JUNIPER NETWORKS

SRC PE Software

Monitoring and Troubleshooting Guide

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SRC PE Software Monitoring and Troubleshooting Guide
Release 4.0.x

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About the Documentation

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SRC Documentation and Release Notes

For a list of related SRC documentation, see http://www.juniper.net/techpubs/.

If the information in the latest *SRC Release Notes* differs from the information in the SRC guides, follow the *SRC Release Notes*.

Audience

This documentation is intended for experienced system and network specialists working with routers running JUNOS® and JUNOSe Software in an Internet access environment. We assume that readers know how to use the routers, directories, and RADIUS servers that they will deploy in their SRC networks. If you are using the SRC software in a cable network environment, we assume that you are familiar with the PacketCable Multimedia Specification (PCMM) as defined by Cable Television Laboratories, Inc. (CableLabs) and with the Data-over-Cable Service Interface Specifications (DOCSIS) 1.1 protocol. We also assume that you are familiar with operating a multiple service operator (MSO) multimedia-managed IP network.

Documentation Conventions

Table 1 on page xviii defines the notice icons used in this guide. Table 2 on page xviii defines text conventions used throughout this documentation.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2: Text Conventions

Convention	Description	Examples
Bold text like this	• Represents keywords, scripts, and tools in text. • Represents a GUI element that the user selects, clicks, checks, or clears.	• Specify the keyword **exp-msg**. • Run the **install.sh** script. • Use the **pkgadd** tool. • To cancel the configuration, click **Cancel**.
Bold text like this	Represents text that the user must type.	**user@host# set cache-entry-age *cache-entry-age***

`Fixed-width text like this`	Represents information as displayed on your terminal's screen, such as CLI commands in output displays.	`nic-locators {`
		`  login {`
		`  resolution {`
		`  resolver-name /realms/`
		`  login/A1;`
		`  key-type LoginName;`
		`  value-type SaeId;`
		`  }`

Regular sans serif typeface	• Represents configuration statements. • Indicates SRC CLI commands and options in text. • Represents examples in procedures. • Represents URLs.	• **system ldap server{ stand-alone;** • Use the **request sae modify device failover** command with the **force** option • **user@host# . . .** • **http://www.juniper.net/techpubs/software/management/src/api-index.html**
Italic sans serif typeface	Represents variables in SRC CLI commands.	**user@host# set local-address *local-address***
Angle brackets	In text descriptions, indicate optional keywords or variables.	Another runtime variable is <gfwif>.
Key name	Indicates the name of a key on the keyboard.	Press Enter.

Table 2: Text Conventions *(continued)*

Key names linked with a plus sign (+)	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
Italic typeface	• Emphasizes words. • Identifies book names. • Identifies distinguished names. • Identifies files, directories, and paths in text but not in command examples.	• There are two levels of access: *user* and *privileged*. • *SRC PE Getting Started Guide* • *o=Users, o=UMC* • The */etc/default.properties* file.
Backslash	At the end of a line, indicates that the text wraps to the next line.	Plugin.radiusAcct-1.class=\ net.juniper.smgt.sae.plugin\ RadiusTrackingPluginEvent
Words separated by the | symbol	Represent a choice to select one keyword or variable to the left or right of this symbol. (The keyword or variable may be either optional or required.)	diagnostic | line

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at https://www.juniper.net/cgi-bin/docbugreport/. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf .
- Product warranties—For product warranty information, visit http://www.juniper.net/support/warranty/ .
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: http://www.juniper.net/customers/support/
- Search for known bugs: http://www2.juniper.net/kb/
- Find product documentation: http://www.juniper.net/techpubs/
- Find solutions and answer questions using our Knowledge Base: http://kb.juniper.net/
- Download the latest versions of software and review release notes: http://www.juniper.net/customers/csc/software/
- Search technical bulletins for relevant hardware and software notifications: https://www.juniper.net/alerts/
- Join and participate in the Juniper Networks Community Forum: http://www.juniper.net/company/communities/
- Open a case online in the CSC Case Management tool: http://www.juniper.net/cm/

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://tools.juniper.net/SerialNumberEntitlementSearch/

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at http://www.juniper.net/cm/ .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see http://www.juniper.net/support/requesting-support.html .

PART 1

Monitoring and Troubleshooting the SRC Software and C Series Controllers

- Overview of Monitoring and Troubleshooting Tools on page 3

CHAPTER 1

Overview of Monitoring and Troubleshooting Tools

- Overview of Monitoring and Troubleshooting Tools on page 3

Overview of Monitoring and Troubleshooting Tools

The SRC software provides the following tools to help you monitor and troubleshoot your SRC environment:

- Logging support for SRC components
- System log server on C Series Controllers
- NIC test commands to troubleshoot NIC configuration
- Router simulation to facilitate application testing
- Subscriber simulation to facilitate application testing
- SNMP agent to monitor SRC components as well as system performance. The agent can send data to SNMP network management systems.
- SNMP trap notification to SNMP management systems
- SRC CLI to monitor specified SRC components and C Series Controllers
- C-Web interface to monitor specified SRC components and C Series Controllers

In addition, the SRC Volume Tracking Application (SRC VTA) in the SRC application library includes a Web-based application to test events.

The SRC software also includes various sample and test clients for the dynamic service activator, the SAE remote interface, and the SAE plug-in interface.

Related Topics

- Overview of Logging for SRC Components on page 7
- Monitoring with the SRC CLI and the C-Web Interface on page 83
- SRC Monitoring Options on page 83
- Overview of SNMP Traps on page 57

PART 2

Using Logging for the SRC Software and C Series Controllers

- Configuring Logging for SRC Components on page 7
- Configuring Logging for SRC Components with the CLI on page 13
- Configuring Logging for SRC Components (C-Web Interface) on page 19

CHAPTER 2

Configuring Logging for SRC Components

- Overview of Logging for SRC Components on page 7
- Categories and Severity Levels for Event Messages on page 8
- Rotation of Log Files on page 10

Overview of Logging for SRC Components

SRC components and applications generate event messages that you can save in logs—either by writing the messages to text files or by using the system log (syslog) facilities. You can use these logs to monitor the SRC components and troubleshoot problems.

Each SRC component has its own logging configuration. For example, the license server, the NIC, the SAE, and SNMP each have logging configuration. The C Series Controller includes a system log server that you can configure to manage messages generated on that platform. You can use the CLI and the C-Web interface to configure logging on a C Series Controller and to configure the system log server on a C Series Controller.

When you enable logging to a file, by default SRC components and applications write log files in the/opt/UMC/<component-directory>/var/log folder for a component, such as /opt/UMC/sae/var/log. .

All log files with the file extension .log in a *var/log* directory are rotated daily. When a new log file is created, the previous day's file is compressed and saved.

Related Topics

- Overview of the C Series Controller Log Server
- The syslog Protocol—draft-ietf-syslog-protocol-16.txt (July 2006 expiration)
- Configuring the SDX SNMP Agent (SRC CLI)
- Configuration Statements for SRC Component Logging on page 13
- Categories and Severity Levels for Event Messages on page 8

Categories and Severity Levels for Event Messages

In the logging configuration, you can specify a filter for each type of log. This filter can include an expression that defines the *categories* and *severity levels* of event messages that the software saves.

Defining Categories

The category of an event message defines the SRC component that generated the event message. If you want to view only event logs in a specific category, you can define a variable <category>, which is a text string that matches the name of a category. This variable is not case sensitive. To view the names of categories for event messages, view a log file for one of the default filters.

For example, the category Cops defines event messages generated by the COPS server. Similarly, the category CopsMsg defines a particular sort of event message that the COPS server generates.

Juniper Networks Customer Service can also provide names of categories, especially for troubleshooting purposes.

Defining Severity Levels

The event filter provides 128 levels of severity numbered 1–127. A higher number indicates a higher level of severity. Common levels of severity also have a specific name, as shown in Table 3 on page 8.

CAUTION: Enabling the generation of debug log messages has a negative affect on system performance. Do not enable debug log messages unless you are instructed to do so by Juniper Networks Technical Assistance Center (JTAC).

Table 3: Named Severity Levels

Name	Severity Level
logmin	1
debug	10
info	20
notice	30
warning	40
error	50
crit	60
alert	70

Table 3: Named Severity Levels *(continued)*

Name	Severity Level
emerg	80
panic	90
logmax	127

You can define a severity level as follows:

- Specify an explicit severity. For example:
  - debug—Defines only debug messages
- Specify a minimum severity and a maximum severity. For example:
  - info-warning—Defines messages of minimum severity level of info and a maximum severity level of warning
  - Accept the default minimum (logmin) or maximum (logmax) severity by omitting the minimum or maximum severity. For example:
  - info-—Defines messages of minimum severity level info and maximum severity level logmax
  - -warning—Defines messages of minimum severity level logmin and maximum severity level warning
- Specify no severities to log all event messages.

The syntax for the severity takes the format:

[<severity>] | [<minimumSeverity>]-[<maximumSeverity>]

Use either the name or the number of a severity level shown in Table 3 on page 8 for the variables in this syntax.

Defining Filters

You specify a filter by defining an expression with the following format:

singlematch [,singlematch]*

- singlematch—[!] (<category> | ([<category>]/[<severity>] | [<minimumSeverity>]-[<maximumSeverity>]))
- !—Do not log matching events
- <category>—See “Defining Categories” on page 8
- [<severity>] | [<minimumSeverity>]-[<maximumSeverity>]—See “Defining Severity Levels” on page 8 .

The software filters events by evaluating each subexpression in order from left to right. When the software determines that an event message matches a subexpression, the software logs or ignores the message accordingly. You can specify an unlimited number of subexpressions; however, the order in which you specify the subexpressions affects the result.

Table 4 on page 10 shows some examples of filters.

Table 4: Examples of Filters for Event Messages

Syntax	Event Messages Saved
/	All event messages
/info-	Event messages of level info and above from all categories
Cops/debug	Debug events from COPS category only
!Cops,/debug	All debug events except those from COPS category
CopsMsg/info-,!CopsMsg,Cops	All messages from COPS category, except those from CopsMsg category with level less than info

Related Topics

- Overview of Logging for SRC Components on page 7
- Overview of SNMP Traps on page 57

Rotation of Log Files

On C Series Controllers, log files that contain entries are rotated daily when other daily system tasks run on the system. The system retails 5 log files for a component before overwriting the oldest file.

When a new log file is opened to replace a file from the previous day that contains content, a number (1–4) is appended to the name of the older file. For example, *sae_debug.log.4* would be the oldest file in the rotation, *sae_debug.log.1* would be the newest file in the rotation; *sae_debug.log* would be the active log file for SAE.

On C Series Controllers, the software compresses log files and appends the *.gz* suffix; for example, *sae_debug.log.4.gz*. Log files are stored in the */opt/UMC/component-name/var/log directory*; for example, */opt/UMC/sae/var/log*.

NOTE: On a C Series Controller, log files are automatically rotated on a daily basis. Typically, you do not specify a maximum file size when log files are rotated. Consider whether specifying a rollover filename is needed for SRC software running on a C Series Controller. If you do configure a rollover file when files are rotated, the software creates five compressed versions of partial log files, and one uncompressed log file.

You can configure components to send log messages to the system log server (also called a syslog server) on the platform on which the SRC software is running.

If you plan to filter log messages, you should be familiar with severity levels and filters for logging before you configure system logging for a component.

Related Topics

- Overview of Logging for SRC Components on page 7
- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20

CHAPTER 3

Configuring Logging for SRC Components with the CLI

- Configuration Statements for SRC Component Logging on page 13
- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring System Logging (SRC CLI) on page 15

Configuration Statements for SRC Component Logging

Use the following configuration statements to configure logging for SRC components. You access these statements from the hierarchy for a component, such as:

- **[edit shared acp configuration]**
- **[edit shared sae configuration]**
- **[edit shared nic scenario** *scenario-name* **]**
- **[edit snmp agent]**
- **[edit slot 0 jps]**

```
logger name {
  file-logger {
    filter filter ;
    filename filename ;
    rollover-filename rollover-filename ;
    maximum-file-size maximum-file-size ;
  }
  syslog-logger {
    filter filter ;
    syslog-host syslog-host ;
    syslog-facility syslog-facility ;
    format format ;
  }
}
```

Related Topics

- For detailed information about each configuration statement, see *SRC PE CLI Command Reference*.
- Configuring System Logging (SRC CLI) on page 15

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Before You Configure Logging for SRC Components on page 19
- Overview of Logging for SRC Components on page 7

Configuring a Component to Store Log Messages in a File (SRC CLI)

Use the following statements to configure an SRC component to store log messages in a file:

```
logger name file {
  filter filter;
  filename filename;
  rollover-filename rollover-filename;
  maximum-file-size maximum-file-size;
}
```

If you plan to filter log messages, you should be familiar with severity levels and filters for logging before you configure system logging for a component. See "Categories and Severity Levels for Event Messages" on page 8.

To configure component logging to a file:

1. From configuration mode, access the configuration statement that configures the logging destination for the component.

   ```
   [edit]
   user@host# component-hierarchy logger name file
   ```

   For example:

   ```
   [edit]
   user@host# edit shared sae configuration logger sae-file-log-1 file
   ```

   ```
   [edit]
   user@host# edit snmp agent logger snmp-file-log-1 file
   ```

   ```
   [edit]
   user@host# edit slot 0 jps logger jps-file-log-1 file
   ```

2. Specify the filter to define which event messages the software logs or disregards.

   ```
   [edit shared sae configuration logger sae-file-log-1 file]
   user@host# set filter filter
   ```

   If you do not specify a filter, logging to the specified file is disabled.

   Filters can specify the logging level, such as debug, or can specify expressions.

3. Specify the absolute path of the filename that contains the current log files.

   ```
   [edit shared sae configuration logger sae-file-log-1 file]
   user@host# set filename filename
   ```


Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

4. (Optional) Specify the absolute path of the filename that contains the log history.

   [edit shared sae configuration logger sae-file-log-1 file]
   user@host# set rollover-filename *rollover-filename*

   When the log file reaches the maximum size, the software closes the log file and renames it. If a previous rollover file exists, the software overwrites it. The software then reopens the log file and continues to save event messages in it.

NOTE: On a C Series Controller, log files are automatically rotated on a daily basis. If you do configure a rollover file when files are rotated, the software creates five compressed versions of partial log files, and one uncompressed log file.

5. (Optional) Specify the maximum size of the log file and the rollover file.

   [edit shared sae configuration logger sae-file-log-1 file]
   user@host# set maximum-file-size *maximum-file-size*

   Do not set the maximum file size to a value greater than the available disk space.

NOTE: On a C Series Controller, log files are automatically rotated on a daily basis.

Related Topics

- Configuring System Logging (SRC CLI) on page 15
- Saving System Log Messages to a File (SRC CLI)
- Sending System Log Messages to Other Servers (SRC CLI)
- Before You Configure Logging for SRC Components on page 19
- Overview of Logging for SRC Components on page 7

Configuring System Logging (SRC CLI)

Use the following statements to configure the SRC software to send log messages to the system logging facility:

```
logger name syslog {
    filter filter;
    host host;
    facility facility;
    format format;
}
```

You can configure components to send log messages to the system log server (also called a syslog server) on the platform on which the SRC software is running.

If you plan to filter log messages, you should be familiar with severity levels and filters for logging before you configure system logging for a component. See “Categories and Severity Levels for Event Messages” on page 8.

To configure component logging to the system log server:

1. From configuration mode, access the configuration statement that configures the logging destination for the component. For example:

   [edit]
   user@host# ***component-hierarchy*** **logger** ***name*** **syslog**

   For example:

   [edit]
   user@host# edit shared sae configuration logger sae-sys-1 syslog

   [edit]
   user@host# edit snmp agent logger snmp-sys-1 syslog

   [edit]
   user@host# edit slot 0 jps logger jps-sys-1 syslog

2. (Optional) Specify the filter to define which event messages the software logs or disregards.

   [edit shared sae configuration logger sae-sys-1 syslog]
   user@host# set filter ***filter***

   Filters can specify the logging level, such as debug, or can specify expressions.

3. (Optional) Change the IP address or name of a host that collects event messages by means of a standard system logging daemon.

   [edit shared sae configuration logger sae-sys-1 syslog]
   user@host# set host ***host***

   By default, the host is **loghost** for the syslog server on the local host. (Configuration in the */etc/hosts* file sets **loghost** to **localhost**.)

   Make sure that the user under which the J2EE application server or Web application server runs has write access to this folder. If this user does not have write access to the default folder, configure the component or application to write logs in folders to which the user has write access.

4. (Optional) Specify the type of system log in accordance with the system logging protocol, a value of 0–23.

   [edit shared sae configuration logger sae-sys-1 syslog]
   user@host# set facility ***facility***

5. (Optional) Specify the Message Format string that indicates how the information in an event message is printed.

[edit shared sae configuration logger sae-sys-1 syslog]
user@host# set format *format*

Specify a Message Format string as defined in

http://java.sun.com/j2se/1.4.2/docs/api/java/text/MessageFormat.html

The fields available for events are:

- 0—Time and date of the event
- 1—Name of the thread generating the event
- 2—Text message of the event
- 3—Category of the event
- 4—Priority of the event

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Saving System Log Messages to a File (SRC CLI)
- Configuration Statements for SRC Component Logging on page 13
- Before You Configure Logging for SRC Components on page 19
- Overview of Logging for SRC Components on page 7

CHAPTER 4

Configuring Logging for SRC Components (C-Web Interface)

- Before You Configure Logging for SRC Components on page 19
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring the SNMP to Store Log Messages in a File (C-Web Interface) on page 21
- Configuring JPS to Store Log Messages in a File (C-Web Interface) on page 21

Before You Configure Logging for SRC Components

Before you configure logging for SRC components, you should be familiar with the logging filters that you can configure. If you use a syslog log facility, you should be familiar with the syslog protocol. For information about logging filters see "Overview of Logging for SRC Components" on page 7.

If you plan to filter log messages, you should be familiar with severity levels and filters for logging before you configure system logging for a component. See "Categories and Severity Levels for Event Messages" on page 8.

Related Topics

- Configuring System Logging (SRC CLI) on page 15
- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuration Statements for SRC Component Logging on page 13

Configuring ACP to Store Log Messages in a File (C-Web Interface)

To configure component logging for ACP:

1. Click **Configure**, expand **Shared**, expand **ACP**, and then click **Configuration**.

   The Configuration pane appears.

2. From the Create new list, select **Logger**.

3. In the dialog box, type a name for the new logger, and click **OK**.

   The name of the logger appears in the side pane and the Logger pane.

4. Expand the logger in the side pane, and then click **File** or **Syslog**.
5. Click **Create,** enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring SRC ACP (C-Web Interface)
- Overview of SRC ACP

Configuring the SAE to Store Log Messages in a File (C-Web Interface)

To configure component logging for SAE:

1. Click **Configure**, expand **Shared**, expand **ACP**, and then click **Configuration**.

   The Configuration pane appears.

2. From the Create new list, select **Logger**.

   The name of the logger appears in the side pane and the Logger pane.

3. Expand the logger in the side pane, and then click **File** or **Syslog**.
4. Click **Create**, enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring the SNMP to Store Log Messages in a File (C-Web Interface) on page 21
- Configuring JPS to Store Log Messages in a File (C-Web Interface) on page 21

Configuring NIC to Store Log Messages in a File (C-Web Interface)

To configure component logging for NIC:

1. Click **Configure**, expand **Shared**, and then click **NIC**.

   The NIC pane appears.

2. In the side pane, expand a configuration scenario, such as Scenario:OnePopSharedIp.

3. In the side pane, expand a host, such as Demohost.

   The Hosts pane appears.

4. From the Create new list, select **Logger**.

   The name of the logger appears in the side pane and the Logger pane.

5. Expand the logger in the side pane, and then click **File** or **Syslog**.

6. Click **Create**, enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring the SNMP to Store Log Messages in a File (C-Web Interface) on page 21
- Configuring JPS to Store Log Messages in a File (C-Web Interface) on page 21

Configuring the SNMP to Store Log Messages in a File (C-Web Interface)

To configure component logging for SNMP:

1. Click **Configure**, expand **Snmp**, and then click **Agent**.

   The Agent pane appears.

2. From the Create new list, select **Logger**.

   The name of the logger appears in the side pane and the Logger pane.

3. Expand the logger in the side pane, and then click **File** or **Syslog**.

4. Click **Create,** enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring JPS to Store Log Messages in a File (C-Web Interface) on page 21

Configuring JPS to Store Log Messages in a File (C-Web Interface)

To configure component logging for JPS:

1. Click **Configure**, expand **Slot**, and then expand the slot for which you want to configure component logging.
2. Click **JPS**.

   The JPS pane appears.
3. From the Create new list, select **Logger**.

   The name of the logger appears in the side pane and the Logger pane.
4. Expand the logger in the side pane, and then click **File** or **Syslog**.
5. Click **Create**, enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring a Component to Store Log Messages in a File (SRC CLI) on page 14
- Configuring ACP to Store Log Messages in a File (C-Web Interface) on page 19
- Configuring the SAE to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring NIC to Store Log Messages in a File (C-Web Interface) on page 20
- Configuring the SNMP to Store Log Messages in a File (C-Web Interface) on page 21

PART 3

Using Simulated Router Drivers and Simulated Subscribers for Testing

- Configuring a Simulated Router Driver for Testing (SRC CLI) on page 25
- Configuring a Simulated Router Driver for Testing (C-Web Interface) on page 27
- Using Simulated Subscribers for Testing (SRC CLI) on page 29

CHAPTER 5

Configuring a Simulated Router Driver for Testing (SRC CLI)

- Overview of Simulated Router Drivers for the SRC Software on page 25
- Configuring Simulated Router Drivers (SRC CLI) on page 25

Overview of Simulated Router Drivers for the SRC Software

Simulated router drivers allow you to create subscriber sessions without connecting to a router. You can then use the simulated subscriber sessions to test SAE applications.

The SRC software has a default simulated router driver instance called default@simJunos.

Related Topics

- Configuring Simulated Router Drivers (SRC CLI) on page 25
- Configuring a Simulated Router Driver for Testing (C-Web Interface) on page 27

Configuring Simulated Router Drivers (SRC CLI)

You configure a simulated router in the same way that you configure a real router.

Before you configure a simulated router driver:

- Make sure that you configure an interface classification script for the simulated router.

  See Overview of Classification Scripts .
- Configure the SAE to instantiate a simulated router driver for each simulated router that you create.
- (Optional) Configure a session store for a simulated router driver. The driver uses the session store to store subscriber sessions, service sessions, and policies.

  See Configuring the Session Store Feature (SRC CLI)

Use the following configuration statements to configure simulated router drivers:

```
shared sae configuration driver simulated name {
  driver-type (junos | junose | pcmm);
  router-version router-version ;
  driver-address driver-address ;
```

```
    transport-router transport-router ;
}
```

To configure simulated router drivers:

1. From configuration mode, access the configuration statement that configures simulated router drivers. In this sample procedure, west-region is the name of the SAE group, and default@simjunos is the name of the simulated router driver.

   ```
   [edit]
   user@host# edit shared sae group west-region configuration driver simulated
     default@simJunos
   ```

2. Configure the type of device that the simulated driver simulates.

   ```
   [edit shared sae group west-region configuration driver simulated default@simJunos]
   user@host#  set driver-type (junos | junose | pcmm)
   ```

3. (Optional) Configure the version of the router software to simulate. This is the software version that is sent by the router.

   ```
   [edit shared sae group west-region configuration driver simulated default@simJunos]
   user@host#  set router-version router-version
   ```

4. Configure the IP address of the device driver.

   ```
   [edit shared sae group west-region configuration driver simulated default@simJunos]
   user@host#  set driver-address driver-address
   ```

5. (Optional) Configure the name of a virtual router that is used to connect to the SAE. This value is passed to the router initialization script. It is not supported on the JUNOS routing platform.

   ```
   [edit shared sae group west-region configuration driver simulated default@simJunos]
   user@host#  set transport-router transport-router
   ```

6. (Optional) Verify the configuration of the simulated driver.

   ```
   [edit shared sae group west-region configuration driver simulated
   default@simJunos]

   user@host# show

   driver-type junos;
   router-version 8.4;
   driver-address 10.10.90.5;
   ```

Related Topics

- For information about setting up SAE groups, see Configuring an SAE Group.
- Configuring a Simulated Router Driver for Testing (C-Web Interface) on page 27
- Overview of Simulated Router Drivers for the SRC Software on page 25

CHAPTER 6

Configuring a Simulated Router Driver for Testing (C-Web Interface)

- Configuring a Simulated Router Driver for Testing (C-Web Interface) on page 27

Configuring a Simulated Router Driver for Testing (C-Web Interface)

You configure a simulated router in the same way that you configure a real router.

Before you configure a simulated router driver:

- Make sure that you configure an interface classification script for the simulated router.

  See Overview of Classification Scripts .
- Configure the SAE to instantiate a simulated router driver for each simulated router that you create.
- (Optional) Configure a session store for a simulated router driver. The driver uses the session store to store subscriber sessions, service sessions, and policies.

  See Configuring the Session Store Feature (SRC CLI).

To configure simulated router drivers:

1. Click **Configure**, expand **Shared**, expand **SAE**, expand **Configuration**, and then click **Driver.**

   The Driver pane appears.
2. From the Create new list, select **Simulated**.
3. In the dialog box, type a name for the new simulated driver, and click **OK**.

   The name of the simulated driver appears in the side pane and the Driver pane.
4. Enter information as described in the Help text in the main pane, and click **Apply**.

Related Topics

- Configuring Simulated Router Drivers (SRC CLI) on page 25
- For information about setting up SAE groups, see Configuring an SAE Group
- Overview of Simulated Router Drivers for the SRC Software on page 25

CHAPTER 7

Using Simulated Subscribers for Testing (SRC CLI)

- Overview of Simulated Subscribers on page 29
- Commands to Manage Simulated Subscribers on page 29
- Logging In Simulated Subscribers (SRC CLI) on page 30
- Viewing Subscriber Sessions (SRC CLI) on page 33
- Logging Out Simulated Subscribers (SRC CLI) on page 33

Overview of Simulated Subscribers

Simulated subscribers allow you to create subscriber sessions without connecting to a router or other device. When developing an application, you can log in as a simulated subscriber to test a portal without a router or a client PC. You can log out from the simulated subscriber session in the same way that you log out from other subscriber sessions.

Related Topics

- Logging In Simulated Subscribers (SRC CLI) on page 30
- Logging Out Simulated Subscribers (SRC CLI) on page 33
- Viewing Subscriber Sessions (SRC CLI) on page 33
- Commands to Manage Simulated Subscribers on page 29

Commands to Manage Simulated Subscribers

You can use the following operational mode commands to manage simulated subscribers.

- **request sae login ipv4 authenticated-dhcp**
- **request sae login ipv4 authenticated-interface**
- **request sae login ipv4 unauthenticated-dhcp**
- **request sae login ipv4 unauthenticated-interface**
- **request sae logout dn**
- **request sae logout ip**

- **request sae logout login-name**
- **request sae logout session-id**
- **show sae subscribers**
- **show sae subscribers dn**
- **show sae subscribers ip**
- **show sae subscribers login-name**
- **show sae subscribers session-id**

Related Topics

- Overview of Simulated Subscribers on page 29
- For detailed information about each command, see the *SRC PE CLI Command Reference*
- Logging In Simulated Subscribers (SRC CLI) on page 30
- Logging Out Simulated Subscribers (SRC CLI) on page 33
- Viewing Subscriber Sessions (SRC CLI) on page 33

Logging In Simulated Subscribers (SRC CLI)

You can log in IPv4 subscribers in the following ways:

- Logging In Authenticated DHCP Subscribers on page 30
- Logging In Authenticated Interface Subscribers on page 31
- Logging In Unauthenticated DHCP Subscribers on page 31
- Logging In Unauthenticated Interface Subscribers on page 32

Logging In Authenticated DHCP Subscribers

Use the following command to log in simulated IPv4 authenticated DHCP subscribers:

request sae login ipv4 authenticated-dhcp virtual-router *virtual-router* **address** *address* **login-name** *login-name* **mac-address** *mac-address* <service-bundle *service-bundle* > <radius-class *radius-class* > <interface-name *interface-name* > <interface-alias *interface-alias* > <interface-description *interface-description* > <nas-port-id *nas-port-id* >

To log in a simulated IPv4 authenticated DHCP subscriber:

1. Issue the **request sae login ipv4 authenticated-dhcp** command. Specify the **virtual-router**, **address**, **login-name**, and **mac-address** options.

   user@host> request sae login ipv4 authenticated-dhcp virtual-router *virtual-router* **address** *address* **login-name** *login-name* **mac-address** *mac-address*

2. (Optional) To specify the service bundle used when logging in the simulated subscriber, use the **service-bundle** option.
3. (Optional) To specify the RADIUS class used when logging in the simulated subscriber, use the **radius-class** option.

4. (Optional) To specify the virtual interface used when logging in the simulated subscriber, use the **interface-name** option.
5. (Optional) To specify the interface description used when logging in the simulated subscriber, use the **interface-alias** option.

   If you are simulating JUNOSe routers, the interface alias is the description that is configured on JUNOSe routers with the **interface description** command.
6. (Optional) To specify the alternate interface name used when logging in the simulated subscriber, use the **interface-description** option.
7. (Optional) To specify the port identifier of an interface used when logging in the simulated subscriber, use the **nas-port-id** option.

Logging In Authenticated Interface Subscribers

Use the following command to log in simulated IPv4 authenticated interface subscribers:

request sae login ipv4 authenticated-interface virtual-router *virtual-router* **address** *address* **login-name** *login-name* <service-bundle *service-bundle* > <radius-class *radius-class* > <interface-name *interface-name* > <interface-alias *interface-alias* > <interface-description *interface-description* > <nas-port-id *nas-port-id* >

To log in a simulated IPv4 authenticated interface subscriber:

1. Issue the **request sae login ipv4 authenticated-interface** command. Specify the **virtual-router**, **address**, and **login-name** options.

   user@host> request sae login ipv4 authenticated-interface virtual-router *virtual-router* **address** *address* **login-name** *login-name*

2. (Optional) To specify the service bundle used when logging in the simulated subscriber, use the **service-bundle** option.
3. (Optional) To specify the RADIUS class used when logging in the simulated subscriber, use the **radius-class** option.
4. (Optional) To specify the virtual interface used when logging in the simulated subscriber, use the **interface-name** option.
5. (Optional) To specify the interface description used when logging in the simulated subscriber, use the **interface-alias** option.

   If you are simulating JUNOSe routers, the interface alias is the description that is configured on JUNOSe routers with the **interface description** command.
6. (Optional) To specify the alternate interface name used when logging in the simulated subscriber, use the **interface-description** option.
7. (Optional) To specify the port identifier of an interface used when logging in the simulated subscriber, use the **nas-port-id** option.

Logging In Unauthenticated DHCP Subscribers

Use the following command to log in simulated IPv4 unauthenticated DHCP subscribers:

request sae login ipv4 unauthenticated-dhcp virtual-router *virtual-router* **address** *address* **mac-address** *mac-address* <**login-name** *login-name* > <**service-bundle** *service-bundle* > <**radius-class** *radius-class* > <**interface-name** *interface-name* > <**interface-alias** *interface-alias* > <**interface-description** *interface-description* > <**nas-port-id** *nas-port-id* >

To log in a simulated IPv4 unauthenticated DHCP subscriber:

1. Issue the **request sae login ipv4 unauthenticated-dhcp** command. Specify the **virtual-router**, **address**, and **mac-address** options.

   user@host> request sae login ipv4 unauthenticated-dhcp virtual-router *virtual-router* **address** *address* **mac-address** *mac-address*

2. (Optional) To specify the fully-qualified name used to log in the simulated subscriber, use the **login-name** option.
3. (Optional) To specify the service bundle used when logging in the simulated subscriber, use the **service-bundle** option.
4. (Optional) To specify the RADIUS class used when logging in the simulated subscriber, use the **radius-class** option.
5. (Optional) To specify the virtual interface used when logging in the simulated subscriber, use the **interface-name** option.
6. (Optional) To specify the interface description used when logging in the simulated subscriber, use the **interface-alias** option.

   If you are simulating JUNOSe routers, the interface alias is the description that is configured on JUNOSe routers with the **interface description** command.
7. (Optional) To specify the alternate interface name used when logging in the simulated subscriber, use the **interface-description** option.
8. (Optional) To specify the port identifier of an interface used when logging in the simulated subscriber, use the **nas-port-id** option.

Logging In Unauthenticated Interface Subscribers

Use the following command to log in simulated IPv4 unauthenticated interface subscribers:

request sae login ipv4 unauthenticated-interface virtual-router *virtual-router* **interface-name** *interface-name* <**address** *address* > <**login-name** *login-name* > <**service-bundle** *service-bundle* > <**radius-class** *radius-class* > <**interface-alias** *interface-alias* > <**interface-description** *interface-description* > <**nas-port-id** *nas-port-id* >

To log in a simulated IPv4 authenticated interface subscriber:

1. Issue the **request sae login ipv4 authenticated-interface** command. Specify the **virtual-router** and **interface-name** options.

   user@host> request sae login ipv4 authenticated-interface virtual-router *virtual-router* **interface-name** *interface-name*

2. (Optional) To specify the IP address from which you log in the simulated subscriber, use the **address** option.
3. (Optional) To specify the fully-qualified name used to log in the simulated subscriber, use the **login-name** option.
4. (Optional) To specify the service bundle used when logging in the simulated subscriber, use the **service-bundle** option.
5. (Optional) To specify the RADIUS class used when logging in the simulated subscriber, use the **radius-class** option.
6. (Optional) To specify the interface description used when logging in the simulated subscriber, use the **interface-alias** option.

   If you are simulating JUNOSe routers, the interface alias is the description that is configured on JUNOSe routers with the **interface description** command.
7. (Optional) To specify the alternate interface name used when logging in the simulated subscriber, use the **interface-description** option.
8. (Optional) To specify the port identifier of an interface used when logging in the simulated subscriber, use the **nas-port-id** option.

Related Topics

- Logging Out Simulated Subscribers (SRC CLI) on page 33
- Viewing Subscriber Sessions (SRC CLI) on page 33
- Commands to Manage Simulated Subscribers on page 29
- Overview of Simulated Subscribers on page 29

Viewing Subscriber Sessions (SRC CLI)

Purpose View all subscriber sessions.

Action

```
user@host> show sae subscribers
```

Related Topics

- Logging Out Simulated Subscribers (SRC CLI) on page 33
- Logging In Simulated Subscribers (SRC CLI) on page 30

Logging Out Simulated Subscribers (SRC CLI)

You can view subscribers who are logged in and then log out subscribers who are accessible:

- Logging Out Subscribers by DN on page 34
- Logging Out Subscribers by IP Address on page 34
- Logging Out Subscribers by Login Name on page 34
- Logging Out Subscribers by Session ID on page 35

Logging Out Subscribers by DN

To log out subscribers who are accessible by DN:

1. Issue the **show sae subscribers dn** command to view the subscribers who are accessible by DN.
2. Issue the **request sae logout dn command** to log out all subscribers who are accessible by DN.
3. To log out specific subscribers, use the **filter** option and specify all or part of the DN for the subscribers that you want to log out.

   user@host> request sae logout dn filter ***filter***

4. To specify that no confirmation is requested before the software logs out the subscribers, use the **force** option.

   user@host> request sae logout dn force
   user@host> request sae logout dn filter ***filter*** **force**

Logging Out Subscribers by IP Address

To log out subscribers who are accessible by IP address:

1. Issue the **show sae subscribers ip** command to view the subscribers who are accessible by IP address.
2. Issue the **request sae logout ip command** to log out all subscribers who are accessible by IP address.
3. To log out specific subscribers, use the **filter** option and specify the IP address for the subscribers that you want to log out.

   user@host> request sae logout ip filter ***filter***

4. To specify that no confirmation is requested before the software logs out the subscribers, use the **force** option.

   user@host> request sae logout ip force
   user@host> request sae logout ip filter ***filter*** **force**

Logging Out Subscribers by Login Name

To log out subscribers who are accessible by login name:

1. Issue the **show sae subscribers login-name** command to view the subscribers accessible by login name.
2. Issue the **request sae logout login-name command** to log out all subscribers accessible by login name.
3. To log out specific subscribers, use the **filter** option and specify all or part of the login name for the subscribers that you want to log out.

   user@host> request sae logout login-name filter ***filter***

4. To specify that no confirmation is requested before the software logs out the subscribers, use the **force** option.

   user@host> request sae logout login-name force
   user@host> request sae logout login-name filter *filter* force

Logging Out Subscribers by Session ID

To log out subscribers who are accessible by session ID:

1. Issue the **show sae subscribers session-id** command to view the subscribers accessible by session ID.
2. Issue the **request sae logout session-id command** to log out all subscribers accessible by session ID.
3. To log out specific subscribers, use the **filter** option and specify all or part of the session ID for the subscribers that you want to log out.

   user@host> request sae logout session-id filter *filter*

4. To specify that no confirmation is requested before the software logs out the subscribers, use the **force** option.

   user@host> request sae logout session-id force
   user@host> request sae logout session-id filter *filter* force

Related Topics

- Logging In Simulated Subscribers (SRC CLI) on page 30
- Viewing Subscriber Sessions (SRC CLI) on page 33
- Commands to Manage Simulated Subscribers on page 29
- Overview of Simulated Subscribers on page 29

PART 4

Using SNMP for Monitoring and Troubleshooting

- Creating Custom SNMP Monitors on page 39
- Configuring SNMP Chassis Alarms on page 49
- Configuring the SNMP Traps (SRC CLI) on page 57
- Understanding Traps on page 63

CHAPTER 8

Creating Custom SNMP Monitors

- SNMP Monitoring on C Series Controllers on page 39
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Defining an Alarm for an SNMP Monitor That Compares Object Values (SRC CLI) on page 43
- Defining an Alarm to Monitor the Status of an Object (SRC CLI) on page 44
- Defining an Alarm for an SNMP Monitor That Compares Values Against Thresholds (SRC CLI) on page 45
- Defining a Discontinuity Check to Validate Delta Values (SRC CLI) on page 45
- Configuring an SNMPv3 Security Name for SNMP Monitoring (SRC CLI) on page 46
- Defining Events for Which SNMP Sends Notifications (SRC CLI) on page 46
- Defining Events That Set Values for SNMP MIB Objects (SRC CLI) on page 47
- Example: SNMP Monitoring of Multiple MIB Objects on page 48

SNMP Monitoring on C Series Controllers

You can create custom SNMP monitors to detect changes in MIB objects. Use custom monitors to generate an alarm and take action in response to an alarm.

