

Chapter 25

Using Inventory Reports

This chapter describes how to view and manipulate Inventory Management System reports of inventory data stored in the JUNOScope software database. Inventory data is stored when the Inventory Management System scans devices on the network for items, such as hardware components, software components, and feature licenses.

The Inventory Management System can generate predefined inventory reports from the stored inventory records, or you can define your own report formats. You can save custom inventory reports, including user-specified definitions and controls. Reports are saved in the JUNOScope database, where all JUNOScope users can view them.

An Inventory Management System Demo lets you view and manipulate sample inventory reports so you can practice and learn the full potential of the system before scanning real production inventory data.

The Inventory Management System displays reports in a browser using HTML, and can also be exported to Extensible Markup Language (XML), Comma-Separated Values (CSV) text, Adobe PDF, and Microsoft Excel formats.

You must have superuser, read-write, or read-only access privilege levels to use the Inventory Management System reports.

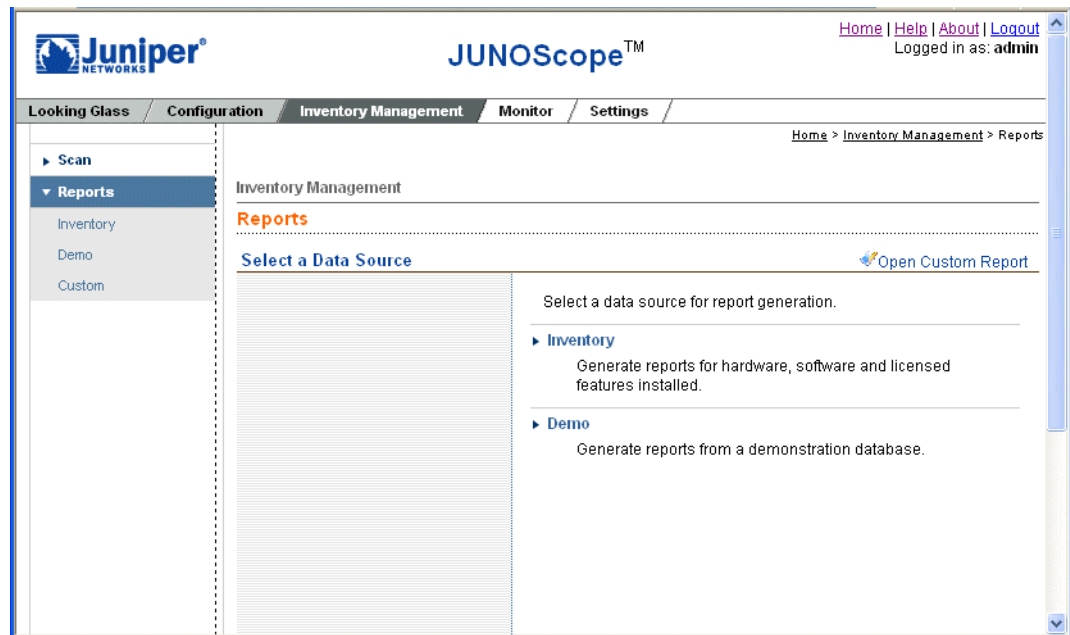
This chapter includes the following topics:

- Understanding Report Data Sources on page 240
- Navigating a Report on page 254
- Starting a New Report on page 255
- Opening a Custom Report on page 256
- Manipulating Report Data on page 258
- Viewing Report Data on page 276
- Where To Go From Here on page 278

Understanding Report Data Sources

A data source is a database from which you can view inventory report information. The Inventory Management System provides two report data sources:

- **Inventory**—Includes all inventory items that are created when you perform an inventory scan on Juniper Networks devices on the network that has been added to JUNOScope. You must perform an inventory scan of devices on the network for the Inventory data source to have any data. For more information, see “Scanning Inventory Data” on page 231.
- **Demo**—A demonstration database that includes sample inventory items that you can use to practice viewing and manipulating inventory reports. When you open a demo report, you see the word Demo in the title bar area to differentiate from your production inventory reports. Some of the reports shown in this chapter are generated using the Demo database.



To view Inventory Management System report data sources, from the JUNOScope main window, click Inventory Management > Reports.

This section includes the following topics:

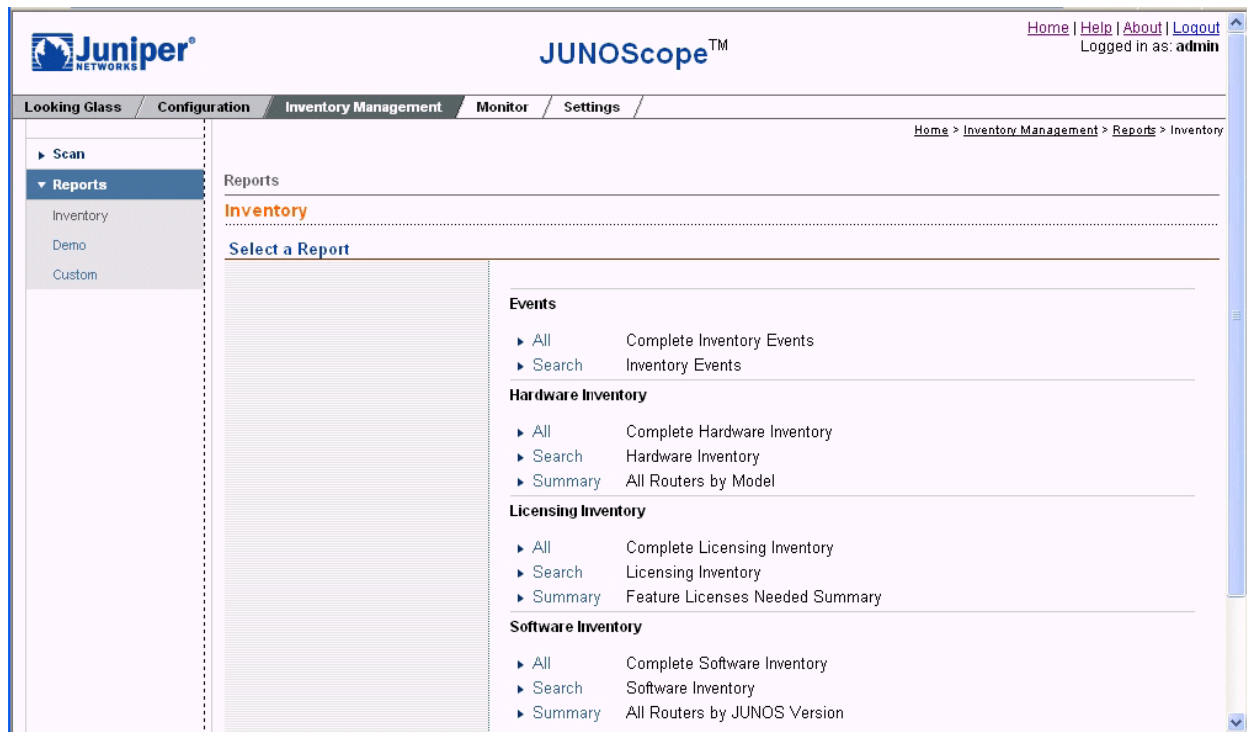
- Viewing a Report on page 241
- Understanding Types of Inventory Reports on page 243
- Searching for Inventory Report Data on page 251

Viewing a Report

You can view a report of inventory data that has been scanned and stored in the database from devices on your network. Additionally, you can view reports from the demonstration database. For information about scanning inventory items, see “Scanning Inventory Data” on page 231.

To view a report, follow these steps:


1. Click Inventory Management > Reports. The Select a Data Source page appears.
2. Click Inventory or Demo. The Select a Report page appears.




- Click the Report that you want. The Report Results page appears with the report that you selected. The following report (Software Inventory—All) is generated from the Inventory Management System demo database.

The screenshot shows the JUNOScope web interface. The top navigation bar includes 'Home | Help | About | Logout' and 'Logged in as: admin'. The main menu has 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, showing a breadcrumb trail: 'Home > Inventory Management > Reports > Demo > Report Result'. The left sidebar has 'Scan', 'Reports', 'Inventory', 'Demo', and 'Custom'. The 'Reports' section is expanded to show 'Demo'. The main content area is titled 'Report Result' and 'Complete Software Inventory'. It shows 'Showing Records 1 to 50 of 263'. A table displays the following data:

Device	Model	Routing Engine	JUNOS Version	Package Name	Package Comment	Created	Last Scanned
core-1320-den	T320	re0	7.2R1.7	jbase	JUNOS Base OS Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jcrypto	JUNOS Crypto Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jdocs	JUNOS Online Documentation [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	kernel	JUNOS Kernel Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jpfe	JUNOS Packet Forwarding Engine Support (T-Series) [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005

 **NOTE:** If a report remains idle for more than 30 minutes, any subsequent manipulation on the expired report will result in an error message "Report instance expired. Please select a data source again." Click Select a Data Source in the top right area of the title bar. Then select the report that you were viewing from the Select a Report page.

