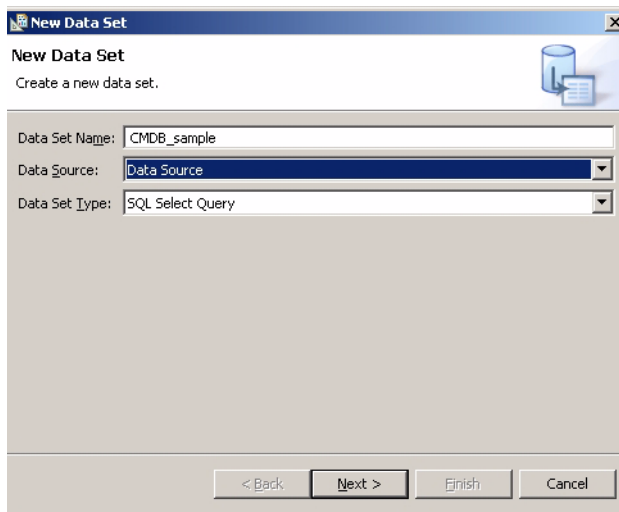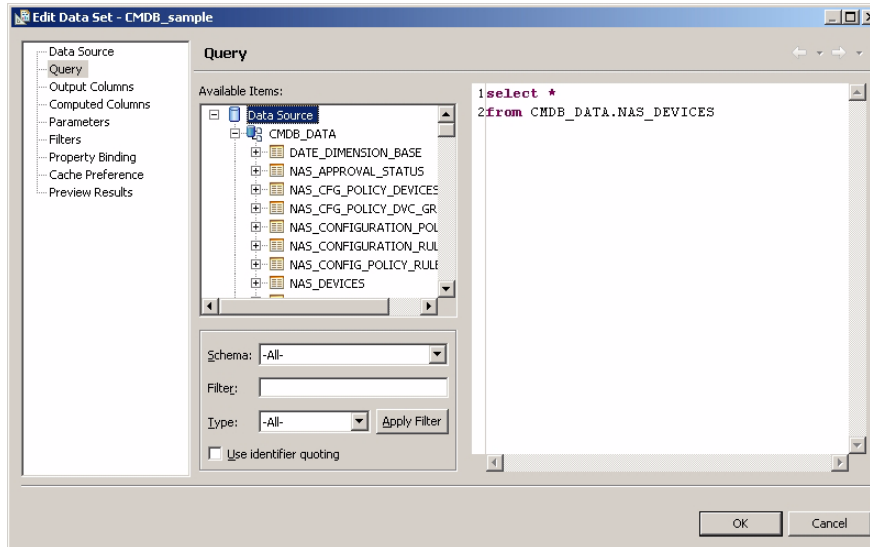
Figure 4-24: New Data Set

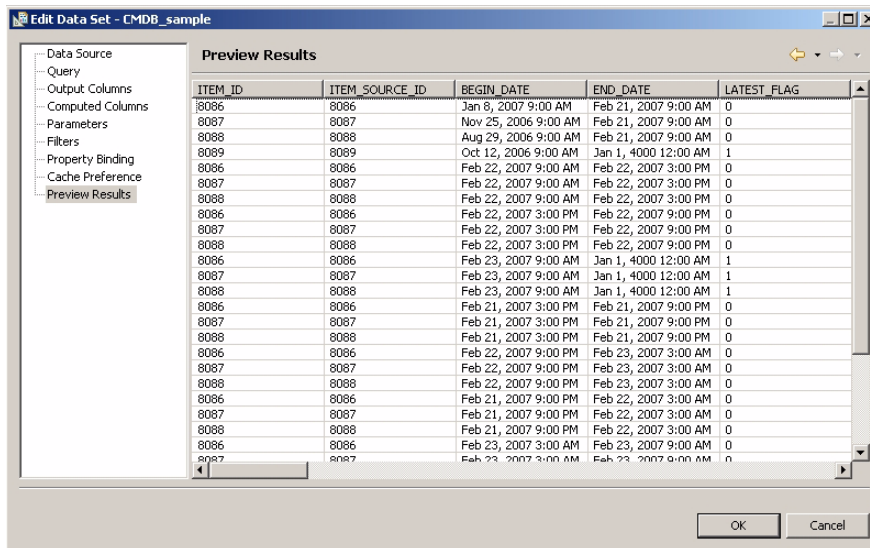*Figure 4-25: Name New Data Set*

7 Click **Next**.

8 Create the SQL query. Drag and drop the selected data rows into the SQL panel on the right, remembering to add SQL commands, commas, and spaces, as needed.