To configure a monitor, you define a condition that when met generates an SNMP notification. You can define a monitor for any single MIB object (of type integer) supported on a C Series Controller. These MIBs include Juniper Networks enterprise-specific objects as well as standard MIB objects.

You can configure the following for custom monitors:

- Alarms—Define an alarm condition and an event to generate in response to the alarm.

  An alarm identifies the object to be monitored, the frequency with which the monitor retrieves a sample value for the object, and a condition that triggers an event.

- Events—Define the type of action (SNMP set or notification) to be taken in response to an alarm condition. If you do not define an event for an alarm, SNMP sends the notifications based on the monitor type.

The SRC software supports the following types of alarm conditions for monitors:

- Boolean test—Compares a sample value with a specified value or range of values.
- Existence test—Monitors when an object appears, disappears, or changes value.
- Threshold test—Monitors when an object's value rises above or falls below specified values.

A monitor supports only one type of alarm condition, or test, at a time. Each alarm can use one of the following sampling methods:

- Absolute value—Uses the actual value of the object.

  Existence tests support only absolute values.

- Delta value—Uses the difference between two sample values.

  By using the delta value sampling method, you can configure SNMP to detect a discontinuity in values to prevent false alarms caused by the value of a MIB object being reset. At the end of a polling interval before the SNMP agent calculates a delta value, SNMP checks the value of a MIB object called a discontinuity marker. If the value of the discontinuity marker changes, SNMP does not perform the test for the associated condition until the next polling interval.

For alarms that do not have a configured event, SNMP sends the following notifications that are defined in RFC 2981—Event MIB (October 2000):

- Boolean or existence test—mteTriggerFired
- Threshold test (rising value)—mteTriggerRising
- Threshold test (falling value)—mteTriggerfalling

The default configuration for SNMP custom monitors assesses all objects in a MIB branch based on the object identifier specified for the monitor. For this type of monitor, you can configure SNMP notification MIB objects located in the same row as the object that generates the event, as well as for a single object. You can create sophisticated monitors by monitoring an entire branch, then creating notifications for multiple objects.

Related Topics

- Overview of SNMP Traps on page 57
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuring an SNMPv3 Security Name for SNMP Monitoring (SRC CLI) on page 46
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- Example: SNMP Monitoring of Multiple MIB Objects on page 48
- Information about SRC MIBs on the Juniper Web site at http://www.juniper.net/techpubs/software/management/src
- Also, see information about the disman event MIB in RFC 2981—Event MIB (October 2000)

Configuration Statements for Customized SRC SNMP Monitors

Use the following configuration statements to configure the SNMP custom monitoring at the [edit] hierarchy level.

```
snmp monitor {
  security-name security-name;
}
  snmp monitor alarm name{
    interval interval;
    sample-type (absolute-value | delta-value);
    ignore-startup-alarm;
    event event;
    variable variable;
    strict-oid;
  }
  snmp monitor alarm name boolean-test {
    comparison (equal | unequal | less | less-or- equal | greater | greater-or-equal);
    value value;
  }
  snmp monitor alarm name existence-test {
    type (present | absent | changed);
  }
  snmp monitor alarm name threshold-test {
    rising-threshold rising-threshold;
    falling-threshold falling-threshold;
  }
  snmp monitor alarm name delta-discontinuity-check {
    variable variable;
  }
  snmp monitor event namenotification {
    oid oid;
    strict-object [strict-object...];
    wildcarded-object [wildcarded-object...];
  }
  snmp monitor event name snmp-set {
    variable variable;
    value value;
    strict-oid;
  }
```

Related Topics

- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Example: SNMP Monitoring of Multiple MIB Objects on page 48
- Configuring an SNMPv3 Security Name for SNMP Monitoring (SRC CLI) on page 46
- SNMP Monitoring on C Series Controllers on page 39
- For detailed information about each configuration statement, see the *SRC PE CLI Command Reference*

Configuring an SNMP Alarm on a C Series Controller (SRC CLI)

You can configure SNMP to establish alarms for custom monitors.

NOTE: Configure only one monitor test at a time.

To configure an SNMP alarm:

1. Specify an SNMP username.

   See "Configuring an SNMPv3 Security Name for SNMP Monitoring (SRC CLI)" on page 46.

2. From configuration mode, access the configuration statements that configures an alarm. For example:

   ```
   [edit]
   user@host# edit snmp monitor alarm saeHeapUsage
   ```

   where **saeHeapUsage** is the name of the alarm.

3. Specify the number of seconds between which SNMP samples the value of an object. For example:

   ```
   [edit snmp monitor alarm saeHeapUsage]
   user@host# set interval 60
   ```

4. Specify whether to sample the actual value of the object or the difference between two values. For example, to use the actual of the object:

   ```
   [edit snmp monitor alarm saeHeapUsage]
   user@host# set sample-type absolute-value
   ```

   If you set the sample type to **delta-value**, you can configure a discontinuity check. See "Defining a Discontinuity Check to Validate Delta Values (SRC CLI)" on page 45.

5. (Optional) Indicate that an alarm not be sent when the alarm is initially activated.

   ```
   [edit snmp monitor alarmsaeHeapUsage]
   user@host# set ignore-startup-alarm
   ```

6. (Optional) Specify the name of the event to be generated in response to an alarm condition. For example:

   ```
   [edit snmp monitor alarm saeHeapUsage]
   user@host# set event saeHeapUsageEvent
   ```

7. Specify the name or object identifier (OID) of the MIB variable to be monitored. For example:

   ```
   [edit snmp monitor alarm saeHeapUsage]
   user@host# set variable juniSdxSaeHeapUsed.0
   ```

8. (Optional) Specify whether to monitor the SNMP object instance identified by a variable attribute. To monitor the SNMP object instance specified by the variable attribute:


```
[edit snmp monitor alarm saeHeapUsage]
user@host# set strict-oid
```

Do not enable the **strict-oid** option when you monitor a column of an SNMP MIB table. An alarm for a column monitors the column on all entries of the table. If an entry for an object in the column passes an alarm test, an event is generated for that object.

9. Configure a boolean, existence, or threshold test for the alarm.

Related Topics

- Defining an Alarm for an SNMP Monitor That Compares Object Values (SRC CLI) on page 43
- Defining an Alarm to Monitor the Status of an Object (SRC CLI) on page 44
- Defining an Alarm for an SNMP Monitor That Compares Values Against Thresholds (SRC CLI) on page 45
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining an Alarm for an SNMP Monitor That Compares Object Values (SRC CLI)

You can configure a monitor to compare a sample value to a specified value or range of values by using one of the following types of comparisons:

- equal
- unequal
- less
- less-or-equal
- greater
- greater-or-equal

NOTE: Configure only one monitor test at a time.

Before you define an alarm type, configure the associated SNMP alarm.

See “Configuring an SNMP Alarm on a C Series Controller (SRC CLI)” on page 42.

To configure a monitor to compare a sample to a specified value or range of values:

1. From configuration mode, access the configuration statements that configure SNMP monitoring for a boolean test. For example:

```
[edit]
user@host# edit snmp monitor alarm saeHeapUsage boolean-test
```

where **saeHeapUsage** is the name of the alarm.

2. Specify the type of boolean test. For example:

   ```
   [edit snmp monitor alarm saeHeapUsage boolean-test]
   user@host# set comparison greater
   ```

3. Define the value that the test uses. For example:

   ```
   [edit snmp monitor saeHeapUsage boolean-test]
   user@host# value 14000000
   ```

Related Topics

- Defining an Alarm to Monitor the Status of an Object (SRC CLI) on page 44
- Defining an Alarm for an SNMP Monitor That Compares Values Against Thresholds (SRC CLI) on page 45
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining an Alarm to Monitor the Status of an Object (SRC CLI)

You can configure a monitor to identify when a MIB object appears, disappears, or changes value. If the test criteria are met, the test is considered to be successful.

NOTE: Configure only one monitor test at a time.

Before you define an alarm type, configure the associated SNMP alarm.

See “Configuring an SNMP Alarm on a C Series Controller (SRC CLI)” on page 42.

To configure an alarm to monitor the status of an object:

- Specify the type of alarm: present, absent, or changed. For example for an alarm named existence-alarm:

  ```
  [edit snmp monitor alarm existence-alarm existence-test]
  user@host# set type present
  ```

Related Topics

- Defining an Alarm for an SNMP Monitor That Compares Object Values (SRC CLI) on page 43
- Defining an Alarm for an SNMP Monitor That Compares Values Against Thresholds (SRC CLI) on page 45
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining an Alarm for an SNMP Monitor That Compares Values Against Thresholds (SRC CLI)

You can configure a monitor to compare a sample value for a MIB object to a threshold encountered as the value rises and a threshold encountered as the value falls.

NOTE: Configure only one monitor test at a time.

Before you define an alarm type, configure the associated SNMP alarm.

See "Configuring an SNMP Alarm on a C Series Controller (SRC CLI)" on page 42.

To configure an alarm for a monitor that compares a sample value to an upper threshold value and a lower threshold value:

1. Define the upper threshold against which to compare a rising sample value. For example:

   [edit snmp monitor alarm thresholds threshold-test]
   user@host# set rising-threshold 2

2. Define the lower threshold against which to compare a falling sample value. For example:

   [edit snmp monitor alarm threshold-alarm]
   user@host# set falling-threshold 1

Related Topics

- Defining an Alarm for an SNMP Monitor That Compares Object Values (SRC CLI) on page 43
- Defining an Alarm to Monitor the Status of an Object (SRC CLI) on page 44
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining a Discontinuity Check to Validate Delta Values (SRC CLI)

You can configure a monitor to use a discontinuity check to prevent sending false alarms when the value of the monitored object is reset between two samples.

Use a discontinuity check when the sampling type for a monitor is **delta-value** and the test type is boolean or threshold. You define a variable, called a discontinuity marker (a MIB object used to validate the delta, or difference, between values). Typically, the marker object is of the type TimeTicks, DateAndTime, or Timestamp.

To define a discontinuity check:

1. Configure an SNMP alarm with the sample type set to **delta-value**.

See “Configuring an SNMP Alarm on a C Series Controller (SRC CLI)” on page 42.

2. From configuration mode, access the configuration statements that configures a discontinuity check. For example, for an alarm named ifErrorsDelta:

   [edit]
   user@host# edit snmp monitor alarm ifErrorsDelta delta-discontinuity-check

3. Specify the name or object identifier (OID) of the discontinuity marker. For example:

   [edit snmp monitor alarm sequence-check ifErrorsDelta delta-discontinuity-check]
   user@host# set variable ifTable.ifEntry.ifLastChange

Related Topics

- Defining Events That Set Values for SNMP MIB Objects (SRC CLI) on page 47
- Example: SNMP Monitoring of Multiple MIB Objects on page 48
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Configuring an SNMPv3 Security Name for SNMP Monitoring (SRC CLI)

To configure an SNMPv3 security name to access a monitored MIB object:

1. From configuration mode, access the configuration statements that configure SNMP monitoring.

   [edit]
   user@host# edit snmp monitor

2. Specify an SNMPv3 security name.

   [edit snmp monitor]
   user@host# set security-name *your-security-name*

Related Topics

- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining Events for Which SNMP Sends Notifications (SRC CLI)

NOTE: Do not define an event notification and an SNMP set for the same event.

To define an event for which SNMP sends a notification:

1. From configuration mode, access the configuration statements that configure SNMP event notification and provide a name for the event. For example:

   [edit]
   user@host# edit snmp monitor event routerErrorEvent notification

2. Specify the object identifier (OID) object identifier of the notification object. For example:

   ```
   [edit snmp monitor event routerErrorEvent notification]
   user@host# set oid juniSdxMibs.24.2.1
   ```

3. (Optional) Allow wildcards in the OID to include instances of subidentifiers that correspond to the monitored object. For example:

   ```
   [edit snmp monitor event routerErrorEvent notification notification]
   user@host# set wildcarded-object [juniSaeRouterMsgErrors,
     juniSaeRouterMsgTimeouts]
   ```

   Alternatively, you can configure event notification to use a specific OID.

Related Topics

- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Example: SNMP Monitoring of Multiple MIB Objects on page 48
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Defining Events That Set Values for SNMP MIB Objects (SRC CLI)

You can configure SNMP to set the value of a MIB object in response to an SNMP event.

NOTE: Do not define an event notification and an SNMP set for the same event.

To define an event that sets the value for a MIB variable in response to an SNMP event:

1. From configuration mode, access the configuration statements that configure an SNMP set for an event.

   ```
   [edit]
   user@host# edit snmp monitor event event-name snmp-set
   ```

2. Specify the object identifier (OID) of the MIB variable to set.

   ```
   [edit snmp monitor event event-name snmp-set]
   user@host# set oid OID
   ```

3. Specify the value for the object.

   ```
   [edit snmp monitor event event-name snmp-set]
   user@host# set value value
   ```

4. (Optional) Specify whether the software monitors only the OID specified by the variable option. If you do not set this option, the index of the object triggering the alarm is appended to the variable to be set.

   ```
   [edit snmp monitor event event-name snmp-set]
   user@host# set strict-oid
   ```

Related Topics

- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42

- Example: SNMP Monitoring of Multiple MIB Objects on page 48
- Configuration Statements for Customized SRC SNMP Monitors on page 41
- SNMP Monitoring on C Series Controllers on page 39

Example: SNMP Monitoring of Multiple MIB Objects

You can configure SNMP to monitor a column of a MIB table and configure SNMP notifications to include MIB objects located in the same row as the object that generates the event. This example shows how to configure an alarm to generate an event in response to error conditions and send notifications that contain both the number of router errors and router timeouts .

This example uses the juniSaeRouterTable shown in Table 5 on page 48. SNMP monitors the juniSaeRouterMsgErrors branch, and sends a notification object (juniSdxMibs.24.2.1) for the objects in the same row as the object attached to the notification: juniSaeRouterMsgTimeouts and juniSaeRouterMsgErrors. The monitor generates an event named routerErrorEvent for the column juniSaeRouterMsgErrors.

Table 5: Example Table for juniSaeRouterTable Object

juniSaeRouterClinetId	juniSaeRouterMsgErrors	juniSaeRouterMsgTimeouts
default@router1	100	5
default@router2	11	0
default@router3	52	2
...	...	...

The following example shows the configuration for this scenario.

```
snmp monitor {
   alarm saeRouterErrors {
      variable juniSaeRouterMsgErrors;
      //strict-oid;
      event routerErrorEvent;
      ...
   }
   event routerErrorEvent notification {
      oid juniSdxMibs.24.2.1
      wildcarded-object [juniSaeRouterMsgErrors,
      juniSaeRouterMsgTimeouts]
   }
}
```

Related Topics

- SNMP Monitoring on C Series Controllers on page 39
- Configuring an SNMP Alarm on a C Series Controller (SRC CLI) on page 42
- Configuration Statements for Customized SRC SNMP Monitors on page 41

CHAPTER 9

Configuring SNMP Chassis Alarms

- SNMP Chassis Alarms on a C Series Controller on page 49
- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- Defining Alarm Thresholds for Battery Voltage Sensors on page 50
- Defining Alarm Thresholds for CPU Sensors on page 51
- Defining Alarm Thresholds for Fan Speed Sensors on page 53
- Defining Alarm Thresholds for System Temperature Sensors on page 54
- Defining Alarm Thresholds for Voltage Sensors on page 54

SNMP Chassis Alarms on a C Series Controller

You can configure SNMP to establish built-in chassis alarms that monitor the sensors on C Series Controllers. The chassis alarms are preconfigured SNMP monitors that detect changes in the MIB objects described in Juniper-SDX-CHASSIS-TRAP-MIB (Chassis Trap MIB). The chassis alarms are configured to use the Boolean test condition and absolute value sampling method. Each time you start the SNMP agent and you have enabled chassis alarms, the initial action is to raise the clear trap for all chassis sensors.

You cannot delete chassis alarms, but you can disable them. You can modify the time interval between which SNMP samples the value for the chassis alarms. You can also define the alarm thresholds for each chassis alarm.

NOTE: If you want to use the built-in chassis alarms, you must delete any custom SNMP monitors that you configured to detect changes in the Juniper-SDX-CHASSIS-TRAP-MIB MIB objects.

To configure the chassis alarms, you must set the editing level to expert.

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Monitoring on C Series Controllers on page 39

Configuring SNMP Chassis Alarms (SRC CLI)

To configure SNMP chassis alarms:

1. Set the editing level for the CLI to expert.

   user@host> set cli level expert

2. From configuration mode, access the configuration statement that configures the chassis alarms.

   [edit]
   user@host# edit snmp monitor chassis-alarm

3. (Optional) Disable all chassis alarms. You cannot delete the chassis alarms.

   [edit snmp monitor chassis-alarm]
   user@host# set disable

4. (Optional) Specify the number of seconds between which SNMP samples the value of an object. For example:

   [edit snmp monitor chassis-alarm]
   user@host# set interval 60

Related Topics

- Defining Alarm Thresholds for Battery Voltage Sensors on page 50
- Defining Alarm Thresholds for CPU Sensors on page 51
- Defining Alarm Thresholds for Fan Speed Sensors on page 53
- Defining Alarm Thresholds for System Temperature Sensors on page 54
- SNMP Chassis Alarms on a C Series Controller on page 49

Defining Alarm Thresholds for Battery Voltage Sensors

To configure SNMP chassis alarm thresholds for battery voltage sensors:

1. Set the editing level for the CLI to expert.

   user@host> set cli level expert

2. From configuration mode, access the configuration statement that defines the thresholds for battery voltage sensors.

   [edit]
   user@host# edit snmp monitor chassis-alarm battery-voltage

3. (Optional) Specify the lower threshold for the minor alarm. For example:

   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set below-minor 3024

4. (Optional) Specify the lower threshold for the major alarm. For example:

   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set below-major 3008

5. (Optional) Specify the lower threshold for the critical alarm. For example:

   ```
   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set below-critical 2992
   ```

6. (Optional) Specify the upper threshold for the minor alarm. For example:

   ```
   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set over-minor 3744
   ```

7. (Optional) Specify the upper threshold for the major alarm. For example:

   ```
   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set over-major 3760
   ```

8. (Optional) Specify the upper threshold for the critical alarm. For example:

   ```
   [edit snmp monitor chassis-alarm battery-voltage]
   user@host# set over-critical 3776
   ```

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Chassis Alarms on a C Series Controller on page 49

Defining Alarm Thresholds for CPU Sensors

- Defining Alarm Thresholds for CPU Core Voltage Sensors on page 51
- Defining Alarm Thresholds for CPU DIMM Voltage Sensors on page 52
- Defining Alarm Thresholds for CPU Temperature Sensors on page 52

Defining Alarm Thresholds for CPU Core Voltage Sensors

To configure SNMP chassis alarm thresholds for CPU core voltage sensors:

1. Set the editing level for the CLI to expert.

   ```
   user@host> set cli level expert
   ```

2. From configuration mode, access the configuration statement that defines the thresholds for CPU core voltage sensors.

   ```
   [edit]
   user@host# edit snmp monitor chassis-alarm cpu-core-voltage
   ```

3. (Optional) Specify the lower threshold for the minor alarm. For example:

   ```
   [edit snmp monitor chassis-alarm cpu-core-voltage]
   user@host# set below-minor 1030
   ```

4. (Optional) Specify the lower threshold for the major alarm. For example:

   ```
   [edit snmp monitor chassis-alarm cpu-core-voltage]
   user@host# set below-major 1020
   ```

5. (Optional) Specify the lower threshold for the critical alarm. For example:

   ```
   [edit snmp monitor chassis-alarm cpu-core-voltage]
   user@host# set below-critical 1008
   ```

6. (Optional) Specify the upper threshold for the minor alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-core-voltage]
user@host# set over-minor 1728
```

7. (Optional) Specify the upper threshold for the major alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-core-voltage]
user@host# set over-major 1740
```

8. (Optional) Specify the upper threshold for the critical alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-core-voltage]
user@host# set over-critical 1752
```

Defining Alarm Thresholds for CPU DIMM Voltage Sensors

To configure SNMP chassis alarm thresholds for CPU DIMM voltage sensors:

1. Set the editing level for the CLI to expert.

```
user@host> set cli level expert
```

2. From configuration mode, access the configuration statement that defines the thresholds for CPU DIMM voltage sensors.

```
[edit]
user@host# edit snmp monitor chassis-alarm cpu-dimm-voltage
```

3. (Optional) Specify the lower threshold for the minor alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set below-minor 2292
```

4. (Optional) Specify the lower threshold for the major alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set below-major 2280
```

5. (Optional) Specify the lower threshold for the critical alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set below-critical 2268
```

6. (Optional) Specify the upper threshold for the minor alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set over-minor 2832
```

7. (Optional) Specify the upper threshold for the major alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set over-major 2844
```

8. (Optional) Specify the upper threshold for the critical alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-dimm-voltage]
user@host# set over-critical 2856
```

Defining Alarm Thresholds for CPU Temperature Sensors

To configure SNMP alarm thresholds for CPU temperature sensors:

1. Set the editing level for the CLI to expert.

```
user@host> set cli level expert
```

2. From configuration mode, access the configuration statement that defines the thresholds for the CPU temperature sensors.

```
[edit]
user@host# edit snmp monitor chassis-alarm cpu-temperature
```

3. (Optional) Specify the upper threshold for the minor alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-temperature]
user@host# set minor 76
```

4. (Optional) Specify the upper threshold for the major alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-temperature]
user@host# set major 78
```

5. (Optional) Specify the upper threshold for the critical alarm. For example:

```
[edit snmp monitor chassis-alarm cpu-temperature]
user@host# set critical 80
```

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Chassis Alarms on a C Series Controller on page 49

Defining Alarm Thresholds for Fan Speed Sensors

To configure SNMP chassis alarm thresholds for fan speed sensors:

1. Set the editing level for the CLI to expert.

```
user@host> set cli level expert
```

2. From configuration mode, access the configuration statement that configures the chassis alarm thresholds for fan speed sensors.

```
[edit]
user@host# edit snmp monitor chassis-alarm fan-speed
```

3. (Optional) Specify the lower threshold for the minor alarm in revolutions per minute. For example:

```
[edit snmp monitor chassis-alarm fan-speed]
user@host# set minor 540
```

4. (Optional) Specify the lower threshold for the major alarm in revolutions per minute. For example:

```
[edit snmp monitor chassis-alarm fan-speed]
user@host# set major 405
```

5. (Optional) Specify the lower threshold for the critical alarm in revolutions per minute. For example:

```
[edit snmp monitor chassis-alarm fan-speed]
user@host# set critical 270
```

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Chassis Alarms on a C Series Controller on page 49

Defining Alarm Thresholds for System Temperature Sensors

To configure SNMP chassis alarm thresholds for system temperature sensors:

1. Set the editing level for the CLI to expert.

   user@host> set cli level expert

2. From configuration mode, access the configuration statement that defines the thresholds for system temperature sensors.

   [edit]
   user@host# edit snmp monitor chassis-alarm system-temperature

3. (Optional) Specify the upper threshold for the minor alarm. For example:

   [edit snmp monitor chassis-alarm system-temperature]
   user@host# set minor 76

4. (Optional) Specify the upper threshold for the major alarm. For example:

   [edit snmp monitor chassis-alarm system-temperature]
   user@host# set major 78

5. (Optional) Specify the upper threshold for the critical alarm. For example:

   [edit snmp monitor chassis-alarm system-temperature]
   user@host# set critical 80

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Chassis Alarms on a C Series Controller on page 49

Defining Alarm Thresholds for Voltage Sensors

You can configure alarm thresholds for these voltage sensors:

- 1.8V
- 3.3V
- 5V
- 12V
- –12V

To configure SNMP chassis alarm thresholds for voltage sensors:

1. Set the editing level for the CLI to expert.

   user@host> set cli level expert

2. From configuration mode, access the configuration statement that defines the thresholds for voltage sensors.

   [edit]
   user@host# edit snmp monitor chassis-alarm *voltage-sensor*

   For example:

   [edit]
   user@host# edit snmp monitor chassis-alarm voltage-1.8v

   [edit]
   user@host# edit snmp monitor chassis-alarm voltage-3.3v

   [edit]
   user@host# edit snmp monitor chassis-alarm voltage-5v

   [edit]
   user@host# edit snmp monitor chassis-alarm voltage-12v

   [edit]
   user@host# edit snmp monitor chassis-alarm voltage-negative12v

3. (Optional) Specify the lower threshold for the minor alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set below-minor 1644

4. (Optional) Specify the lower threshold for the major alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set below-major 1632

5. (Optional) Specify the lower threshold for the critical alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set below-critical 1620

6. (Optional) Specify the upper threshold for the minor alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set over-minor 2028

7. (Optional) Specify the upper threshold for the major alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set over-major 2040

8. (Optional) Specify the upper threshold for the critical alarm. For example:

   [edit snmp monitor chassis-alarm voltage-1.8v]
   user@host# set over-critical 2052

Related Topics

- Configuring SNMP Chassis Alarms (SRC CLI) on page 50
- SNMP Chassis Alarms on a C Series Controller on page 49

CHAPTER 10

Configuring the SNMP Traps (SRC CLI)

- Overview of SNMP Traps on page 57
- Configuration Statements for the SNMP Traps on page 59
- Configuring Performance Traps (SRC CLI) on page 60
- Configuring Event Traps (SRC CLI) on page 61

Overview of SNMP Traps

The SNMP agent provides network management systems with SNMP trap notifications in case of component failure or when critical resources are out of configurable limits. This information is captured in a Management Information Base (MIB).

The SNMP agent can be run on each SRC host. It can monitor any SRC process running on the host and is preconfigured to monitor SRC processes. Additionally, it provides detailed monitoring and configuration of SRC server components.

MIBs

The SNMP agent monitors MIB variables. Most variables measure the performance of the system. Some variables are counters, such as the saeLogins variable, which counts the total number of subscriber logins since startup. Some variables are gauges, and their numbers go up and down, such as the saeHeapUsed variable, which measures the Java Virtual Machine heap that is currently in use.

A MIB defines a trap type that is associated with many MIB variables. For traps based on counters, the SNMP agent periodically polls each specified variable. It takes the difference between the previous and current values of the variable and compares that difference with the threshold. If the difference has moved up across thresholds, the SNMP agent sends a trap raising an alarm (minor, major, or critical) for the highest threshold crossed to all configured receivers. If the difference has moved down across thresholds, the agent sends a trap clearing the alarm of the lowest threshold crossed.

You can configure the polling interval between samples. If you change the polling interval, also adjust the thresholds. For instance, if the critical threshold for SAE logins is 1,000 and the interval is 60 seconds, then a critical alarm is raised if there are more than 1,000 logins in 60 seconds. But if you change the interval to 600 seconds, then you would need to change the threshold to 10,000 to have the same meaning.

For traps based on gauges, the previous value is not needed; the current value is compared with the thresholds.

In the trap tables, there is a field named R/AV, where R means rate, and AV means absolute value. Rate is used for variables that are counters, and it measures the rate of change of the counter. Absolute value is used for variables that are gauges.

Configuration MIBs

The SRC software has a limited number of MIB variables that can be set, such as variables to shut down or start components.

MIB Structure

The SNMP agent MIB uses the following Juniper Networks MIBs:

- Juniper-SDX-ACP-MIB—SRC ACP MIB
- Juniper-SDX-CHASSIS-MIB—Chassis MIB (for C Series Controllers)
- Juniper-SDX-DES-MIB—Directory eventing system MIB
- Juniper-SDX-GW-MIB—Gateway applications MIB (includes the NIC MIB)
- Juniper-SDX-JPS-MIB—JPS MIB
- Juniper-SDX-LICENSE-MIB—Licensing MIB
- Juniper-SDX-MIB—Main Juniper Networks SDX MIB
- Juniper-SDX-MIBS—Collection of Juniper Networks SDX MIB modules
- Juniper-SDX-POM-MIB—Policy management MIB
- Juniper-SDX-REDIRECTOR-MIB—Redirector MIB
- Juniper-SDX-SAE-MIB—SAE MIB
- Juniper-SDX-TC-MIB—Textual conventions MIB
- Juniper-SDX-TRAP-MIB—SRC trap definition MIB
- Juniper-UNI-SMI—Base SMI MIB

MIB Location

The MIBs are located on the Juniper Networks Web site at

http://www.juniper.net/techpubs/software/management/src

Traps

Traps are individual events that the SNMP agent can monitor, such as the number of timeouts or errors that have occurred or connections that have opened or closed. There are two types of traps:

- Performance traps—Traps that poll MIB variables associated with the trap to determine whether a variable has crossed configured thresholds. If the variable crosses a threshold, an alarm is triggered and a trap is sent to the list of configured receivers.

- Event traps—Traps that are sent when an event occurs; for example, when a connection is established or closed.

SNMP Traps and Informs

SNMP notifications can be sent as traps or inform requests. SNMP traps are unconfirmed notifications. SNMP informs are confirmed notifications.

SNMP traps are defined in either standard or enterprise-specific MIBs. The standard and enterprise-specific traps are compiled into the network management software.

With traps, the receiver does not send any acknowledgment when it receives a trap and the sender cannot determine if the trap was received. To increase reliability, SNMP informs are supported in SNMPv3. With an inform, the receiver acknowledges the message with a response. For information about configuring SNMP notification handling,

Related Topics

- For information on system logging severity levels for SNMP traps, see Categories and Severity Levels for Event Messages on page 8
- Configuring the SDX SNMP Agent (SRC CLI)
- SAE Performance Traps on page 66
- Accounting Performance Traps on page 68
- Authentication Performance Traps on page 70
- NIC Performance Traps on page 71
- Router Driver Performance Traps on page 72
- System Management Performance Traps on page 74
- Policy Engine Performance Traps on page 74
- SRC Redirector Performance Traps on page 75
- SRC ACP Performance Traps on page 75
- JPS Performance Traps on page 75

Configuration Statements for the SNMP Traps

Use the following configuration statements to configure the SNMP traps and the notification target at the **[edit]** hierarchy level.

```
snmp notify alarm category category-name ...
snmp notify alarm category category-name alarm alarm-name {
    interval interval;
    critical critical;
    major major;
    minor minor;
}
snmp notify event category category-name ...
snmp notify event category category-name event event-name ...
snmp notify target target-name {
```

```
    address;
    port;
    community;
    type (trapv1|trapv2|inform);
  }
```

Related Topics

- For detailed information about each configuration statement, see the *SRC PE CLI Command Reference*
- Configuring Performance Traps (SRC CLI) on page 60
- Configuring Event Traps (SRC CLI) on page 61
- Overview of SNMP Traps on page 57

Configuring Performance Traps (SRC CLI)

Use the following configuration statements to configure performance traps:

```
snmp notify alarm category category-name ...
snmp notify alarm category category-name alarm alarm-name {
  interval interval;
  critical critical;
  major major;
  minor minor;
}
```

To configure performance traps:

1. From configuration mode, access the configuration statement that configures the type of performance trap.

   ```
   [edit]
   user@host# edit snmp notify
   ```

2. Specify the type of trap and the trap name.

   ```
   [edit snmp notify]
   user@host# set alarm category category-name alarm alarm-name
   ```

   You can select from the list of trap types and their associated traps or create new traps.

3. (Optional) Specify the interval at which the variable associated with the trap is polled.

   ```
   [edit snmp notify alarm category category-name alarm alarm-name]
   user@host# set interval interval
   ```

4. Specify the threshold above which a critical alarm is generated.

   ```
   [edit snmp notify alarm category category-name alarm alarm-name]
   user@host# set critical critical
   ```

5. Specify the threshold above which a major alarm is generated.

```
[edit snmp notify alarm category category-name alarm alarm-name]
user@host# set major major
```

6. Specify the threshold above which a minor alarm is generated.

```
[edit snmp notify alarm category category-name alarm alarm-name]
user@host# set minor minor
```

Related Topics

- Configuring Event Traps (SRC CLI) on page 61
- Configuration Statements for the SNMP Traps on page 59
- SAE Performance Traps on page 66
- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64

Configuring Event Traps (SRC CLI)

Use the following configuration statements to configure event traps:

```
snmp notify event category category-name ...
snmp notify event category category-name event event-name ...
```

To configure event traps:

1. From configuration mode, access the configuration statement that configures the type of event trap.

```
[edit]
user@host# edit snmp notify
```

2. Specify the type of trap and the trap name.