For information about types of Inventory reports, see “Understanding Report Data Sources” on page 240.

 **NOTE:** Inventory reports display inventory results for both the TX Matrix platform and the attached T640 routing nodes. The TX Matrix routing platform consist of the TX Matrix platform (also known as the switch-card chassis [SCC]) and the attached T640 routing nodes (also known as line-card chassis [LCC]).

Understanding Types of Inventory Reports

The Inventory Management System provides the following types of reports:

- Events Inventory Reports on page 244
- Hardware Inventory Reports on page 246
- Licensing Inventory Reports on page 248
- Software Inventory Reports on page 249

The screenshot shows the Juniper JUNOScope™ web interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, and the 'Reports' menu item is selected in the left sidebar. The main content area is titled 'Inventory' and contains a 'Select a Report' section. This section lists reports under four categories: Events, Hardware Inventory, Licensing Inventory, and Software Inventory. Each category has three options: 'All', 'Search', and 'Summary'.

Category	Option	Description
Events	All	Complete Inventory Events
	Search	Inventory Events
	Summary	
Hardware Inventory	All	Complete Hardware Inventory
	Search	Hardware Inventory
	Summary	All Routers by Model
Licensing Inventory	All	Complete Licensing Inventory
	Search	Licensing Inventory
	Summary	Feature Licenses Needed Summary
Software Inventory	All	Complete Software Inventory
	Search	Software Inventory
	Summary	All Routers by JUNOS Version

Events Inventory Reports

Events reports list any changes or discrepancies found in an inventory scan as compared with the inventory data stored in the database.

Table 18 describes the type of inventory events that occur when JUNOScope scans device inventory.

Table 18: Events Types

Event	Description
CREATE	Initial discovery of an inventory item.
ADD	Inventory item added to a device although it was previously associated with the same or a different device (applicable to hardware inventory items only).
DELETE	Inventory item removed from a device.
UPDATE	Change in an inventory item attribute.
UNKNOWN	Unable to store inventory item in the database due to a missing serial number, licensed feature name, or software package name.



NOTE: Physical Interface Cards (PICs) and Flexible PIC Concentrators (FPCs) are tracked during an inventory scan by their containing chassis and slot position within the chassis. Therefore, if you move a PIC from FPC 0 to FPC 1 within the same chassis or to a different chassis, a DELETE event is generated with the old location and an ADD event is generated with the new location.

Table 19 describes the type of JUNOScope inventory event reports that are available. To view inventory reports, see “Viewing a Report” on page 241.

Table 19: Type of Events Reports

Report	Description
All	Displays all inventory event records stored in the database. The report displays records by device name, event type, item name, item description, event details, serial number, Routing Engine, and time. (See Table 20 for a description of the report columns.)
Search	Lets you search for specific inventory event records by device name, event type, item name, hardware description, license description, event details, serial number, item description, event details, serial number, routing engine, or time. When you select Search, the (Search) Specify Parameters dialog box appears where you can specify the inventory records you want searched. (See “Searching for Inventory Report Data” on page 251 for more information about searching for inventory report records.)

The screenshot shows the JUNOScope web interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, and the 'Reports' sub-menu is selected. The main content area displays a 'Report Result' for 'Complete Inventory Events'. The report shows 1376 records, with the first four displayed in a table.

Device	Type	Item	Description	Event Details	Serial Number	Routing Engine	Time
pe-m10i-sea	DELETE	PIC	4x F/E, 100 BASE-TX	Item was deleted from spaten at Module:FPC 1, Submodule:PIC 3	HC3974		Tue May 03 09:24:56 PDT 2005
pe-m10i-sea	ADD	PIC	4x F/E, 100 BASE-TX	Item was added to spaten at Module:FPC 0, Submodule:PIC 0	HC3974		Tue May 03 09:24:56 PDT 2005
pe-m10i-sea	DELETE	PIC	1x G/E SFP, 1000 BASE	Item was deleted from spaten at Module:FPC 0, Submodule:PIC 1	CH9637		Tue May 03 09:24:56 PDT 2005
pe-m10i-sea	ADD	PIC	1x G/E SFP, 1000 BASE	Item was added to spaten at Module:FPC 0, Submodule:PIC 2	CH9637		Tue May 03 09:24:56 PDT 2005

Table 20 describes the Events report columns.

Table 20: Events Report Columns

Report Column	Description
Device	DNS name of device.
Type	Type of event. Event types include CREATE, ADD, DELETE, UPDATE, and UNKNOWN.
Item	Name of the inventory item scanned and stored in the JUNOScope database.
Description	Description of the inventory item scanned and stored in the JUNOScope database.
Event Details	Description of an action that caused an inventory event.
Serial Number	Component serial number. The serial number is not displayed for software or licensing inventory items.
Routing Engine	Routing Engine on which the JUNOS software package is installed. This column differentiates software inventory events associated with multiple Routing Engines in a given device.
Time	Date and time the event record was scanned and stored in the JUNOScope database.

Hardware Inventory Reports

Hardware inventory reports list the hardware components installed in a device or router chassis, including the part number and serial number.

Table 21 describes the type of hardware inventory reports. To view inventory reports, see “Viewing a Report” on page 241.

Table 21: Types of Hardware Inventory Reports

Report	Description
All	Displays all hardware inventory records stored in the database. The report displays records by device name, router model number, hardware name, version, part number, serial number, hardware description, chassis identifier, module, submodule, sub-submodule, time created, and time last scanned. (See Table 22 on page 247 for a description of the report columns.)
Search	Lets you search for specific hardware inventory records by device name, router model number, hardware name, version, part number, serial number, hardware description, chassis identifier, module, submodule, sub-submodule, time created, and time last scanned. When you select Search, the (Search) Specify Parameters dialog box appears where you can specify the inventory records you want searched. (See “Searching for Inventory Report Data” on page 251 for more information about searching for inventory report records.)
Summary	Displays a listing of all device names by model number. (See Table 22 on page 247 for a description of the report columns.)

Home > Inventory Management > Reports > Demo > Report Res

Reports

Demo

Report Result Start New Report

Complete Hardware Inventory

Showing Records 1 to 50 of 732

Device	Model	Name	Version	Part Number	Serial Number	Description	Chassis	Module	Sub Module	Sub Sub Module	Created	Last Scanned
core-t320-den	T320	Midplane	REV 04	710-004339	BC1439	T320 Backplane		Midplane			Mon Apr 25 13:57:49 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	FPM GBUS	REV 03	710-004461	BC1404	T320 FPM Board		FPM GBUS			Mon Apr 25 13:57:49 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	FPM Display	REV 04	710-002897	RA0001	FPM Display		FPM Display			Mon Apr 25 13:57:49 PDT 2005	Tue May 03 09:24:43 PDT 2005

Encoding: ISO-8859-1
Line separator: DOS
Separation character: , (comma)
Include titles:

Table 22 describes the Hardware Inventory report columns.

Table 22: Hardware Inventory Report Columns

Report Columns	Description
Device	DNS device name.
Model	Routing platform.
Name	Name of the hardware component.
Version	Version of the hardware firmware.
Part Number	Hardware component part number.
Serial Number	Hardware component serial number.
Description	Hardware component description.
Chassis	Routing platform chassis in which the hardware component is installed. Information is displayed in this column for the TX Matrix routing platform.
Module	Component installed in the chassis; for example, an FPC.
Sub module	Component installed inside another router component. A PIC is a submodule installed inside an FPC.
Sub sub module	Component installed inside a submodule. An SFP is a sub-submodule installed inside a PIC.
Created	Date and time the hardware item was scanned.
Last Scanned	Date and time the hardware item was previously scanned.

Licensing Inventory Reports

Licensing inventory reports list the feature licenses that have been installed on devices in the network, including the name of the licensed feature, number of licenses installed, number of licenses that are currently being used, and the number of licenses that are required to legally use the feature.

Table 23 describes the type of licensing inventory reports. To view inventory reports, see “Viewing a Report” on page 241.

