

## Chapter 5

# Using the SRC CLI Operational Commands to Monitor the SRC Software

This chapter provides information about CLI operational commands. Topics include:

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## SRC CLI Command Categories

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When you log in to the SRC CLI and it starts, broad groups of CLI commands are available:

- Commands for controlling the CLI environment—The commands in the **set** hierarchy configure the CLI display screen.
- Commands for monitoring and troubleshooting—The following commands display information and statistics about the software and test network connectivity:
  - **clear**—Clears statistics and protocol database information.
  - **show**—Displays the current configuration and information about interfaces, routing protocols, routing tables, routing policy filters, system alarms, and the chassis.
  - **test**—Tests the configuration.
- Commands for connecting to other network systems—The **ssh** command opens secure shell connections, and the **telnet** command opens Telnet sessions to other hosts on the network.

- Commands for copying files—The **file copy** command copies files from one location on the system to another, from the system to a remote system, or from a remote system to the local system.
- Commands for restarting software processes—The commands in the **restart** hierarchy restart the various SRC components, including the Admission Control Plug-In (ACP), SNMP agent, the service and policy editor, the Juniper Networks database, Juniper Policy Server, the network information collector, the redirect server, SAE, and C-Web.
- A command—**request**—for performing system-level operations, including stopping and rebooting the C-series Controller and loading SRC software images.
- A command—**start**—to exit the CLI and start a shell.
- A command—**configure**—to enter configuration mode, which provides a series of commands that configure the SRC software, including system management and SRC components.
- A command—**quit**—to exit the CLI.

For more information about the CLI operational mode commands, see *SRC-PE CLI Command Reference*.

## Commonly Used Operational Mode Commands

Table 6 lists operational commands that you may find useful to monitor system operation. For a complete description of operational commands, see *SRC-PE CLI Command Reference*.

**Table 6: Commonly Used Operational Mode Commands**

Items to Check	Description	Command
CLI	Settings for CLI environment	<b>show cli</b>
Configuration	Current system configuration	<b>show configuration</b>
Manipulate files	List of files and directories	<b>file list</b>
	Contents of a file	<b>file show</b>
Redirect server	Redirect server usage information	<b>show redirect-server statistics</b>
SRC licenses	Type of license and detailed license information	<b>show sae licenses</b>
System	General system information, including hostname, hardware version, software version, disk usage	<b>show system information</b>
System components	List of installed components and the status of each component	<b>show component</b>

## Viewing Files and Directories

The SRC software stores information in files on the system, including configuration files, log files, and system software files. You can use operational commands to view files and directories on the system.

## Directories on the C-series Controller

The C-series Controller has numerous directories used by the operating system. Table 7 lists directories on a C-series Controller.

**Table 7: Directories on a C-series Controller**

Directory	Description
<i>/altroot</i>	Files that are a snapshot of the file system. You can use these files to restore the file system to the state in the snapshot.
<i>/altvar</i>	Files that are a snapshot of the file system. You can use these files to restore the file system to the state in the snapshot.
<i>/media</i>	Mount points created automatically for dynamic devices (for example, USB flash drive)
<i>/opt/UMC</i>	SRC files for installed components
<i>/tmp</i>	Temporary files
<i>/var/home</i>	Home directory for local users
<i>/var/log</i>	System log files
<i>/var/UMC</i>	Operational files and log files for SRC components

## Listing Files and Directories

You can view the system's directory structure as well as individual files by issuing the file commands in operational mode.

The user's home directory is the default directory for most of the SRC software commands that require a filename.



**NOTE:** You can change the default directory by using the `set cli directory` command.

- To view a list of the file commands, type the following:

```
user@host> file ?
Possible completions:
archive      Archive files from the system (local)
checksum     Calculate file checksum
compare      Compare files (local)
copy         Copy files
delete       Delete a file (local)
list         List files (local)
rename       Rename a file (local)
show         Show file contents
user@host> file
```

- Use the `list` option to see the directory structure. For example, to show the files located in your home directory:

```
user@host> file list
initial.cfg
install.log
install.log.syslog
```

- To view the contents of other file directories, specify the directory location. For example:

```
user@host> file list /opt/UMC/
acp
agent
cli
editor
idp
jdb
jps
jre
licsvr
net-snmp
nic
pom
redir
sae
smg
webadm
```