```
[edit snmp notify]
user@host# set event category category-name event event-name
```

You can select from the list of trap types and their associated traps or create new traps.

Related Topics

- Configuring Performance Traps (SRC CLI) on page 60
- Configuration Statements for the SNMP Traps on page 59
- Event Traps on page 77
- Overview of SNMP Traps on page 57

CHAPTER 11

Understanding Traps

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Decoding Trap Numbers for Raised Trap Actions on page 65
- Decoding Trap Numbers for Clear Trap Actions on page 65
- SRC Performance Traps on page 66
- Event Traps on page 77
- Alarm State Transitions on page 79

Performance Traps

Trap tables list all the traps supported by the SNMP agent, the text displayed for each trap, trap thresholds and intervals, and any special notes pertaining to the trap.

Table 6 on page 63 describes the symbols used in the performance traps tables.

Table 6: Symbols in Performance Traps Tables

Symbol	Description
$S	Severity level of the trap: MINOR, MAJOR, CRITICAL, or CLEAR
$D	Status data
$P	Polling interval
$T	Threshold value
$A	Trap action; displayed as RAISED or CLEARED
$L	“Exceeded” if the trap is raised; “ is below” if the trap is cleared

SRC performance trap tables contain a trap ID, text displayed, and default values for alarm threshold levels, as well as rate (R) and absolute values (AV) fields.

R/AV

Each performance trap table has a field called R/AV. R means rate, and AV means absolute value.

- Rate is used for variables that are counters. The rate is the difference between the current value of the underlying MIB variable being monitored and its previous value, which was read <interval> time ago. The interval length affects those values that are appropriate for the thresholds; that is, the longer the interval, the larger the thresholds must be. For instance, saeLogins is a counter of the total number of SAE logins. With the default interval of 60 seconds, the critical threshold of 2,000 means that a critical trap is sent if there are more than 2,000 logins within one minute. If you change the interval to 300 seconds (5 minutes), to keep the critical threshold at 2,000 logins a minute, you need to change the threshold to 10,000 (the number of logins in 5 minutes for a rate of 2,000 per minute).
- Absolute value is used for variables that are gauges, and they transition from one alarm threshold level to the next.

Related Topics

- Overview of SNMP Traps on page 57
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60
- Accounting Performance Traps on page 68
- Authentication Performance Traps on page 70

Trap Numbers in Performance Traps

Performance traps contain a trap ID, a severity, and an action. The trap ID, severity, and action are encoded in the trap number to make it easy to configure trap receivers, such as HP OpenView, to color and highlight traps.

Every performance trap has four trap definitions: one for critical, major, and minor severity levels, and one for the clear action. For critical, major, and minor severity levels, the action is raise. For the clear action, there is no severity level, because the severity level is implied by the last raise action for the trap ID.

Severity levels are assigned the following numbers:

- Critical=1
- Major=2
- Minor=3
- Information=5

The JuniSdxTrapID ::= TEXTUAL-CONVENTION section in the Juniper-SDX-TC MIB lists the trap IDs for all traps. The Juniper-SDX-TRAP MIB defines the SDX traps.

You can access the MIBs on the Juniper Web site at

http://www.juniper.net/techpubs/software/management/src

Related Topics

- Performance Traps on page 63
- Decoding Trap Numbers for Raised Trap Actions on page 65
- Decoding Trap Numbers for Clear Trap Actions on page 65

Decoding Trap Numbers for Raised Trap Actions

To decode a trap number for raised trap actions:

- Use the following equation:

  Trap number = Trap ID * 10 + severity

For example, if the trap number is 43, then the trap ID is 4 (saeServiceActivations) and the severity is 3 (MINOR). Therefore, a trap number of 43 means that a MINOR event has occurred for the saeServiceActivations trap.

Related Topics

- Decoding Trap Numbers for Clear Trap Actions on page 65
- Configuring Performance Traps (SRC CLI) on page 60
- Trap Numbers in Performance Traps on page 64
- Performance Traps on page 63

Decoding Trap Numbers for Clear Trap Actions

To decode a trap number for clear trap actions:

- Use the following equation:

  Trap number = Trap ID * 10

For example, if the trap number is 250, then the trap ID is 25 (saeAccPendingRequests). Therefore, a trap number of 250 means that the saeAccPendingRequests alarm has been cleared.

Related Topics

- Decoding Trap Numbers for Raised Trap Actions on page 65
- Configuring Performance Traps (SRC CLI) on page 60
- Trap Numbers in Performance Traps on page 64
- Performance Traps on page 63

SRC Performance Traps

The following SRC performance trap tables are available:

- SAE Performance Traps on page 66
- Accounting Performance Traps on page 68
- Authentication Performance Traps on page 70
- NIC Performance Traps on page 71
- Router Driver Performance Traps on page 72
- System Management Performance Traps on page 74
- Policy Engine Performance Traps on page 74
- SRC Redirector Performance Traps on page 75
- SRC ACP Performance Traps on page 75
- JPS Performance Traps on page 75
- Chassis Performance Traps on page 76

SAE Performance Traps

Table 7 on page 66 lists the performance traps for the SAE.

Table 7: Performance Traps—SAE

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval (sec)	R/AV
saeHeapUsed	1	$S:SAE:$D% of Java VM heap is in use. This $L the threshold of $T %.:$A	95	90	80	60	AV
saeLogins	2	$S:SAE:During the last $Ps, $D logins occurred. This $L the threshold of $T logins.:$A	2000	1000	400	60	R
saeLogouts	3	$S:SAE:During the last $Ps, $D logouts occurred. This $L the threshold of $T logouts.:$A	2000	1000	400	60	R

Table 7: Performance Traps—SAE *(continued)*

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval (sec)	R/AV
saeServiceActivations	4	$S:SAE:During the last $Ps, $D services were activated. This $L the threshold of $T service activations.:$A	2000	1000	500	60	R
saeServiceDeactivations	5	$S:SAE:During the last $Ps, $D services were deactivated. This $L the threshold of $T service deactivations.:$A	2000	1000	500	60	R
saeCurrentUsers	6	$S:SAE:The number of user sessions is $D. This $L the threshold of $T users sessions.:$A	18000	14000	12000	60	AV
saeUserNumberLicense	7	$S:SAE:$D% of the available licenses are in use. This $L the threshold of $T.:$A	99	95	90	60	AV
saeUserLicenseExpiry	8	$S:SAE:The SAE license is about to expire in $D days. This $L the threshold of $T.:$A	1	10	14	3500	AV
saeClientLicExpiry	12	$S:SAE:The client has consumed $D% of its available license. This $L the threshold of $T.:$A	90	70	40	900	AV

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64

- Configuring Performance Traps (SRC CLI) on page 60

Accounting Performance Traps

Table 8 on page 68 lists the performance traps for accounting.

Table 8: Performance Traps—Accounting

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval (sec)	R/AV
saeAccInvalidServerAddresses	20	$S:SAE RADIUS Accounting Client:During the last $Ps, $D invalid server address errors occurred. This $L the threshold of $T invalid server address errors.:$A	5	2	1	60	R
saeAccRoundTripTime	21	$S:SAE RADIUS Accounting Client:The round trip message time is $Dms. This $L the threshold of $Tms.:$A	2250	1500	750	60	AV
saeAccRetransmissions	22	$S:SAE RADIUS Accounting Client:During the last $Ps, $D retransmissions occurred. This $L the threshold of $T retransmissions.:$A	5	2	1	60	R
saeAccMalformedResponses	23	$S:SAE RADIUS Accounting Client:During the last $Ps, $D malformed responses occurred. This $L the threshold of $T malformed responses.:$A	5	2	1	60	R

Table 8: Performance Traps—Accounting *(continued)*

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval (sec)	R/AV
saeAccBadAuthenticators	24	$S:SAE RADIUS Accounting Client:During the last $Ps, $D bad authenticator error occurred. This $L the threshold of $T bad authenticators errors.:$A	5	2	1	60	R
saeAccPendingRequests	25	$S:SAE RADIUS Accounting Client:The number of pending requests is $D. This $L the threshold of $T pending requests:$A	50	25	10	60	AV
saeAccTimeouts	26	$S:SAE RADIUS Accounting Client:During the last $Ps, $D timeouts occurred. This $L the threshold of $T timeouts.:$A	30	20	10	60	R
saeAccUnknownTypes	27	$S:SAE RADIUS Accounting Client:During the last $Ps, $D unknown type errors occurred. This $L the threshold of $T unknown type errors.:$A	30	20	10	60	R
saeAccPacketsDropped	28	$S:SAE RADIUS Accounting Client:During the last $Ps, $D packets were dropped. This $L the threshold of $T dropped packets.:$A	30	20	10	60	AV

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64

- Configuring Performance Traps (SRC CLI) on page 60

Authentication Performance Traps

Table 9 on page 70 lists the performance traps for authentication.

Table 9: Performance Traps—Authentication

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
saeAuthInvalidServerAddresses	40	$S:SAE RADIUS Authentication Client:During the last $Ps, $D invalid server address errors occurred. This $L the threshold of $T invalid server address errors.:$A	10	5	1	60	AV
saeAuthRoundTripTime	41	$S:SAE RADIUS Authentication Client:The round trip message time is $Dms. This $L the threshold of $Tms:$A	2250	1500	750	60	R
saeAuthAccessRetransmissions	42	$S:SAE RADIUS Authentication Client:During the last $Ps, $D retransmissions occurred. This $L the threshold of $T retransmissions.:$A	5	2	1	60	R
saeAuthMalformedAccessResponses	43	$S:SAE RADIUS Authentication Client:During the last $Ps, $D malformed responses occurred. This $L the threshold of $T malformed responses.:$A	5	2	1	60	R
saeAuthBadAuthenticators	44	$S:SAE RADIUS Authentication Client:During the last $Ps, $D bad authenticators errors occurred. This $L the threshold of $T.:$A	5	2	1	60	
saeAuthPendingRequests	45	$S:SAE RADIUS Authentication Client:The number of pending requests is $D. This $L the threshold of $T pending requests:$A	50	25	10	60	AV
saeAuthTimeouts	46	$S:SAE RADIUS Authentication Client:During the last $Ps, $D timeouts occurred. This $L the threshold of $T timeouts.:$A	5	2	1	60	R

Table 9: Performance Traps—Authentication *(continued)*

Trap Event	Trap ID	Text Displayed	Alarm Threshold Levels (default values)				R/AV
			Critical	Major	Minor	Interval(sec)	
saeAuthUnknownTypes	47	$S:SAE RADIUS Authentication Client:During the last $Ps, $D unknown type errors occurred. This $L the threshold of $T unknown type errors.:$A	5	2	1	60	R
saeAuthPacketsDropped	48	$S:SAE RADIUS Authentication Client:During the last $Ps, $D packets were dropped. This $L the threshold of $T dropped packets.:$A	5	2	1	60	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

NIC Performance Traps

Table 10 on page 71 lists the performance traps for NIC.

Table 10: Performance Traps—NIC

Trap Event	Trap ID	Text Displayed	Alarm Threshold Levels (default values)				R/AV
			Critical	Major	Minor	Interval(sec)	
nicHostReslvErrors	230	$S:NIC Host: During the last $Ps, the number of resolution errors that occurred is $D. This $L is the threshold of $T errors.:$A	10	5	1	60	R
nicHostAvgReslvTime	231	$S:NIC Host: During the last $Ps, the average time this NIC Host spent on resolutions is $Dms. This $L the threshold of $Tms.:$A	1000	500	250	60	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

Router Driver Performance Traps

Table 11 on page 72 lists the performance traps for router drivers.

Table 11: Performance Traps—Router Drivers

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
routerMsgErrors	190	$S:SAE Router Driver ($juniSaeRouterClientId):During the last $Ps, $D router errors occurred. This $L the threshold of $T errors.:$A	10	5	1	60	R
routerMsgTimeouts	191	$S:SAE Router Driver ($juniSaeRouterClientId):During the last $Ps, $D router timeouts occurred. This $L the threshold of $T timeouts.:$A	10	5	1	60	R
routerAvgJobQTime	192	$S:SAE Router Driver ($juniSaeRouterClientId):During the last $Ps, the average time that incoming router messages waited to be processed is $Dms. This $L the threshold of $Tms.:$A	500	250	100	60	R
routerJobQLength	193	$S:SAE Router Driver ($juniSaeRouterClientId):The number of unprocessed incoming router messages is $D. This $L the threshold of $T messages.:$A	2500	500	100	60	AV
routerJobQAge	194	$S:SAE Router Driver ($juniSaeRouterClientId):The oldest unprocessed router message has been waiting for $Dms. This $L the threshold of $Tms.:$A	30000	10000	5000	60	AV
routerAvgAddTime	195	$S:SAE Router Driver ($juniSaeRouterClientId): During the last $Ps, the average time (in milliseconds) this router driver spent handling 'object added' notifications is $Dms. This $L the threshold of $Tms.:$A	1000	500	100	60	R

Table 11: Performance Traps—Router Drivers *(continued)*

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
routerAvgChgTime	196	$S:SAE Router Driver ($juniSaeRouterClientId): During the last polling interval, the average time (in milliseconds) this router driver spent handling 'object changed' notifications is $Dms. This $L the threshold of $Tms.:$A	1000	500	100	60	R
routerAvgDelTime	197	$S:SAE Router Driver ($juniSaeRouterClientId): During the last polling interval, the average time (in milliseconds) this router driver spent handling 'object deleted' notifications is $Dms. This $L the threshold of $Tms.:$A	1000	500	100	60	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

System Management Performance Traps

Table 12 on page 74 lists the performance traps for system management event.

Table 12: Performance Traps—System Management Event

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
agentLdapLimitReached	113	$S: Ldap: The Ldap Limit has been reached: $D entries, during the last $Ps. This $L the threshold of $T entries.:$A.	100% of MAX	95% of MAX	90% of MAX	30	AV

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

Policy Engine Performance Traps

Table 13 on page 74 lists the performance traps for policy engine.

Table 13: Performance Traps—Policy Engine

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
penAvgPGModProcTime	150	$S:Policy Engine:The average policy group modification processing time is $D ms. This $L the threshold of $T ms.:$A	200	500	1000	60	AV
penAvgICMModProcTime	151	$S:Policy Engine:The average interface classifier modification processing time is $D ms. This $L the threshold of $T ms.:$A	200	500	1000	60	AV
pdpErrors	152	$S:Policy Decision Point:During the last $Ps, $D errors occurred. This $L the threshold of $T PDP errors.:$A	10	5	1	30	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

SRC Redirector Performance Traps

Table 14 on page 75 lists the performance traps for SRC redirector.

Table 14: Performance Traps—SRC Redirector

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
redirGBLimitReached	170	$S:SDX Redirector:During the last $Ps, the global bucket limit has been reached for $D times. This $L the threshold of $T times.:$A	3	2	1	900	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

SRC ACP Performance Traps

Table 15 on page 75 lists the performance traps for the SRC-Admission Control Plug-In (SRC ACP) application.

Table 15: Performance Traps—SRC ACP

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
acpHeapUsed	280	$S:ACP:$D% of Java VM heap is in use. This $L the threshold of $T%.:$A	95%	90%	80%	60	AV

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

JPS Performance Traps

Table 16 on page 76 lists the performance traps for the Juniper Policy Server (JPS).

Table 16: Performance Traps—JPS

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval(sec)	R/AV
jpsHeapUsed	250	$S:JPS:$D% of Java VM heap is in use. This $L the threshold of $T%.:$A	95%	90%	80%	60	AV
jpsCmtsAvgSyncTime	251	$S:JPS:During the last $Ps, the average time this JPS spent on CMTS synchronizations is $Dms. This $L the threshold of $Tms.:$A	900s	600s	200s	60	R
jpsCmtsAvgDecTime	252	$S:JPS:During the last $Ps, the average time the CMTS connection spent on successfully completed DEC/RPT transactions is $Dms. This $L the threshold of $Tms.:$A	3s	2s	1s	60	R
jpsMsgHdlrProcTime	253	$S:JPS:During the last $Ps, the average time the JPS message handler spent on message handling is $Dms. This $L the threshold of $Tms.:$A	10s	5s	2s	60	R
jpsMsgFlowProcTime	254	$S:JPS:During the last $Ps, the average time the JPS message flow spent on message handling is $Dms. This $L the threshold of $Tms.:$A	30s	15s	6s	60	R
jpsMsgFlowDroppedMsgs	255	$S:JPS:During the last $Ps, the number of messages dropped by a JPS message flow is $D. This $L the threshold of $T.:$A	1000	100	1	60	R

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

Chassis Performance Traps

Table 17 on page 77 lists the performance traps for chassis events.

Table 17: Performance Traps—Chassis

			Alarm Threshold Levels (default values)				
Trap Event	Trap ID	Text Displayed	Critical	Major	Minor	Interval (sec)	R/AV
diskUsage	302	$S:diskUsage: directory (juniSdxDiskPath) uses up to (juniSdxDiskUsedPercentage) of disk space. This exceeded (THRESHOLD).:RAISE	95% of MAX	90% of MAX	80% of MAX	60	AV

Related Topics

- Performance Traps on page 63
- Trap Numbers in Performance Traps on page 64
- Configuring Performance Traps (SRC CLI) on page 60

Event Traps

Table 18 on page 77 lists the event traps.

Table 18: Event Traps

Trap Event	Trap ID	Text Displayed
saeLicenseNetworkCapacity	9	$S:SAE:The total number of sum-weighted line cards allocated in this SRC network is $LINE_CARD_NUMBER ($THRESHOLD_PERCENTAGE)%. This $L the network ERX capacity threshold of $T sum-weighted line cards.: $A
saeServiceSessionLicense	11	$S:LICENSE SERVER:$SERVICE_SESSIONS ($SERVICES_PERCENTAGE%) of the available licensed service sessions are in use.: $A
routerConnClosed	211	When juniSaeRouterUseFailOver is FALSE: • INFORMATION:SAE Router Driver: The router connection to $juniSaeRouterClientId has been closed.:RAISE When juniSaeRouterUseFailOver is TRUE: • INFORMATION:SAE Router Driver:The router connection to $juniSaeRouterClientId has been closed and redirected to $juniSaeRouterFailOverIp:$juniSaeRouterFailOverPort:RAISE
routerConnDown	212	INFORMATION:SAE Router Driver:The router connection to $juniSaeRouterClientId went down.:RAISE
routerConnRejected	213	INFORMATION:SAE Router Driver:The router connection from $juniSaeRouterClientId has been rejected.:RAISE
routerConnUp	210	INFORMATION:SAE Router Driver:A new router connection was established with $juniSaeRouterClientId.:RAISE

Table 18: Event Traps *(continued)*

Trap Event	Trap ID	Text Displayed
routerConfOutOfSynch	214	When the trap is raised, the text displayed is: • INFORMATION:SAE Router Driver: The configured state of router $juniSaeRouterClientId is out of synch with SAE. The configured action to be taken by SAE is $configuredAction.:RAISE When the trap is cleared, the text displayed is: • INFORMATION:SAE Router Driver: The configured state of router $juniSaeRouterClientId is successfully resynchronized with SAE.:CLEAR
agentStarted	110	INFORMATION:Agent: The agent has started.:RAISE
agentRestartFailed	111	CRITICAL: Agent: The agent has failed to restart after $ATTEMPTS attempts:RAISE
agentShutdown	112	INFORMATION:Agent:The agent has shutdown.:RAISE
componentUp	114	INFORMATION:$I: This component is up.:RAISE
componentDown	115	INFORMATION:$I: This component is down:RAISE
dirConnected	130	INFORMATION:$I:The directory connection has been established with $LDAP_HOST on port $LDAP_PORT, and has a type of $CONNECTION_TYPE.:RAISE
dirConnectionFailure	131	CRITICAL:$I:The directory connection with $LDAP_HOST has failed.:RAISE
dirNotAvail	132	CRITICAL:$I:A directory connection is not available.:RAISE
nicHostRedundStateSwitched	240	INFORMATION:NIC Host: The redundancy state of the NIC Host has switched to $juniNicHostRedundState.:RAISE
nicHostMisconfigured	241	INFORMATION:NIC Host: The NIC Host failed to start due to misconfiguration. The error message is "$MESSAGE".:RAISE
acpSyncCompleted	290	INFORMATION: ACP State Sync:ACP finished state sync with SAE for $juniAcpVirtualRouterName.:RAISE
acpRedundStateSwitched	291	INFORMATION: ACP Host:The redundancy state of the ACP Host has switched to $juniAcpRedundState.:RAISE
jpsAmConnUp	260	INFORMATION: JPS:A new application manager connection was established.:RAISE
jpsAmConnDown	261	INFORMATION:JPS:The application manager connection went down.:RAISE
jpsCmtsConnUp	262	INFORMATION:JPS:A new CMTS connection was established.:RAISE
jpsCmtsConnDown	263	INFORMATION:JPS:A CMTS connection went down.:RAISE

Table 18: Event Traps *(continued)*

Trap Event	Trap ID	Text Displayed
jdbReplicationFailure	292	When the trap is raised, the text displayed is: • INFORMATION:jdbReplicationFailure:Failed to replicate LDAP data {juniSdxJdbReplicationDirection} neighbor {juniSdxJdbNeighbor}.The latest JDB replicaiton status is:{juniSdxJdbLastStatus }:RAISE When the trap is cleared, the text displayed is: • INFORMATION: jdbReplicationFailure:Community directory server {juniSdxJdbNeighbor} latest update status error:CLEAR
systemOperatingFailure	300	When the trap is raised, the text displayed is: • INFORMATION:System:hardware failure is found with $juniSdxOperatingSensor on system $juniSdxOperatingLocation:RAISE When the trap is cleared, the text displayed is: • INFORMATION:System:hardware failure with $juniSdxOperatingSensor on system $juniSdxOperatingLocation is cleared:CLEAR
diskFailure	301	When the trap is raised, the text displayed is: • INFORMATION:System:disk failure is found:RAISE When the trap is cleared, text displayed is: • INFORMATION:System:disk failure is cleared:CLEAR

Related Topics

- Overview of SNMP Traps on page 57
- Configuring Event Traps (SRC CLI) on page 61
- Alarm State Transitions on page 79

Alarm State Transitions

Table 19 on page 79 lists the alarm state transitions.

Table 19: Alarm State Transitions

Last Data Threshold	Current Data Threshold	Action(s)	
NONE	NONE	No action	
NONE	MINOR	Raise minor event	
NONE	MAJOR	Raise major event	
NONE	CRITICAL	Raise critical event	

Table 19: Alarm State Transitions *(continued)*

Last Data Threshold	Current Data Threshold	Action(s)	
MINOR	NONE	Clear minor event	
MINOR	MINOR	No action	
MINOR	MAJOR	Raise major event	
MINOR	CRITICAL	Raise critical event	
MAJOR	NONE	Clear critical event	
MAJOR	MINOR	Clear major event	Raise minor event
MAJOR	MAJOR	No action	
MAJOR	CRITICAL	Raise critical event	
CRITICAL	NONE	Clear critical event	
CRITICAL	MINOR	Clear critical event	Raise minor event
CRITICAL	MAJOR	Clear critical event	Raise major event
CRITICAL	CRITICAL	No action	

Related Topics

- Configuring Event Traps (SRC CLI) on page 61
- Event Traps on page 77

PART 5

Monitoring the SRC Software and the C Series Controller with the C-Web Interface and the SRC CLI

- Monitoring with the SRC CLI and the C-Web Interface on page 83
- Monitoring the System (SRC CLI) on page 87
- Monitoring the System (C-Web Interface) on page 93
- Monitoring SAE Data (SRC CLI) on page 105
- Monitoring SAE Data (C-Web Interface) on page 127
- Monitoring and Troubleshooting the NIC (SRC CLI) on page 157
- Monitoring the NIC (C-Web Interface) on page 167
- Monitoring NTP (SRC CLI) on page 173
- Monitoring NTP (C-Web Interface) on page 177
- Monitoring Redirect Server (SRC CLI) on page 181
- Monitoring the Redirect Server and Filtered Traffic (C-Web Interface) on page 183
- Troubleshooting Network Connectivity (SRC CLI) on page 187
- Monitoring Network Connectivity (C-Web Interface) on page 191
- Monitoring Activity for SRC Components on page 193

CHAPTER 12

Monitoring with the SRC CLI and the C-Web Interface

- Monitoring with the SRC CLI and the C-Web Interface on page 83
- SRC Monitoring Options on page 83

Monitoring with the SRC CLI and the C-Web Interface

You can use the **show** commands available with the SRC CLI to monitor the operation and configuration of your SRC environment.

The C-Web graphical user interface (GUI) allows you to monitor the operation and configuration of your SRC environment by using a Web browser with Hypertext Transfer Protocol (HTTP) or HTTP over Secure Sockets Layer (HTTPS) enabled.

Related Topics

- Overview of Monitoring and Troubleshooting Tools on page 3
- SRC Monitoring Options on page 83

SRC Monitoring Options

Table 20 on page 84 lists and compares the monitoring options for the C-Web interface and the SRC CLI.

Table 20: Comparison of SRC Monitoring Options

C-Web Interface Monitor Option	Information Displayed	Corresponding SRC CLI Commands
ACP	Admission Control Plug-In (ACP) data and statistics	• show acp backbone congestion-point congestion-point-expression • show acp backbone congestion-point dn • show acp backbone service • show acp edge congestion-point dn • show acp edge congestion-point subscriber-session-id • show acp edge subscriber • show acp remote-update congestion-point dn • show acp remote-update congestion-point name • show acp remote-update subscriber • show acp statistics device • show acp statistics directory • show acp statistics general
CLI	SRC CLI level and authorization data	• show cli • show cli authorization
Component	Installed components	• show component
Date	System date and time	• show date
Disk	System disk status	• show disk status
Interfaces	System interfaces	• show interfaces
Iptables	Filtered traffic statistics from the iptables Linux tool	• show iptables
JPS	Juniper Policy Server (JPS) data and statistics	• show jps statistics • show jps statistics am • show jps statistics am connections • show jps statistics cmts-locator • show jps statistics cmts • show jps statistics_cmts connections • show jps statistics message-handler • show jps statistics message-handler message-flow • show jps statistics process • show jps statistics rks

Table 20: Comparison of SRC Monitoring Options *(continued)*

C-Web Interface Monitor Option	Information Displayed	Corresponding SRC CLI Commands
NIC	Network information collector (NIC) component configuration data and statistics, including NIC agents, resolvers, and process	• show nic data • show nic data agent • show nic data resolver • show nic statistics • show nic statistics agent • show nic statistics host • show nic statistics process • show nic statistics resolver • show nic slot number data • show nic slot number statistics
NTP	Network Time Protocol (NTP) configuration data and statistics	• show ntp associations • show ntp statistics • show ntp status
Redirect server	Redirect server statistics	• show redirect server statistics
Route	Route data from the local system to a remote host	• show route

Table 20: Comparison of SRC Monitoring Options *(continued)*

C-Web Interface Monitor Option	Information Displayed	Corresponding SRC CLI Commands
SAE	SAE configuration data and statistics	• show sae drivers • show sae interfaces • show sae licenses • show sae policies • show sae registered equipment • show sae registered login • show sae services • show sae statistics device • show sae statistics device common • show sae statistics directory • show sae statistics directory connections • show sae statistics license client • show sae statistics license device • show sae statistics license local • show sae statistics policy-management • show sae statistics process • show sae statistics radius • show sae statistics radius client • show sae statistics sessions • show sae subscribers • show sae subscribers dn • show sae subscribers ip • show sae subscribers login-name • show sae subscribers service-name • show sae subscribers session-id • show sae threads
Security	Security certificate configuration and statistics	• show security certificate
System	SRC software and C Series Controller configuration data	• show configuration • show system boot-messages • show system information • show system ldap community • show system ldap server • show system ldap statistics • show system users

Related Topics

- Overview of Monitoring and Troubleshooting Tools on page 3
- Monitoring with the SRC CLI and the C-Web Interface on page 83

CHAPTER 13

Monitoring the System (SRC CLI)

- Viewing Information About a C Series Controller (SRC CLI) on page 87
- Viewing Information About Components Installed (SRC CLI) on page 88
- Viewing Information About Boot Messages (SRC CLI) on page 89
- Viewing Information About Security Certificates (SRC CLI) on page 91

Viewing Information About a C Series Controller (SRC CLI)

Purpose View information about a C Series Controller.

Action

```
user@host> show system information

System Identification
Hostname         my-server
Manufacturer     Juniper Networks
Product Name     C-2000
Version          1.0
Serial Number    0207082006000001
UUID             48384441-5254-0030-4859-0030485977EE
Hostid           e30a2e07
Software version SRC PE Release 7.0 [A.7.0.0-151]

System Time
Current time              2007-01-02 17:29:19 EST
Uptime                    15 days, 1:07
Number of active users    3
Load Averages (1m/5m/15m) 0.23/0.22/0.14

Memory
Total 15G
Free  12G

CPU Info
Number of CPU 4
CPU Model     Dual Core AMD Opteron(tm) Processor 265
Clock Speed   1804.132 MHz

Disk Information
  Mountpoint       Total Used  Use%
  /                2015M  956M  47%
  /altroot         2015M   35M   1%
  /altvar            29G   75M   0%
  /boot              98M   14M  14%
  /var               31G  216M   0%
```

```
Temperature
System +23 C
CPU-1  +33 C
CPU-2  +35 C

Fan speed
Fan-1 9375 RPM
Fan-2 9375 RPM
```

Related Topics

- Viewing Information About Boot Messages (SRC CLI) on page 89
- Viewing Information About the System (C-Web Interface) on page 93
- Viewing Information About Components Installed (SRC CLI) on page 88
- Viewing Information About System Disk Status (C-Web Interface) on page 98
- For information about configuring C Series Controllers, see the *SRC PE C-Web Interface Configuration Guide*

Viewing Information About Components Installed (SRC CLI)

Purpose View release and status information for SRC components installed on a system.

Action

```
user@host> show component

Installed Components
Name    Version                    Status
cli       Release: 7.0 Build: CLI.A.7.0.0.0171              running
acp       Release: 7.0 Build: ACP.A.7.0.0.0174              disabled
jdb       Release: 7.0 Build: DIRXA.A.7.0.0.0176            running
editor    Release: 7.0 Build: EDITOR.A.7.0.0.0176           running
redir     Release: 7.0 Build: REDIR.A.7.0.0.0176            disabled
licSvr    Release: 7.0 Build: LICSVR.A.7.0.0.0179           stopped
nic       Release: 7.0 Build: GATEWAY.A.7.0.0.0170          disabled
sae       Release: 7.0 Build: SAE.A.7.0.0.0166              running
www       Release: 7.0 Build: UMC.A.7.0.0.0169              disabled
jps       Release: 7.0 Build: JPS.A.7.0.0.0172              disabled
agent     Release: 7.0 Build: SYSMAN.A.7.0.0.0174           running
webadm    Release: 7.0 Build: WEBADM.A.7.0.0.0173           disabled
```

Meaning Table 21 on page 88 describes the output fields for the **show component** command. Output fields are listed in the order in which they appear.

Table 21: Output Fields for show component

Field Name	Field Description
Name	Name of the component
Version	Version of the component
Status	State of the component, running or disabled

Related Topics

- Viewing Information About Components Installed (C-Web Interface) on page 95

- Viewing C Series Controller Information
- Directories on the C Series Controller

Viewing Information About Boot Messages (SRC CLI)

Purpose If you encounter system problems in a C Series Controller after you start the system, you can view information about the boot process.

View messages generated during system boot.

Action

```
user@host> show system boot-messages
Bootdata ok (command line is ro root=/dev/vg0/root console=tty0 console=ttyS0,96
00)
Linux version 2.6.9-42.0.3.ELsmp (buildcentos@x8664-build.centos.org) (gcc versi
on 3.4.6 20060404 (Red Hat 3.4.6-3)) #1 SMP Fri Oct 6 06:28:26 CDT 2006
BIOS-provided physical RAM map:
 BIOS-e820: 0000000000000000 - 000000000009ac00 (usable)
 BIOS-e820: 000000000009ac00 - 00000000000a0000 (reserved)
 BIOS-e820: 00000000000ea070 - 0000000000100000 (reserved)
 BIOS-e820: 0000000000100000 - 00000000dffc0000 (usable)
 BIOS-e820: 00000000dffc0000 - 00000000dffcf000 (ACPI data)
 BIOS-e820: 00000000dffcf000 - 00000000dfff0000 (ACPI NVS)
 BIOS-e820: 00000000dfff0000 - 00000000e0000000 (reserved)
 BIOS-e820: 00000000fec00000 - 00000000fec86000 (reserved)
 BIOS-e820: 00000000fee00000 - 00000000fee01000 (reserved)
 BIOS-e820: 00000000ffb00000 - 0000000100000000 (reserved)
 BIOS-e820: 0000000100000000 - 0000000220000000 (usable)
ACPI: RSDP (v000 ACPIAM                                    ) @ 0x00000000000f7760
ACPI: RSDT (v001 A M I  OEMRSDT  0x03000529 MSFT 0x00000097) @ 0x00000000dffc000
0
ACPI: FADT (v002 A M I  OEMFACP  0x03000529 MSFT 0x00000097) @ 0x00000000dffc020
0
ACPI: MADT (v001 A M I  OEMAPIC  0x03000529 MSFT 0x00000097) @ 0x00000000dffc039
0
ACPI: OEMB (v001 A M I  AMI_OEM  0x03000529 MSFT 0x00000097) @ 0x00000000dffcf04
0
ACPI: DSDT (v001  DVLG2 DVLG2007 0x00000007 INTL 0x02002026) @ 0x000000000000000
0
No NUMA configuration found
Faking a node at 0000000000000000-0000000220000000
Bootmem setup node 0 0000000000000000-0000000220000000
No mptable found.
On node 0 totalpages: 2228224
  DMA zone: 4096 pages, LIFO batch:1
  Normal zone: 2224128 pages, LIFO batch:16
  HighMem zone: 0 pages, LIFO batch:1
DMI 2.3 present.
ACPI: PM-Timer IO Port: 0x408
ACPI: Local APIC address 0xfee00000
ACPI: LAPIC (acpi_id[0x01] lapic_id[0x00] enabled)
Processor #0 15:4 APIC version 16
ACPI: LAPIC (acpi_id[0x02] lapic_id[0x06] enabled)
Processor #6 15:4 APIC version 16
ACPI: LAPIC (acpi_id[0x03] lapic_id[0x01] enabled)
Processor #1 15:4 APIC version 16
ACPI: LAPIC (acpi_id[0x04] lapic_id[0x07] enabled)
Processor #7 15:4 APIC version 16
Setting APIC routing to flat
```

```
ACPI: IOAPIC (id[0x08] address[0xfec00000] gsi_base[0])
IOAPIC[0]: apic_id 8, version 32, address 0xfec00000, GSI 0-23
ACPI: IOAPIC (id[0x09] address[0xfec10000] gsi_base[24])
IOAPIC[1]: apic_id 9, version 32, address 0xfec10000, GSI 24-4
ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 dfl dfl)
ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 high level)
ACPI: IRQ0 used by override.
ACPI: IRQ2 used by override.
ACPI: IRQ9 used by override.
Using ACPI (MADT) for SMP configuration information
Allocating PCI resources starting at e2000000 (gap: e0000000:1ec00000)
Checking aperture...
Built 1 zonelists
Kernel command line: ro root=/dev/vg0/root console=tty0 console=ttyS0,9600
Initializing CPU#0
PID hash table entries: 4096 (order: 12, 131072 bytes)
time.c: Using 3.579545 MHz PM timer.
time.c: Detected 3200.267 MHz processor.
Console: colour VGA+ 80x25
Dentry cache hash table entries: 2097152 (order: 12, 16777216 bytes)
Inode-cache hash table entries: 1048576 (order: 11, 8388608 bytes)
Placing software IO TLB between 0x28c1000 - 0x68c1000
Memory: 8168568k/8912896k available (2106k kernel code, 0k reserved, 1297k data,

 196k init)
Calibrating delay using timer specific routine.. 6406.43 BogoMIPS (lpj=3203218)
Security Scaffold v1.0.0 initialized
SELinux:  Initializing.
SELinux:  Starting in permissive mode
There is already a security framework initialized, register_security failed.
selinux_register_security:  Registering secondary module capability
Capability LSM initialized as secondary
Mount-cache hash table entries: 256 (order: 0, 4096 bytes)
CPU: Trace cache: 12K uops, L1 D cache: 16K
CPU: L2 cache: 2048K
using mwait in idle threads.
CPU0: Initial APIC ID: 0, Physical Processor ID: 0
Using IO APIC NMI watchdog
CPU: Trace cache: 12K uops, L1 D cache: 16K
CPU: L2 cache: 2048K
CPU0: Initial APIC ID: 0, Physical Processor ID: 0
CPU0:                   Intel(R) Xeon(TM) CPU 3.20GHz stepping 03
per-CPU timeslice cutoff: 705.82 usecs.
task migration cache decay timeout: 1 msecs.
Booting processor 1/6 rip 6000 rsp 10006945f58
Initializing CPU#1
Calibrating delay using timer specific routine.. 6399.38 BogoMIPS (lpj=3199690)
CPU: Trace cache: 12K uops, L1 D cache: 16K
CPU: L2 cache: 2048K
CPU1: Initial APIC ID: 6, Physical Processor ID: 3
                  Intel(R) Xeon(TM) CPU 3.20GHz stepping 03
Booting processor 2/1 rip 6000 rsp 1000697df58
Initializing CPU#2
Calibrating delay using timer specific routine.. 6399.32 BogoMIPS (lpj=3199664)
CPU: Trace cache: 12K uops, L1 D cache: 16K
CPU: L2 cache: 2048K
```

Related Topics

- Viewing Information About Boot Messages (C-Web Interface) on page 96
- Viewing Information About a C Series Controller (SRC CLI) on page 87

- Viewing Information About Components Installed (SRC CLI) on page 88
- Viewing Information About System Disk Status (C-Web Interface) on page 98
- For information about configuring C Series Controllers, see the *SRC PE C-Web Interface Configuration Guide*

Viewing Information About Security Certificates (SRC CLI)

Purpose View information about security certificates that reside on the system.

Action

```
user@host> show security certificate
web subject:CN=myhost
CAcert1 subject:CN=myhost
```

Meaning If no security certificates reside on the system, the CLI return a message to that effect:

```
user@host> show security certificate
No entity certificates in key store
```

Related Topics

- Viewing Information About Security Certificates (C-Web Interface) on page 97
- For information about managing security digital certificates, see Overview of Digital Certificates

CHAPTER 14

Monitoring the System (C-Web Interface)

- Viewing Information About the System (C-Web Interface) on page 93
- Viewing the System Date and Time (C-Web Interface) on page 94
- Viewing Information About Components Installed (C-Web Interface) on page 95
- Viewing Information About Boot Messages (C-Web Interface) on page 96
- Viewing Information About Security Certificates (C-Web Interface) on page 97
- Viewing Information About System Disk Status (C-Web Interface) on page 98
- Viewing Information About the Users on the System (C-Web Interface) on page 99
- Viewing Information About the Juniper Networks Database in Community Mode (C-Web Interface) on page 100
- Viewing Statistics for the Juniper Networks Database (C-Web Interface) on page 101
- Viewing Information About the SRC CLI (C-Web Interface) on page 102

Viewing Information About the System (C-Web Interface)

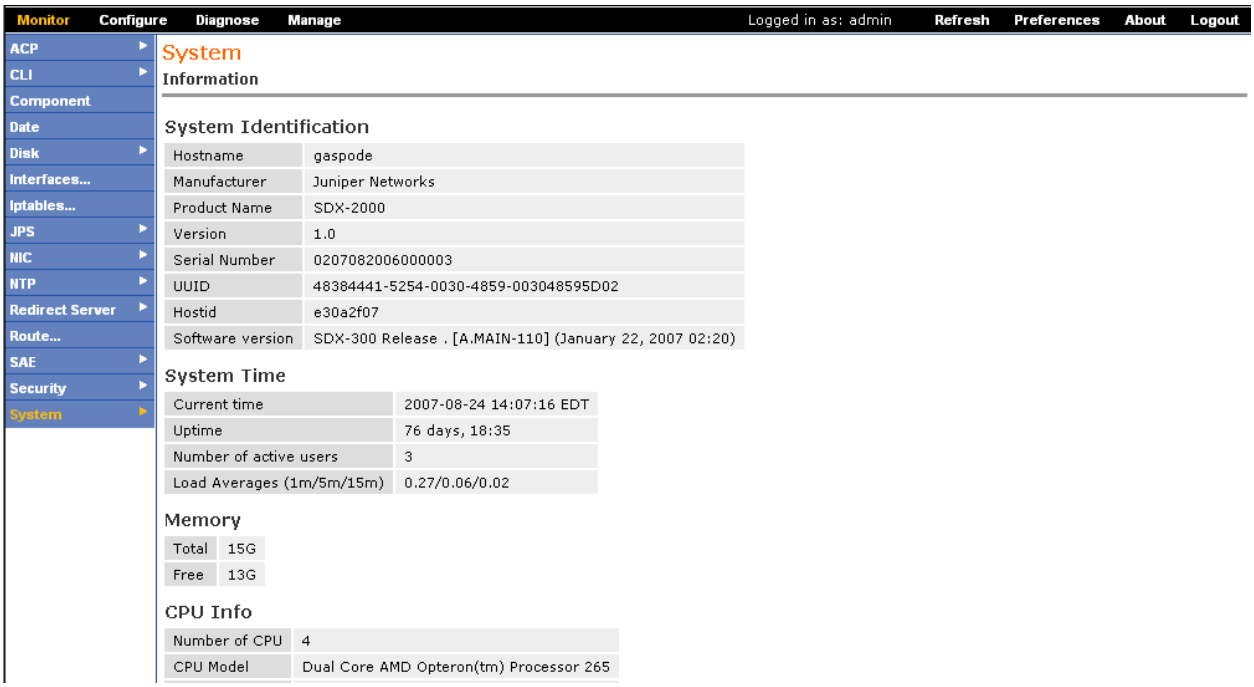
Purpose View system information.

You can view information about the SRC software, including system identification and the system time. You can also view information about the environment of the C Series Controller, including memory, temperature, and fan speeds.

Action

- Click **Monitor**>**System**>**Information**.

  The Information pane displays the system information.



Related Topics

- Viewing Information About a C Series Controller (SRC CLI) on page 87
- Viewing Information About Boot Messages (C-Web Interface) on page 96
- Viewing Information About System Disk Status (C-Web Interface) on page 98
- For information about configuring C Series Controllers, see the *SRC PE C-Web Interface Configuration Guide*

Viewing the System Date and Time (C-Web Interface)

Purpose View the system date and time.

Action Click **Monitor**>**Date**.

The Date pane displays the date and time of the system.

Related Topics

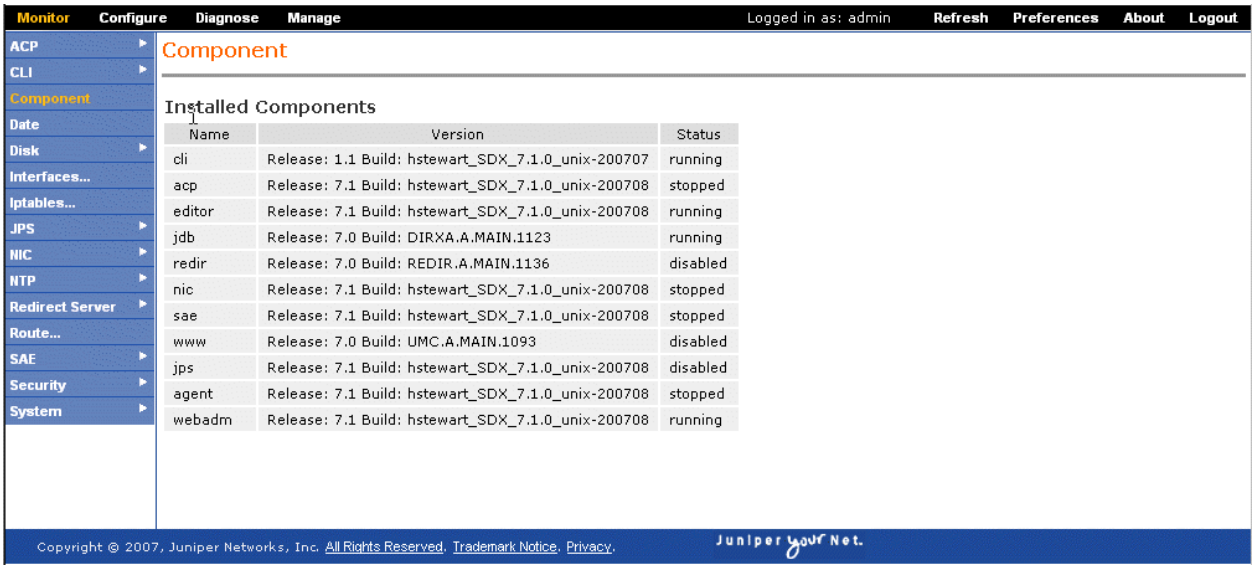
- Setting the Time Zone (SRC CLI)
- Setting the System Date (SRC CLI)
- Viewing NTP Peers (C-Web Interface) on page 177
- Viewing Statistics for NTP (C-Web Interface) on page 178
- Viewing NTP Status (C-Web Interface) on page 178

Viewing Information About Components Installed (C-Web Interface)

Purpose View the installed SRC components.

Action Click **Monitor**>**Component**.

The Component pane displays the status of each installed component.



Related Topics

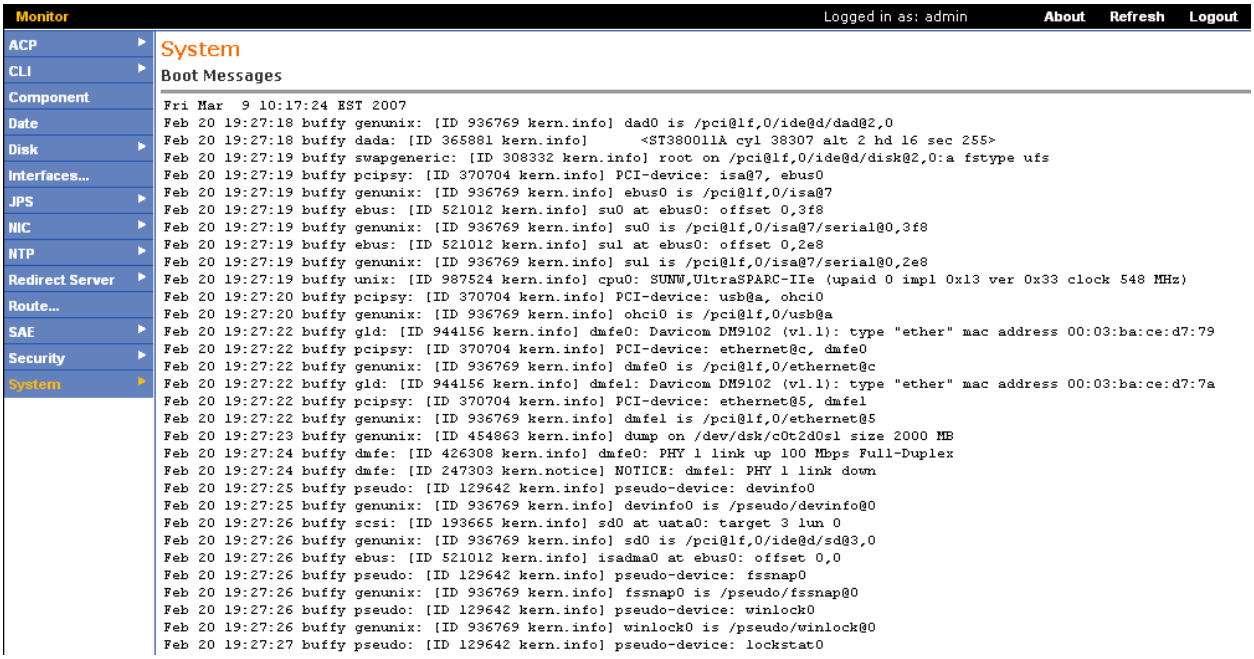
- Viewing Information About Components Installed (SRC CLI) on page 88
- Viewing C Series Controller Information
- Directories on the C Series Controller

Viewing Information About Boot Messages (C-Web Interface)

Purpose View messages generated during SRC software startup.

Action Click **Monitor**>**System**>**Boot Messages**.

The Boot Messages pane displays the boot messages.



Related Topics

- Viewing Information About a C Series Controller (SRC CLI) on page 87
- Viewing Information About Boot Messages (SRC CLI) on page 89
- Viewing Information About the System (C-Web Interface) on page 93
- Viewing Information About System Disk Status (C-Web Interface) on page 98

Viewing Information About Security Certificates (C-Web Interface)

Purpose View messages generated during SRC software startup.

Action

1. Click **Monitor**>**Security**>**Certificate**.

   The Certificate pane appears.

2. To display authority certificates, select the **Trusted** check box.
3. Click **OK**.

   The Certificate pane displays the security certificates.

Related Topics

- Viewing Information About Security Certificates (SRC CLI) on page 91
- For information about managing security digital certificates, see Overview of Digital Certificates

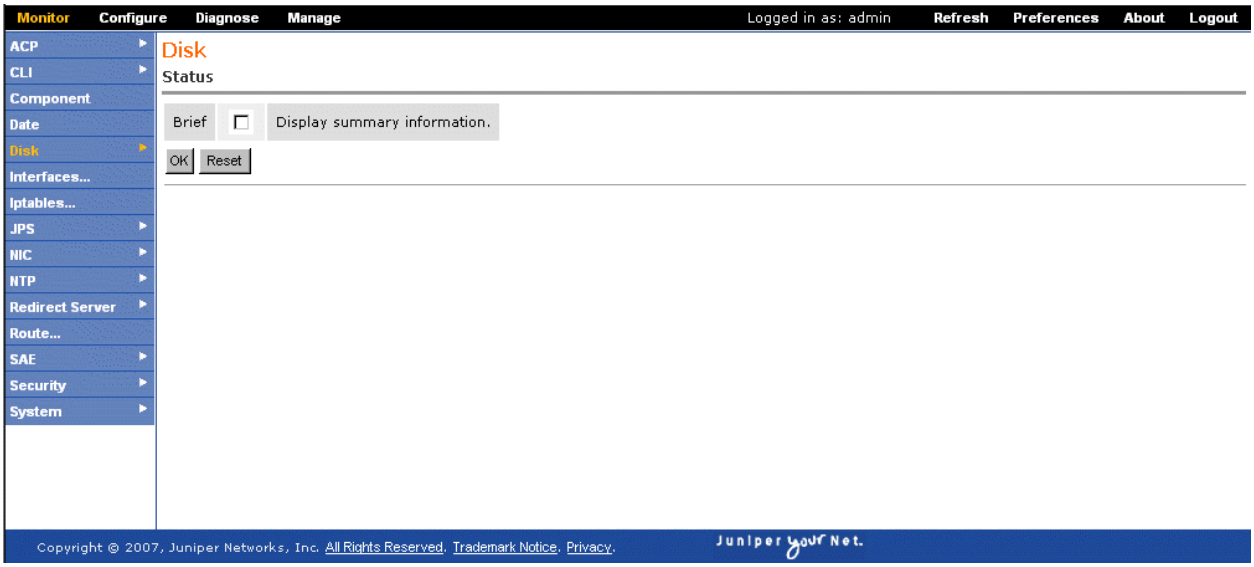
Viewing Information About System Disk Status (C-Web Interface)

Purpose View information about the system disk status.

Action

1. Click **Monitor**>**Disk**>**Status**.

   The Status pane appears.



2. To display a summary of the system disk status, select the **Brief** check box.
3. Click **OK**.

   The Status pane displays the system disk status.

Related Topics

- Viewing Information About a C Series Controller (SRC CLI) on page 87
- Viewing Information About the System (C-Web Interface) on page 93
- Viewing Information About Boot Messages (C-Web Interface) on page 96

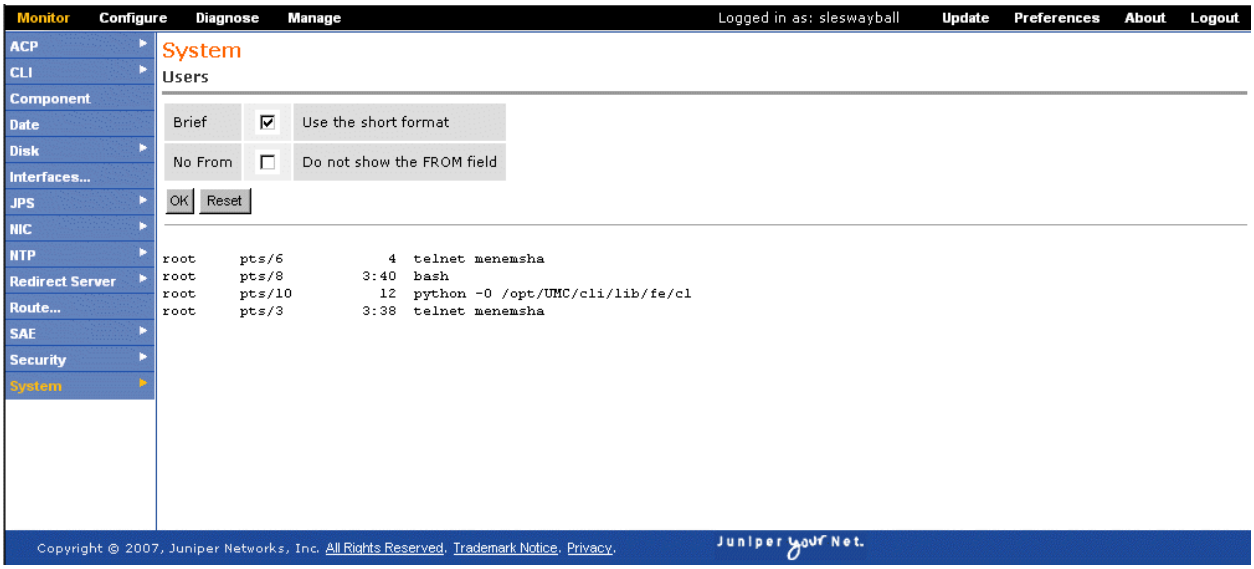
Viewing Information About the Users on the System (C-Web Interface)

Purpose View information about the users on the system.

Action

1. Click **Monitor**>**System**>**Users**.

   The Users pane appears.



2. To display a summary of the users, select the **Brief** check box.
3. Click **OK**.

   The Users pane displays the information about the users on the system.

Related Topics

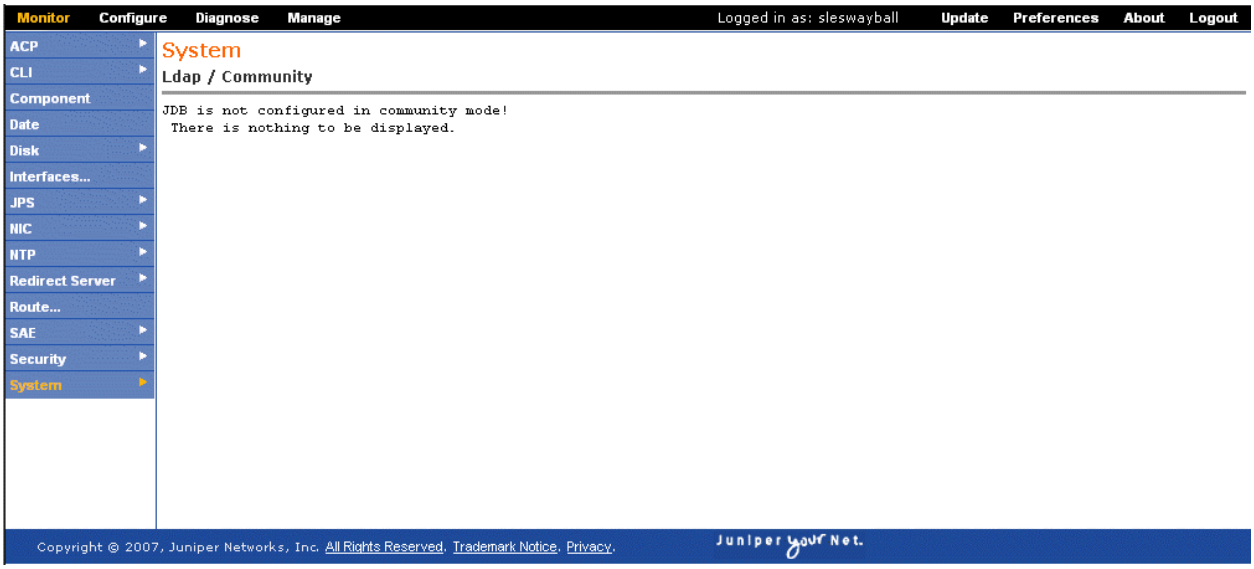
- Configuring User Accounts (C-Web Interface)
- Viewing Information About the SRC CLI (C-Web Interface) on page 102
- Viewing Information About SRC CLI User Permissions (C-Web Interface) on page 102

Viewing Information About the Juniper Networks Database in Community Mode (C-Web Interface)

Purpose View information about the Juniper Networks database when it runs in community mode.

Action Click **Monitor**>**System**>**LDAP**>**Community**.

The LDAP/Community pane appears and displays information about the Juniper Networks database.



Related Topics

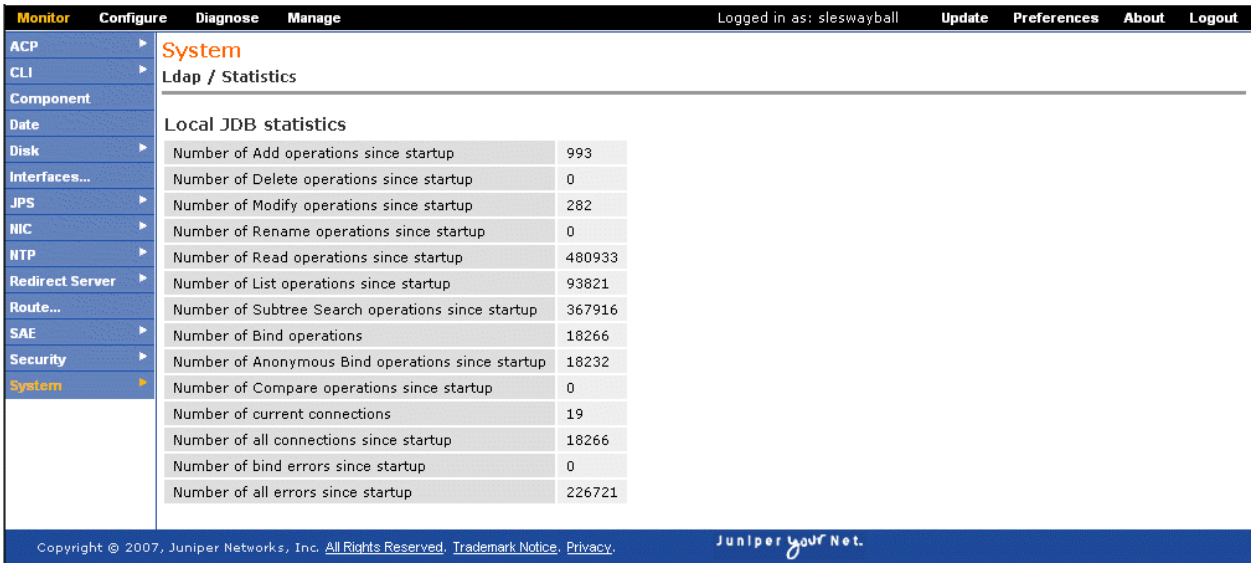
- Configuring the Juniper Networks Database to Run in Community Mode (C-Web Interface)
- Viewing Statistics for the Juniper Networks Database (C-Web Interface) on page 101

Viewing Statistics for the Juniper Networks Database (C-Web Interface)

Purpose View statistics for the Juniper Networks database.

Action Click **Monitor**>**System**>**LDAP**>**Statistics**.

The Statistics pane appears and displays local Juniper Networks database statistics.



Related Topics

- Troubleshooting Data Synchronization for Juniper Networks Databases (SRC CLI)

- Viewing Information About the Juniper Networks Database in Community Mode (C-Web Interface) on page 100

Viewing Information About the SRC CLI (C-Web Interface)

You can view information about the current user's permissions and editing level for the SRC CLI by:

- Viewing Information About the SRC CLI (C-Web Interface) on page 102
- Viewing Information About SRC CLI User Permissions (C-Web Interface) on page 102

Viewing Information About the SRC CLI (C-Web Interface)

Purpose View information about the current user's command completion setting and editing level for the SRC CLI.

Action Click **Monitor**>**CLI**.

The CLI pane appears and displays the information about the CLI.

Related Topics

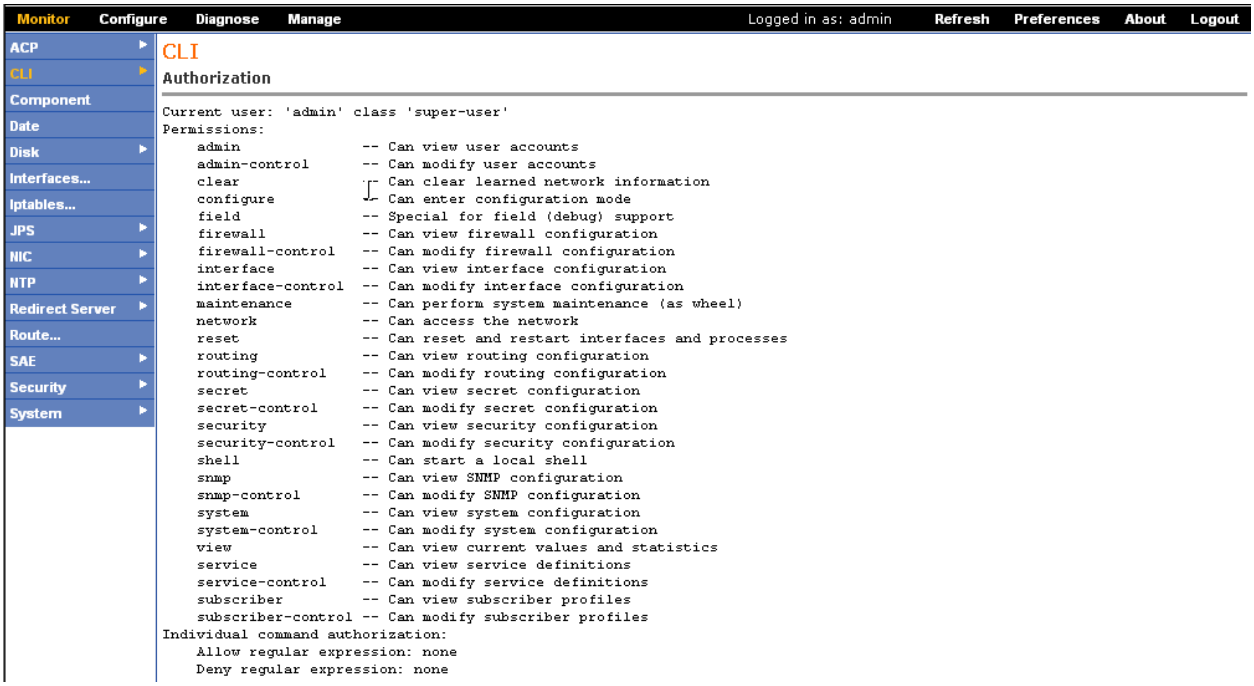
- Creating an SRC Configuration
- Starting the SRC CLI
- Viewing Settings for the SRC CLI
- Viewing Information About SRC CLI User Permissions (C-Web Interface) on page 102

Viewing Information About SRC CLI User Permissions (C-Web Interface)

Purpose To display information about the current user's permissions for the SRC CLI.

Action Click **Monitor**>**CLI**>**Authorization**.

The Authorization pane appears and displays the current user's permissions for each SRC CLI option.



Related Topics

- Viewing Information About the SRC CLI (C-Web Interface) on page 102
- Viewing Information about Users Logged Into the SRC Software

CHAPTER 15

Monitoring SAE Data (SRC CLI)

- Viewing SAE Data with the CLI on page 105
- Viewing Information About Subscriber Sessions (SRC CLI) on page 113
- Viewing SAE SNMP Information with the CLI on page 118

Viewing SAE Data with the CLI

You can view information about the SAE active configuration for data currently stored in the SAE server's memory.

You can view SAE data by:

- Viewing Information About the Directory Blacklist (SRC CLI) on page 105
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106
- Viewing Information About SAE Interfaces (SRC CLI) on page 107
- Viewing Information About SAE Licenses (SRC CLI) on page 107
- Viewing Information About Policies on the SAE (SRC CLI) on page 108
- Viewing Login Registrations (SRC CLI) on page 109
- Viewing Equipment Registrations (SRC CLI) on page 110
- Viewing Information About Services (SRC CLI) on page 110
- Viewing Information About Threads (SRC CLI) on page 112

Viewing Information About the Directory Blacklist (SRC CLI)

Purpose View information about the directory blacklist configured on the SAE.

Action `user@host>` **show sae directory-black-list**

Related Topics

- Removing the Directory Blacklist (C-Web Interface)
- Initially Configuring the SAE
- Viewing Information About the Directory Blacklist (C-Web Interface) on page 127
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106

Viewing Information About SAE Device Drivers (SRC CLI)

Purpose View information about SAE device drivers. Each device driver manages one logical router instance.

Action To view information about the state of SAE device drivers:

```
user@host> show sae drivers
JUNOSe Driver
Device name                           default@dryad
Device type                           junose
Device IP                             10.227.7.244
Local IP                              10.227.7.172
TransportRouter                       default@dryad
Device version                        7.2.0
Start time                            Tue Feb 13 14:18:44 EST 2007
Number of notifications               20
Number of processed added             14
Number of processed changed           0
Number of processed deleted           6
Number of provisioning attempt        30
Number of provisioning attempt failed 0
Number of outstanding decisions       0
Number of SAP                         7
Number of PAP                         1
  Job Queue
  Size                 0
  Age (ms)             1
  Total enqueued       28
  Total dequeued       28
  Average job time (ms) 426
  State Synchronization
  Number recovered subscriber sessions              0
  Number recovered service sessions                 0
  Number recovered interface sessions               0
  Number invalid subscriber sessions                0
  Number invalid service sessions                   0
  Number invalid interface sessions                 0
  Background restoration start time                 Tue Feb 13 14:18:49 EST 2007

  Background restoration end time                   Tue Feb 13 14:18:49 EST 2007

  Number subscriber sessions restored in background 0
  Number of provisioning objects left to collect    0
  Total number of provisioning objects to collect   11
  Start time                                        Tue Feb 13 14:18:45 EST 2007

  End time                                          Tue Feb 13 14:18:47 EST 2007

  Number of synched contexts                        7
  Number of post-sync jobs                          6
```

To view information about the state of a particular device driver, specify all or part of the virtual router name. For JUNOS router drivers and PCMM drivers, use the format default@routerName.

```
user@host> show sae drivers device-name device-name
```

To view only the virtual router names for the device driver:


```
user@host> show sae drivers brief

Router Drivers
Router Name        Router Type
default@simJunos              junos
```

To restrict the number of displayed results:

```
user@host> show sae drivers maximum-results maximum-results
```

Related Topics

- Initially Configuring the SAE
- Shutting Down the Device Drivers (SRC CLI)
- Viewing Information About Device Drivers (C-Web Interface) on page 131
- Viewing Statistics for Device Drivers (SRC CLI) on page 123

Viewing Information About SAE Interfaces (SRC CLI)

Purpose View information about SAE interfaces.

We recommend that you do not enter the **show sae interfaces** command without specifying an interface, virtual router, brief, or maximum results to filter the results. Entering the **show sae interfaces** command can generate a large quantity of results, and processing these results can place a load on the C Series Controller.

Action To view information about the router interfaces:

```
user@host> show sae interfaces
```

To view information about particular router interfaces, specify all or part of the interface name.

```
user@host> show sae interfaces interface-name interface-name
```

To view information about interfaces for a particular virtual router, specify all or part of the VR name.

```
user@host> show sae interfaces virtual-router-name virtual-router-name
```

To view only the interface names:

```
user@host> show sae interfaces brief
```

To restrict the number of displayed results:

```
user@host> show sae interfaces maximum-results maximum-results
```

Related Topics

- Initially Configuring the SAE
- Reloading Interface Classification Scripts (SRC CLI)
- Viewing Information About Interfaces (C-Web Interface) on page 133
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106

Viewing Information About SAE Licenses (SRC CLI)

Purpose View the installed licenses.

Action

```
user@host> show sae licenses
SSC License Key Checker V3.0
Type of license: Pilot. Status: OK.
The following valid licenses are found:
License: cn=83ced779,ou=Licenses,o=Management,o=UMC
license.val.component = 1
license.val.customer = buffy
license.val.expiry = 2007-02-23
license.val.nodeid = 83ced779
license.val.release = 7.*
license.val.seqnum = 00555
license.val.type = pilot
license.val.userSessions = 100
```

Related Topics

- Obtaining an SRC License
- Viewing Information About Licenses (C-Web Interface) on page 129
- Viewing Information About Policies on the SAE (SRC CLI) on page 108

Viewing Information About Policies on the SAE (SRC CLI)

Purpose View policy information.

Action To view information about the policies available on the SAE:

```
user@host> show sae policies
```

To view information about particular policies, specify all or part of the policy list name:

```
user@host> show sae policies filter filter
```

For example, if you wanted to view the policy called brickwall:

```
user@host> show sae policies filter brickwall
```

```
Policy Group
Policy Group Name brickwall
Absolute ID       policyGroupName=brickwall,ou=entjunos,o=Policies,o=UMC

 Policy Object
  applicability  both
  Name           both
  policyRoles    JUNOS
  accountingRule false
  Name           block
  priority       601
  ruleType       JUNOS ASP
  matchDirection both
  Name           all
  Name           drop
  Name           packet
```

To view only the policy list names for the policies:

```
user@host> show sae policies brief
```

```
Policies
ADSL-Basic
basicBod
BestEffort64
block
```

```
bod
bodVpn
both_fwr_filter
both_fwr_fwd
both_fwr_reject
brickwall
brickwall
content-provider
content-provider-tiered
custom_policer
default
default
DHCP
DocsisParameter
DownStream
dynsrcnat
eglimit
emailweb
emailweb
EntDefault
filter
More results available. Display has reached the maximum number of results.
Number of skipped results: 43
```

To restrict the number of displayed results:

```
user@host> show sae policies maximum-results maximum-results
```

Related Topics

- Enabling the Policy Configuration on the SRC CLI
- Viewing Information About Policies (C-Web Interface) on page 130
- Viewing Information About SAE Licenses (SRC CLI) on page 107
- Viewing SNMP Information for Policies (SRC CLI) on page 121

Viewing Login Registrations (SRC CLI)

Purpose View information about registered logins. You can view all login registrations, or you can view a specific registration.

Action To view information about all login registrations:

```
user@host> show sae registered login
```

To view a specific registration, specify the media access control (MAC) address for the registration that you want to display:

```
user@host> show sae registered login mac-address mac-address
```

To view only the MAC address of the registrations:

```
user@host> show sae registered login brief
```

To restrict the number of displayed results:

```
user@host> show sae registered login maximum-results maximum-results
```

Related Topics

- For information about login registrations, see the *SRC PE Sample Applications Guide*
- Removing Login Registrations (SRC CLI)

- Viewing Login Registrations (C-Web Interface) on page 135

Viewing Equipment Registrations (SRC CLI)

Purpose View information about equipment registrations. You can view all equipment registrations, or you can view a specific registration.

Action To view information about all equipment registrations:

```
user@host> show sae registered equipment
```

To view a specific registration, specify the media access control (MAC) address for the registration that you want to display:

```
user@host> show sae registered equipment mac-address mac-address
```

To view only the MAC address of the registrations:

```
user@host> show sae registered equipment brief
```

To restrict the number of displayed results:

```
user@host> show sae registered equipment maximum-results maximum-results
```

Related Topics For information about equipment registrations, see the *SRC PE Sample Applications Guide*

- Removing Equipment Registrations (C-Web Interface)
- Viewing Equipment Registrations (C-Web Interface) on page 133
- Viewing Login Registrations (SRC CLI) on page 109

Viewing Information About Services (SRC CLI)

Purpose View information about services available on the SAE. You can view information about all services, or about specific services.

Action To view information about the services available on the SAE:

```
user@host> show sae services
```

To view information about particular services, specify all or part of the service name:

```
user@host> show sae services filter filter
```

For example, if you wanted to view the service called BrickWall:

```
user@host> show sae services filter brickwall
```

```
Service
available      true
description    This firewall blocks all incoming and outgoing traffic.
location       l=entjunos,o=scopes,o=umc
policygroupref policyGroupName=brickwall,ou=entjunos,o=Policies,o=UMC
servicename    BrickWall
servicetype    7
sspcategory    basicFirewall
ssptype        Normal
status         2
```

```
available      true
description    This firewall blocks all incoming and outgoing traffic.
location       l=entjunosstatelessfw,o=scopes,o=umc
policygroupref policyGroupName=brickwall,ou=entjunos_statelessfw,o=Policies,o=UMC
servicename    BrickWall
servicetype    7
sspcategory    basicFirewall
ssptype        Normal
status         2
```

To view all the hidden services:

```
user@host> show sae services secret

Service
available      true
description    This firewall blocks all incoming traffic and allows only
               outgoing email and web traffic.
location       l=entjunos,o=scopes,o=umc
policygroupref policyGroupName=emailweb,ou=entjunos,o=Policies,o=UMC
servicename    EmailAndWeb
servicetype    7
sspcategory    basicFirewall
sspradiusclass EmailAndWeb
ssptype        Normal
status         2
available      true
description    This firewall blocks all incoming traffic and allows only
               outgoing email and web traffic.
location       l=entjunosstatelessfw,o=scopes,o=umc
policygroupref policyGroupName=emailweb,ou=entjunos_statelessfw,o=Policies,o=UMC
servicename    EmailAndWeb
servicetype    7
sspcategory    basicFirewall
sspradiusclass EmailAndWeb
ssptype        Normal
status         2
Service
available             true
                      This service is activated automatically when the
description           subscriber is the source or destination of a network
                      attack
location              l=idp-subscriber,o=scopes,o=umc
parametersubstitution captiveAddress=66.13.2.11
policygroupref        policyGroupName=quarantine,ou=idp,o=Policies,o=UMC
servicename           Quarantine
servicetype           7
sspradiusclass        Quarantine
ssptype               Normal
status                2
```

To view only the service names for the services:

```
user@host> show sae services brief

Services
EmailAndWeb
Quarantine
Audio-Silver
Internet-Gold
Internet-Silver
DynSrcNat
FWR_Filter_Out
```

```
StaticDestNat
PingDoSProtect
MirrorFragment
SubrIntfFragment
BrickWall
Audio-Bronze
Internet-Bronze
Limit500kbs
News
Gold_VPN
Limit1Mbs
Video-Silver
Audio-Gold
RouterFragment
1.0 Mbps
DynSrcNat
FWR_Filter_Out
StaticDestNat
PingDoSProtect
MirrorFragment
SubrIntfFragment
BrickWall
Audio-Bronze
Internet-Bronze
Limit500kbs
News
Gold_VPN
Limit1Mbs
Video-Silver
Audio-Gold
RouterFragment
1.0 Mbps
FWR_Rej_In
MirrorAggregate
Video-Bronze
More results available. Display has reached the maximum number of results.
Number of skipped results: 26
```

To restrict the number of displayed results:

```
user@host> show sae services maximum-results maximum-results
```

Related Topics

- Configuring Access to Service Data (SRC CLI)
- Reloading Services (SRC CLI)
- Viewing Information About Services (C-Web Interface) on page 128

Viewing Information About Threads (SRC CLI)

Purpose View information about the threads and their priority on the SAE.

Action

```
user@host> show sae threads
```

```
Thread Group
Thread group name system
Active threads    112
Active groups     11
Max priority      10
```

```
  Thread name           Priority  Daemon thread
  Reference Handler     10        true
  Finalizer              8        true
  Signal Dispatcher      9        true
...

Thread Group
Thread group name RKSTrackingQueue
Active threads    5
Active groups     0
Max priority      10
  Thread name           Priority  Daemon thread
  RKSTrackingQueue-0    5         true
  RKSTrackingQueue-1    5         true
  RKSTrackingQueue-2    5         true
  RKSTrackingQueue-3    5         true
  RKSTrackingQueue-4    5         true
```

Related Topics

- Viewing Information About Threads (C-Web Interface) on page 136

Viewing Information About Subscriber Sessions (SRC CLI)

You can list subscriber sessions by:

- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Login Name (SRC CLI) on page 115
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing General Information for Subscriber Sessions (SRC CLI)

Purpose View general information about subscriber sessions. You can view all or restricted information about all subscriber sessions.

Action To view information about all subscriber sessions:

```
user@host> show sae subscribers
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers maximum-results maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing Information About Subscriber Sessions by DN (SRC CLI)

Purpose View information about subscriber sessions by the DN associated with the subscriber session. You can view all or restricted information about all associated subscriber sessions.

Action To view information about subscriber sessions accessible by DN:

```
user@host> show sae subscribers dn
```

To view information about particular subscriber sessions, specify all or part of the DN:

```
user@host> show sae subscribers dn filter filter
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers dn secret
user@host> show sae subscribers dn filter filter secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers dn brief
user@host> show sae subscribers dn filter filter brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers dn terse
user@host> show sae subscribers dn filter filter terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers dn maximum-results maximum-results
user@host> show sae subscribers dn filter filter maximum-results maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing Information About Subscriber Sessions by IP Address (SRC CLI)

Purpose View information about subscriber sessions by the IP address associated with the subscriber session.

You can list subscriber sessions by IP address for Dynamic Host Configuration Protocol (DHCP) subscribers, authenticated Point-to-Point Protocol (PPP) subscribers, and static IP subscribers who have logged in to the portal.

Action To view information about subscriber sessions accessible by IP address:

```
user@host> show sae subscribers ip
```

To view information about particular subscriber sessions, specify the IP address:

```
user@host> show sae subscribers ip filter filter
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers ip secret
user@host> show sae subscribers ip filter filter secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers ip brief
user@host> show sae subscribers ip filter filter brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers ip terse
user@host> show sae subscribers ip filter filter terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers ip maximum-results maximum-results
user@host> show sae subscribers ip filter filter maximum-results maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing Information About Subscriber Sessions by Login Name (SRC CLI)

Purpose View information about subscriber sessions by the subscriber login name. You can view all or restricted information about all associated subscriber sessions.

Action To view information about subscriber sessions accessible by login name:

```
user@host> show sae subscribers login-name
```

To view information about particular subscriber sessions, specify all or part of the login name:

```
user@host> show sae subscribers login-name filter filter
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers login-name secret
user@host> show sae subscribers login-name filter filter secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers login-name brief
user@host> show sae subscribers login-name filter filter brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers login-name terse
user@host> show sae subscribers login-name filter filter terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers login-name maximum-results maximum-results
user@host> show sae subscribers login-name filter filter maximum-results maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing Information About Subscriber Sessions by Service Name (SRC CLI)

Purpose View information about subscriber sessions that are associated with a specified service. You can view all or restricted information about all associated subscriber sessions.

Action To view information about subscriber sessions activated by a subscription to an active service session:

```
user@host> show sae subscribers service-name
```

To view information about particular subscriber sessions, specify all or part of the service name:

```
user@host> show sae subscribers service-name filter filter
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers service-name secret
user@host> show sae subscribers service-name filter filter secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers service-name brief
user@host> show sae subscribers service-name filter filter brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers service-name terse
user@host> show sae subscribers service-name filter filter terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers service-name maximum-results maximum-results
user@host> show sae subscribers service-name filter filter maximum-results
maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113

- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

Viewing Information About Subscriber Sessions by Session ID (SRC CLI)

Purpose View information about subscriber sessions by the session ID associated with the subscriber session. You can view all or restricted information about all associated subscriber sessions.