Table 23: Types of Licensing Inventory Reports

Report	Description
All	Displays all licensing inventory records stored in the database. The report displays records by device, model number, feature name, description, licenses installed, licenses used, free ports used, licenses needed, time created, and time last scanned. (See Table 24 on page 249 for a description of the report columns.)
Search	Lets you search for specific licensing inventory records by device, model number, feature name, description, licenses installed, licenses used, free ports used, licenses needed, time created, and time last scanned. When you select Search, the (Search) Specify Parameters dialog box appears for you to specify the inventory records you want searched. (See “Searching for Inventory Report Data” on page 251 for more information about searching for inventory report records.)
Summary	Displays the total number of feature license that are needed by feature name. (See Table 24 for a description of the report columns.)

The screenshot shows the JUNOScope web interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, showing a breadcrumb trail: Home > Inventory Management > Reports > Demo > Report Result. The left sidebar has a 'Reports' menu with options for 'Inventory', 'Demo', and 'Custom'. The main content area is titled 'Report Result' and shows a 'Complete Licensing Inventory' report. A table displays the following data:

Device	Model	Feature Name	Description	Free Ports Used	Licenses Used	Licenses Installed	Licenses Needed	Created	Last Scanned
cpe-j2300-bos	J2300	all	All features		0	1	0	Mon Apr 25 13:57:52 PDT 2005	Tue May 03 09:24:47 PDT 2005
cpe-j2300-den	J2300	all	All features		1	1	0	Mon Apr 25 13:57:58 PDT 2005	Tue May 03 09:24:51 PDT 2005
cpe-j2300-den	J2300	if-se	One additional serial port	1	1	0	0	Mon Apr 25 13:57:58 PDT 2005	Tue May 03 09:24:51 PDT 2005

Table 24 describes the Licensing Inventory report columns.

Table 24: Licensing Inventory Report Columns

Report Columns	Description
Device	DNS device name.
Model	Routing platform on which the feature license inventory item exists.
Feature Name	Feature license name.
Description	Feature license description.
Free Ports Used	Interface port feature which can be configured without a license. The first port in a PIC is typically free.
Licenses Used	Feature licenses used on a device.
Licences Installed	Feature licenses installed on a device.
Licenses Needed	Feature used but not licensed.
Created	Date and time the feature license item was scanned.
Last Scanned	Date and time the feature license item was previously scanned.

Software Inventory Reports

Software Inventory reports list the JUNOS software and its packages that have been installed on devices in the network, including the package name, package description, JUNOS software version, the Routing Engine on which the software is installed, and the total number of devices on which each JUNOS version is installed. The Inventory Management System scans software inventory by package. A package is a collection of files that make up a software component.

Table 25 describes the JUNOS software packages.

Table 25: JUNOS Software Packages

Package	Name
kernel	JUNOS Kernel Software Suite
base	JUNOS Base OS Software Suite
route	JUNOS Routing Software Suite
pf	JUNOS Packet Forwarding Engine Support
docs	JUNOS Online Documentation
crypto	JUNOS Crypto Software Suite
ggsn	JUNOS GGSN Software
junos	JUNOS Base OS boot
web	JUNOS Web Management software

Table 26 describes the types of software inventory reports. To view inventory reports, see “Viewing a Report” on page 241.

Table 26: Types of Software Inventory Reports

Report	Description
All	Displays all JUNOS software package inventory records stored in the database. The default report displays records by device name, model, Routing Engine on which the software package is installed, JUNOS software version, package name, package comment, time the record was created, and time the package was last scanned. (See Table 24 on page 249 for a description of the report columns.)
Search	Lets you search for specific JUNOS software package inventory records by device name, model, Routing Engine on which the software package is installed, package name, package description, time the record was created, and time the package was last scanned. When you select Search, the (Search) Specify Parameters dialog box appears where you can specify the inventory records you want searched. (See “Searching for Inventory Report Data” on page 251 for more information about searching for inventory report records.)
Summary	Displays the total number of devices on which each JUNOS version is installed. Inventory records are listed by software version, device name, model, and the Routing Engine on which the software is installed. (See Table 24 on page 249 for a description of the report columns.)

The screenshot shows the JUNOScope web interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, showing a breadcrumb trail: Home > Inventory Management > Reports > Demo > Report Result. The left sidebar has a 'Reports' menu with options for 'Inventory', 'Demo', and 'Custom'. The main content area is titled 'Report Result' and shows a 'Complete Software Inventory' report. The report displays a table with the following data:

Device	Model	Routing Engine	JUNOS Version	Package Name	Package Comment	Created	Last Scanned
core-t320-den	T320	re0	7.2R1.7	jbase	JUNOS Base OS Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	re0	7.2R1.7	jcrypto	JUNOS Crypto Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	re0	7.2R1.7	jdocs	JUNOS Online Documentation [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	re0	7.2R1.7	jkernel	JUNOS Kernel Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-t320-den	T320	re0	7.2R1.7	jpfe	JUNOS Packet Forwarding Engine Support (T-Series) [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005

Table 27 describes the Software Inventory report columns.

Table 27: Software Inventory Report Columns

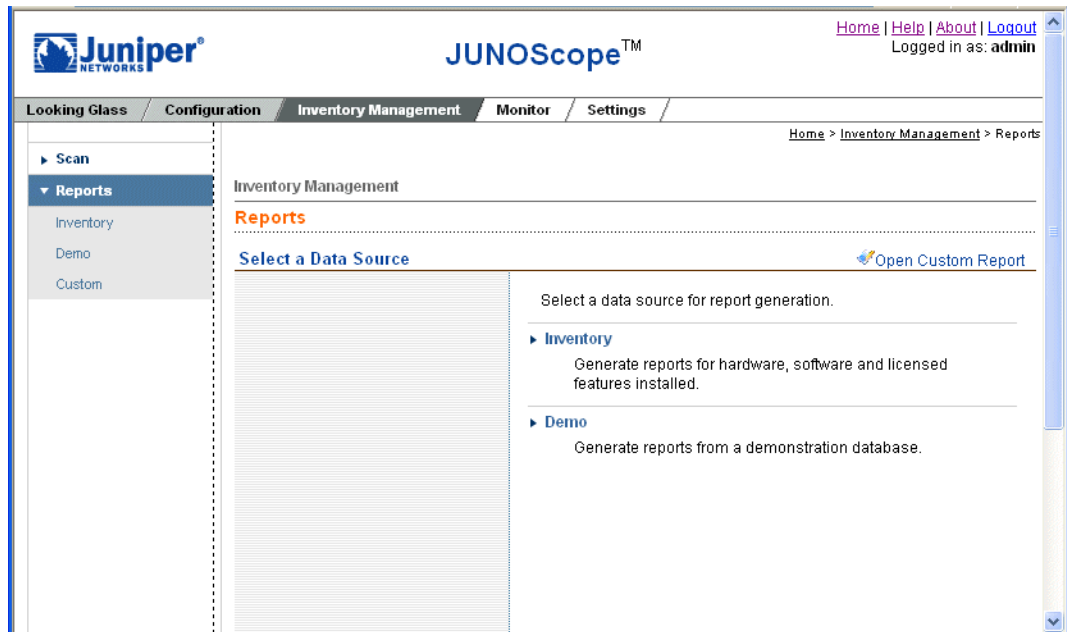
Report Columns	Description
Device	DNS device name
Model	Routing platform on which the software package was scanned
Routing Engine	Routing Engine on which the software package is installed
JUNOS Version	Version of the JUNOS software
Package Name	Name of the software package
Package Comment	Description of the software package
Created	Date and time the software package inventory item was created
Last Scanned	Date and time the software package inventory item was previously scanned