Figure 4-26: Creating SQL Query

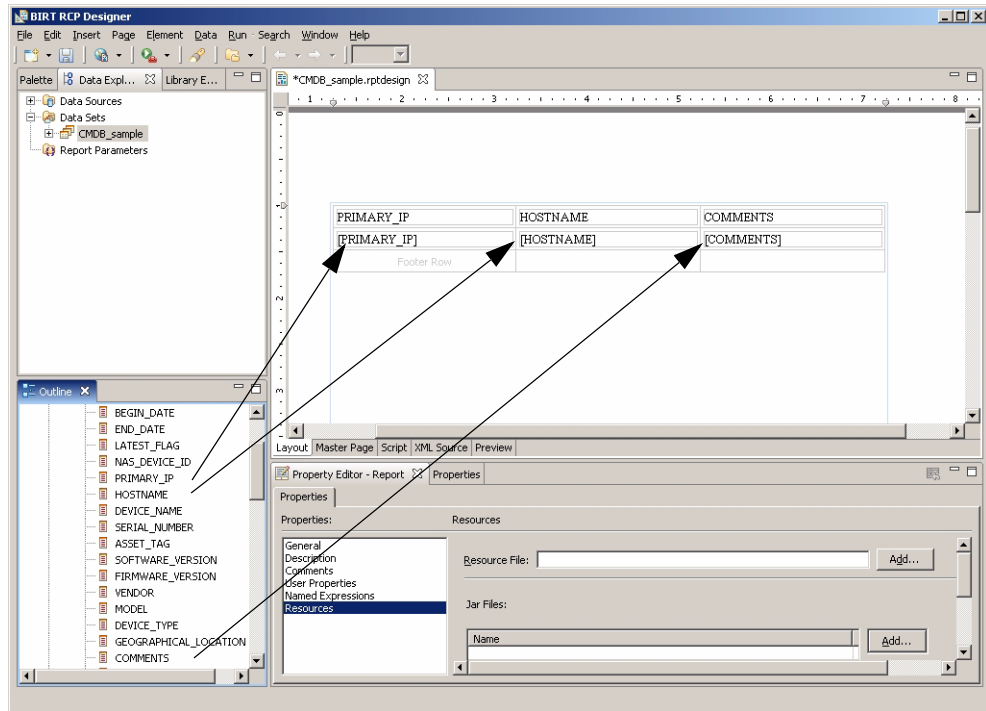**9** Click **Preview Results** to see if the SQL parses and runs.

Figure 4-27: Preview Results

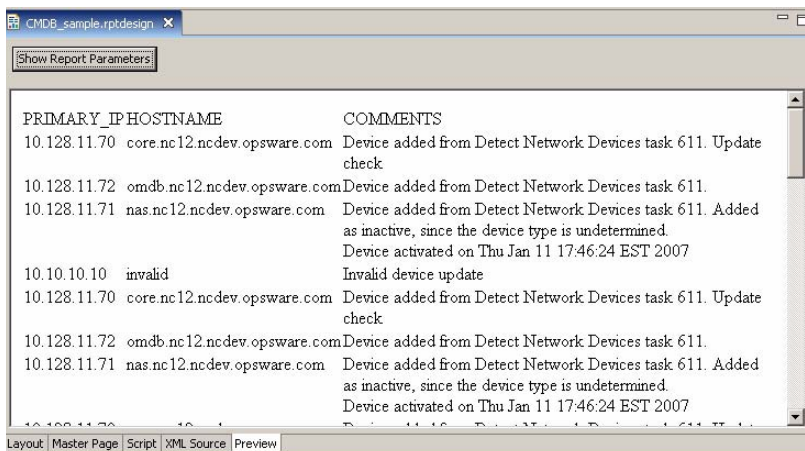**10** Drag the Table icon from the Palette to the middle row of the layout grid.

11 When the Insert Table window appears, set the number of columns to three.

12 Drag the desired fields from the Outline tab on the left into position on the table.

Figure 4-28: BIRT RCP Designer

13 Select the Preview tab to preview your report.

Figure 4-29: Show Report Parameters

14 Integrate the new report into the Opsware OMDB Client. The procedure is described in "Integrating a Custom Report into the OMDB Client" on page 75.