Action To view information about subscriber sessions by session ID:

```
user@host> show sae subscribers session-id
```

To view information about particular subscriber sessions, specify all or part of the subscriber session ID:

```
user@host> show sae subscribers session-id filter filter
```

To view the subscriptions and service sessions from hidden services:

```
user@host> show sae subscribers session-id secret
user@host> show sae subscribers session-id filter filter secret
```

To view only the subscriber session information without service sessions:

```
user@host> show sae subscribers session-id brief
user@host> show sae subscribers session-id filter filter brief
```

To view the subscriber session ID, login name, and IP address:

```
user@host> show sae subscribers session-id terse
user@host> show sae subscribers session-id filter filter terse
```

To restrict the number of displayed results:

```
user@host> show sae subscribers session-id maximum-results maximum-results
user@host> show sae subscribers session-id filter filter maximum-results maximum-results
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing General Information for Subscriber Sessions (SRC CLI) on page 113
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116

Viewing SAE SNMP Information with the CLI

You can view state information that is also available through SNMP, including information about counters that describe the SAE history of activity. This information is the same as the information you can view from the SAE SNMP interface. You can monitor SNMP by:

- Viewing Statistics About the Directory (SRC CLI) on page 118
- Viewing Statistics for Directory Connections (SRC CLI) on page 118
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121
- Viewing SNMP Information for Policies (SRC CLI) on page 121
- Viewing SNMP Information for the SAE Server Process (SRC CLI) on page 122
- Viewing Statistics for RADIUS Clients (SRC CLI) on page 122
- Viewing SNMP Information for RADIUS Clients (SRC CLI) on page 122
- Viewing SNMP Information for Routers and Devices (SRC CLI) on page 123
- Viewing Statistics for Device Drivers (SRC CLI) on page 123
- Viewing Statistics for Specific Device Drivers (SRC CLI) on page 124
- Viewing Statistics for Subscriber and Service Sessions (SRC CLI) on page 125
- Monitoring Statistics for Subscriber and Service Sessions (SRC CLI) on page 125

Viewing Statistics About the Directory (SRC CLI)

Purpose View statistics about the directory.

Action

```
user@host> show sae statistics directory

SNMP Statistics
Services read         51
Services written      0
Subscriptions read    0
Subscriptions written 0
Users read            0
Users written         0
```

Related Topics

- Configuring the Directory Location for SAE Data (C-Web Interface)
- Viewing Statistics for Directory Connections (SRC CLI) on page 118
- Viewing SNMP Statistics for the Directory (C-Web Interface) on page 143
- Viewing SNMP Statistics for Directory Connections (C-Web Interface) on page 144

Viewing Statistics for Directory Connections (SRC CLI)

Purpose View information for all or specific directory connections.

Action To view statistics for directory connections:

```
user@host> show sae statistics directory connections

DES connection
Connection ID            FEEDBACK_DATA_MANAGER
Number of read           93
Number of write          93
Number of events sent    0
Number of events dropped 0
Average read time        2
Average write time       23
Directory host           127.0.0.1
Directory port           389
Directory type           primary
Primary restore time     83218
Event queue length       0
...

DES connection
Connection ID            ldapAuth-LdapAuthenticator
Number of read           0
Number of write          0
Number of events sent    0
Number of events dropped 0
Average read time        0
Average write time       0
Directory host           127.0.0.1
Directory port           389
Directory type           primary
Primary restore time     83200
Event queue length       0
```

To view information about particular directory connections, specify all or part of the connection ID.

```
user@host> show sae statistics directory connections filter filter
```

For example, if you wanted to view the directory connection that contained ldap in its connection ID:

```
user@host> show sae statistics directory connections filter ldap

DES connection
Connection ID            ldapAuth-LdapAuthenticator
Number of read           0
Number of write          0
Number of events sent    0
Number of events dropped 0
Average read time        0
Average write time       0
Directory host           127.0.0.1
Directory port           389
Directory type           primary
Primary restore time     83608
Event queue length       0
```

To view only the directory connection IDs:

```
user@host> show sae statistics directory connections brief

Directory Connections
FEEDBACK_DATA_MANAGER
EQUIPMENT_DATA_MANAGER
POM_Engine
```

```
LICENSE_MANAGER
SAE_ConfigMgr
adminLdap-LdapAuthenticator
SERVICE_DATA_MANAGER
USER_DATA_MANAGER
SAE_ConfigMgr(dynamicProps)
ldapAuth-LdapAuthenticator
```

Related Topics

- Configuring the Directory Location for SAE Data (C-Web Interface)
- Viewing Statistics About the Directory (SRC CLI) on page 118
- Viewing SNMP Statistics for the Directory (C-Web Interface) on page 143
- Viewing SNMP Statistics for Directory Connections (C-Web Interface) on page 144

Viewing SNMP Information for Client Licenses (SRC CLI)

Purpose View SNMP information about the state of client licenses.

Action

```
user@host> show sae statistics license client
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120

Viewing SNMP Information for Local Licenses (SRC CLI)

Purpose View SNMP information about the state of local licenses.

Action

```
user@host> show sae statistics license local

Client License State
Mode                    Pilot
Number of licensed users 100
Number of current users  0
Expiry                  2007-02-23
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121

Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI)

Purpose View SAE license information for the SRC software.

Action To view SNMP information about the state of licenses on specified virtual routers:

```
user@host> show sae statistics license device
```

To view information about the state of licenses for a particular virtual router, specify all or part of the VR name. For JUNOS router drivers and PCMM drivers, use the format default@routerName.

```
user@host> show sae statistics license device name name
```

To view only the virtual router names:

```
user@host> show sae statistics license device brief
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120

Viewing SNMP Information for Policies (SRC CLI)

Purpose View SNMP information for the policy engine, policy decision point, and the shared object repository where the policy objects are stored:

Action

```
user@host> show sae statistics policy-management
```

```
SNMP Statistics
Policy Management Type                                    Policy Engine Data
Total number of policy group modifications                0
Total number of interface classifier modifications        0
Average time for processing policy group modification     0
Average time for processing interface classifer modification 0
Policy Management Type                                    PDP Data
Total number of default policy decisions                  45
Total number of service policy decisions                  0
Total number of errors                                    0
Policy Management Type                                    Repository Data
Current total number of policy groups loaded              1
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing Information About Policies (C-Web Interface) on page 130
- Viewing SNMP Statistics About Policies (C-Web Interface) on page 148

Viewing SNMP Information for the SAE Server Process (SRC CLI)

Purpose View SNMP information for the SAE server process.

Action

```
user@host> show sae statistics process

SNMP Statistics
Heap in use 19211 kilo bytes (2%)
Heap limit  910016 kilo bytes
Threads     96
Up time     80877 seconds since Tue Jan 23 19:51:42 EST 2007
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics About Server Processes (C-Web Interface) on page 149

Viewing Statistics for RADIUS Clients (SRC CLI)

Purpose View SNMP statistics for RADIUS clients.

Action

```
user@host> show sae statistics radius

SNMP Statistics
Accounting ACKs from unrecognized IP     0
Authentication ACKs from unrecognized IP 0
Radius client ID                         SAE.buffy
```

Related Topics

- Configuring the RADIUS Local IP Address and NAS ID (C-Web Interface)
- Viewing SNMP Information for RADIUS Clients (SRC CLI) on page 122

Viewing SNMP Information for RADIUS Clients (SRC CLI)

Purpose View SNMP information for RADIUS clients. You can view information for all accounting or authentication clients, or by IP address, UDP port number, or IP address and UDP port.

Action To view SNMP information for RADIUS accounting clients:

```
user@host> show sae statistics radius client accounting
```

To view SNMP information for RADIUS authentication clients:

```
user@host> show sae statistics radius client  authentication
```

To view information for a particular RADIUS client by IP address:

```
user@host> show sae statistics radius client ip-address ip-address
user@host> show sae statistics radius client accounting ip-address ip-address
user@host> show sae statistics radius client  authentication ip-address ip-address
```

To view information for a particular RADIUS client by UDP port number:

```
user@host> show sae statistics radius client udp-port udp-port
user@host> show sae statistics radius client accounting udp-port udp-port
user@host> show sae statistics radius client  authentication udp-port udp-port
```

To view only the RADIUS clients that were accessible by IP address and port number:

```
user@host> show sae statistics radius client brief
user@host> show sae statistics radius client accounting brief
user@host> show sae statistics radius client  authentication brief
```

Related Topics

- Configuring the RADIUS Local IP Address and NAS ID (C-Web Interface)
- Viewing Statistics for RADIUS Clients (SRC CLI) on page 122

Viewing SNMP Information for Routers and Devices (SRC CLI)

Purpose View SNMP information for routers and devices that the SAE manages. You can view information for all routers and devices, or for specific ones.

Action To view SNMP information for routers and devices that the SAE is managing:

```
user@host> show sae statistics device
```

To view information for a particular router, specify all or part of the VR name. For JUNOS router drivers and PCMM drivers, use the format default@routerName.

```
user@host> show sae statistics device filter filter
```

To view only the RADIUS clients that were accessible by IP address and port number:

```
user@host> show sae statistics device brief
```

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing Statistics for Device Drivers (SRC CLI) on page 123
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121
- Viewing Statistics for Specific Device Drivers (SRC CLI) on page 124

Viewing Statistics for Device Drivers (SRC CLI)

Purpose View SNMP statistics for all device drivers.

Action

```
user@host> show sae statistics device common

SNMP Statistics
Driver type                    JUNOSE COPS
Number of close requests       0
Number of connections accepted 0
Number of current connections  0
Number of open requests        0
Server address                 0.0.0.0
Server port                    3288
Time since last redirect       0

SNMP Statistics
Driver type                    PACKETCABLE COPS
Number of close requests       0
Number of connections accepted 0
Number of current connections  0
Number of open requests        0
Server address                 0.0.0.0
```

```
Server port                    0
Time since last redirect       0

SNMP Statistics
Driver type                    JUNOS
Number of close requests       0
Number of connections accepted 0
Number of current connections  0
Number of open requests        0
Server address                 0.0.0.0
Server port                    3333
Time since last redirect       0
```

The value of the server address can be either an IPv4 or IPv6 address, depending on the platform.

Related Topics

- Shutting Down the Device Drivers (C-Web Interface)
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106
- Viewing SNMP Information for Routers and Devices (SRC CLI) on page 123
- Viewing Statistics for Specific Device Drivers (SRC CLI) on page 124

Viewing Statistics for Specific Device Drivers (SRC CLI)

Purpose View statistics for specific router drivers or device drivers.

Action To view SNMP statistics for JUNOS router drivers:

```
user@host> show sae statistics device common junos
```

To view SNMP statistics for JUNOSe router drivers:

```
user@host> show sae statistics device common junose-cops
```

To view SNMP statistics for PCMM device drivers:

```
user@host> show sae statistics device common packetcable-cops
```

To view SNMP statistics for third-party device drivers:

```
user@host> show sae statistics device common proxy
```

For example, to view SNMP statistics for JUNOS router drivers:

```
user@host> show sae statistics device common junos

SNMP Statistics
Driver type                    JUNOS
Number of close requests       0
Number of connections accepted 0
Number of current connections  0
Number of open requests        0
Server address                 0.0.0.0
Server port                    3333
Time since last redirect       0
```

Related Topics

- Configuring the Session Store Feature (SRC CLI)
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106

- Viewing SNMP Information for Routers and Devices (SRC CLI) on page 123
- Viewing Statistics for Device Drivers (SRC CLI) on page 123

Viewing Statistics for Subscriber and Service Sessions (SRC CLI)

Purpose View SNMP statistics for subscriber and service sessions.

Action

```
user@host> show sae statistics sessions

SNMP Statistics
Current service sessions                          0
Current user sessions                             0
Logins (includes sync. and static IP portal logins) 0
Logouts                                           0
Service session idle timeouts                     0
Service sessions started                          0
Service sessions stopped                          0
Service session timeouts                          0
```

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Configuring Access to Service Data (SRC CLI)
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117
- Monitoring Statistics for Subscriber and Service Sessions (SRC CLI) on page 125

Monitoring Statistics for Subscriber and Service Sessions (SRC CLI)

Purpose Display real-time SNMP statistics for subscriber and service sessions.

Action To display real-time SNMP statistics for subscriber and service sessions:

```
user@host> monitor sae statistics sessions
```

To specify the time interval for refreshing the data:

```
user@host> monitor sae statistics sessions interval interval
```

Related Topics

- Viewing Statistics for Subscriber and Service Sessions (SRC CLI) on page 125
- Output Control Keys for monitor Command

CHAPTER 16

Monitoring SAE Data (C-Web Interface)

- Viewing SAE Data (C-Web Interface) on page 127
- Viewing Information About Subscriber Sessions (C-Web Interface) on page 136
- Viewing SNMP Information (C-Web Interface) on page 143

Viewing SAE Data (C-Web Interface)

You can view data currently stored in the SAE server's memory by:

- Viewing Information About the Directory Blacklist (C-Web Interface) on page 127
- Viewing Information About Services (C-Web Interface) on page 128
- Viewing Information About Licenses (C-Web Interface) on page 129
- Viewing Information About Policies (C-Web Interface) on page 130
- Viewing Information About Device Drivers (C-Web Interface) on page 131
- Viewing Information About Interfaces (C-Web Interface) on page 133
- Viewing Equipment Registrations (C-Web Interface) on page 133
- Viewing Login Registrations (C-Web Interface) on page 135
- Viewing Information About Threads (C-Web Interface) on page 136

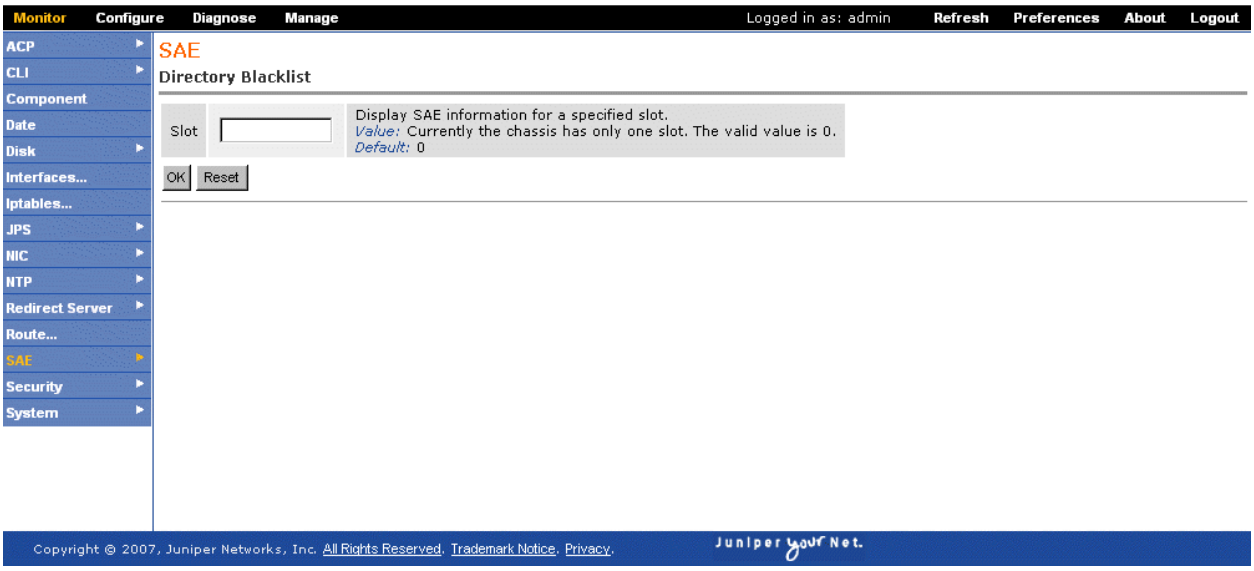
Viewing Information About the Directory Blacklist (C-Web Interface)

Purpose View information about the directory blacklist configured on the SAE.

Action

1. Click **Monitor**>**SAE** >**Directory Blacklist**.

   The Directory Blacklist pane appears.



2. In the Slot box, enter the number of the slot for which you want to display directory blacklist information.

   The Directory Blacklist pane displays the directory blacklist information.

Related Topics

- Removing the Directory Blacklist (C-Web Interface)
- Viewing Information About the Directory Blacklist (SRC CLI) on page 105

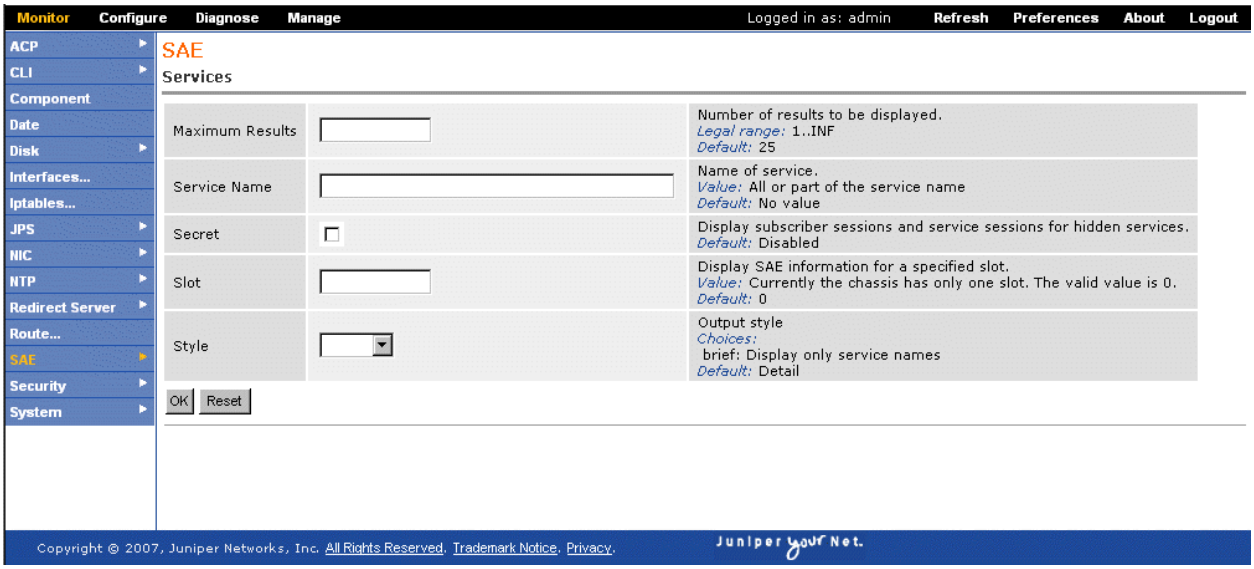
Viewing Information About Services (C-Web Interface)

Purpose View information about the services available on the SAE.

Action

1. Click **Monitor**>**SAE** >**Services**.

   The Services pane appears.



2. In the Maximum Results box, enter the maximum number of results that you want to receive.
3. In the Service Name box, enter a full or partial service name for which you want to display information, or leave the box blank to display all services.
4. Select the **Secret** check box to set a flag indicating that secret services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display services information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Services pane displays the status of the services running on the SAE.

Related Topics

- Viewing Information About Services (SRC CLI) on page 110

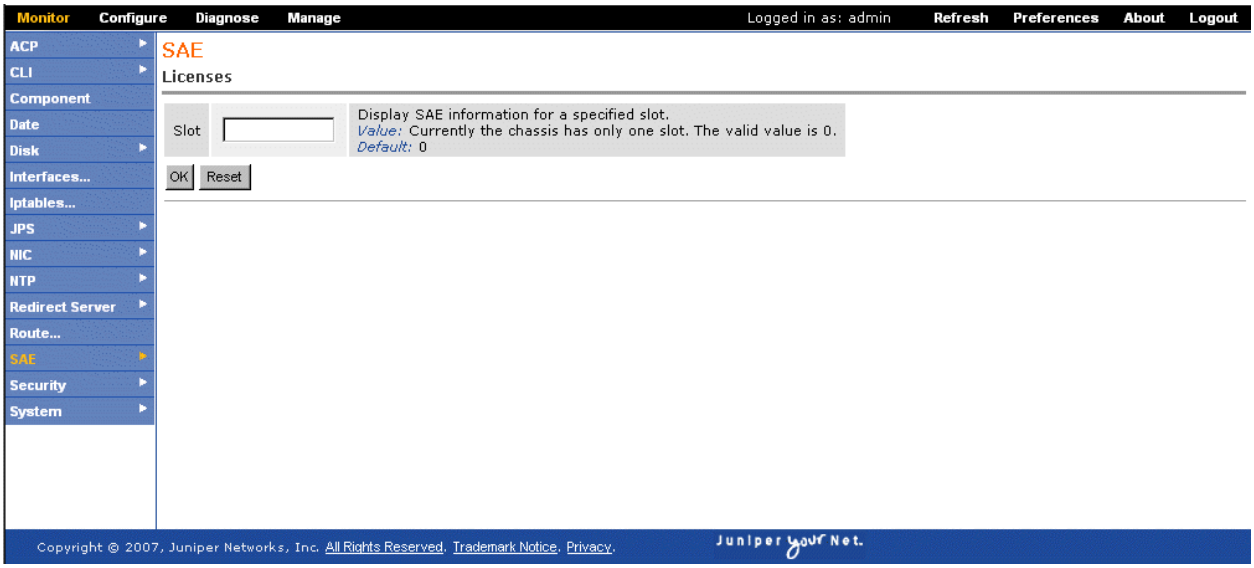
Viewing Information About Licenses (C-Web Interface)

Purpose View information about licenses.

Action

1. Click **Monitor**>**SAE** >**Licenses**.

   The Licenses pane appears.



2. In the Slot box, enter the number of the slot for which you want to display license information.
3. Click **OK**.

   The Licenses pane displays license information.

Related Topics

- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120

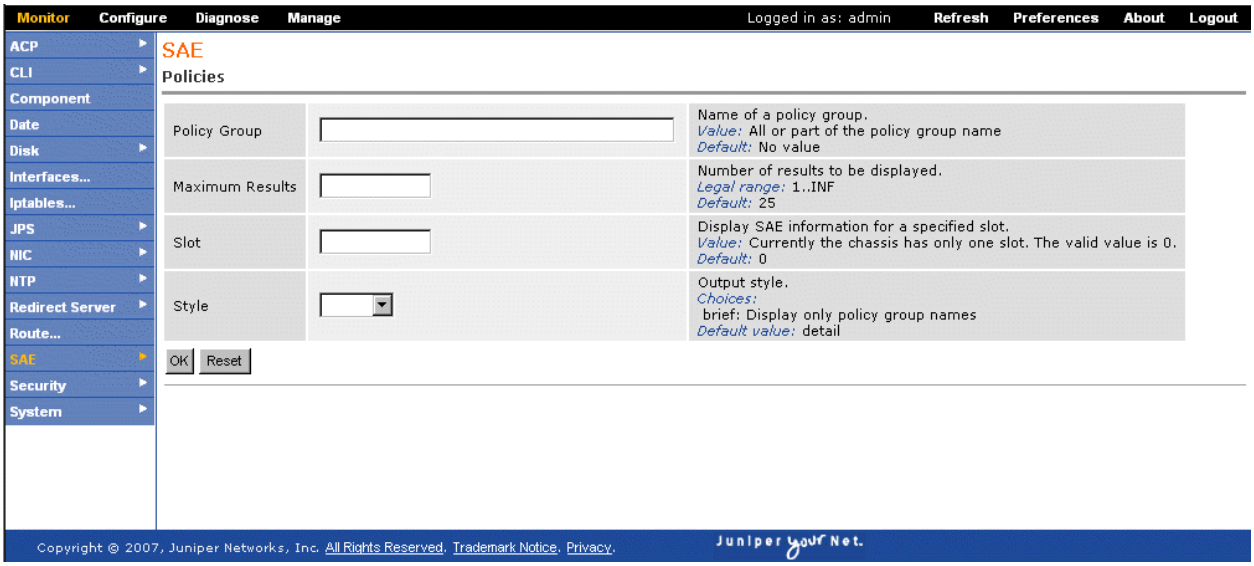
Viewing Information About Policies (C-Web Interface)

Purpose View information about the policies available on the SAE.

Action

1. Click **Monitor**>**SAE** >**Policies**.

   The Policies pane appears.



2. In the Policy Group box, enter a full or partial policy name for which you want to display information, or leave the box blank to display all policies.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. In the Slot box, enter the number of the slot for which you want to display policy information.
5. Select an output style from the Style list.
6. Click **OK**.

   The Policies pane displays the status of the policies configured on the SAE.

Related Topics

- Configuring Access to Policy Data (SRC CLI)
- Viewing SNMP Information for Policies (SRC CLI) on page 121
- Viewing SNMP Statistics About Policies (C-Web Interface) on page 148

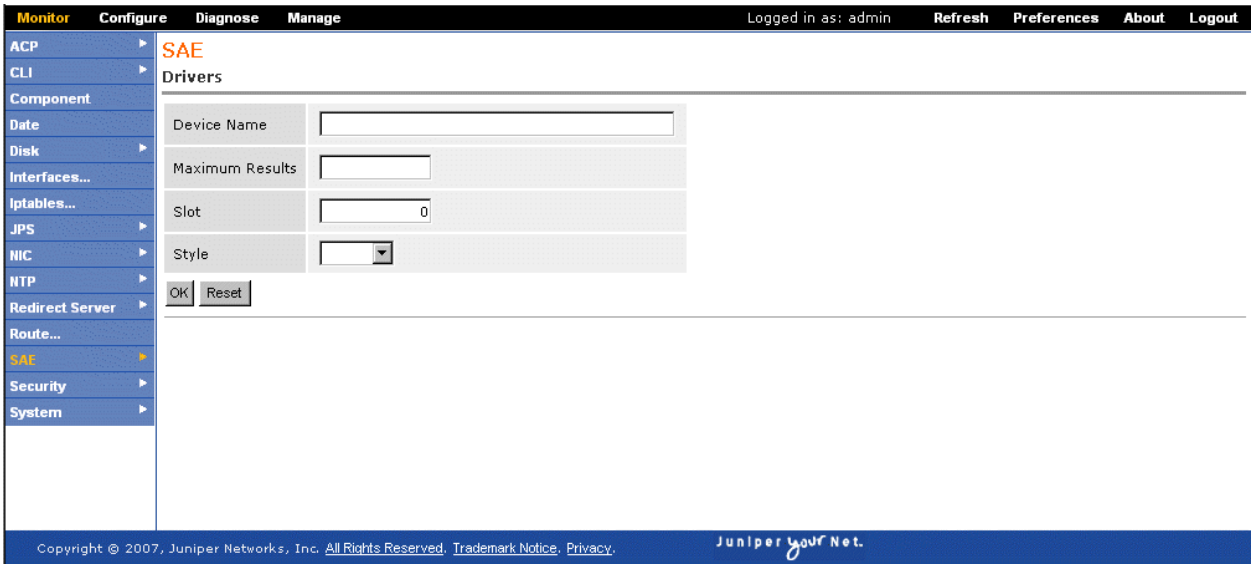
Viewing Information About Device Drivers (C-Web Interface)

Purpose View information about the device drivers available on the SAE.

Action

1. Click **Monitor**>**SAE** >**Drivers**.

   The Drivers pane appears.



2. In the Device Name box, enter a full or partial device driver name for which you want to display information, or leave the box blank to display all devices.

   For JUNOSe router drivers, use the format:

   <virtual router name>@<router name>

   For JUNOS router drivers and PCMM drivers, use the format:

   default@<router name>

3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. In the Slot box, enter the number of the slot for which you want to display device information.
5. Select an output style from the Style list.
6. Click **OK**.

   The Drivers pane displays the status of the devices running on the SAE.

Related Topics

- Connections to Managed Devices
- Viewing SNMP Information for Routers and Devices (SRC CLI) on page 123
- Viewing Statistics for Device Drivers (SRC CLI) on page 123
- Viewing Statistics for Specific Device Drivers (SRC CLI) on page 124
- Viewing Information About SAE Device Drivers (SRC CLI) on page 106

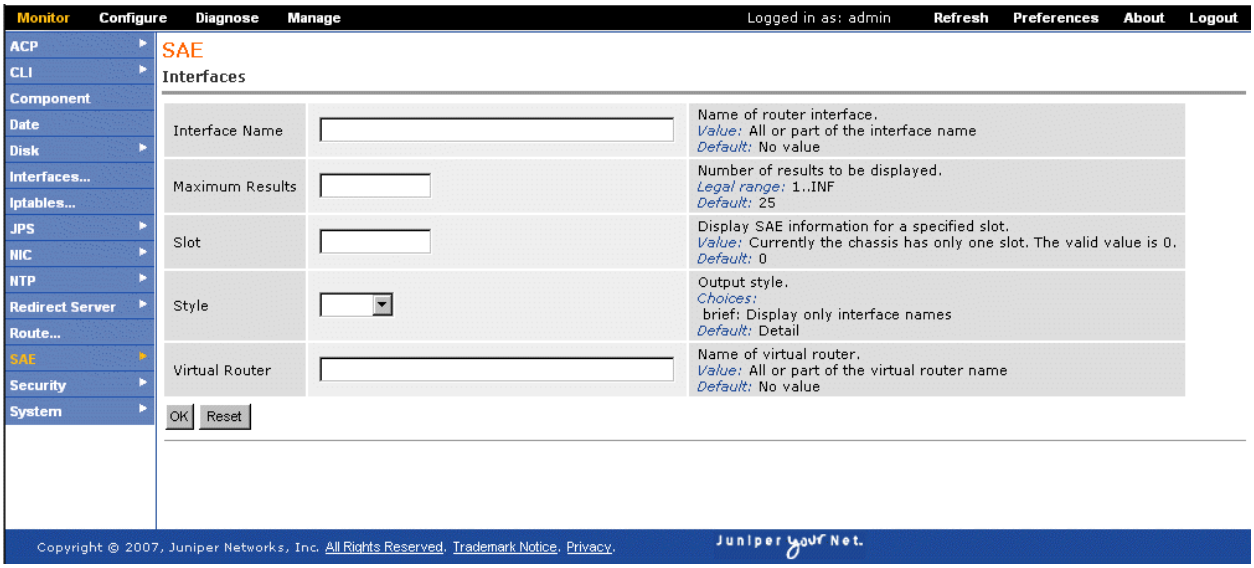
Viewing Information About Interfaces (C-Web Interface)

Purpose View information about the interfaces available on the router.

Action

1. Click **Monitor**>**SAE** >**Interfaces**.

   The Interfaces pane appears.



2. In the Interface Name box, enter the name of the router interface for which you want to display information. or leave the box blank to display information about all router interfaces.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. In the Slot box, enter the number of the slot for which you want to display interface information.
5. Select an output style from the Style list.
6. In the Virtual Router box, enter the name of the virtual router for which you want to display interfaces, or leave the box blank to display information for all virtual routers.
7. Click **OK**.

   The Interfaces pane displays the interfaces available on the router.

Related Topics

- Viewing Information About SAE Interfaces (SRC CLI) on page 107
- Overview of External Interfaces on a C Series Controller

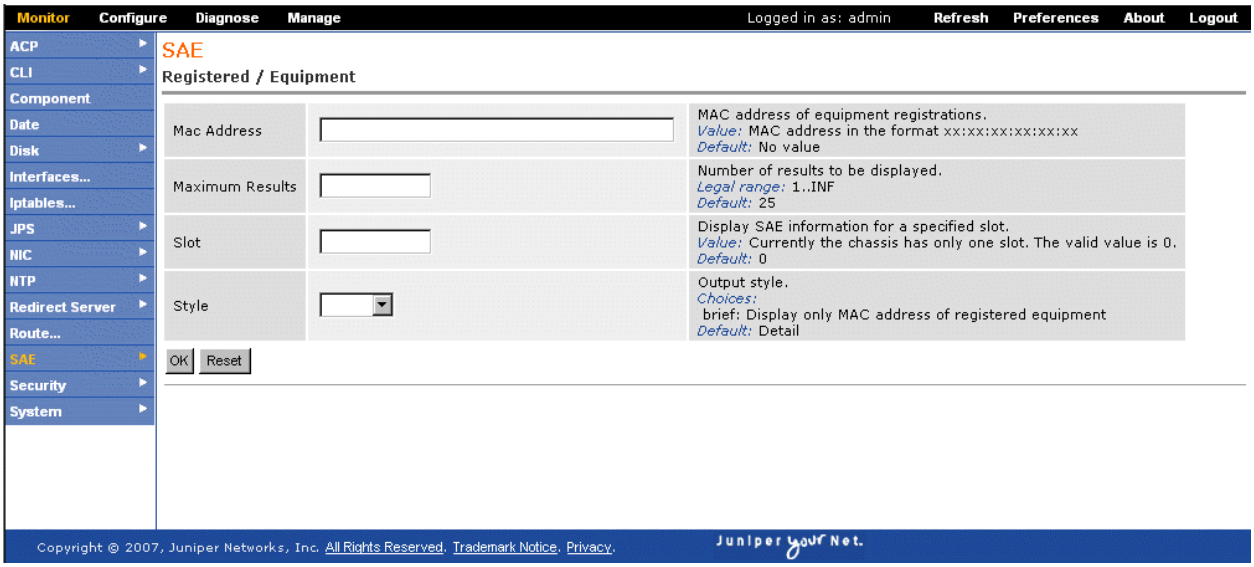
Viewing Equipment Registrations (C-Web Interface)

Purpose You can view all equipment registrations, or you can view a specific registration.

Action To view information about equipment registrations.

1. Click **Monitor**>**SAE** >**Registered**>**Equipment**.

   The Registered/Equipment pane appears.



2. In the MAC Address box, enter a MAC address that specifies the equipment registrations that you want to display.

   Use the format:

   xx:xx:xx:xx:xx:xx

3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. In the Slot box, enter the number of the slot for which you want to display equipment registration information.
5. Select an output style from the Style list.
6. Click **OK**.

   The Registered/Equipment pane displays information about the equipment registrations.

Related Topics

- Removing Login Registrations (C-Web Interface)
- Removing Equipment Registrations (C-Web Interface)
- For information about login and equipment registrations, see the *SRC PE Sample Applications Guide*
- Viewing Login Registrations (SRC CLI) on page 109
- Viewing Login Registrations (C-Web Interface) on page 135

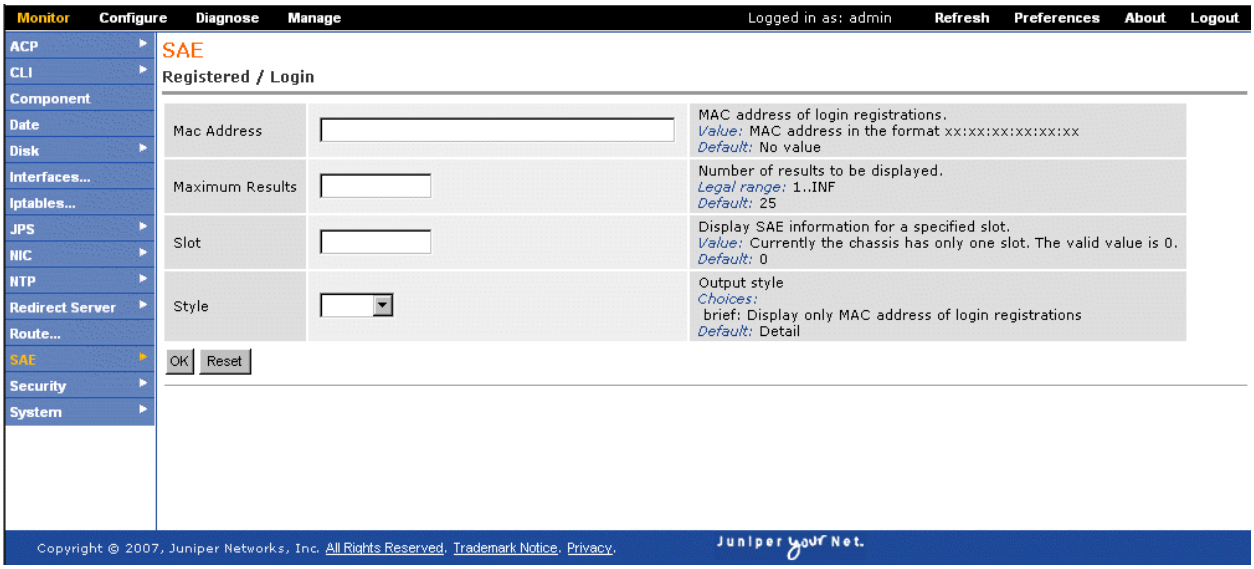
Viewing Login Registrations (C-Web Interface)

Purpose You can view all login registrations, or you can view a specific registration.

Action To view information about login registrations:

1. Click **Monitor**>**SAE** >**Registered**>**Login**.

   The Registered/Login pane appears.



2. In the MAC Address box, enter a MAC address that specifies the login registrations that you want to display.

   Use the format:

   xx:xx:xx:xx:xx:xx

3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. In the Slot box, enter the number of the slot for which you want to display login registration information.
5. Select an output style from the Style list.
6. Click **OK**.

   The Registered/Login pane displays information about the login registrations.

Related Topics

- Removing Login Registrations (C-Web Interface)
- Removing Equipment Registrations (C-Web Interface)
- For information about login and equipment registrations, see the *SRC PE Sample Applications Guide*

- Viewing Login Registrations (SRC CLI) on page 109
- Viewing Equipment Registrations (C-Web Interface) on page 133

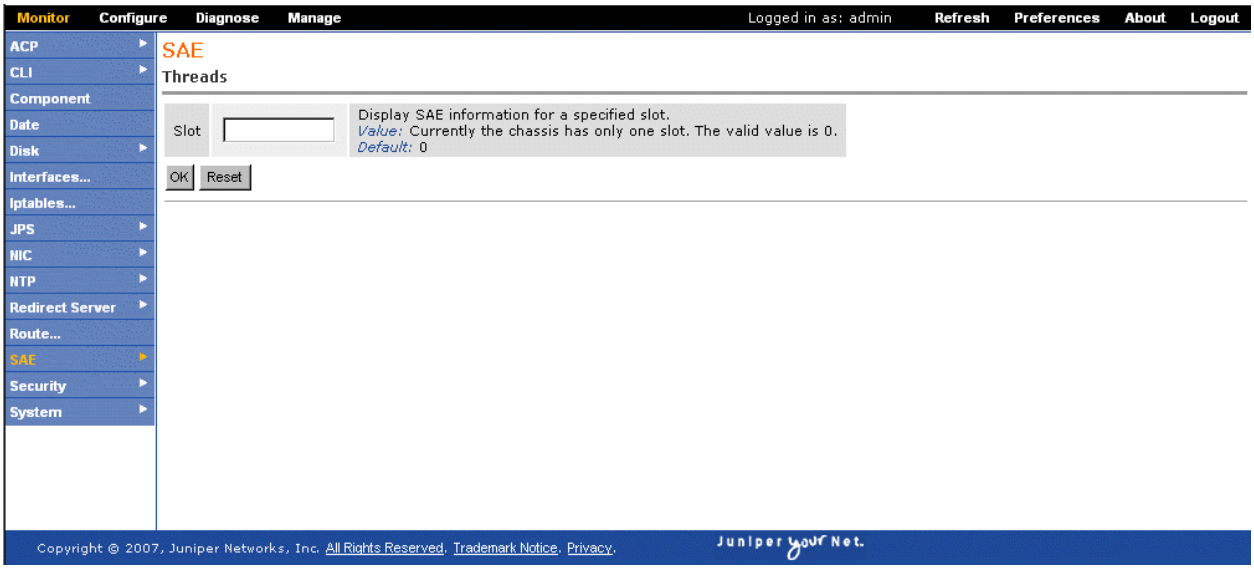
Viewing Information About Threads (C-Web Interface)

Purpose View information about the threads and their priority on the SAE.