Searching for Inventory Report Data

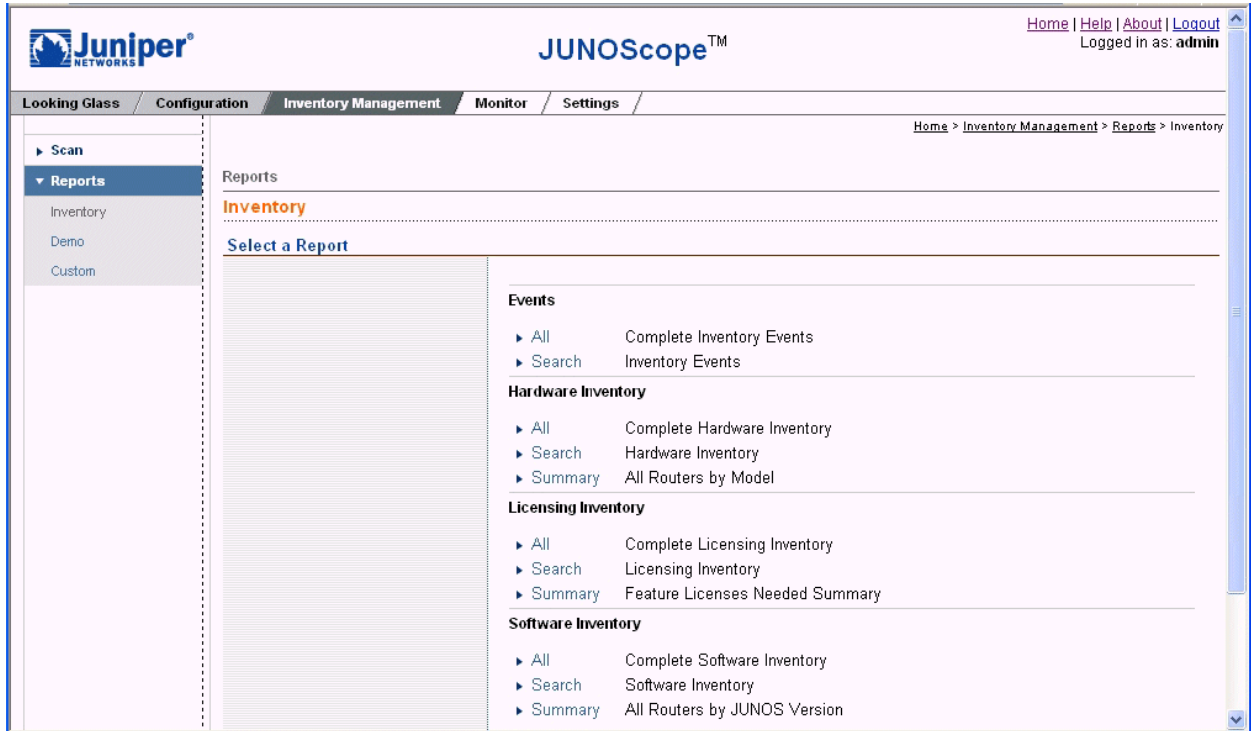
The Search Report option lets you specify the information that you want to appear in the report results. The Search—Specify Parameters dialog box lets you search for specific inventory items depending on the selected report type.

To search for inventory report data, follow these steps:

1. Click Inventory Management > Reports. The Select a Data Source page appears.



2. Click Inventory. The Select a Report page appears.



- Click the Search under the report type that you want. The Specify Parameters dialog box appears.

The screenshot shows the Juniper JUNOScope web interface. The top navigation bar includes the Juniper logo, the title 'JUNOScope™', and links for Home, Help, About, and Logout. The user is logged in as 'admin'. The main navigation menu includes Looking Glass, Configuration, Inventory Management, Monitor, and Settings. The current page is 'Reports' under 'Inventory Management', with a breadcrumb trail: Home > Inventory Management > Reports > Demo > Search.

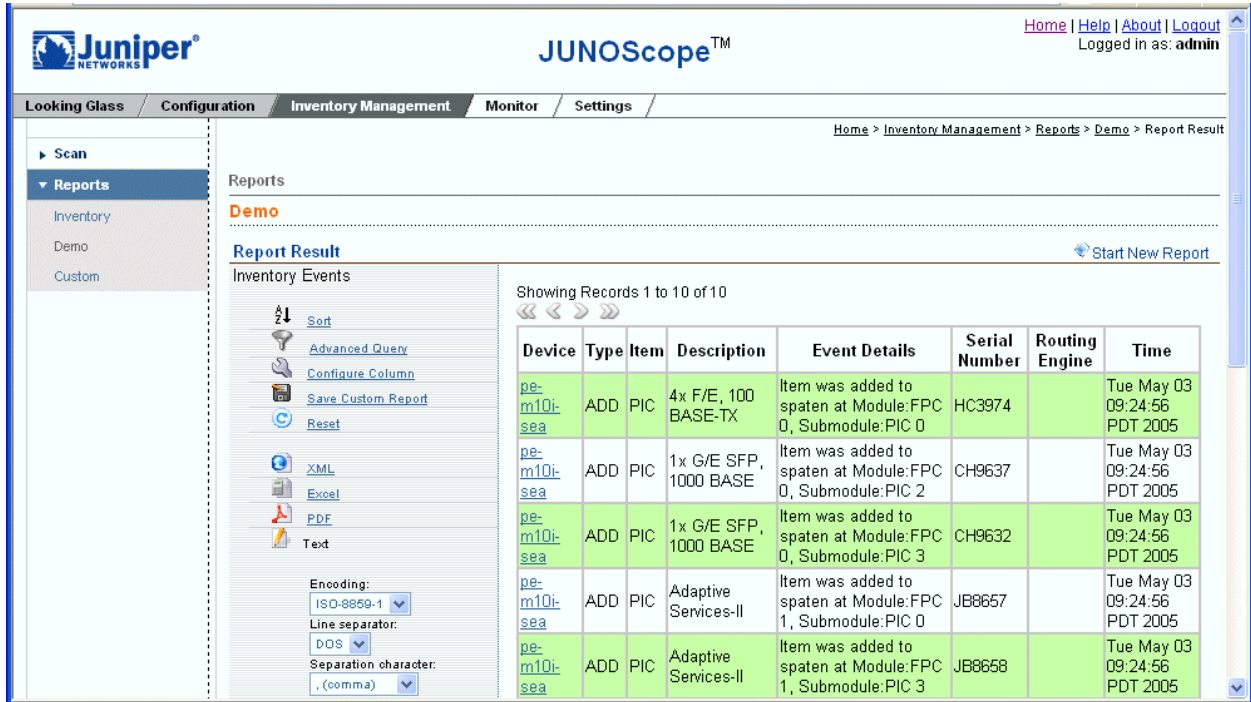
The 'Specify Parameters' dialog box is open for 'Inventory Events'. It contains the following fields and options:

- Device**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Type**: Search operator dropdown (currently empty) and value dropdown (currently 'ADD').
- Item**: Search operator dropdown (currently empty) and value dropdown (currently 'PIC').
- Hardware Description**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Licensing Description**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Software Version**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Package Name**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Routing Engine**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Event Details**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Serial Number**: Search operator dropdown (currently empty) and value dropdown (currently empty).
- Time**: Search operator dropdown (currently empty) and value dropdown (currently empty).

A 'Submit Query' button is located at the bottom of the dialog box. A note indicates that '*' denotes a required field.

- Select the inventory item search operator in the drop-down list box next to the inventory item name. For more information about search operators, see Table 29 on page 262.
- Select the inventory item description or value in the drop-down list box next to the search operator. Type or copy a particular description for which you want to search.
- Click **Submit Query**. The Inventory Management System displays a report displaying the information for which you specified.

- The Report Result page displays the search item and value. Click the edit link to edit and specify a different search, if necessary.



Navigating a Report

You can scroll through a report in the Report Result window or display specific device data.

Scrolling Through a Report

The Report Result window displays 50 lines of report data at a time in a window.

To scroll through a report, do one of the following:

- To scroll forward through a report one page at a time, click the right arrow (>).
- To scroll backward through a report one page at a time, click the left arrow (<).
- To scroll forward to the end of the report, click the double right arrows (>>).
- To scroll backward to the beginning of the report, click the double left arrows (<<).

Displaying Specific Device Data

To display data for a specific device, in the report you are viewing, click the name of the device in the Device column. You can also view a specific device report by selecting a Device report under each inventory report type.

Starting a New Report

If the report you are viewing is not the one that you want, you can select to open a new report.

To start a new report, follow this step:

1. From any Report Results page, click Start New Report. The Start New Report command is located at the top right of the Report Results page title bar area.

The screenshot shows the Juniper JUNOScope web interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' section is active, and the 'Reports' menu is expanded to show 'Inventory', 'Demo', and 'Custom'. The 'Demo' report is selected, and the 'Report Result' page is displayed. The report title is 'Complete Software Inventory'. On the right side of the report area, there is a 'Start New Report' button. The main content area shows a table of software packages installed on devices. The table has the following columns: Device, Model, Routing Engine, JUNOS Version, Package Name, Package Comment, Created, and Last Scanned. The table contains six rows of data, all for devices with Model 'T320' and Routing Engine 're0'. The packages listed are 'jbase', 'jcrypto', 'jdocs', 'jkernel', and 'jpf'. The 'Created' and 'Last Scanned' dates are all 'Tue May 03 09:24:43 PDT 2005'.