Advanced Topics For OMDB Custom Reports

This section contains the following advanced topics for OMDB custom report creation:

• Parameter Substitution

• Dates

• Actionability

Parameter Substitution

For the OMDB, a `com.opsware.reporting.util` package was created to use with BIRT. Reports are currently JDBC-based and include embedded SQL. In the data-set of the BIRT Reports for the OMDB, set the beforeOpen script to:

```
importPackage(Packages.com.opsware.reporting.util)
request = reportContext.getHttpServletRequest();
queryText = SqlUtilities.processBeforeOpenEvent(queryText,
params, request);
```

This will retrieve the SQL query for the report and pass it to a parser to replace any runtime variables. Runtime variables for the OMDB reporter are denoted in the SQL as ansi style C comments and have a begin and end tag. The begin tag is /*PARAM'n'*/ and the end tag is `/*/PARAM'n'*/` where 'n' is greater than 0. In addition to the begin and end tags, there is a operator position tag `/*C*/`.

For example, the query below for a report with runtime value:

```
select full_date
from cmdb_data.date_dimension
where 1 = 1
/*PARAM1*/and full_date /*C*/ = trunc(sysdate)/*/PARAM1*/
```

When the report is run, one of the following events occur:

• If the user selects Any Value for the parameter, then the string between the begin and end tags is removed.

• If a value is picked with an operator (in, equal, not equal) then the string between the operator position tag and end tag is replaced with the appropriate operator/parameter value string.

• If the parameter value is text and case-insensitive (by default), then the left-side expression between AND or OR and the operator position tag will be enclosed by an UPPER function. The parameter value will also be upper-case.

Parameters in `report_def.xml` for OMDB take a string of SQL for their lookup values. This is different from the way reports are parameterized in SAS, with a resource type and resource field.

Report parameter substitution is not supported in local previews. To test this feature, you must deploy it to the OMDB server.

Dates

The OMDB reporting data source `omdb-reporter-ds.xml` used by the OMDB BIRT engine is configured to set all session connections to the current user's time zone as these connections are accessed by BIRT. This allows for the use of certain functionality within Oracle to ensure that date processing occurs and is displayed relative to the user's time zone.

The OMDB `CMDB-DATA` schema includes a DATE_DIMENSION view that is useful in creating the date-based SQL typically used in OMDB's historical reporting. This view contains a number of date-related columns for reporting including FULL_DATE_LOCAL and FULL_DATE_UTC. All columns are relative to the user's local midnight boundary (including FULL_DATE_LOCAL) except for FULL_DATE_UTC. FULL_DATE_UTC is a calculated value based on the offset of the user's time zone from FULL_DATE_LOCAL. The time component of FULL_DATE_LOCAL is always midnight (00:00:00), so for someone in New York (EST), FULL_DATE_UTC will be 5 hours later than FULL_DATE_LOCAL meaning its time component will be 05:00:00.

When doing parameter substitution of single dates or date ranges, these values will be substituted in the current user's time zone and should always be compared to FULL_DATE_LOCAL. When using the resulting DATE_DIMENSION records to access historical data tables, the FULL_DATE_UTC column must be used as all OMDB data time stamps are UTC.

The following two functions are available for performing time zone offsets:

- **UTC_TO_LOCAL**: Use this to convert almost all OMDB time stamp columns to local time for display in the user's local time zone

- **LOCAL_TO_UTC**: This will convert a local time stamp to UTC, which may not be useful for return to BIRT, but may be useful in other scenarios.

Almost all time stamp columns returned for display in BIRT should be wrapped in the UTC_TO_LOCAL function for correct display. The only time you wouldn't do this is if there is a need to display the date in UTC or if a BIRT expression is being used to convert the UTC time stamp to some other desired value.

Actionability

OMDB reports can also support actionable items.

To set a table as actionable, perform the following steps:

1 Launch BIRT RCP Designer.

2 In the Outline pane, expand the report name, and then expand Body.

3 Select the table name.

4 In the Property Editor -table name, click the Properties tab.

5 In the Properties list, select Bookmark.

6 In the text field, enter the following string:

```
id=''actionable''
```

7 From the File menu, select **Save**.

The format for OMDB actionable items is

```
source:object_type:id
```

To add the source and object type to your custom report, perform the following steps:

1 Launch BIRT RCP Designer.

2 Expand Data Set.

3 Double-click the data set that is associated with the report.

4 In the query text field, add the following string:

```
'source:object_type:' || objectid
```

The actionable `source` and `object_type` pairs are limited to:

```
sas:device:
sas:patch_policy:
sas:configuration:
sas:compliance_test:
sas:configuration:
sas:compliance_test:
sas:job:
sas:user:
sas:usergroup:
sas:audit_policy:
sas:audit_task:
sas:audit_result:
```

Set the `objectid` to the object id in SAS or NAS. Do not set `objectid` to an item id in OMDB.

5 In the left list of the Edit Data Set window, click Output Columns.

6 Click **OK**.

7 Expand the Data Set.

8 Drag the new column into the table as the first column of the Detail Row of the table.

Index

S

V