Action

1. Click **Monitor**>**SAE** >**Threads**.

   The Threads pane appears.



2. In the Slot box, enter the number of the slot for which you want to display thread information.
3. Click **OK**.

   The Threads pane displays information about threads.

Related Topics

- Viewing Information About Threads (SRC CLI) on page 112

Viewing Information About Subscriber Sessions (C-Web Interface)

- Information about Subscriber Sessions on page 137
- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137
- Viewing Information About Subscriber Sessions by IP Address (C-Web Interface) on page 139
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140

- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141
- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142

Information about Subscriber Sessions

You can list subscriber sessions by the distinguished name (DN) of the subscriber entry in the directory, by login name, or by session ID. You can also list subscriber sessions by IP address for Dynamic Host Configuration Protocol (DHCP) subscribers, authenticated Point-to-Point Protocol (PPP) subscribers, and static IP subscribers who are being managed by the SAE.

Related Topics

- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137
- Viewing Information About Subscriber Sessions by DN (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by IP Address (SRC CLI) on page 114
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140
- Viewing Information About Subscriber Sessions by Login Name (SRC CLI) on page 115
- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141
- Viewing Information About Subscriber Sessions by Service Name (SRC CLI) on page 116
- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142
- Viewing Information About Subscriber Sessions by Session ID (SRC CLI) on page 117

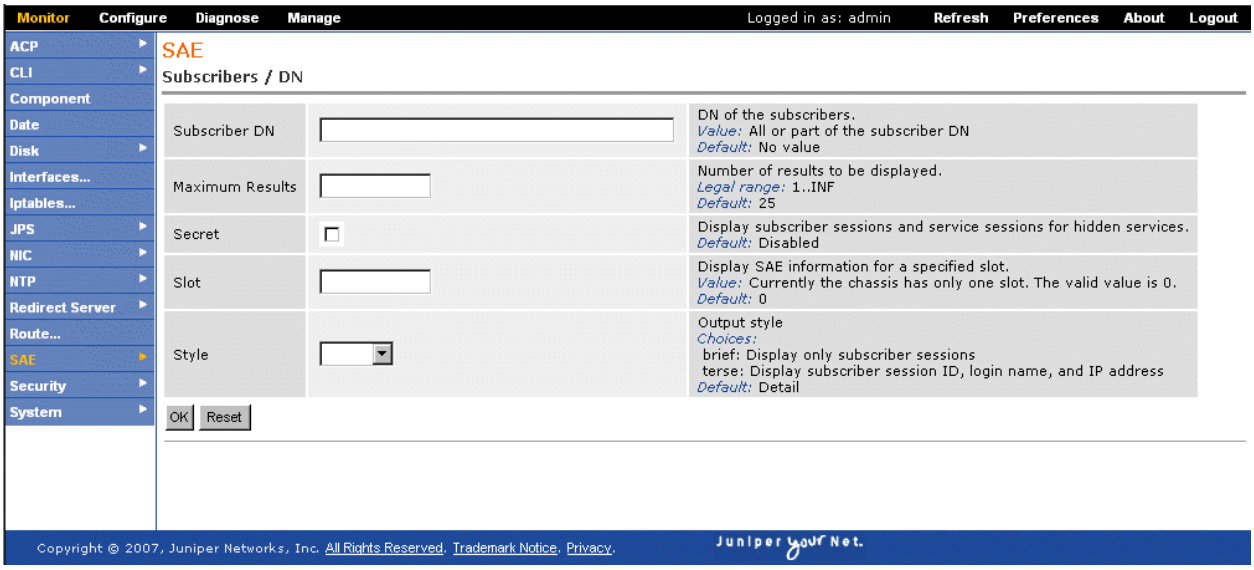
Viewing Information About Subscriber Sessions by DN (C-Web Interface)

Purpose View information about subscriber sessions by DN.

Action

1. Click **Monitor**>**SAE** >**Subscribers**>**DN**.

   The Subscribers/DN pane appears.



2. In the Subscriber DN box, enter a full or partial subscriber DN for which you want to display information, or leave the box blank to display all subscriber sessions.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. Select the **Secret** check box to set a flag indicating that subscriptions and service sessions from hidden services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display subscriber session information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Subscribers/DN pane displays information about subscriber sessions.

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing Information About Subscriber Sessions by IP Address (C-Web Interface) on page 139
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140
- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141
- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142

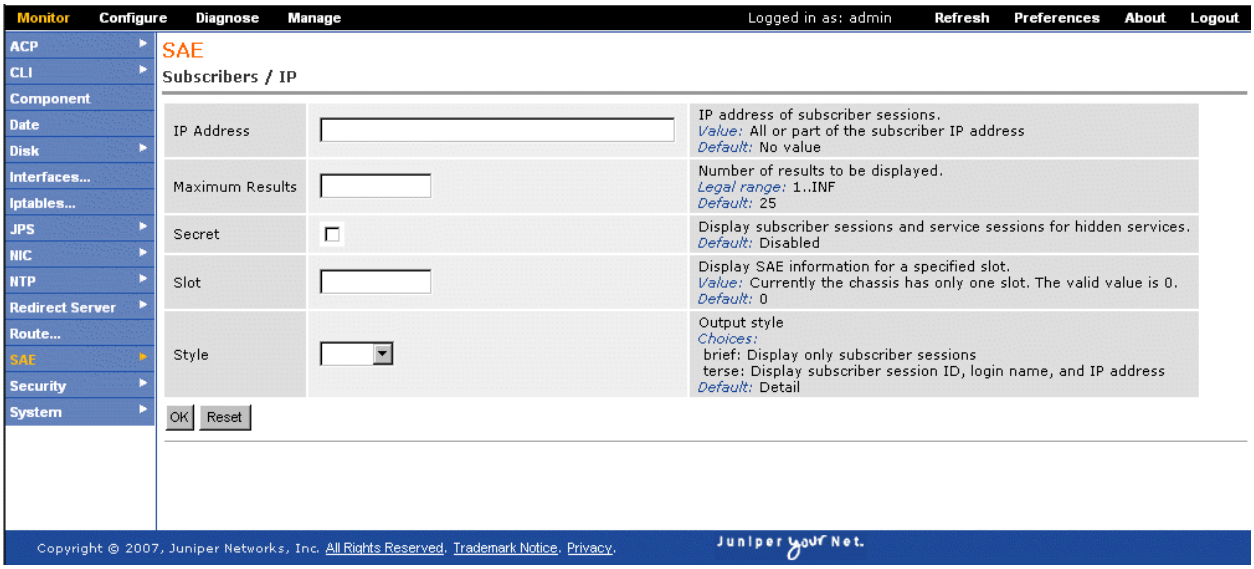
Viewing Information About Subscriber Sessions by IP Address (C-Web Interface)

Purpose View information about subscriber sessions by IP address.

Action

1. Click **Monitor**>**SAE** >**Subscribers**>**IP**.

   The Subscribers/IP pane appears.



2. In the IP Address box, enter a full or partial IP address for which you want to display information, or leave the box blank to display all subscriber sessions.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. Select the **Secret** check box to set a flag indicating that subscriptions and service sessions from hidden services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display subscriber session information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Subscribers/IP pane displays information about subscriber sessions.

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140
- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141

- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142

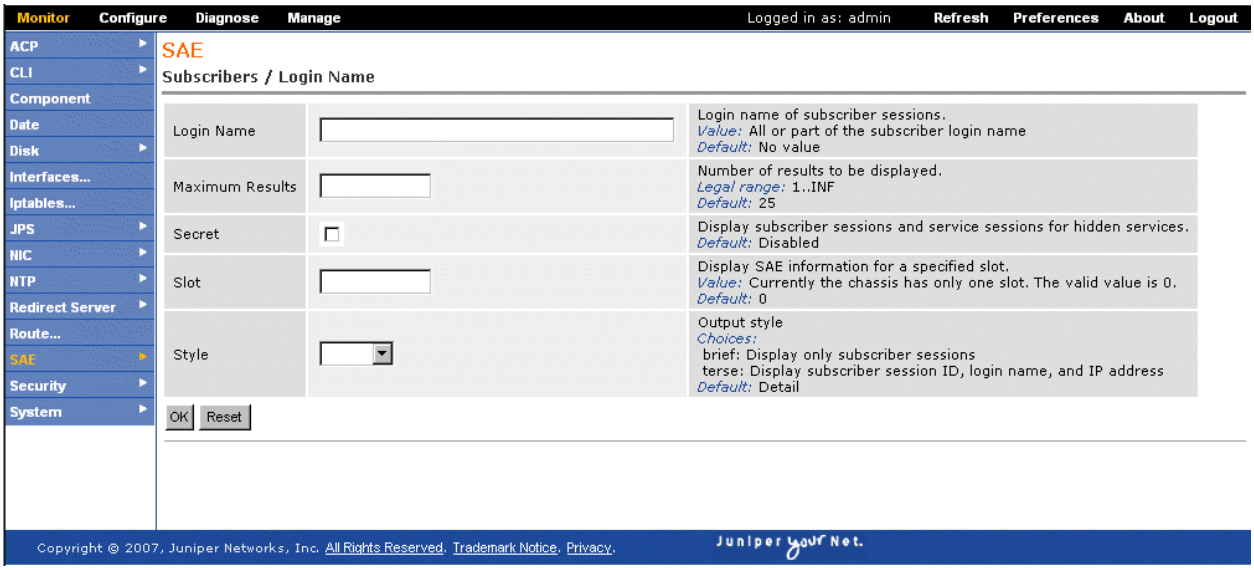
Viewing Information About Subscriber Sessions by Login Name (C-Web Interface)

Purpose View information about subscriber sessions by login name.

Action

1. Click **Monitor**>**SAE** >**Subscribers**>**Login Name**.

   The Subscribers/Login Name pane appears.



2. In the Login Name box, enter a full or partial login name for which you want to display information, or leave the box blank to display all subscriber sessions.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. Select the **Secret** check box to set a flag indicating that subscriptions and service sessions from hidden services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display subscriber session information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Subscribers/Login Name pane displays information about subscriber sessions.

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137
- Viewing Information About Subscriber Sessions by IP Address (C-Web Interface) on page 139

- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141
- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142

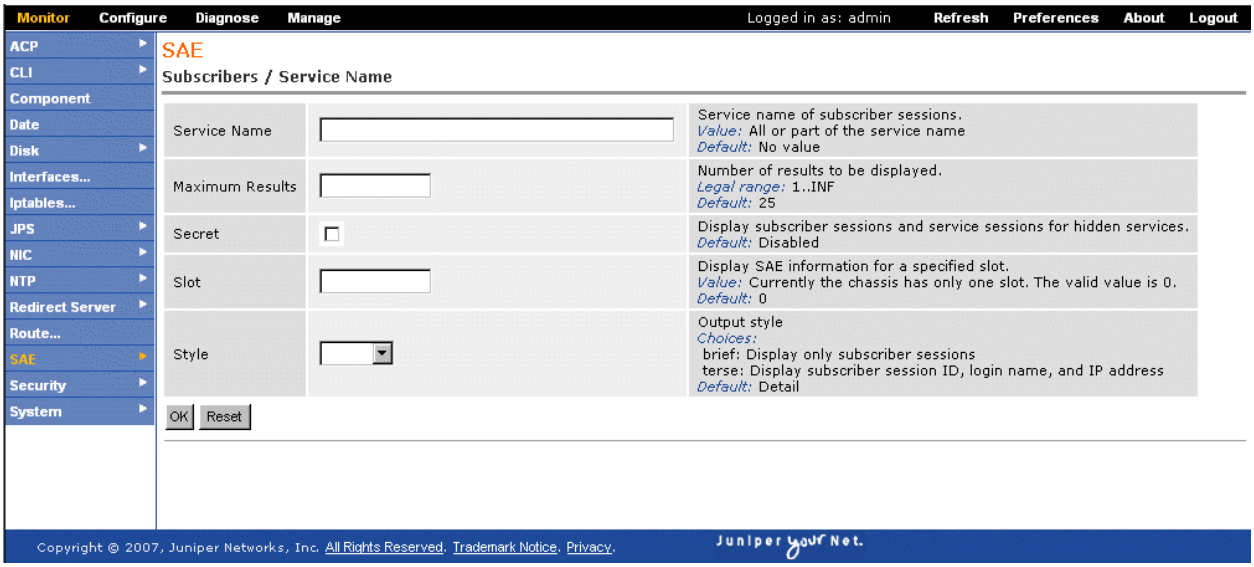
Viewing Information About Subscriber Sessions by Service Name (C-Web Interface)

Purpose View information about subscriber sessions by service name.

Action

1. Click **Monitor**>**SAE** >**Subscribers**>**Service Name**.

   The Subscribers/Service Name pane appears.



2. In the Service Name box, enter a full or partial service name for which you want to display information, or leave the box blank to display all subscriber sessions.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. Select the **Secret** check box to set a flag indicating that subscriptions and service sessions from hidden services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display subscriber session information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Subscribers/Service Name pane displays information about subscriber sessions.

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)
- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137

- Viewing Information About Subscriber Sessions by IP Address (C-Web Interface) on page 139
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140
- Viewing Information About Subscriber Sessions by Session ID (C-Web Interface) on page 142

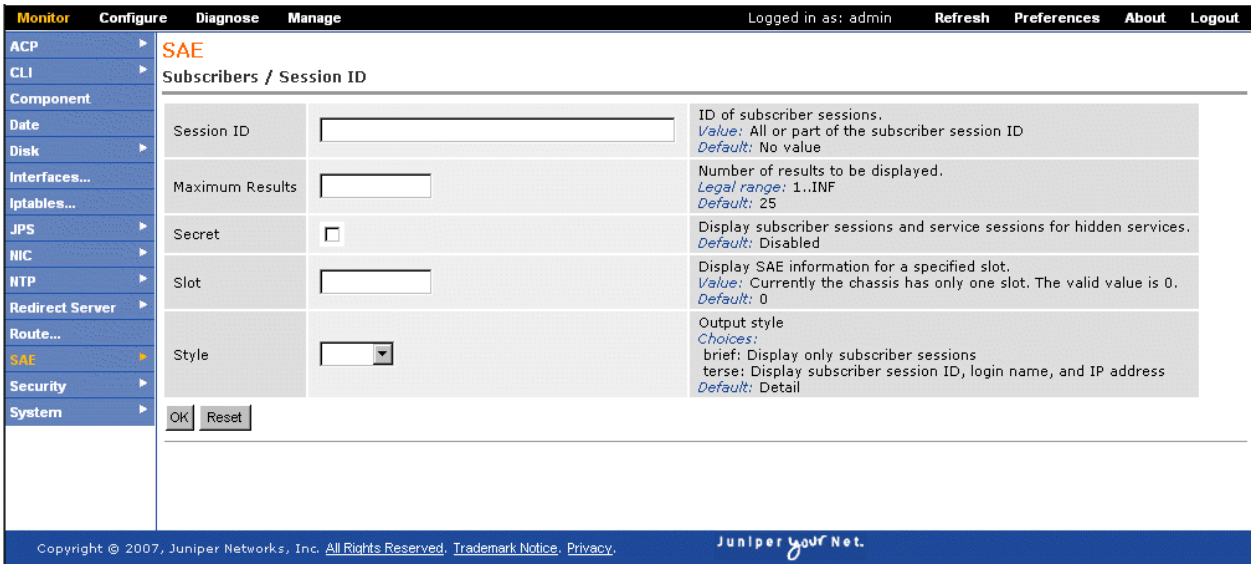
Viewing Information About Subscriber Sessions by Session ID (C-Web Interface)

Purpose View information about subscriber sessions by session ID.

Action

1. Click **Monitor**>**SAE** >**Subscribers**>**Session ID**.

   The Subscribers/Session ID pane appears.



2. In the Session ID box, enter a full or partial session ID name for which you want to display information, or leave the box blank to display all subscriber sessions.
3. In the Maximum Results box, enter the maximum number of results that you want to receive.
4. Select the **Secret** check box to set a flag indicating that subscriptions and service sessions from hidden services are displayed.
5. In the Slot box, enter the number of the slot for which you want to display subscriber session information.
6. Select an output style from the Style list.
7. Click **OK**.

   The Subscribers/Session ID pane displays information about subscriber sessions.

Related Topics

- Configuring Access to Subscriber Data (SRC CLI)

- Viewing Information About Subscriber Sessions by DN (C-Web Interface) on page 137
- Viewing Information About Subscriber Sessions by IP Address (C-Web Interface) on page 139
- Viewing Information About Subscriber Sessions by Login Name (C-Web Interface) on page 140
- Viewing Information About Subscriber Sessions by Service Name (C-Web Interface) on page 141

Viewing SNMP Information (C-Web Interface)

You can use the C-Web interface to view SNMP statistics for the SAE configuration by:

- Viewing SNMP Statistics for the Directory (C-Web Interface) on page 143
- Viewing SNMP Statistics for Directory Connections (C-Web Interface) on page 144
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Statistics About Policies (C-Web Interface) on page 148
- Viewing SNMP Statistics About Server Processes (C-Web Interface) on page 149
- Viewing SNMP Statistics About RADIUS (C-Web Interface) on page 150
- Viewing SNMP Statistics About RADIUS Clients (C-Web Interface) on page 151
- Viewing SNMP Statistics for Devices (C-Web Interface) on page 152
- Viewing SNMP Statistics for Specific Devices (C-Web Interface) on page 153
- Viewing SNMP Statistics for Subscriber Sessions and Service Sessions (C-Web Interface) on page 154

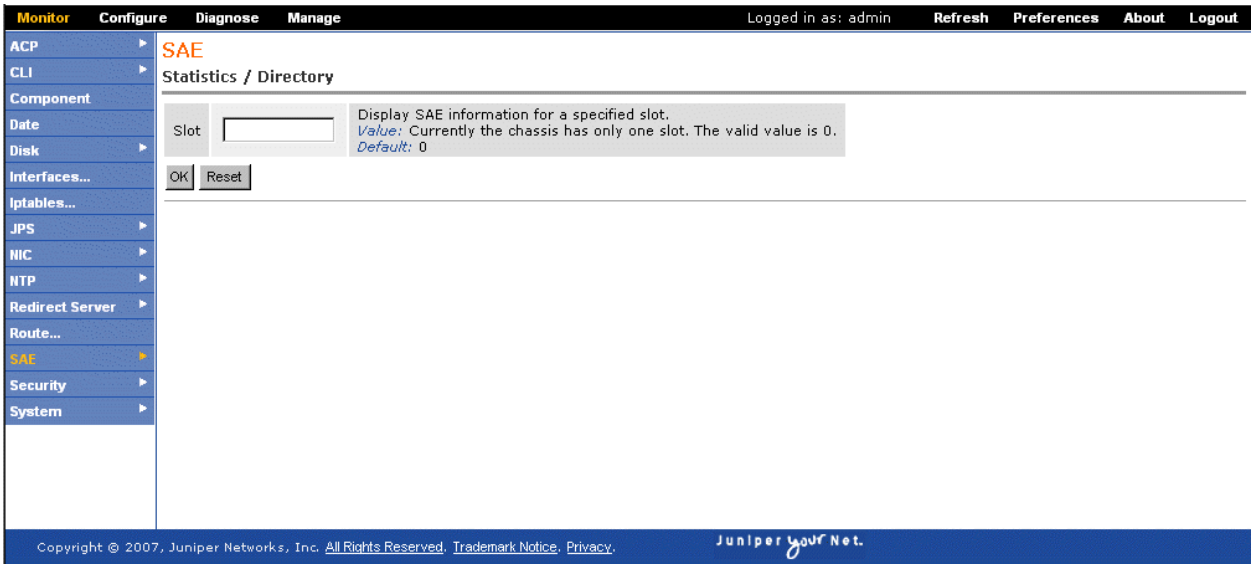
Viewing SNMP Statistics for the Directory (C-Web Interface)

Purpose View SNMP statistics for the directory.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Directory**.

   The Statistics/Directory pane appears.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for the directory.
3. Click **OK**.

   The Statistics/Directory pane displays statistics for the directory.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing Statistics for Directory Connections (SRC CLI) on page 118
- Viewing Statistics About the Directory (SRC CLI) on page 118
- Viewing SNMP Statistics for Directory Connections (C-Web Interface) on page 144

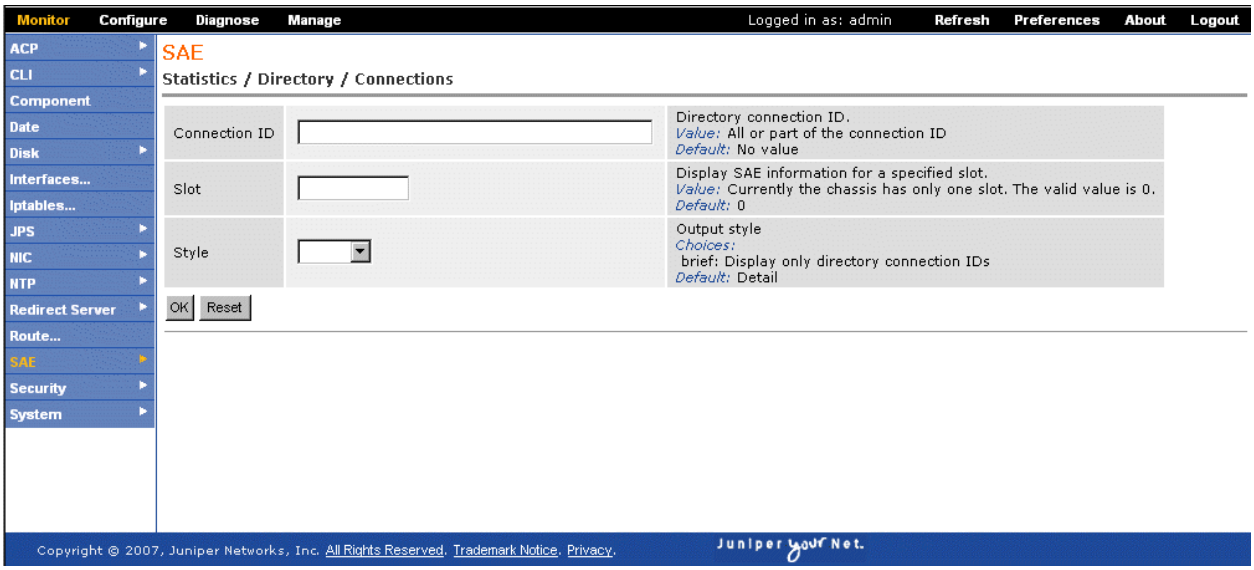
Viewing SNMP Statistics for Directory Connections (C-Web Interface)

Purpose View SNMP statistics for directory connections.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Directory**>**Connections**.

   The Statistics/Directory/Connections pane appears.



2. In the Connection ID box, enter a full or partial connection ID for which you want to display information, or leave the box blank to display all SNMP statistics for all directory connections.
3. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for directory connections.
4. Select an output style from the Style list.
5. Click **OK**.

   The Statistics/Connections pane displays statistics for directory connections.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing Statistics for Directory Connections (SRC CLI) on page 118
- Viewing Statistics About the Directory (SRC CLI) on page 118
- Viewing SNMP Statistics for the Directory (C-Web Interface) on page 143

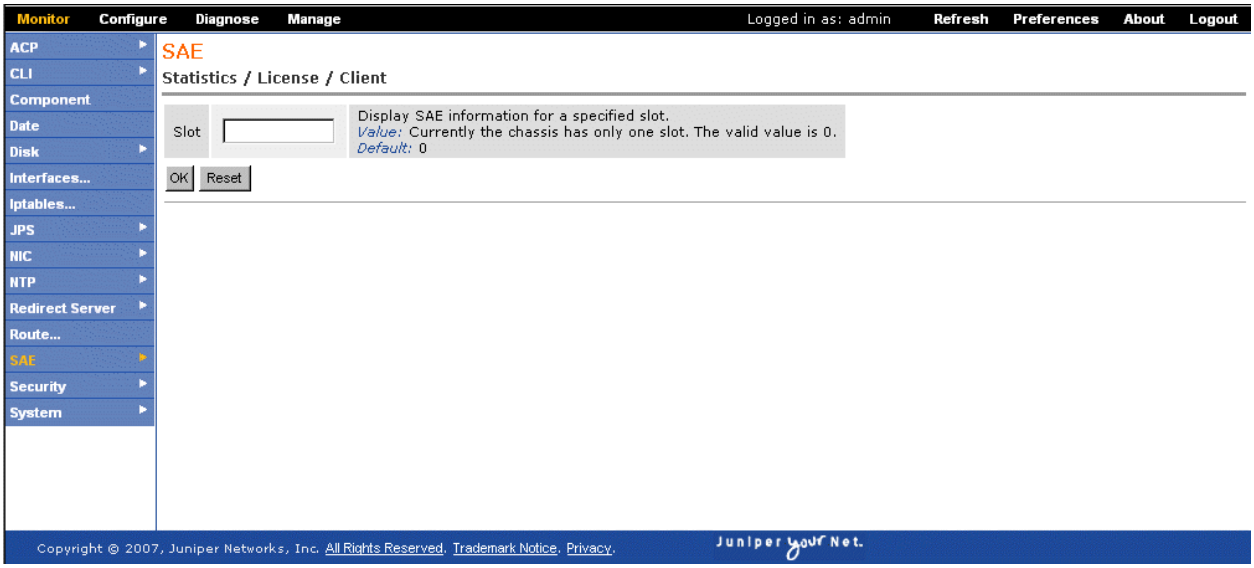
Viewing SNMP Statistics for Client Licenses (C-Web Interface)

Purpose View SNMP statistics for client licenses.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**License**>**Client**.

   The Statistics/License/Client pane appears.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for client licenses.
3. Click **OK**.

   The Statistics/License/Client pane displays statistics for client licenses.

Related Topics

- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121

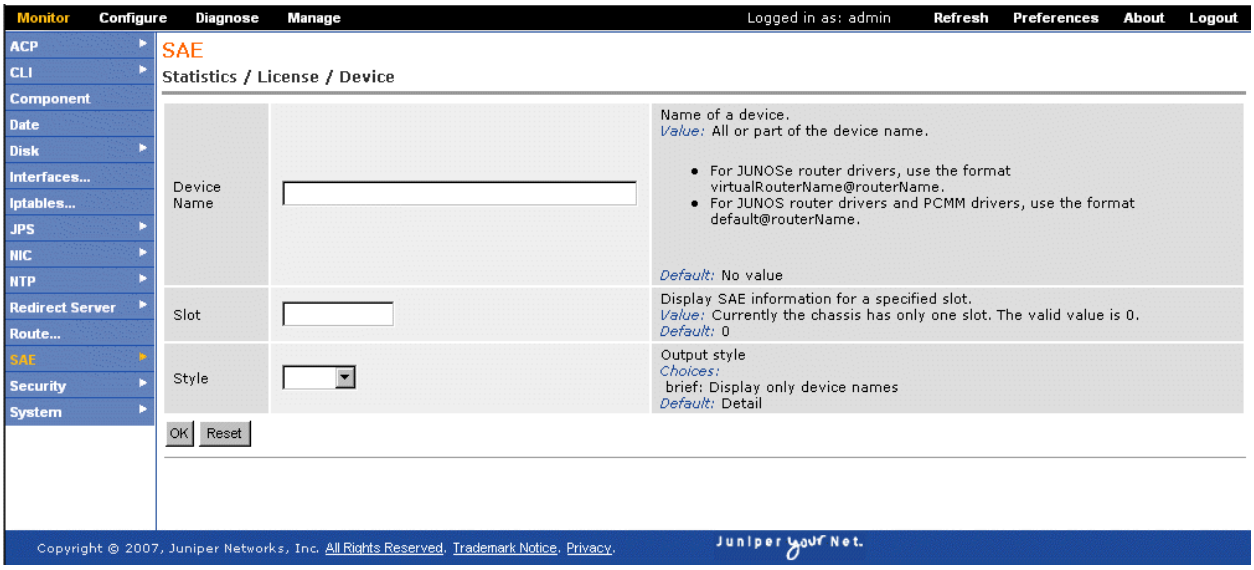
Viewing SNMP Statistics for Licenses by Device (C-Web Interface)

Purpose View SNMP statistics for licenses by device.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**License**>**Device**.

   The Statistics/License/Device pane appears.



2. In the Device Name box, enter a full or partial device name for which you want to display information, or leave the box blank to display SNMP statistics for all devices.

   For JUNOSe router drivers, use the format:

   <virtual router name>@<router name>

   For JUNOS router drivers and PCMM drivers, use the format:

   default@<router name>

3. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for device licenses.
4. Select an output style from the Style list.
5. Click **OK**.

   The Statistics/License/Device pane displays statistics for virtual router licenses.

Related Topics

- Connections to Managed Devices
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Statistics for Local Licenses (C-Web Interface) on page 148

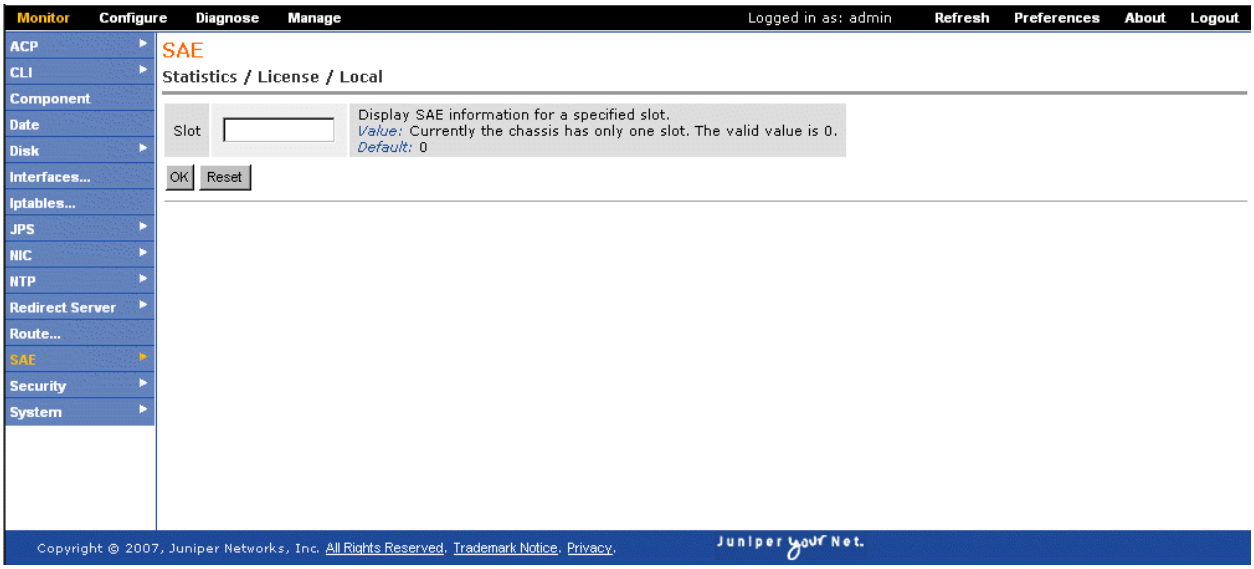
Viewing SNMP Statistics for Local Licenses (C-Web Interface)

Purpose View SNMP statistics for local licenses.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**License**>**Local**.

   The Statistics/License/Local pane appears.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for local licenses.
3. Click **OK**.

   The Statistics/License/Local pane displays statistics for local licenses.

Related Topics

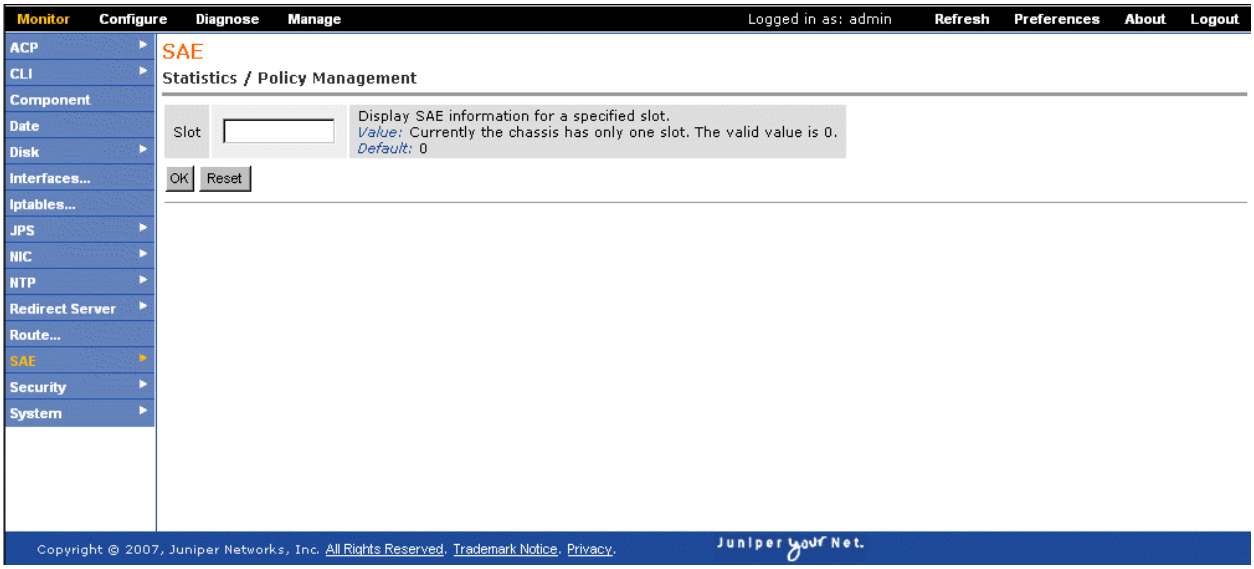
- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Information for Local Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Client Licenses (SRC CLI) on page 120
- Viewing SNMP Information for Licenses on Virtual Routers (SRC CLI) on page 121
- Viewing SNMP Statistics for Client Licenses (C-Web Interface) on page 145
- Viewing SNMP Statistics for Licenses by Device (C-Web Interface) on page 146

Viewing SNMP Statistics About Policies (C-Web Interface)

Purpose View SNMP statistics about policies.

Action Click **Monitor**>**SAE** >**Statistics**>**Policy Management**.

The Statistics/Policy Management pane appears.



1. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for policies.
2. Click **OK**.

   The Statistics/Policy Management pane displays statistics for policies.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing Information About Policies (C-Web Interface) on page 130
- Viewing SNMP Information for Policies (SRC CLI) on page 121

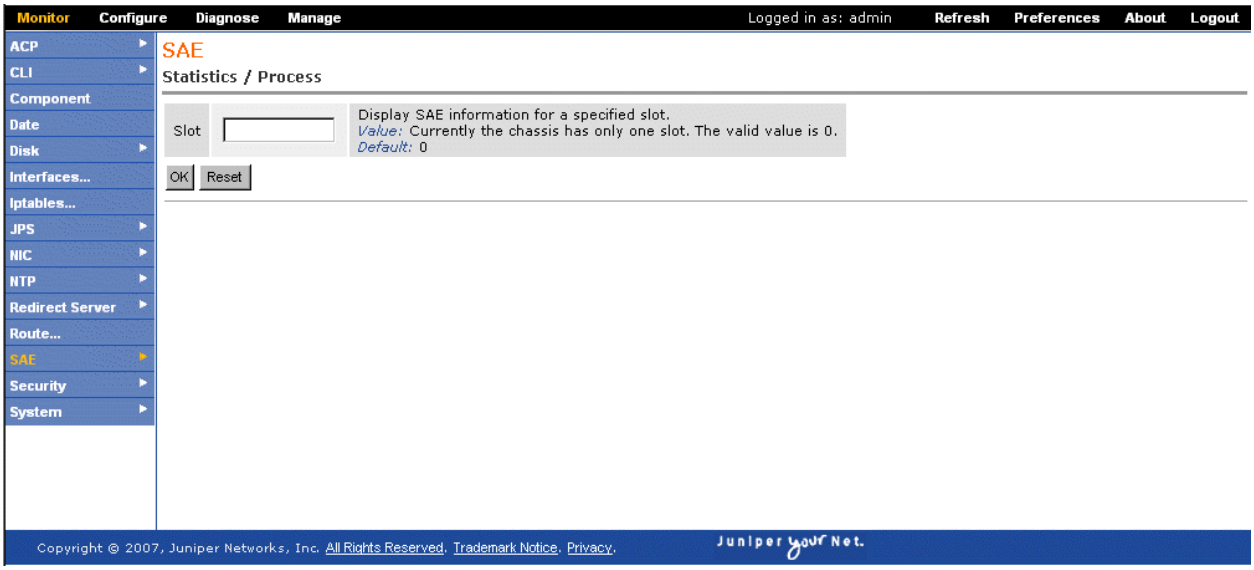
Viewing SNMP Statistics About Server Processes (C-Web Interface)

Purpose View SNMP statistics about server processes.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Process**.

   The Statistics/Process pane appears.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for server processes.
3. Click **OK**.