Device	Model	Routing Engine	JUNOS Version	Package Name	Package Comment	Created	Last Scanned
core-1320-den	T320	re0	7.2R1.7	jbase	JUNOS Base OS Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jcrypto	JUNOS Crypto Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jdocs	JUNOS Online Documentation [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jkernel	JUNOS Kernel Software Suite [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005
core-1320-den	T320	re0	7.2R1.7	jpf	JUNOS Packet Forwarding Engine Support (T-Series) [7.2R1.7]	Tue May 03 09:24:43 PDT 2005	Tue May 03 09:24:43 PDT 2005

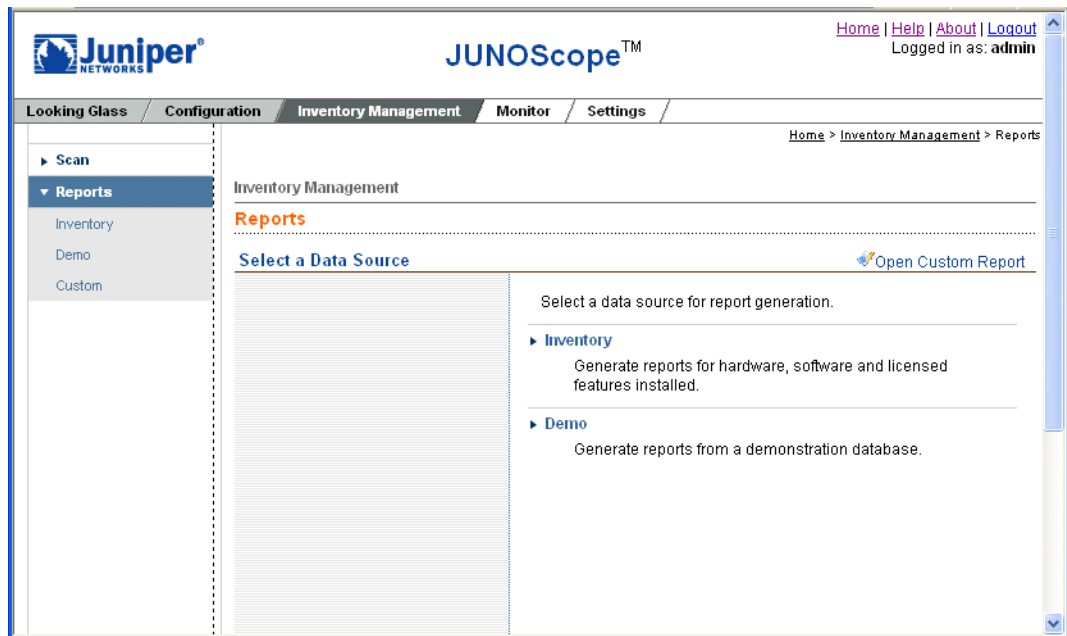
The Select a Report page appears. For more information about the type of inventory reports, see “Understanding Types of Inventory Reports” on page 243.

Opening a Custom Report

A custom report is one that you have saved with customizations. All JUNOScope users can open saved custom reports.

To open a custom report, follow these steps:

1. Click Inventory Management > Reports. The Open Data source page appears.



2. Do one of the following:
 - Click Custom in the command pane at the left.
 - Click Open Custom Report at the far right in the title bar area.

- In the left command pane under Reports, click Custom. The Open Custom Report dialog box appears. If you have not saved a report, the dialog box looks like the following.

The screenshot shows the JUNOScope web interface. The top navigation bar includes the Juniper logo, the title 'JUNOScope™', and links for Home, Help, About, and Logout. The user is logged in as 'admin'. The main navigation tabs are Looking Glass, Configuration, Inventory Management (selected), Monitor, and Settings. The breadcrumb trail is Home > Inventory Management > Reports > Custom. The left sidebar shows a tree view with 'Reports' expanded to 'Custom'. The main content area is titled 'Reports' and 'Custom'. Below this is the 'Open Custom Report' dialog box, which contains a table of reports.


Name	Data Source	Execute	Delete
demo report for a licensing summary	Demo	▶	✕
demo report for a sorted hardware summary	Demo	▶	✕
demo report for all changes in network between Fri morning and Sun evening	Demo	▶	✕
demo report for all Gigabit Ethernet PICs	Demo	▶	✕
demo report for finding JUNOS version greater than or equal to 7.0	Demo	▶	✕

- Select the filename of the report you want to open.
- Click the Execute arrow next to the report name.

Manipulating Report Data

From any Report Results page, you can use the tools to manipulate report data for your specific needs. Table 28 describes each tool.

Table 28: Report Tools

Tool	Name	Description
	Sort	Arranges inventory records in ascending sort order from small to big (where string 123 appears first, followed by string abc, then followed by string ABC); with the exception of event time in descending order (where the latest event appears first). For example, a sort by type will display ADD first, followed by CREATE, DELETE, and UNKNOWN. To sort a report, see “Sorting Report Data” on page 258.
	Advanced Query	Queries report records to display only those based on the criteria that you specify. You can show the query as columns or rows. To filter a report, see “Querying Report Data” on page 261.
	Configure Column	Changes the order in which columns appear in an inventory report. To configure report columns, see “Configuring Report Columns” on page 273.
	Reset	Clears all previously set customized controls such as sort, advanced query, and configure column, then regenerates the report with the default controls.
	Save Custom Report	Saves a report with the customizations that you specified in a file with a unique name that you specify.
	XML	Displays a report in XML format. To view a report in XML format, see “XML” on page 276.
	Excel	Displays a report in Microsoft Excel. To view a report in Excel, see “Microsoft Excel” on page 276.
	PDF	Displays a report in an Adobe Acrobat viewer. To view a report in Adobe Acrobat in PDF format, see “Adobe Acrobat PDF” on page 277.
	Text	Displays a report in text format. To view a report in text format, see “Text” on page 277.

Sorting Report Data

You can customize a report using predefined or user-defined column sort orders.

To sort a report, follow these steps:

1. Select and run the report that you want.
2. In the Report Result window, click the Sort tool. The Sort window appears.

3. Do one of the following:
 - Select a predefined column sort order. See “Sorting by a Predefined Order” on page 259.
 - Define your own column sort order. See “Sorting by User-Defined Order” on page 260.

Sorting by a Predefined Order

To sort a report by a predefined column sort order, follow these steps:

1. In the Select a Predefined Sort Order drop-down list box, select the predefined column sort option that you want. The column sort order options differ depending on the type of report you have selected—events, hardware inventory, licensing inventory, or software inventory.

If you have selected a user-defined sort order, that option displays at the bottom of the Select a Predefined Sort Order drop-down list box.



2. Click Submit Query.

Sorting by User-Defined Order

You can sort the records in the columns in primary, secondary, and tertiary order. For example, if two rows have the same values for the primary sort criteria, they will be sorted based on their values for the secondary sort criteria. Records are sorted alphabetically, numerically, or by time (the latest time is the largest value).

To sort by a user-defined column sort order, follow these steps:

1. Select the primary column item that you want sort. Click the down arrow to view the column selections.

The screenshot shows the JUNOScope web interface. The top navigation bar includes the Juniper Networks logo, the product name 'JUNOScope™', and links for 'Home | Help | About | Logout'. The user is logged in as 'admin'. The main navigation tabs are 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The current page is 'Reports > Demo > Sort'. The left sidebar shows a tree view with 'Reports' expanded, containing 'Inventory', 'Demo', and 'Custom'. The main content area is titled 'Reports' and 'Demo'. Under the 'Sort' section, there is a 'Hardware Inventory' table. To the right of the table, there are two sections for configuring the sort order. The first section, 'Select a Predefined Sort Order:', has a dropdown menu set to 'Sort by Device' and a 'Submit Query' button. The second section, 'Define your own Sort Order:', has three rows: 'Primary' with 'Device' and 'Ascending', 'Secondary' with 'Name' and 'Ascending', and 'Tertiary' with 'Part Number' and 'Ascending'. Each row has a dropdown menu for the column name and a dropdown menu for the sort order. A 'Submit Query' button is located at the bottom of this section.

2. Select the column sort order: ascending or descending.
3. Select the secondary and tertiary column items, then select the sort order. Click the down arrow to see the selections.
4. Click Submit Query.



NOTE: If you leave a column sort level blank, sorting stops at the last level you specify.

Contradicting sorts are ignored. Sort performs the primary sort level, while the secondary contradicting sort level is suppressed.

Querying Report Data

You can specify to display only specific report information in which you are particularly interested. You can show a query as either columns or rows. You can then specify the query criteria.

To perform an advanced query, follow these steps:

1. Select the report that you want. To run a report, see “Viewing a Report” on page 241.
2. In the Report Result window, click the Advanced Query tool. The Advanced Query dialog box appears.

The screenshot shows the Juniper JUNOScope interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The breadcrumb trail is 'Home > Inventory Management > Reports > Demo > Advanced Query'. The left sidebar has 'Reports' expanded, showing 'Inventory', 'Demo', and 'Custom'. The main content area is titled 'Advanced Query' and contains a form for defining query criteria. The criteria are listed as 'AND' conditions, each with a dropdown menu for the field and a text input for the value. The fields include Device, Model (J2300), Feature Name (ipsec-vpn), Description, Free Ports Used, Licenses Used, Licenses Installed, Licenses Needed, Created, and Last Scanned. A 'Submit Query' button is at the bottom.

3. Do one of the following:
 - For events reports, specify the query criteria for the device name, event type, item name, description, event details, serial number, Routing Engine, or time.
 - For hardware inventory reports, specify the query criteria for the device name, model, hardware name, hardware version, part number, serial number, hardware description, chassis ID, module, submodule, sub-submodule, time created, or time last scanned.

- For licensing inventory reports, specify the query criteria for the device, model, feature name, feature description, free ports used, licenses used, licenses installed, licenses needed, time created, or time last scanned.
 - For software inventory reports, specify the query criteria for the device name, model number, Routing Engine on which the software package is installed, software version, package name, package description, time created, or time last scanned.
4. Select an Device query operator. Table 29 provides a reference for the query operators you can select.

Table 29: Advanced Query Operators

Operator	Description
=	(The default operator) Searches for records that exactly equal the search criteria.
not =	Searches for records that do not match the search criteria.
between	Searches for records that fall between a specified range.
not between	Searches for records that do not fall between a specified range.
in	Searches for records that match any of the specified values (up to four).
not in	Searches for records that match none of the specified values (up to four).
<	Searches for records that are less than the search criteria.
< =	Searches for records that are less than or equal to the search criteria.
>	Searches for records that are greater than the search criteria.
> =	Searches for records that are greater than or equal to the search criteria.
empty	Searches for records that have an empty value in the specified column/field. For example, perform an advance query for events inventory with "serial number is not empty" and do one with "serial number is empty".
not empty	Searches for records that have a non-empty value in the specified column/field.
like	Searches for records that match the search criteria.
not like	Searches for records that do not match the search criteria.



NOTE: For the like and not like operators, use % as the wildcard for the matching target. For example, bad % would match badlands but not toobadlands. To match toobadlands, use %bAd%. The match is case insensitive.

The like operator applies to columns with a string value such as device, type, item, description, event details, serial number, and Routing Engine in any Events Inventory reports. The like operator does not apply to Time, which has a type of Date.

For more information about using the like operator, see “Using the Like Device Query Operator” on page 266.

5. In the Device search text box, type a device name in the Device search text box. You can also click the device name in the report to view all records for that report.
6. Select an event Type search operator.

7. In the Type search text box, type the event type that you want to see in the Type search text box.
8. Select a Time search operator.
9. In the Time search text box, type a time. For this procedure, type the current date and time. You can copy a specific date and time from a report and paste it into the search text box.



NOTE: The format for Time is *EEE MMM dd HH:mm:ss z yyyy*, where:

EEE = Day in week (for example, Tue.)

MMM = Month in year (for example, Jan.)

dd = Day in month (for example, 05)

HH = Hour in day (for example, 23)

mm = Minute in hour (for example, 20)

ss = Second in minute (for example, 47)

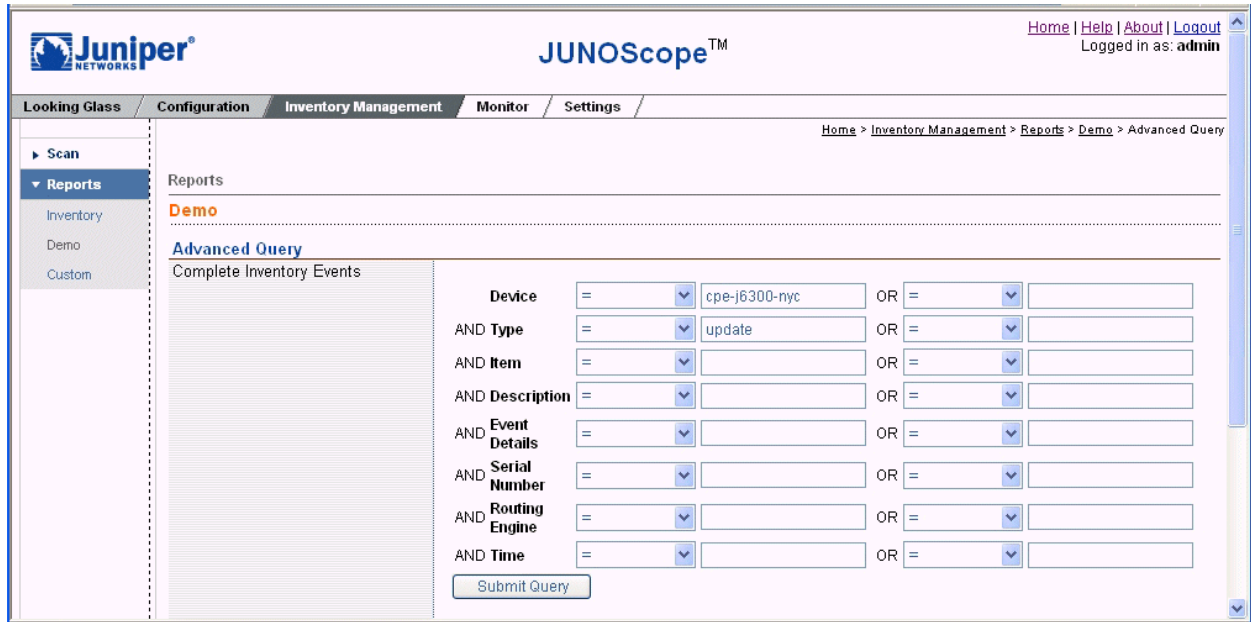
z = Time zone (for example, GMT)

yyyy = Year (for example, 2004)

To search for all items created on or after 3-5-2004 8pm PST 2004, type the following in the search field: `>= Fri Mar 05 20:00:00 PST 2004`.

10. Click Submit Query. The criteria you specified is displayed in the Report Result page.

For example, the following is an all events report advanced query.



The query produces the following report.

The screenshot shows the Juniper JUNOScope interface. The top navigation bar includes 'Looking Glass', 'Configuration', 'Inventory Management', 'Monitor', and 'Settings'. The 'Inventory Management' tab is active. The left sidebar shows 'Reports' with sub-items 'Inventory', 'Demo', and 'Custom'. The main content area is titled 'Report Result' and shows 'Complete Inventory Events'. A yellow box highlights the query configuration: 'Device = "cpe-j6300-nyc" and Type = "update"'. Below this, a table displays the report results.

Showing Records 1 to 2 of 2

You have configured the following query: (edit)
Device = "cpe-j6300-nyc" and Type = "update"

Device	Type	Item	Description	Event Details	Serial Number	Routing Engine	Time
cpe-j6300-nyc	UPDATE	JUNOS Software		JUNOS Software was downgraded from 7.3B1.1 to 7.0R3.2.			Mon May 02 10:42:02 PDT 2005
cpe-j6300-nyc	UPDATE	if-fe	One additional fast ethernet port	Free Ports Used of feature if-fe was changed from 2 to 1.			Tue Apr 26 15:22:27 PDT 2005

Encoding: ISO-8859-1
Line separator: DDS
Separation character: ,(comma)
Include titles: yes

Using the Like Device Query Operator

The like operator uses % as the wildcard character. The following are several examples of how to use the like operator wildcard to display specific information.

Example 1 To search for all Gigabit Ethernet cards on the network, follow these steps:

1. On the Select a Reports page, select Hardware Inventory > All. The Report Result page appears.
2. Click Advanced Query. The Advanced Query dialog box appears.
3. In the And Description drop-down list box, select like.
4. In the text box next to the And Description drop-down list box, type %G/E%.

The screenshot shows the 'Advanced Query' dialog box within the 'Inventory Management' > 'Reports' section. The 'Report' is set to 'All' and the current report is 'Complete Hardware Inventory'. The 'Show Query as:' dropdown is set to 'columns' with a 'Display' button next to it. The query builder consists of several rows, each with a field name, an operator dropdown, a text input box, and an 'OR' operator dropdown. The 'AND Description' row is selected, with the operator set to 'like' and the text input containing '%G/E%'. Other rows for 'Device', 'AND Model', 'AND Name', 'AND Version', 'AND Part Number', 'AND Serial Number', 'AND Chassis', 'AND Module', 'AND Sub Module', and 'AND Sub Sub Module' are currently empty.