   The Statistics/Process pane displays statistics for server processes.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Information for the SAE Server Process (SRC CLI) on page 122

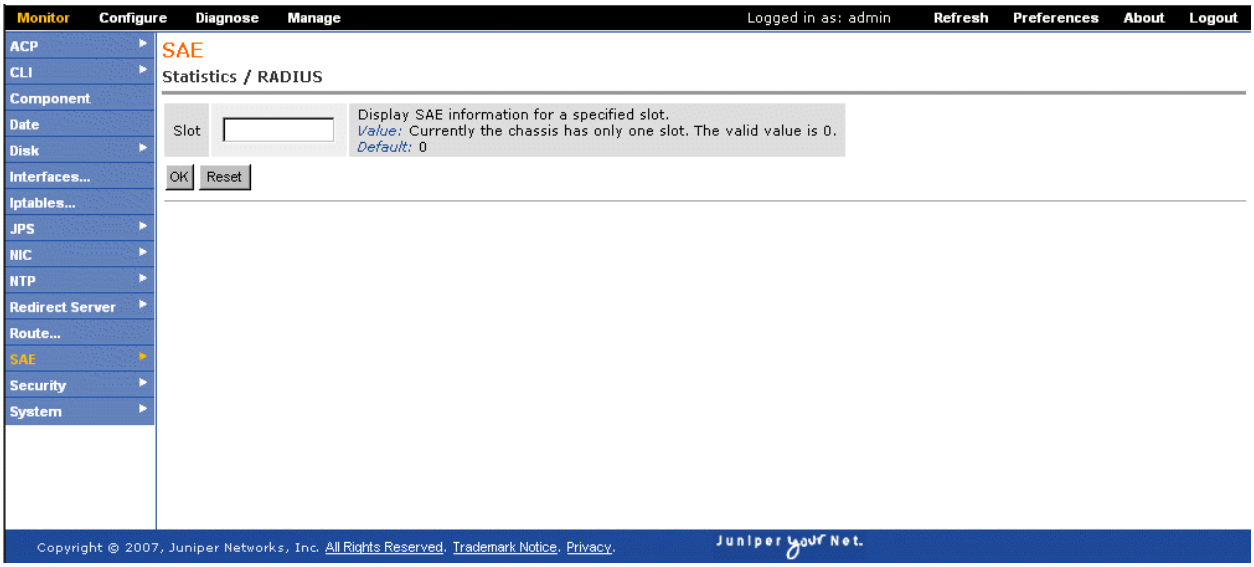
Viewing SNMP Statistics About RADIUS (C-Web Interface)

Purpose View SNMP statistics about RADIUS.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**RADIUS**.

   The Statistics/RADIUS pane appears.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for RADIUS.
3. Click **OK**.

   The Statistics/RADIUS pane displays statistics for RADIUS.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics About RADIUS Clients (C-Web Interface) on page 151

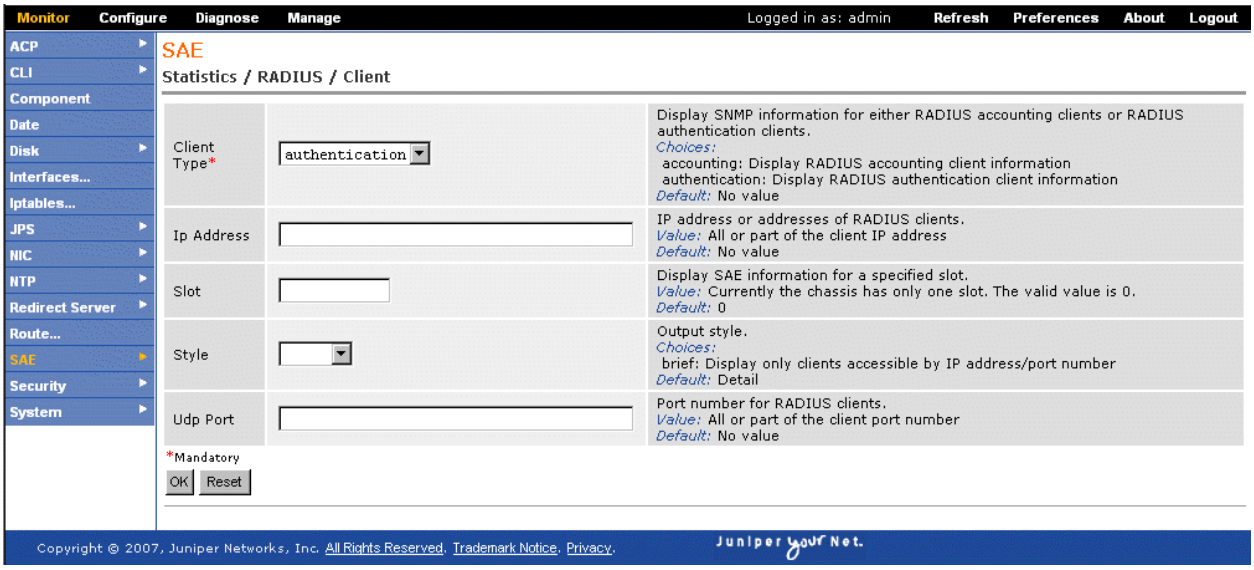
Viewing SNMP Statistics About RADIUS Clients (C-Web Interface)

Purpose View SNMP statistics about RADIUS clients.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**RADIUS**>**Client**.

   The Statistics/RADIUS/Client pane appears.



2. Select a client type from the Client Type list:
   - accounting—Displays RADIUS accounting information
   - authentication—Displays RADIUS client authentication information
3. In the IP Address box, enter the client IP address to display SNMP information for a specific RADIUS client, or leave the box blank to display SNMP information for all RADIUS clients.
4. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for RADIUS clients.
5. Select an output style from the Style list.
6. In the UDP Port box, enter a port number to display SNMP information for a specific RADIUS client, or leave the box blank to display SNMP information for all RADIUS clients.
7. Click **OK**.

   The Statistics/RADIUS/Client pane displays statistics for RADIUS clients.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics About RADIUS (C-Web Interface) on page 150

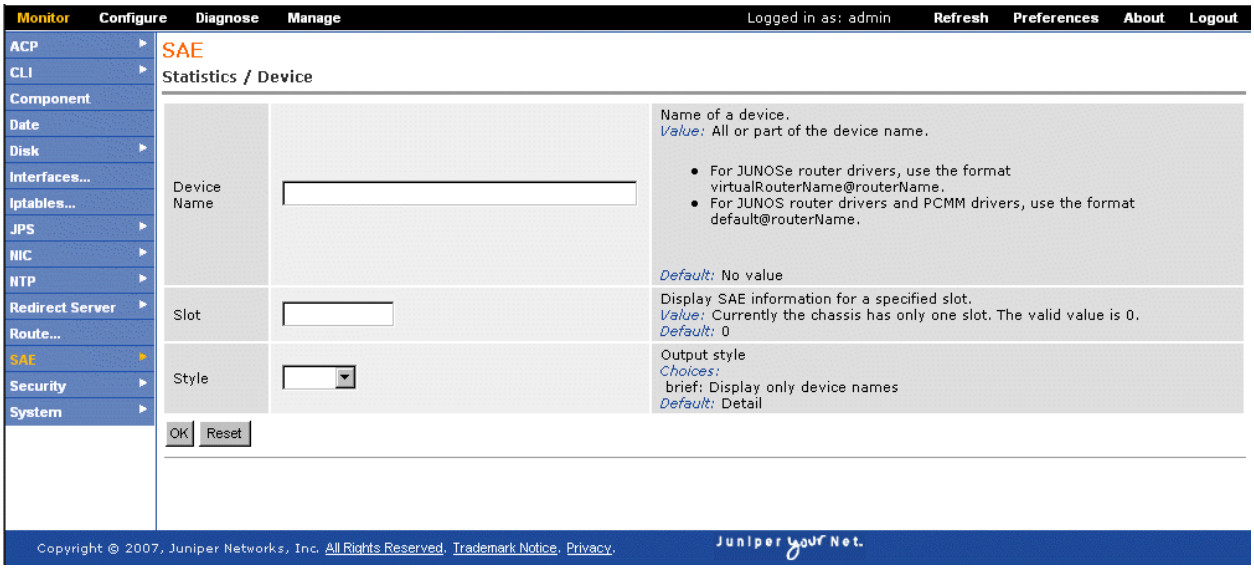
Viewing SNMP Statistics for Devices (C-Web Interface)

Purpose View SNMP statistics about devices.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Device**.

   The Statistics/Device pane appears.



2. In the Device Name box, enter a full or partial device name for which you want to display information, or leave the box blank to display all devices.
3. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for devices.
4. Select an output style from the Style list.
5. Click **OK**.

   The Statistics/Device pane displays statistics for all devices.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Specific Devices (C-Web Interface) on page 153
- Viewing SNMP Statistics for Subscriber Sessions and Service Sessions (C-Web Interface) on page 154

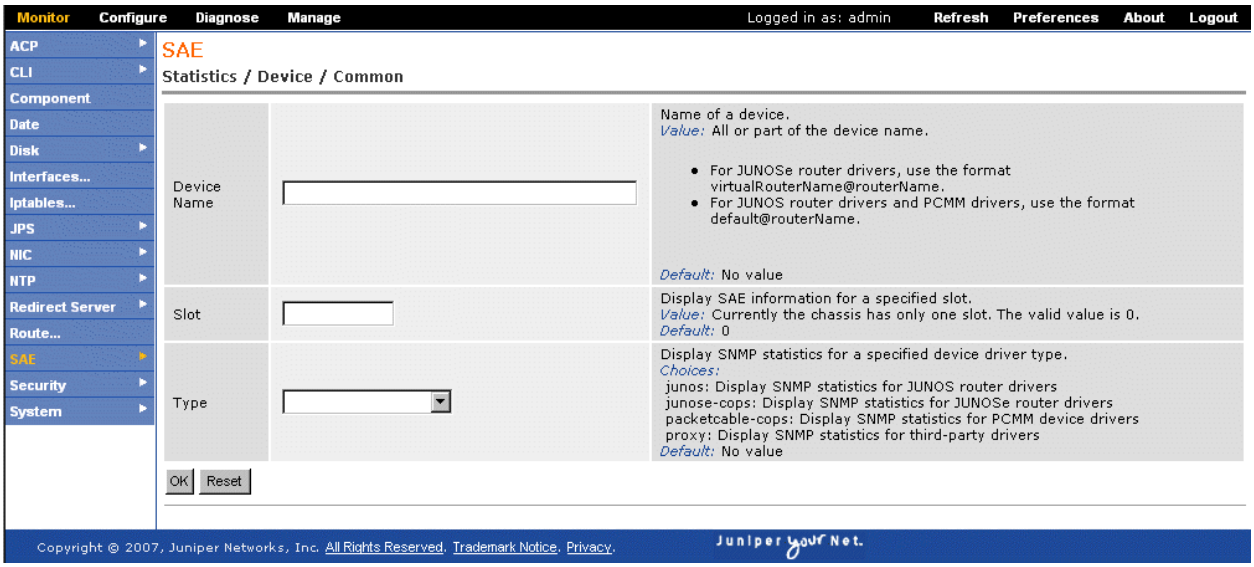
Viewing SNMP Statistics for Specific Devices (C-Web Interface)

Purpose View SNMP statistics about specific devices.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Device**>**Common**.

   The Statistics/Device/Common pane appears.



2. In the Device Name box, enter a full or partial device name for which you want to display information, or leave the box blank to display all devices.
3. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for specific devices.
4. Select a device type from the Type list:
   - junos—Displays SNMP statistics for JUNOS router drivers
   - junose-cops—Displays SNMP statistics for JUNOSe router drivers
   - packetcable-COPS—Displays SNMP statistics for PCMM device drivers
   - proxy—Displays SNMP statistics for third-party drivers
5. Click **OK**.

   The Statistics/Device/Common pane displays statistics for the specified device.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Devices (C-Web Interface) on page 152
- Viewing SNMP Statistics for Subscriber Sessions and Service Sessions (C-Web Interface) on page 154

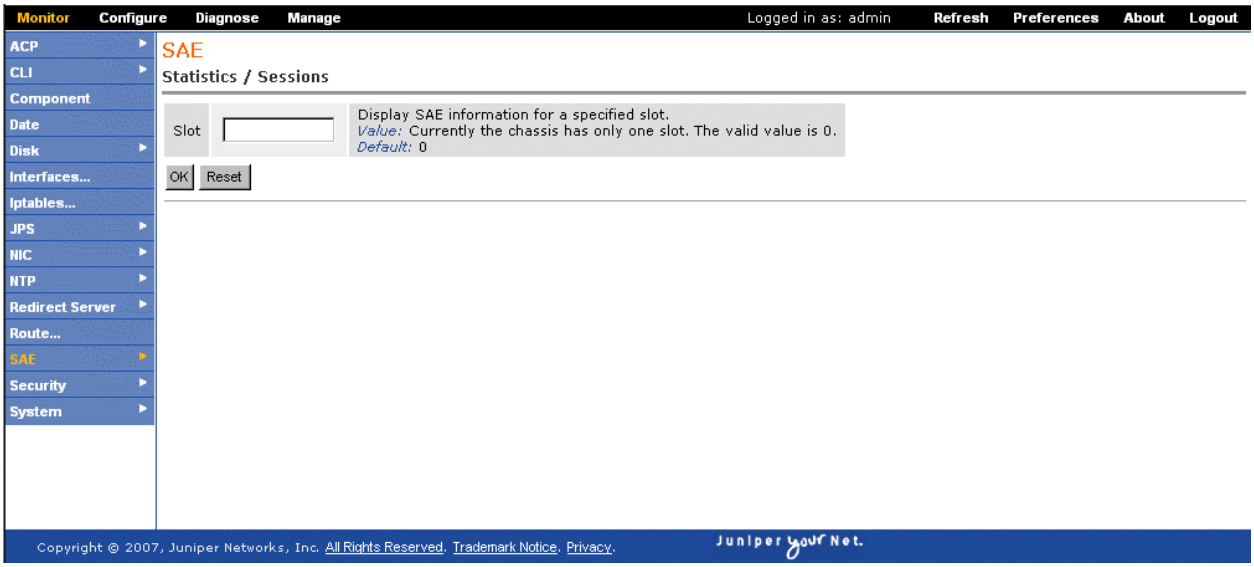
Viewing SNMP Statistics for Subscriber Sessions and Service Sessions (C-Web Interface)

Purpose View SNMP statistics about subscriber sessions and service sessions.

Action

1. Click **Monitor**>**SAE** >**Statistics**>**Sessions**.

   The Statistics/Sessions pane displays statistics for subscriber sessions and service sessions.



2. In the Slot box, enter the number of the slot for which you want to display SNMP statistics for specific devices.
3. Click **OK**.

   The Statistics/Sessions pane displays statistics for subscriber sessions and service sessions.

Related Topics

- Configuring SAE Properties for Global Default SNMP Communities for Use with JUNOSe Routers and JUNOS Routing Platforms
- Viewing SNMP Statistics for Devices (C-Web Interface) on page 152
- Viewing SNMP Statistics for Specific Devices (C-Web Interface) on page 153

CHAPTER 17

Monitoring and Troubleshooting the NIC (SRC CLI)

- SRC CLI Commands to View Statistics About NIC Operations on page 157
- Viewing Statistics for the NIC Process (SRC CLI) on page 158
- Viewing Statistics for a NIC Host (SRC CLI) on page 159
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Statistics for NIC Agents (SRC CLI) on page 160
- SRC CLI Commands to View NIC Resolution Data on page 162
- Viewing Data for NIC Resolvers (SRC CLI) on page 162
- Viewing Data for NIC Agents (SRC CLI) on page 163
- Troubleshooting NIC Data Resolution (SRC CLI) on page 165

SRC CLI Commands to View Statistics About NIC Operations

You can view statistics for the NIC process and for various NIC components. Table 22 on page 157 lists the commands you use to view NIC statistics.

Table 22: Commands to Display NIC Statistics

Command	Output Displayed
show nic statistics	All NIC statistics. The output for this command includes the output for the other **show nic statistics** commands.
show nic statistics agent	NIC statistics for agents.
show nic statistics host	NIC statistics for a NIC host.
show nic statistics process	NIC statistics for the NIC process.
show nic statistics resolver	NIC statistics for resolvers.
show nic statistics slot	All NIC statistics for a specified slot. The output for this command includes the output for the **show nic statistics agent**, **show nic statistics host**, **show nic statistics process**, and **show nic statistics resolver** commands.

Related Topics

- Configuring the NIC (SRC CLI)
- Locating Subscriber Management Information
- Viewing Statistics for the NIC Process (SRC CLI) on page 158
- Viewing Statistics for a NIC Host (SRC CLI) on page 159
- SRC CLI Commands to View NIC Resolution Data on page 162

Viewing Statistics for the NIC Process (SRC CLI)

Purpose View statistics for the NIC process.

Action

```
user@host> show nic statistics process

Component Statistics
Component Name process
Heap in use    456194 bytes (87%)
Heap limit     524288 bytes
Threads        42
Up time        747848 seconds since Wed Jan 31 19:35:57 EST 2007
```

Meaning Table 23 on page 158 describes the output fields for the **show nic statistics process** command. Output fields are listed in the order in which they appear.

Table 23: Output Fields for show nic statistics process

Field Name	Field Description
Component name	Name of component—process indicates the NIC process.
Heap in use	Heap size allocated by the Java Virtual Machine. The percentage indicates the percentage of the heap in use. We recommend that if the percent in use is more than 90% additional heap be allocated for the NIC.
Heap limit	Size of Java heap configured for the NIC.
Threads	Number of threads in use.
Up time	Length of time NIC has been running on the system. Includes the date and time at which NIC was last started.

Related Topics

- Configuring the NIC (SRC CLI)
- Viewing Host Process Statistics (C-Web Interface) on page 168
- Viewing Statistics for a NIC Host (SRC CLI) on page 159
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Statistics for NIC Agents (SRC CLI) on page 160

Viewing Statistics for a NIC Host (SRC CLI)

Purpose View statistics for a NIC host.

Action

```
user@host> show nic statistics host

Component Statistics
Component Name                /hosts
Number of Components Restart  0
Number of No Match Resolutions 0
Number of Resolution Errors   0
Number of Resolutions         0
```

Meaning Table 24 on page 159 describes the output fields for the **show nic statistics host** command. Output fields are listed in the order in which they appear.

Table 24: Output Fields for show nic statistics test

Field Name	Field Description
Component name	Name of component—/hosts indicates NIC host. A specific host has the format **/hosts/** *hostname*.
Number of Components Restart	Number of NIC resolvers and agents that have restarted in the host.
Number of No Match Resolutions	Number of resolution requests that did not return data.
Number of Resolution Errors	Number of errors encountered when processing resolutions requests.
Number of Resolutions	Number of successful data resolutions; for example, the SAE reference for a specified IP address, the login name for a specified IP address, or the SAE reference for a specified login name.

Related Topics

- Configuring the NIC (SRC CLI)
- Viewing Host Statistics (C-Web Interface) on page 167
- Viewing Statistics for the NIC Process (SRC CLI) on page 158
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Statistics for NIC Agents (SRC CLI) on page 160

Viewing Statistics for NIC Resolvers (SRC CLI)

Purpose View statistics for NIC resolvers.

To interpret the statistics for NIC resolvers, make sure that you have a good understanding of the NIC resolutions process.

See Overview of the NIC Resolution Process.

Action

```
user@host> show nic statistics resolver

Component Statistics
Component Name           /realms/login/A1
Number of Data Sources   0
Resolver Size            0

Component Statistics
Component Name           /realms/login/B1
Number of Data Sources   1
Resolver Size            0

Component Statistics
Component Name           /realms/login/C1
Number of Data Sources   1
Resolver Size            2140

Component Statistics
Component Name           /realms/login/D1
Number of Data Sources   2
Resolver Size            0
```

Meaning Table 25 on page 160 describes the output fields for the **show nic statistics resolver** command. Output fields are listed in the order in which they appear.

Table 25: Output Fields for show nic statistics resolver

Field Name	Field Description
Component name	Name of a resolver. Resolver names have the format **/realms/** *realm-name/resolver name*.
Number of Data Sources	The number of sources from which the resolver obtains data. A data source can be an agent or another resolver.
Resolver Size	The number of keys (or number of mappings) required to perform this resolution.

Related Topics

- Configuring the NIC (SRC CLI)
- Viewing Resolver Statistics (C-Web Interface) on page 170
- Viewing Resolvers (C-Web Interface) on page 169
- Viewing Statistics for the NIC Process (SRC CLI) on page 158
- Viewing Statistics for NIC Agents (SRC CLI) on page 160

Viewing Statistics for NIC Agents (SRC CLI)

Purpose To interpret the statistics for NIC agents, make sure that you have a good understanding of the NIC agents.

See Mapping Subscribers to a Managing SAE.

View statistics for NIC agents.

Action

```
user@host> show nic statistics agent

Component Statistics
Component Name            /agents/LoginNameVr
Agent Type                Passive
Connection to Data Source Up
Data Size                 262141

Component Statistics
Component Name            /agents/VrSaeId
Agent Type                Active
Connection to Data Source Up
Data Size                 2212

Component Statistics
Component Name            /agents/IpLoginName
Agent Type                Passive
Connection to Data Source Up
Data Size                 262141

Component Statistics
Component Name            /agents/Pool
Agent Type                Active
Connection to Data Source Up
Data Size                 3
```

Meaning

Table 26 on page 161 describes the output fields for the **show nic statistics agent** command. Output fields are listed in the order in which they appear.

Table 26: Output Fields for show nic statistics agent

Field Name	Field Description
Component name	Name of an agent. Agent names have the format **/agents/** *agent-name*.
Agent Type	Type of agent—active or passive. Active agents publish data whether or not a resolver requests the data. Passive agents provide information only when a resolver requests it.
Connection to Data Source	Whether or not the agent has a connection to its data source; for example, a directory agent to the directory, or an SAE plug-in agent to the CORBA naming server.
Data Size	Number of key to value mappings for the agent.

Related Topics

- Configuring a NIC Scenario (SRC CLI)
- Viewing Agents (C-Web Interface) on page 170
- Viewing Agent Statistics (C-Web Interface) on page 171
- Viewing Statistics for the NIC Process (SRC CLI) on page 158
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159

SRC CLI Commands to View NIC Resolution Data

You can view the data that NIC uses during a resolution. You can view all resolution data, or data for a specified NIC component. Table 27 on page 162 lists the commands you use to view NIC resolution information.

Table 27: Commands to Display NIC DataTable 23: Commands to Display NIC Data

Command	Output Displayed
show nic data	All NIC data. The output for this command includes the output for the other **show nic data** commands.
show nic data maximum-results	All or a specified quantity of NIC resolution data.
show nic data agent	NIC resolution data for a specified agent.
show nic data resolver	NIC resolution data for a specified resolver.
show nic data slot	All NIC data for a specified slot. The output for this command includes the output for the **show nic data agent** and **show nic data resolver** commands.

Related Topics

- Testing a NIC Resolution (SRC CLI)
- SRC CLI Commands to View Statistics About NIC Operations on page 157
- Viewing Data for NIC Resolvers (SRC CLI) on page 162
- Viewing Data for NIC Agents (SRC CLI) on page 163

Viewing Data for NIC Resolvers (SRC CLI)

Purpose To interpret the data for resolvers, make sure that you have a good understanding of the NIC resolution process.

See Overview of the NIC Resolution Process.

View all NIC resolver data.

Action

```
user@host> show nic data resolver
Component name
/realms/login/C1
Key
  Type
Vr
  String
default@dw2
Value
  Type
SaeId
  String
IOR:
```

```
00000000000000003549444C3A736D67742E6A756E697065722E6E65742F7361652F5365727...
4163746976617469 6F6E456E67696E653A312E3000000000000000020000000000000780...
0000000C31302E3232372E362E343300226100000000002267617 26B6269742E6B616E6C6...
6E70722E6E65742F736165504F412F534145000000000002000000000000000800000004...
000000010000001C000000000001000100000001050100010001010900000001050100010...
0000002C000000000000000100000001000000 1C000000000001000100000001050100010...
0000000105010001...
Key
  Type
Vr
  String
vr1495@marvin
Value
  Type
SaeId
  String
...
```

Meaning Table 28 on page 163 describes the output fields for the **show nic data resolver** command. Output fields are listed in the order in which they appear.

Table 28: Output Fields for show nic data resolver

Field Name	Field Description
Component name	Name of a resolver. Resolver names have the format **/realms/** *realm-name/resolver name*.
Key	Data type and value of a NIC key. The value is the actual value of the NIC key, not the NIC value to which the key maps.
Value	Data type and value of the NIC value that maps to the associated NIC key.

Related Topics

- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Resolvers (C-Web Interface) on page 169
- Viewing Resolver Statistics (C-Web Interface) on page 170
- Viewing Data for NIC Agents (SRC CLI) on page 163

Viewing Data for NIC Agents (SRC CLI)

Purpose To interpret the data for agents, make sure that you have a good understanding of the NIC resolution process.

See Overview of the NIC Resolution Process.

View all NIC resolver data.

Action

```
user@host> show nic data agent

Component name
/agents/LoginNameVr
Key
```

```
  Type
Ip
  String
192.170.179.0
Value
  Type
Vr
  String
vorbis-13@prsim
Key
  Type
Ip
  String
192.170.179.3
Value
  Type
Vr
  String
vorbis-13@prsim
...
Key
  Type
Vr
  String
default@sys1
Value
  Type
SaeId
  String
IOR:
000000000000003549444C3A736D67742E6A756E697065722E6E65742F7361652F53657276696365
41637469766174696F6E456E67696E653A312E3000000000000000020000000000000007800010200
0000000C31302E3232372E362E343300226100000000002267617 26B6269742E6B616E6C61622E6A
6E70722E6E65742F736165504F412F534145000000000020000000000000008000000004A414300
0000000100000001C000000000001000100000001050100010001010900000001050100010000000 1
0000002C000000000000000100000001000000 1C000000000001000100000001050100010001010 9
0000000105010001
```

Meaning Table 29 on page 164 describes the output fields for the **show nic data agent** command. Output fields are listed in the order in which they appear.

Table 29: Output Fields for show nic data agent

Field Name	Field Description
Component name	Name of an agent. Agent names have the format **/agents/** *agent-name*.
Key	Data type and value of a NIC key. The value is the actual value of the NIC key, not the NIC value to which the key maps.
Value	Data type and value of the NIC value that maps to the associated NIC key.

Related Topics

- Viewing Statistics for NIC Agents (SRC CLI) on page 160
- Viewing Agents (C-Web Interface) on page 170
- Viewing Agent Statistics (C-Web Interface) on page 171

- Viewing Data for NIC Resolvers (SRC CLI) on page 162

Troubleshooting NIC Data Resolution (SRC CLI)

Problem The NIC does not resolve a request.

Solution Troubleshooting NIC data resolution is a complex task that requires a good understanding of how NIC operates, how it resolves resolution requests, and how the NIC configuration scenario that you are using performs resolutions.

This topic provides high-level troubleshooting information. For further assistance troubleshooting NIC operation and NIC resolutions, contact the Juniper Technical Support Center.

Troubleshoot NIC operation:

1. Make sure that the heap size configured for NIC is adequate and that the process is up:

```
user@host> show nic statistics process

Component Statistics
Component Name process
Heap in use    456194 bytes (87%)
Heap limit     524288 bytes
Threads        42
Up time        747848 seconds since Wed Jan 31 19:35:57 EST 2007
```

2. Determine whether there are any NIC resolution errors and whether NIC successfully completed any resolution requests:

```
user@host> show nic statistics host

Component Statistics
Component Name                 /hosts
Number of Components Restart   0
Number of No Match Resolutions 0
Number of Resolution Errors    0
Number of Resolutions          0
```

3. Test the resolution process by using the **test nic resolve** command.

   See Configuring the NIC (SRC CLI).

If you are unsure whether NIC is resolving resolution requests, view data about those requests to see whether NIC is receiving data.

1. Verify that NIC is receiving data by running the **show nic data resolver** command.

   See “Viewing Data for NIC Resolvers (SRC CLI)” on page 162 .

For each resolver, which is identified by a component name such as **/realms/login/C1**, the output should show a value, such as **default@sys1** for the key Vr, and the NIC value for that key such as the IOR that identifies an SAE.

2. If NIC is not receiving data, determine which agent or agents are not receiving data by running the **show nic data agent** command.

   See “Viewing Data for NIC Agents (SRC CLI)” on page 163 .

3. Review your NIC configuration to make sure that NIC is configured correctly by running the **show** command for the NIC configuration scenario. For example:

   ```
   [edit shared nic scenario OnePop]
   user@host# show
   ```

Related Topics

- Overview of the NIC Resolution Process
- NIC Configuration Scenarios

CHAPTER 18

Monitoring the NIC (C-Web Interface)

- Viewing Hosts (C-Web Interface) on page 167
- Viewing Resolvers (C-Web Interface) on page 169
- Viewing Agents (C-Web Interface) on page 170

Viewing Hosts (C-Web Interface)

You can view statistics for hosts and the host process by:

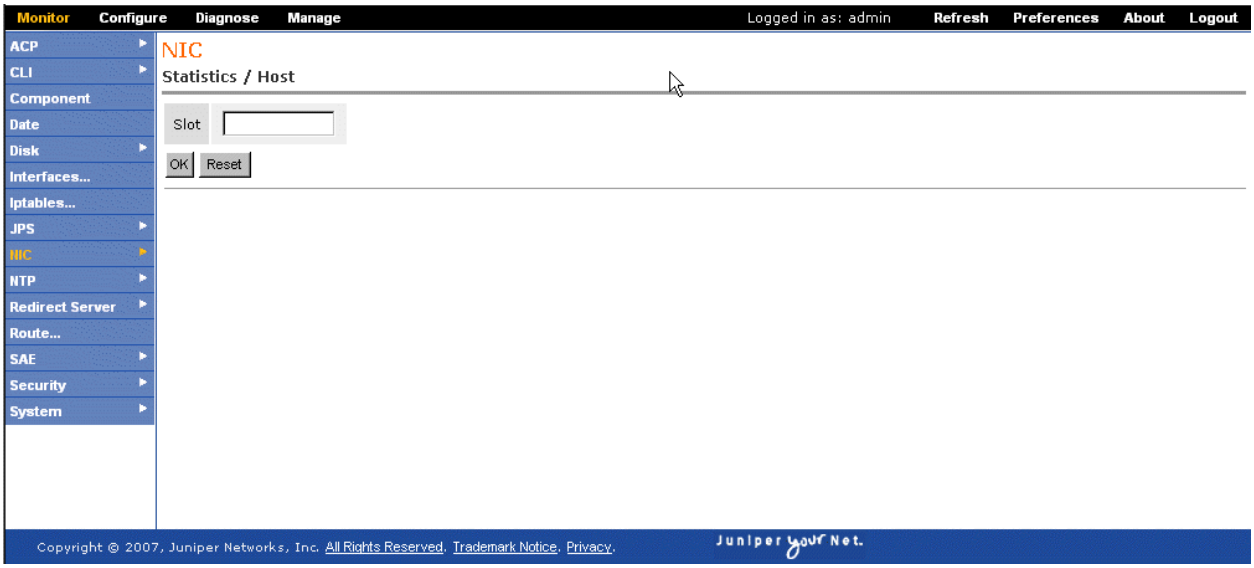
- Viewing Host Statistics (C-Web Interface) on page 167
- Viewing Host Process Statistics (C-Web Interface) on page 168

Viewing Host Statistics (C-Web Interface)

Purpose View NIC host statistics.

Action 1. Click **Monitor**>**NIC**>**Statistics**>**Host**.

The Statistics/Host pane appears.



2. In the Slot box, enter the number of the slot for which you want to display host statistics.
3. Click **OK**.

   The Statistics/Host pane displays the properties for the host.

Related Topics

- Configuring the NIC (C-Web Interface)
- Viewing Host Process Statistics (C-Web Interface) on page 168
- Viewing Statistics for a NIC Host (SRC CLI) on page 159

Viewing Host Process Statistics (C-Web Interface)

Purpose View NIC host process statistics.

Action

1. Click **Monitor**>**NIC**>**Statistics**>**Process**.

   The Statistics/Process pane appears.

2. In the Slot box, enter the number of the slot for which you want to display host process statistics.
3. Click **OK**.

   The Statistics/Process pane displays the statistics for the host process.

Related Topics

- Configuring the NIC (C-Web Interface)
- Viewing Host Statistics (C-Web Interface) on page 167
- Viewing Statistics for the NIC Process (SRC CLI) on page 158

Viewing Resolvers (C-Web Interface)

You can view resolvers and monitor resolver statistics (C-Web Interface) by:

- Viewing Resolvers (C-Web Interface) on page 169
- Viewing Resolver Statistics (C-Web Interface) on page 170

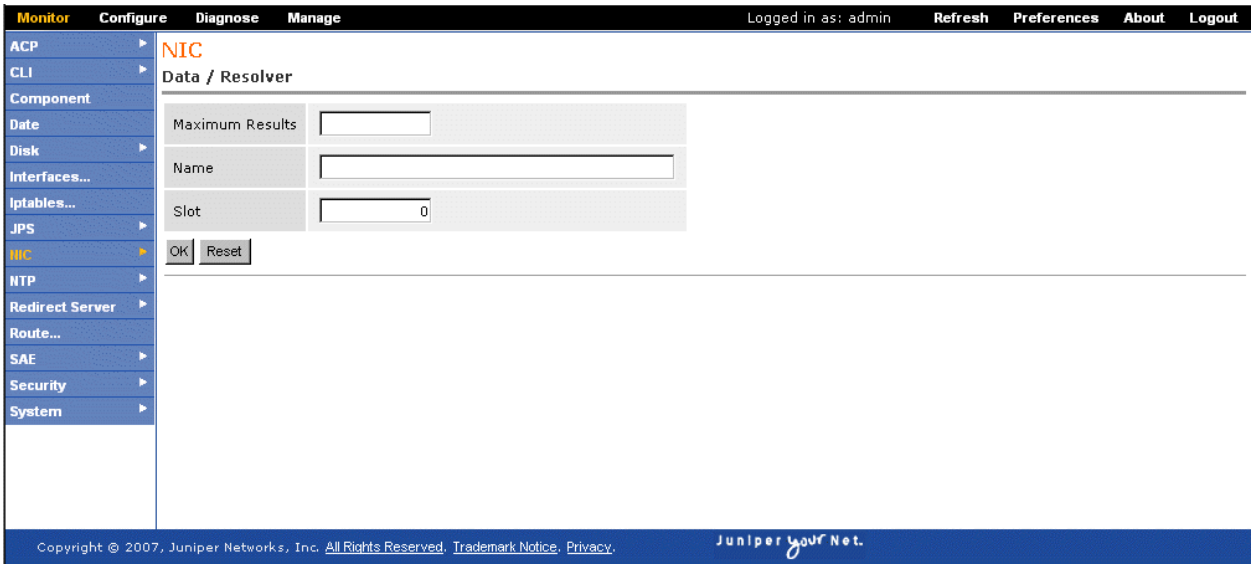
Viewing Resolvers (C-Web Interface)

Purpose View information about a resolver.

Action

1. Click **Monitor>NIC>Data>Resolver**.

   The Data/Resolver pane appears.



2. In the Maximum Results box, enter the maximum number of results that you want to receive.
3. In the Name box, enter the name of the resolver for which you want to view data.
4. In the Slot box, enter the number of the slot for which you want to display resolver data.
5. Click **OK**.

   The Data/Resolver pane displays the properties for the resolver.

Related Topics

- Configuring the NIC (C-Web Interface)
- Viewing Resolver Statistics (C-Web Interface) on page 170
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Data for NIC Resolvers (SRC CLI) on page 162

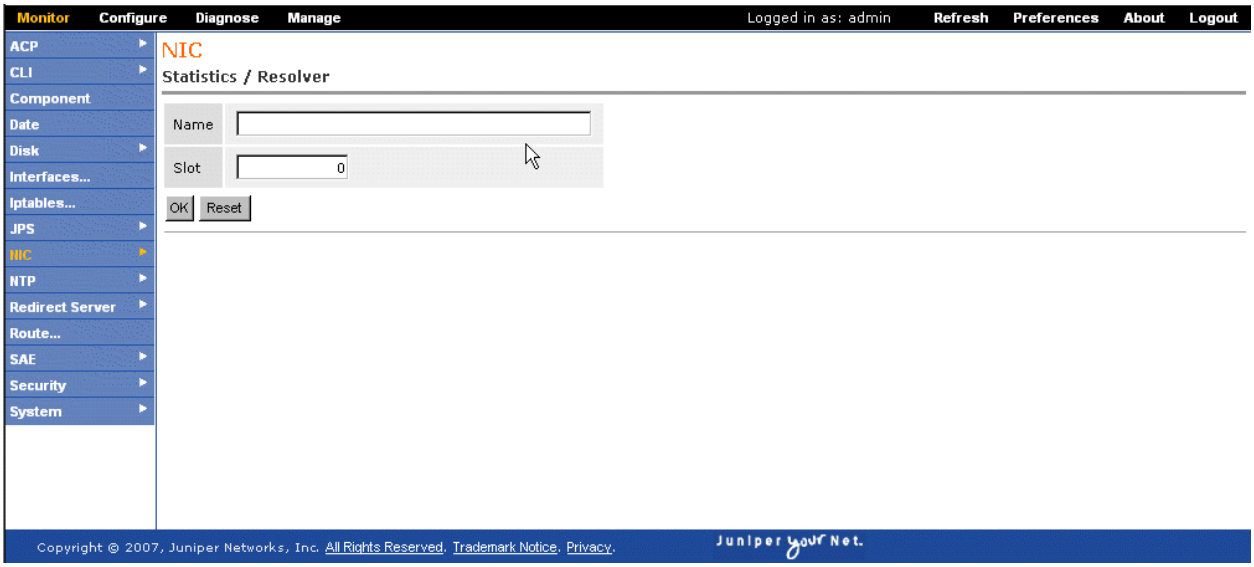
Viewing Resolver Statistics (C-Web Interface)

Purpose View statistics about resolvers.

Action

1. Click **Monitor**>**NIC**>**Statistics**>**Resolver**.

   The Statistics/Resolver pane appears.