Field	Operator	Value	OR
Device	=		=
AND Model	=		=
AND Name	=		=
AND Version	=		=
AND Part Number	=		=
AND Serial Number	=		=
AND Description	like	%G/E%	=
AND Chassis	=		=
AND Module	=		=
AND Sub Module	=		=
AND Sub Sub Module	=		=

Submit Query

- Click Submit Query. The Report Result page displays all of the Gigabit Ethernet cards by device.

Showing Records 1 to 50 of 252

You have configured the following query: [\(edit\)](#)
 Description is like "%G/E%"

Device	Model	Name	Version	Part Number	Serial Number	Description	Chassis	Module	Sub Module	Sub Sub Module	Created	Last Scanned
router5	M20	PIC	REV 03	750-003628	AS8991	1x G/E, 1000 BASE-LH		FPC 2	PIC 0		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005
router5	M20	PIC	REV 03	750-003628	AN4500	1x G/E, 1000 BASE-LH		FPC 2	PIC 2		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005
router5	M20	PIC	REV 02	750-003163	HA3856	1x G/E, 1000 BASE-SX		FPC 2	PIC 3		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005

Example 2 To search for all Gigabit Ethernet PICs on the network, follow these steps:

1. On the Select a Reports page, select Hardware Inventory > All. The Report Result page appears.
2. Click Advanced Query. The Advanced Query dialog box appears.
3. In the And Description drop-down list box, select like.
4. In the text box next to the And Description drop-down list box, type **%G/E%**.
5. In the And Sub Module drop-down list box, select like.
6. In the text box next to the And Sub Module drop-down list box, type **%PIC%**.

The screenshot shows the 'Advanced Query' dialog box within the 'Inventory Management' > 'Reports' section. The current report is 'Complete Hardware Inventory'. The 'Show Query as:' dropdown is set to 'columns' and a 'Display' button is next to it. The query fields are as follows:

Device	=		OR	=	
AND Model	=		OR	=	
AND Name	=		OR	=	
AND Version	=		OR	=	
AND Part Number	=		OR	=	
AND Serial Number	=		OR	=	
AND Description	like	%G/E%	OR	=	
AND Chassis	=		OR	=	
AND Module	=		OR	=	
AND Sub Module	like	%PIC%	OR	=	
AND Sub Sub Module	=		OR	=	

A 'Submit Query' button is located at the bottom of the dialog.

- Click [Submit Query](#). The Report Result page displays all of the Gigabit Ethernet PICs by device.

Showing Records 1 to 50 of 250

You have configured the following query: [\(edit\)](#)
 Description is like "%G/E%" and Sub Module is like "%PIC%"

[«](#)
[<](#)
[>](#)
[»](#)

Device	Model	Name	Version	Part Number	Serial Number	Description	Chassis	Module	Sub Module	Sub Sub Module	Created	Last Scanned
router5	M20	PIC	REV 03	750-003628	AS8991	1x G/E, 1000 BASE-LH		FPC 2	PIC 0		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005
router5	M20	PIC	REV 03	750-003628	AN4500	1x G/E, 1000 BASE-LH		FPC 2	PIC 2		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005
router5	M20	PIC	REV 02	750-003163	HA3856	1x G/E, 1000 BASE-SX		FPC 2	PIC 3		Tue Nov 23 09:48:38 PST 2004	Thu Mar 10 10:20:12 PST 2005

Example 3 To search for all 4X Gigabit Ethernet PICs on the network, follow these steps.

1. On the Select a Reports page, select Hardware Inventory > All. The Report Result page appears.
2. Click Advanced Query. The Advanced Query dialog box appears.
3. In the And Description drop-down list box, select like.
4. In the text box next to the And Description drop-down list box, type **%4X G/E%**.

The screenshot shows the 'Advanced Query' dialog box within the 'Inventory Management' section. The 'Reports' area is active, showing 'Report: All' and 'Complete Hardware Inventory'. The 'Show Query as:' dropdown is set to 'columns' with a 'Display' button next to it. The query fields are as follows:

Device	=	[]	OR	=	[]
AND Model	=	[]	OR	=	[]
AND Name	=	[]	OR	=	[]
AND Version	=	[]	OR	=	[]
AND Part Number	=	[]	OR	=	[]
AND Serial Number	=	[]	OR	=	[]
AND Description	like	%4X G/E%	OR	=	[]
AND Chassis	=	[]	OR	=	[]
AND Module	=	[]	OR	=	[]
AND Sub Module	=	[]	OR	=	[]
AND Sub Sub Module	=	[]	OR	=	[]

A 'Submit Query' button is located at the bottom of the dialog.

- Click Submit Query. The Report Result page displays all of the 4X Gigabit Ethernet cards by device.

Showing Records 1 to 32 of 32

You have configured the following query: [\(edit\)](#)
 Description is like "%4X G/E%"

[«](#)
[<](#)
[>](#)
[»](#)

Device	Model	Name	Version	Part Number	Serial Number	Description	Chassis	Module	Sub Module	Sub Sub Module	Created	Last Scanned
router1	M40e	PIC	REV 04	750-003737	AZ9587	4x G/E, 1000 BASE-SX		FPC 1	PIC 0		Wed Apr 06 16:10:33 PDT 2005	Wed Apr 06 16:10:33 PDT 2005
router1	M40e	PIC	REV 03	750-003737	HG6142	4x G/E, 1000 BASE-SX		FPC 4	PIC 0		Wed Apr 06 16:10:33 PDT 2005	Wed Apr 06 16:10:33 PDT 2005
router3	T320	PIC	REV 04	750-003737	BC1103	4x G/E, 1000 BASE-SX		FPC 7	PIC 0		Wed Apr 06 16:10:22 PDT 2005	Wed Apr 06 16:10:22 PDT 2005

Example 4 To search for a particular PIC, such as an 4X G/E, 1000Base-SX PIC on the network, follow these steps:

1. On the Select a Reports page, select Hardware Inventory > Search. The Specify Parameters page appears.
2. In the Description drop-down list box, select 4X G/E, 1000 BASE-SX. The drop-down list box includes a description of all hardware available on the network.

The screenshot shows the 'Specify Parameters' form for a hardware inventory search. The 'Description' field is selected with the value '4x G/E, 1000 BASE-SX'. Other fields like Device, Model, Name, Version, Part Number, Serial Number, Chassis, Module, Sub Module, Sub Sub Module, Created, and Last Scanned are also present with dropdown menus and input boxes. A 'Submit Query' button is located at the bottom of the form.

3. Click Submit Query. The Report Result page displays all of the 4X G/E, 1000Base-SX PICs by device name.

Showing Records 1 to 30 of 30

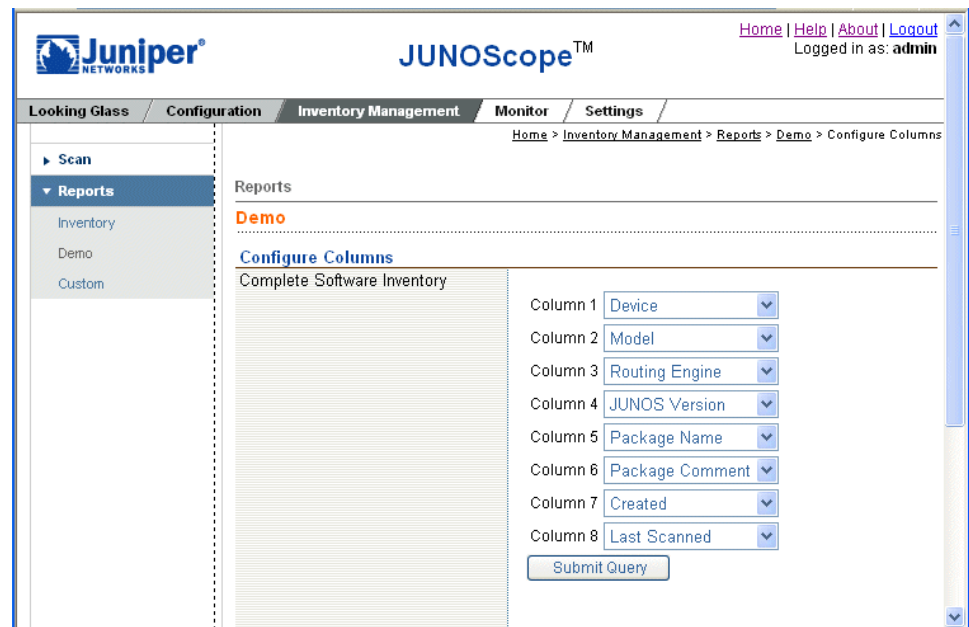
Device	Model	Serial Number	Part Number	Name	Version	Description	Chassis	Module	Sub Module	Sub Sub Module	Created	Last Scanned
router1	M40e	AZ9587	750-003737	PIC	REV 04	4x G/E, 1000 BASE-SX		FPC 1	PIC 0		Wed Apr 06 16:10:33 PDT 2005	Wed Apr 06 16:10:33 PDT 2005
router1	M40e	HG6142	750-003737	PIC	REV 03	4x G/E, 1000 BASE-SX		FPC 4	PIC 0		Wed Apr 06 16:10:33 PDT 2005	Wed Apr 06 16:10:33 PDT 2005

Configuring Report Columns

You can change the order in which columns appear in a displayed report.

To change the column order in a report, follow these steps:

1. Select the report that you want. To run a report, see “Viewing a Report” on page 241.
2. In the Report Result window, click Configure Column. The Configure Columns dialog box appears.



3. Configure the order of the columns as you want them to appear in your report by selecting a name for each column number. Use the drop-down text boxes to select column names.

The column options differ depending on the type of report you have selected:

- For event reports, the default column display order is device, type, item, description, event details, serial number, and time.
- For hardware inventory reports, the default column display order is device, model, name, version, part number, serial number, description, chassis ID, module, submodule, sub-submodule, created, and last scanned.

- For licensing inventory reports, the default column display order is device, model, feature name, description, free ports used, licenses used, licenses installed, licenses needed, created, and last scanned.
- For software inventory reports, the default sort order is device name, model number, Routing Engine on which the software image is installed, software version, software package name, package description, date when the software inventory record was created, and the date when the software inventory record was last scanned.



NOTE: The report column sort order you specify remains in effect until you change it again.

If you leave a column name empty, that column and subsequent columns will not appear in the report.

Resetting Report Customizations

Use Reset to clear all customized controls previously set, such as sort, advanced query, and configure column, and regenerate the report with default controls.

Saving a Custom Report

Use Save Custom Report to save any customization you make on a report, such as sort, advanced query, or configure columns. Saved reports are shared among all users. All saved reports are identified by their unique filenames.

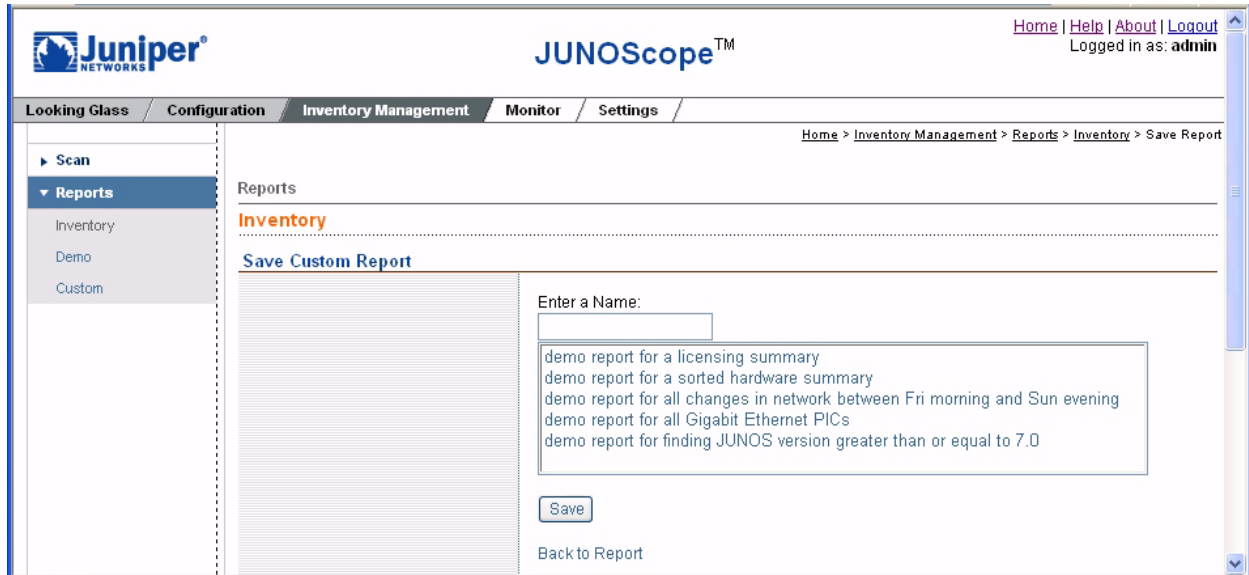


NOTE: Users with superuser and read-write privileges can save custom inventory reports.

To save a report, follow these steps:

1. Select and run the report that you want.

- Once you have a customized report (for example, sort, advance query, or configure columns), click Save. The Save Report dialog box appears.



- Type a filename in the text box. The report name must always start with a letter, and can contain letters, numbers, and the characters . (period), - (dash), and _ (underscore). You can select a previously saved report to overwrite it.
- Click Save or press Enter.

Deleting a Report

Users with superuser or read-only privileges can delete custom inventory reports.

To delete a report, follow these steps:

- In the Report Results page, click Custom in the left command pane. The Save Custom Report dialog box appears.
- Find the filename of the report you want to open.
- Click the Delete [X] icon to the right of the report name.

Viewing Report Data

You can view inventory reports in Extensible Markup Language (XML), Adobe Acrobat Portable Document Format (PDF), Microsoft Excel, or text format. If you select PDF or Excel format, depending on the client (browser and operating system) MIME setting, Acrobat Reader or Excel will either appear inside the browser, or run as a standalone application.

XML

To view a report in XML, follow these steps:

1. Select and open the report you want.
2. In the Report Result window, click XML. The report appears in the Report Result window in XML. Save it using the File > Save menu of the browser.

Microsoft Excel

To view a report in Microsoft Excel, follow these steps:

1. Select and open the report you want.
2. In the Report Result window, click Excel. Microsoft Excel opens and displays the current report. You can manipulate the report in Excel, and save the file in XLS file format.



NOTE: When you convert a report such as All Inventory Events to Microsoft Excel format, the time and date records in the Time column may not appear in the correct format. To format the Time column records correctly, follow these steps:

1. In Microsoft Excel, select the Time column.
2. Right-click to open the Format Cells dialog box.
3. Click the Number tab.
4. Select Time in the Category list box.
5. Select the correct time and date format in the Type list box.
6. Click OK.
7. Adjust the width of the Time column, if necessary, so that the entire value can be displayed.

If the width of the Time column is narrower than the time value being displayed, a series of ##### characters appear.

Adobe Acrobat PDF

To view a report in Adobe PDF, follow these steps:

1. Select and open the report you want.
2. In the Report Result window, click PDF. Adobe Acrobat Reader opens and displays the current report. You can manipulate the report in Adobe Acrobat, and save the file in PDF file format.

Text

You can view Inventory Management System reports in text format.



NOTE: You can view reports in text format for all report types except Hardware Inventory Summary and Licensing Inventory Summary.

Table 30 describes the supported text format.

Table 30: Report Text Formatting Options

Text Format	Option	Description
Encoding	ISO-8859-1	Also called ISO-Latin or Latin-1, this character set is used for HTTP (the transport protocol for Web documents) and is also used in the creation of HTML documents.
	US-ASCII	American Standard Code for Information Interchange, the standard character set for use on the Internet.
	UTF-8	8-bit Unicode Transformation Format, a lossless, variable-length character encoding for Unicode.
	UTF-16	16-bit Unicode Transformation Format, a character encoding form that provides a way to represent a series of abstract characters from Unicode and ISO/IEC 10646 as a series of 16-bit words suitable for storage or transmission by way of data networks.
Line separator	DOS	DOS and Windows operating systems use carriage return and line feed (CR/LF) as the line separator.
	UNIX	UNIX uses LF as the line separator.
Separator character	, (comma)	Character used to separate report data columns.
	; (semicolon)	Character used to separate report data columns.
	tab	Character used to separate report data columns.
	(pipe)	Character used to separate report data columns.
	space	Character used to separate report data columns.
	none	No character used to separate report data columns.
Include titles	Yes	Includes report data column titles.
	No	Does not include report data column titles.

To view a report in text format, follow these steps:

1. Select and open the report you want.
2. In the Report Result window, click the Text options that you want.
3. Click Get Text.

Where To Go From Here

- To use the Inventory Management System to scan for device inventory items, see “Scanning Inventory Data” on page 231.
- To extract Inventory Management System data to an external inventory application using a read-only SQL interface, see “Exporting Inventory Management System Data” on page 291.