2. In the Name box, enter the name of the resolver for which you want to view statistics.
3. In the Slot box, enter the number of the slot for which you want to display resolver statistics.
4. Click **OK**.

   The Statistics/Resolver pane displays the statistics for the resolver.

Related Topics

- Configuring the NIC (C-Web Interface)
- Viewing Resolvers (C-Web Interface) on page 169
- Viewing Statistics for NIC Resolvers (SRC CLI) on page 159
- Viewing Data for NIC Resolvers (SRC CLI) on page 162

Viewing Agents (C-Web Interface)

You can view agent properties or agent statistics with the C-Web interface by:

- Viewing Agents (C-Web Interface) on page 170
- Viewing Agent Statistics (C-Web Interface) on page 171

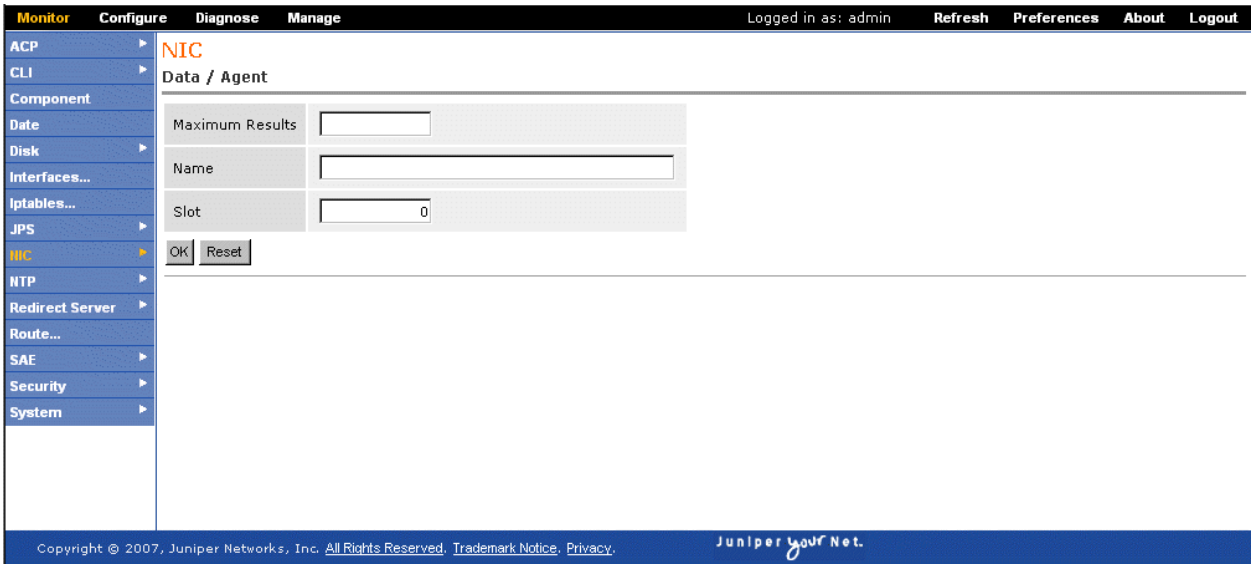
Viewing Agents (C-Web Interface)

Purpose View information about an agent.

Action

1. Click **Monitor**>**NIC**>**Data**>**Agent**.

   The Data/Agent pane appears.



2. In the Maximum Results box, enter the maximum number of results that you want to receive.
3. In the Name box, enter the name of the agent for which you want to view data.
4. In the Slot box, enter the number of the slot for which you want to display agent data.
5. Click **OK**.

   The Data/Agent pane displays the properties for the agent.

Related Topics

- Configuring a NIC Scenario (C-Web Interface)
- Viewing Data for NIC Agents (SRC CLI) on page 163
- Viewing Agent Statistics (C-Web Interface) on page 171
- Viewing Statistics for NIC Agents (SRC CLI) on page 160

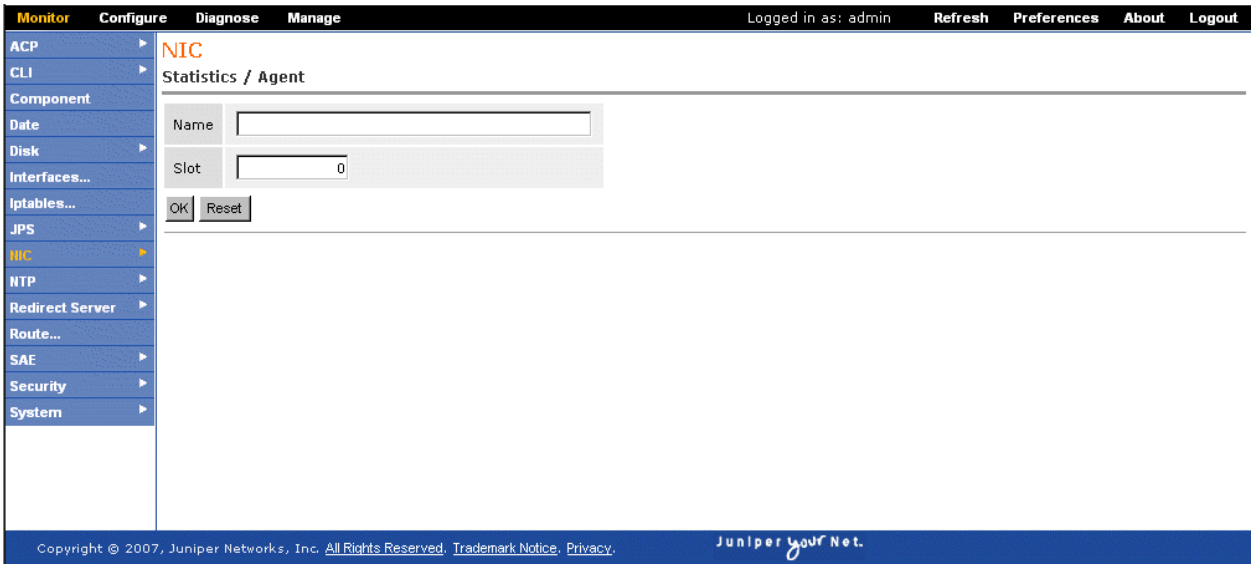
Viewing Agent Statistics (C-Web Interface)

Purpose View statistics for an agent.

Action

1. Click **Monitor**>**NIC**>**Statistics**>**Agent**.

   The Statistics/Agent pane appears.



2. In the Name box, enter the name of the agent for which you want to view statistics.
3. In the Slot box, enter the number of the slot for which you want to display agent statistics.
4. Click **OK**.

   The Statistics/Agent pane displays the properties for the agent.

Related Topics

- Configuring a NIC Scenario (C-Web Interface)
- Viewing Data for NIC Agents (SRC CLI) on page 163
- Viewing Agents (C-Web Interface) on page 170
- Viewing Statistics for NIC Agents (SRC CLI) on page 160

CHAPTER 19

Monitoring NTP (SRC CLI)

- Viewing NTP Peers (SRC CLI) on page 173
- Viewing Statistics for NTP (SRC CLI) on page 174
- Viewing Internal Variables for NTP (SRC CLI) on page 174

Viewing NTP Peers (SRC CLI)

Purpose View a list of NTP peers with the SRC CLI.

Action

```
user@host> show ntp associations
     remote           local      st poll reach  delay   offset    disp
==============================================================================
*myserver.jnpr.n 192.0.7.46      3 1024  377 0.00038 -0.000573 0.12178
```

Meaning Table 30 on page 173 describes the output fields for the **show ntp associations** command. Output fields are listed in the approximate order in which they appear.

Table 30: Output Fields for show ntp associations command

remote	Address or name of the remote NTP peer
local	Address or name used by NTP on the local system
st	Stratum of the remote peer
poll	Polling interval, in seconds
reach	Reachability register, in octal
delay	Current estimated delay of the peer, in milliseconds
offset	Current estimated offset of the peer, in milliseconds
disp	Current estimated dispersion of the peer, in milliseconds

Related Topics

- Configuring an NTP Peer on a C Series Controller (SRC CLI)
- Viewing Statistics for NTP (SRC CLI) on page 174
- Viewing Internal Variables for NTP (SRC CLI) on page 174

- Viewing NTP Peers (C-Web Interface) on page 177

Viewing Statistics for NTP (SRC CLI)

Purpose View statistics for NTP with the SRC CLI.

Action

```
user@host> show ntp statistics
time since restart:     2371617
time since reset:       2371617
packets received:       38765
packets processed:      2573
current version:        38761
previous version:       0
bad version:            0
access denied:          36188
bad length or format:   0
bad authentication:     0
rate exceeded:          0
```

Related Topics

- Configuring NTP on a C Series Controller
- Viewing NTP Peers (SRC CLI) on page 173
- Viewing Statistics for NTP (C-Web Interface) on page 178
- Viewing NTP Status (C-Web Interface) on page 178

Viewing Internal Variables for NTP (SRC CLI)

Purpose View information about internal variables for NTP with the SRC CLI:

Action

```
user@host> show ntp status
system peer:          menemsha.jnpr.net
system peer mode:     client
leap indicator:       00
stratum:              4
precision:            -20
root distance:        0.02245 s
root dispersion:      0.07689 s
reference ID:         [10.227.2.100]
reference time:       c922b152.86dd0529  Thu, Dec  7 2006 10:27:14.526
system flags:         auth monitor ntp kernel stats
jitter:               0.000183 s
stability:            1.728 ppm
broadcastdelay:       0.003998 s
authdelay:            0.000000 s
```

Related Topics

- Viewing NTP Peers (SRC CLI) on page 173
- Viewing Statistics for NTP (SRC CLI) on page 174
- Viewing NTP Peers (C-Web Interface) on page 177
- Viewing Statistics for NTP (C-Web Interface) on page 178

- Viewing NTP Status (C-Web Interface) on page 178

CHAPTER 20

Monitoring NTP (C-Web Interface)

- Viewing NTP Peers (C-Web Interface) on page 177
- Viewing Statistics for NTP (C-Web Interface) on page 178
- Viewing NTP Status (C-Web Interface) on page 178

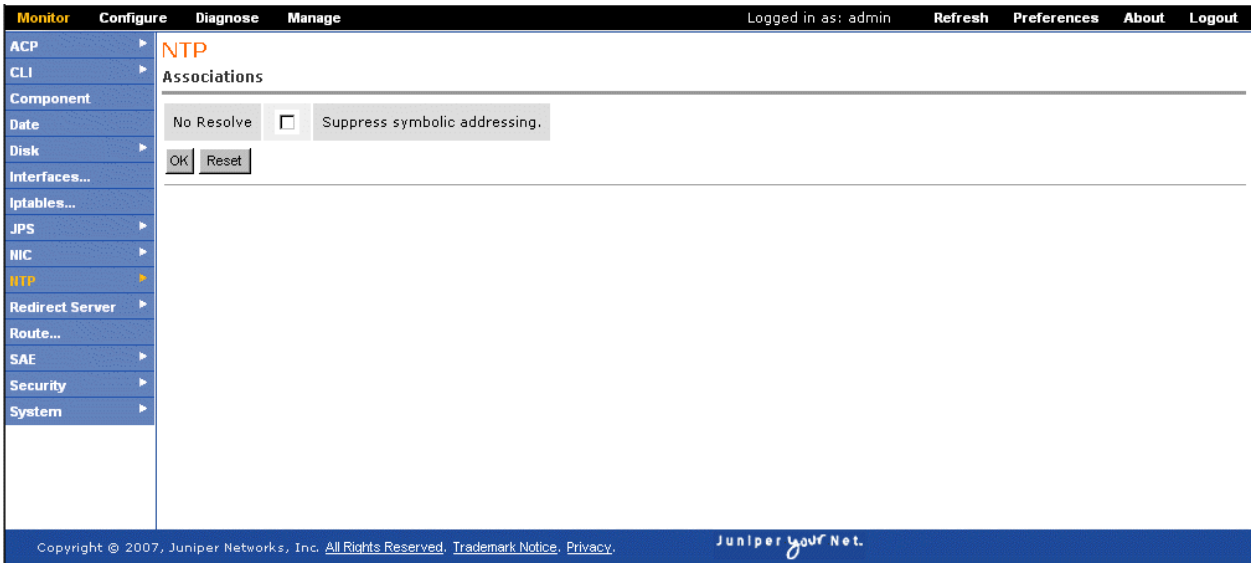
Viewing NTP Peers (C-Web Interface)

Purpose View a list of NTP peers.

Action

1. Click **Monitor**>**NTP**>**Associations**.

   The Associations pane appears.



2. To suppress symbolic addressing, select the **No Resolve** box.
3. Click **OK**.

   The Associations pane displays the list of NTP peers.

Related Topics

- Configuring an NTP Peer for a C Series Controller (C-Web Interface)
- Viewing NTP Peers (SRC CLI) on page 173

- Viewing Statistics for NTP (C-Web Interface) on page 178
- Viewing NTP Status (C-Web Interface) on page 178

Viewing Statistics for NTP (C-Web Interface)

Purpose Display statistics for NTP.

Action

1. Click **Monitor**>**NTP**>**Statistics**.

   The Statistics pane appears.

2. To suppress symbolic addressing, select the **No Resolve** box.
3. Click **OK**.

   The Statistics pane displays statistics for NTP.

Related Topics

- Specifying a Basic NTP Configuration on a C Series Controller (C-Web Interface)
- Viewing Statistics for NTP (SRC CLI) on page 174
- Viewing NTP Peers (C-Web Interface) on page 177
- Viewing NTP Status (C-Web Interface) on page 178

Viewing NTP Status (C-Web Interface)

Purpose Display status for NTP.

Action

1. Click **Monitor**>**NTP**>**Status**.

   The Status pane appears.

2. To suppress symbolic addressing, select the **No Resolve** box.
3. Click **OK**.

   The Status pane displays NTP status.

Related Topics

- Viewing NTP Peers (SRC CLI) on page 173
- Viewing Statistics for NTP (SRC CLI) on page 174
- Viewing Internal Variables for NTP (SRC CLI) on page 174
- Viewing NTP Peers (C-Web Interface) on page 177
- Viewing Statistics for NTP (C-Web Interface) on page 178

CHAPTER 21

Monitoring Redirect Server (SRC CLI)

- Viewing Statistics for the Redirect Server (SRC CLI) on page 181
- Viewing Statistics About Filtered Traffic (SRC CLI) on page 181

Viewing Statistics for the Redirect Server (SRC CLI)

Purpose View statistics for redirect server.

Action

```
user@host> show redirect-server statistics

Redirect Server
Uptime: 1270724.713 s
Accepted Requests: 25
Rejected Requests: 0
User limit leaky buckets: 0
User limits reached: 0
Global limits reached: 0
```

Related Topics

- Configuring the Redirect Server (SRC CLI)
- Viewing Statistics About Filtered Traffic (SRC CLI) on page 181
- Viewing Statistics for the Redirect Server (C-Web Interface) on page 183
- Overview of Traffic Redirection

Viewing Statistics About Filtered Traffic (SRC CLI)

Purpose You can obtain information about the packets filtered on a C Series Controller by accessing statistics for the iptables Linux tool. You can also reset the counters for this tool.

Action To view information about packet filtering on a C Series Controller:

```
user@host> show iptables <nat | filter | mangle> <reset-counters>
```

where

- nat—Displays information for the nat table for the iptables tool. The nat table provides rules for rewriting packet addresses.
- filter—Displays information for the filter table for the iptables tool. The filter table provides rules for defining packet filters.

- mangle—Displays information for the mangle table for the iptables tool. The mangle table provides rules for adjusting packet options, such as quality of service.

  For example:

```
user@host> show iptables

Chain INPUT (policy ACCEPT 25M packets, 9401M bytes)
 pkts bytes target     prot opt in     out     source
destination
Chain FORWARD (policy ACCEPT 0 packets, 0 bytes)
 pkts bytes target     prot opt in     out     source
destination

Chain OUTPUT (policy ACCEPT 24M packets, 4506M bytes)
 pkts bytes target     prot opt in     out     source
destinationreset-counters
```

To reset the values in the output for the **show iptables** command:

```
user@host> show iptables reset counters
```

Related Topics

- Configuring the Redirect Server (SRC CLI)
- Defining Traffic to Transmit to the Redirect Server (SRC CLI)
- Viewing Statistics for the Redirect Server (SRC CLI) on page 181
- Viewing Information for Filtered Traffic (C-Web Interface) on page 184
- Overview of Traffic Redirection

CHAPTER 22

Monitoring the Redirect Server and Filtered Traffic (C-Web Interface)

- Viewing Statistics for the Redirect Server (C-Web Interface) on page 183
- Viewing Information for Filtered Traffic (C-Web Interface) on page 184

Viewing Statistics for the Redirect Server (C-Web Interface)

Purpose View statistics for the redirect server.

Action

1. Click **Monitor**>**Redirect Server**>**Statistics**.

   The Statistics pane appears.

2. Select a style from the Output Style list.
3. Click **OK**.

   The Statistics pane displays the redirect server statistics.

Related Topics

- Configuring General Properties for the Redirect Server (C-Web Interface)

- Configuring the Redirect Server (C-Web Interface)
- Viewing Statistics for the Redirect Server (SRC CLI) on page 181
- Viewing Information for Filtered Traffic (C-Web Interface) on page 184
- Overview of Traffic Redirection

Viewing Information for Filtered Traffic (C-Web Interface)

Purpose View information about filtered traffic with the **iptables Linux** tool when you are using C-Web to monitor the C Series Controller.

Action To view information about the filtered traffic:

1. Click **Monitor**>**Iptables**.

   The Iptables pane appears.

2. Select the type of table that you want to display from the Table list:
   - nat—Displays information for the iptables NAT table
   - filter—Displays information for the iptables filter table
   - mangle—Displays information for the iptables mangle table
3. Select the **Reset Counters** check box to rest the counters of items in the output.
4. Click **OK**.

   The Iptables pane displays information about filtered traffic.

Related Topics
- Defining Traffic to Transmit to the Redirect Server (C-Web Interface)
- Configuring the Redirect Server (C-Web Interface)

- Viewing Statistics About Filtered Traffic (SRC CLI) on page 181
- Viewing Statistics for the Redirect Server (C-Web Interface) on page 183
- Overview of Traffic Redirection

CHAPTER 23

Troubleshooting Network Connectivity (SRC CLI)

- Overview of Commands to Troubleshoot Connections to Remote Hosts on page 187
- Testing Connectivity to Remote Hosts (SRC CLI) on page 187
- Viewing the Route Information (SRC CLI) on page 188
- Viewing Routing Table Information (SRC CLI) on page 188
- Viewing Interface Information (SRC CLI) on page 189

Overview of Commands to Troubleshoot Connections to Remote Hosts

If you are troubleshooting problems with the SRC software that might be caused by connectivity problems to remote hosts, you can use the following commands:

- **ping**—Test connectivity to a remote host.
- **traceroute**—Display the route from the local host to a remote host and back.
- **show interfaces**—Display information about system interfaces.
- **show route**—Display information form the system routing table.

Related Topics

- Testing Connectivity to Remote Hosts (SRC CLI) on page 187
- Viewing the Route Information (SRC CLI) on page 188
- Viewing Routing Table Information (SRC CLI) on page 188
- Viewing Interface Information (SRC CLI) on page 189

Testing Connectivity to Remote Hosts (SRC CLI)

Purpose Test connectivity to a remote host.

Action

```
user@host> ping
PING 10.227.7.45 (10.227.7.45) 56(84) bytes of data.
64 bytes from 10.227.7.45: icmp_seq=0 ttl=63 time=0.560 ms
64 bytes from 10.227.7.45: icmp_seq=1 ttl=63 time=0.613 ms
64 bytes from 10.227.7.45: icmp_seq=2 ttl=63 time=0.641 ms
64 bytes from 10.227.7.45: icmp_seq=3 ttl=63 time=0.653 ms
```

```
64 bytes from 10.227.7.45: icmp_seq=4 ttl=63 time=0.651 ms
64 bytes from 10.227.7.45: icmp_seq=5 ttl=63 time=0.418 ms
64 bytes from 10.227.7.45: icmp_seq=6 ttl=63 time=0.440 ms
64 bytes from 10.227.7.45: icmp_seq=7 ttl=63 time=0.454 ms
64 bytes from 10.227.7.45: icmp_seq=8 ttl=63 time=0.466 ms
64 bytes from 10.227.7.45: icmp_seq=9 ttl=63 time=0.478 ms
64 bytes from 10.227.7.45: icmp_seq=10 ttl=63 time=0.488 ms
```

Ctrl-C

```
--- 10.227.7.45 ping statistics ---
94 packets transmitted, 94 received, 0% packet loss, time 93038ms
rtt min/avg/max/mdev = 0.418/0.560/0.791/0.089 ms, pipe 2
```

For information about all the options for the **ping** command, see the *SRC PE CLI Command Reference*.

Related Topics

- Viewing the Route Information (SRC CLI) on page 188
- Viewing Routing Table Information (SRC CLI) on page 188
- Viewing Interface Information (SRC CLI) on page 189
- Overview of Commands to Troubleshoot Connections to Remote Hosts on page 187

Viewing the Route Information (SRC CLI)

Purpose You can use the **traceroute** command to get information about the hops between the local system and a remote host.

Action To view route information:

```
user@host> traceroute 192.2.7.48
traceroute to 192.2.7.48 (192.2.7.48), 30 hops max, 46 byte packets
 1  host (192.2.7.45)  3000.716 ms !H  3000.733 ms !H  3001.272 ms !H
```

For information about all the options for the **traceroute** command, see the *SRC PE CLI Command Reference*.

Related Topics

- Viewing Routing Table Information (SRC CLI) on page 188
- Viewing Interface Information (SRC CLI) on page 189
- Testing Connectivity to Remote Hosts (SRC CLI) on page 187
- Overview of Commands to Troubleshoot Connections to Remote Hosts on page 187

Viewing Routing Table Information (SRC CLI)

Purpose You can display brief or detailed information about the route from the local system to a remote host.

Action To view brief route information:

```
user@host> show route

Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
```

```
192.2.2.0  ' '' '' '' '' '*   255.255.255.0       U      0     0      0   eth0
default         srclab1.mylab.  0.0.0.0           UG     0     0      0   eth0
```

To view detailed route information:

```
user@host> show route detail

Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface MSS   Window irtt
192.2.2.0  ' '' '' '' '' '*   255.255.255.0       U     0      0      0   eth0 ' '' '0   0      0
default         srclab1.mylab.  0.0.0.0           UG    0      0      0   eth0 ' '' '0   0      0
```

The detailed output includes the additional Metric, Ref, and Use fields.

Related Topics

- Viewing Information About the Routing Table (C-Web Interface) on page 191
- Viewing the Route Information (SRC CLI) on page 188
- Viewing Interface Information (SRC CLI) on page 189
- Testing Connectivity to Remote Hosts (SRC CLI) on page 187
- Overview of Commands to Troubleshoot Connections to Remote Hosts on page 187

Viewing Interface Information (SRC CLI)

Purpose You can view information about all system interfaces, or about a specified interface.

Action To view information about all system interfaces:

```
user@host> show interfaces
eth0      Link encap:Ethernet  HWaddr 00:30:48:55:B6:FC
          inet addr:10.227.6.42  Bcast:10.227.6.255  Mask:255.255.255.0
          inet6 addr: fe80::230:48ff:fe55:b6fc/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:482467 errors:0 dropped:0 overruns:0 frame:0
          TX packets:57573 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:38147790 (36.3 MiB)  TX bytes:4396018 (4.1 MiB)
          Base address:0xcc00 Memory:fc9c0000-fc9e0000
eth1      Link encap:Ethernet  HWaddr 00:30:48:55:B6:FD
          BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
          Base address:0xc800 Memory:fc9a0000-fc9c0000
lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:1946394 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1946394 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:260604464 (248.5 MiB)  TX bytes:260604464 (248.5 MiB)
lo:1      Link encap:Local Loopback
          inet addr:192.168.254.1  Mask:255.255.255.0
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
```

```
sit0      Link encap:IPv6-in-IPv4
          NOARP  MTU:1480  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
```

Related Topics

- Viewing Information About System Interfaces (C-Web Interface) on page 192
- Viewing the Route Information (SRC CLI) on page 188
- Viewing Routing Table Information (SRC CLI) on page 188
- Testing Connectivity to Remote Hosts (SRC CLI) on page 187
- Overview of Commands to Troubleshoot Connections to Remote Hosts on page 187

CHAPTER 24

Monitoring Network Connectivity (C-Web Interface)

- Viewing Information About the Routing Table (C-Web Interface) on page 191
- Viewing Information About System Interfaces (C-Web Interface) on page 192

Viewing Information About the Routing Table (C-Web Interface)

Purpose View information about the route from the local system to a remote host.

Action

1. Click **Monitor**>**Route**.

   The Route pane appears.

2. To suppress symbolic addressing, select the **No Resolve** box.
3. To display detailed output, select the **Detail** box.
4. Click **OK**.

   The Route pane displays the information about the route.

Related Topics

- Viewing Routing Table Information (SRC CLI) on page 188
- Viewing Information About System Interfaces (C-Web Interface) on page 192

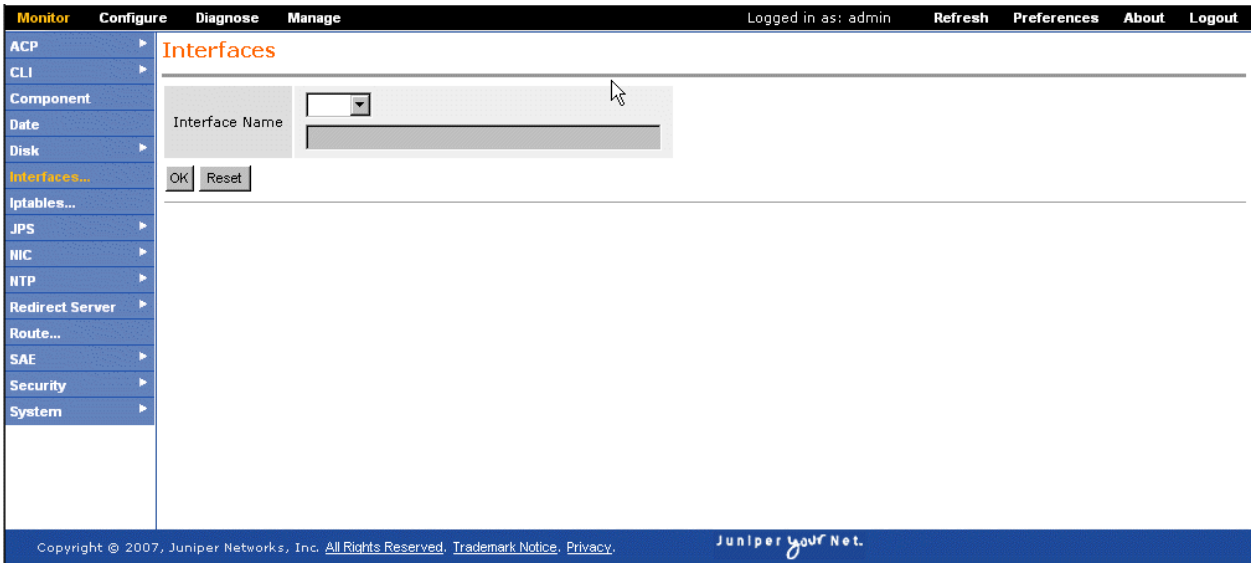
Viewing Information About System Interfaces (C-Web Interface)

Purpose View information about all system interfaces.

Action

1. Click **Monitor**>**Interfaces**.

   The Interfaces pane appears.



2. In the Interface name box, enter the name of the interface for which you want to view data.
3. Click **OK**.

   The Interfaces pane displays the information about the interface.

Related Topics

- Viewing Interface Information (SRC CLI) on page 189
- Viewing Information About the Routing Table (C-Web Interface) on page 191

CHAPTER 25

Monitoring Activity for SRC Components

- Monitoring Activity on C Series Controllers on page 193
- Collecting Data with the Activity Monitor (SRC CLI) on page 194
- Collecting Data with the Activity Monitor (C-Web Interface) on page 195
- Viewing Graphs (C-Web Interface) on page 196
- Viewing Graphs from a Web Page on page 196

Monitoring Activity on C Series Controllers

The SRC software provides logging support and general statistics for SRC components. The Activity Monitor collects diagnostic information about the state of a component at a specific time and archives this information in one file.

You can collect the following information:

- Log files
- Configuration files
- stdout
- stderr
- Round-robin database (rrd) files generated by the Activity Monitor
- Output from system monitoring commands

The collected information is in a zipped tarball file that is named in the format **diagnostic-*YYMMDD-HHMMSS*.tar.gz** and is found in the */opt/UMC/activity/var/diagnostic/* directory. The tarball file contains the *diagnostic-info.log* file, which contains all the operations performed by the command and their success status. If an error occurred during an operation, the error message is logged.

The Activity Monitor can create graphs from the collected data to help determine the state of the SRC component for troubleshooting. You can view the graphs for the components during a specified time in the C-Web interface.

The generated graphs include data about the C Series Controller:

- CPU usage
- Load average
- Memory usage
- Interface traffic

The generated graphs for the SAE include the following data:

- Heap usage
- Service activity
- User activity
- Users and services

The generated graphs for the components include data generated from the MIBs.

- ACP—juniAcpHeapLimit, juniAcpHeapUsed, juniAcpIntfTrackingEvents, juniAcpIgnoredTrackingEvents, juniAcpCongestionPoints, juniAcpVirtualRouters, juniAcpCPUpdateRcvd, juniAcpUserUpdateRcvd, juniAcpCPActiveUpdate, juniAcpUserActiveUpdate
- License server—juniSdxLicApplEntry
- NIC—juniNicHostHeapLimit, juniNicHostHeapUsed, juniNicHostResolutions, juniNicHostUnmatchedResolutions, juniNicHostResolutionErrors, juniNicHostResolutionTime
- SAE—juniSaeRouterCommonCurConn, juniSdxSaeUserLicenses

Related Topics

- Collecting Data with the Activity Monitor (SRC CLI) on page 194
- Collecting Data with the Activity Monitor (C-Web Interface) on page 195
- Viewing Graphs (C-Web Interface) on page 196
- Viewing Graphs from a Web Page on page 196

Collecting Data with the Activity Monitor (SRC CLI)

You can collect data with the Activity Monitor for specific components over a specified time. Before you perform data collection with the Activity Monitor, make sure the Activity Monitor (activity), CLI (cli), and C-Web interface (webadm) components are enabled.

To perform data collection with the Activity Monitor:

- **user@host> request support information**

To perform data collection for specific components:

- **user@host> request support information *component***

where ***component*** is one of the following:

- acp—SRC Admission Control Plug-In
- activity—Activity Monitor
- agent—SNMP agent
- appsvr—Application server
- cli—SRC CLI
- diameter—Diameter application
- dsa—Dynamic Service Activator
- extsubmon—External Subscriber Monitor
- ims—IP multimedia subsystem
- jdb—Juniper Networks database
- jps—Juniper Policy Server
- licSvr—License server
- nic—Network information collector
- redir—Redirect server
- sae—SAE
- webadm—C-Web interface

To perform data collection for a specified number of days:

- **user@host> request support information *days***

  where ***days*** is in the range of 1–36500.

Related Topics

- Viewing Graphs (C-Web Interface) on page 196
- Viewing Graphs from a Web Page on page 196
- Monitoring Activity on C Series Controllers on page 193

Collecting Data with the Activity Monitor (C-Web Interface)

You can collect data with the Activity Monitor for specific components over a specified time. Before you configure data collection for the Activity Monitor, make sure the Activity Monitor (activity), CLI (cli), and C-Web interface (webadm) components are enabled.

To perform data collection with the Activity Monitor:

1. Click **Manage>Request>Support>Information**.

The Support Information pane appears.

2. From the Components list, select the components you want to monitor, and click **OK**.
3. (Optional) Enter the number of days for which you want to collect data, and click **OK**.

Related Topics

- Viewing Graphs (C-Web Interface) on page 196
- Viewing Graphs from a Web Page on page 196
- Monitoring Activity on C Series Controllers on page 193

Viewing Graphs (C-Web Interface)

You can display graphs for components for which the Activity Monitor has collected data.

To display graphs from the Activity Monitor with the C-Web interface:

1. Click **Graphs**.
2. In the side pane, select the component and the graph that you want to display.

   The pane for selecting the time period displayed by the graph appears.
3. Select one of the preset values or enter the time range in the From and To boxes, and click **OK**.

   The graphs appear.

Related Topics

- Collecting Data with the Activity Monitor (C-Web Interface) on page 195
- Viewing Graphs from a Web Page on page 196
- Monitoring Activity on C Series Controllers on page 193

Viewing Graphs from a Web Page

You can display graphs for components for which the Activity Monitor has collected data from a Web page. Before you display these graphs, make sure the Activity Monitor (activity) and C-Web interface (webadm) components are enabled. For more secure displays, configure the C-Web interface to use HTTPS and use POST requests.

- Viewing Graphs for a Preset Time Period from a Web Page on page 197
- Viewing Graphs for Specified Time Periods from a Web Page on page 198

Viewing Graphs for a Preset Time Period from a Web Page

To display graphs with preset time periods from the Activity Monitor from a Web page:

http://*ip-address*/graph?&id=*username*&pw=*password*&name=*graph-name*&time=*time-period*

where

- ***ip-address***—IP address of the C Series Controller
- ***username***—Username used to log in to the C Series Controller
- ***password***—Password used to log in to the C Series Controller
- ***graph-name***—Name of graph to display in the format **<*component*>-<*graph*>**, where **<*graph*>** is the name of the graph as specified in the C-Web interface in all lowercase letters with hyphens separating words
- ***time-period***—Period of time that data was collected for display in a graph in the format **<*number*><*units*>**

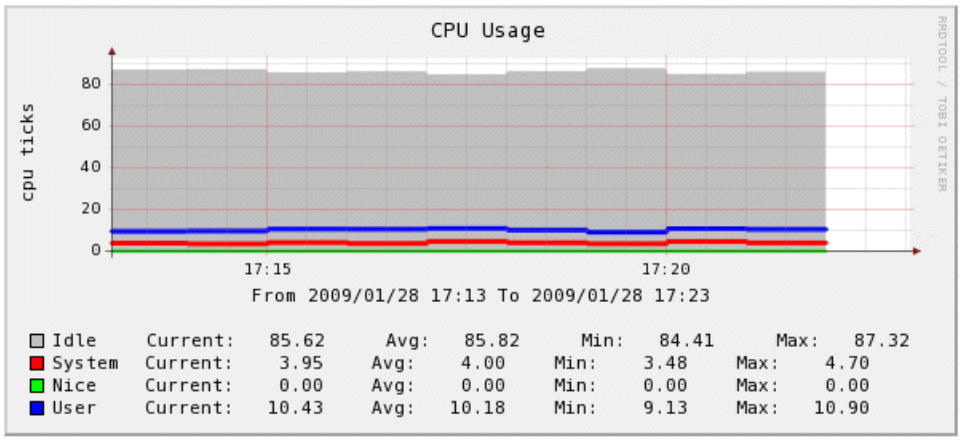
  The **<*number*>** is the number of **<*units*>**, which are specified as one of the following values:

  - m—minutes
  - h—hours
  - d—days
  - w—weeks
  - M—months
  - y—years

For example, to view the CPU graph for the System component for the past 10 minutes on the C Series Controller called c2000 for the user admin:

http://c2000/graph?&id=admin&pw=secret&name=system-cpu&time=10m

The CPU Usage graph appears.



Viewing Graphs for Specified Time Periods from a Web Page

To display graphs for specified time periods from the Activity Monitor from a Web page:

http://*ip-address*/graph?&id=*username*&pw=*password*&name=*graph-name*&start=*date-time*&end=*date-time*

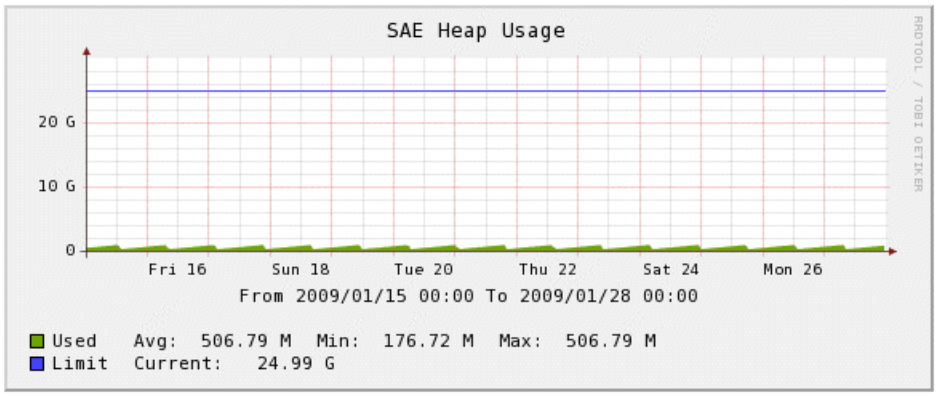
where

- ***ip-address***—IP address of the C Series Controller
- ***username***—Username used to log in to the C Series Controller
- ***password***—Password used to log in to the C Series Controller
- ***graph-name***—Name of graph to display in the format **<*component*>-<*graph*>**, where **<*graph*>** is the name of the graph as specified in the C-Web interface in all lowercase letters with hyphens separating words
- ***date-time***—Date and time that data was collected for display in a graph in the format ***yyyyMMddHHmm***, where:
  - yyyy—year
  - MM—month
  - dd—day
  - HH—hour
  - mm—minute

For example, to view the heap usage graph for the SAE component from January 15 to January 28 on the C Series Controller called c2000 for the user admin:

http://c2000/graph?&id=admin&pw=secret&name=sae-heap&start=200901150000&end=200901280000

The SAE Heap Usage graph appears.



Related Topics

- Collecting Data with the Activity Monitor (SRC CLI) on page 194
- Collecting Data with the Activity Monitor (C-Web Interface) on page 195
- Viewing Graphs (C-Web Interface) on page 196
- Monitoring Activity on C Series Controllers on page 193

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