- You can also use the CLI context-sensitive help system to locate a directory. For example:

```
user@host> file list /?
Possible completions:
<path>          Path to list
/.autofsck      Size: 0, Last changed: Sep 19, 2006 1:36 PM
/altroot/       Last changed: Sep 19, 2006 1:22 PM
/bin/           Last changed: Sep 19, 2006 1:27 PM
/boot/          Last changed: Sep 19, 2006 1:25 PM
/dev/           Last changed: Sep 19, 2006 1:36 PM
/etc/           Last changed: Sep 19, 2006 2:42 PM
/home/          Last changed: Feb 18, 2005 4:26 AM
/initrd/        Last changed: Feb 18, 2005 4:26 AM
/lib/           Last changed: Sep 19, 2006 1:26 PM
/lib64/         Last changed: Sep 19, 2006 1:26 PM
/lost+found/    Last changed: Sep 19, 2006 1:22 PM
/media/         Last changed: Sep 19, 2006 1:36 PM
/misc/          Last changed: Aug 15, 2006 8:33 PM
/mnt/           Last changed: Feb 18, 2005 4:26 AM
/net/           Last changed: Sep 19, 2006 1:36 PM
/opt/           Last changed: Sep 19, 2006 1:27 PM
/proc/          Last changed: Sep 19, 2006 1:36 PM
/root/          Last changed: Sep 19, 2006 6:44 PM
/sbin/          Last changed: Sep 19, 2006 1:26 PM
/selinux/       Last changed: Sep 19, 2006 1:36 PM
/srv/           Last changed: Feb 18, 2005 4:26 AM
/sys/           Last changed: Sep 19, 2006 1:36 PM
/tmp/           Last changed: Sep 19, 2006 6:46 PM
/usr/           Last changed: Sep 19, 2006 1:24 PM
/var/           Last changed: Sep 19, 2006 1:36 PM
```

```
user@host> file list /var/?
```

```
Possible completions:
```

<path>	Path to list
/var/UMC/	Last changed: Sep 19, 2006 1:28 PM
/var/account/	Last changed: Sep 19, 2006 1:25 PM
/var/acp/	Last changed: Sep 19, 2006 1:27 PM
/var/cache/	Last changed: Sep 19, 2006 1:26 PM
/var/crash/	Last changed: Sep 19, 2006 1:25 PM
/var/db/	Last changed: Sep 19, 2006 1:26 PM
/var/empty/	Last changed: Sep 19, 2006 1:26 PM
/var/home/	Last changed: Sep 19, 2006 6:44 PM
/var/lib/	Last changed: Sep 19, 2006 1:36 PM
/var/local/	Last changed: Feb 18, 2005 4:26 AM
/var/lock/	Last changed: Sep 19, 2006 1:36 PM
/var/log/	Last changed: Sep 19, 2006 2:41 PM
/var/lost+found/	Last changed: Sep 19, 2006 1:22 PM
/var/mail/	Last changed: Feb 18, 2005 4:26 AM
/var/net-snmp/	Last changed: Sep 19, 2006 6:44 PM
/var/nis/	Last changed: Feb 18, 2005 4:26 AM
/var/opt/	Last changed: Feb 18, 2005 4:26 AM
/var/preserve/	Last changed: Feb 18, 2005 4:26 AM
/var/run/	Last changed: Sep 19, 2006 6:44 PM
/var/spool/	Last changed: Sep 19, 2006 1:26 PM
/var/tmp/	Last changed: Sep 19, 2006 1:28 PM
/var/yp/	Last changed: Sep 19, 2006 1:26 PM

- You can also display the contents of a file. For example:

```
user@host> file show install.log
```

```
Installing 309 packages
```

```
Installing chkconfig-1.3.13.4-1.x86_64.
Installing ethtool-1.8-4.x86_64.
Installing hdparm-5.7-2.x86_64.
Installing hwdata-0.146.22.EL-1.noarch.
Installing iputils-20020927-18.EL4.3.x86_64.
Installing libgcc-3.4.6-3.i386.
Installing libgcc-3.4.6-3.x86_64.
Installing mingetty-1.07-3.x86_64.
Installing mktemp-1.5-20.x86_64.
Installing redhat-logos-1.1.26-1.junosx.noarch.
Installing rootfiles-8-1.noarch.
Installing setserial-2.17-17.x86_64.
. . .
```

## Specifying Filenames and URLs

In some CLI commands and configuration statements—including **file copy**, **file archive**, **load**, and **save**—you can include a filename.

You can specify a filename or URL in one of the following ways:

- **filename**—File in the user's current directory on the local system. You can use wildcards to specify multiple source files or a single destination file. Wildcards are not supported in FTP.



**NOTE:** Wildcards are supported only by the **file compare**, **file copy**, **file delete**, **file list**, **file rename**, **file show**, and **save** commands. When you issue the **file show** command with a wildcard, it must resolve to one filename.

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- **path/filename**—File on the local system.
- **File URL**—File URL of local files.
- **usb:filename**—Files on a dynamically mounted USB port.
- **ftp://hostname/path/filename**—File on an FTP server. You can also specify **hostname** as **username@hostname** or **username:password@hostname**.

For example:

```
user@host> file copy ftp://username@ftp.hostname.net//filename
file copy ftp.hostname.net: Not logged in.
```

## Managing SRC Components

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You use operational commands to manage SRC components.

## Viewing C-series Controller Information

You can view general information about the C-series Controller and version and status information for the installed SRC components.

To view SRC software information, including hostname and version information for the SRC software installed on your system, type the following command:

```
user@host> show system information
```

**System Identification**

Hostname	myC-seriesController
Manufacturer	Juniper Networks
Product Name	SDX-2000
Version	1.0
Serial Number	0207082006000001
UUID	48384441-5254-0030-4859-0030485977EE
Hostid	e30a2e07
Software version	SDX-300 Release 7.0 [A.7.0.0-24]

**System Time**

Current time	2006-11-30 12:09:15 EST
Uptime	20 days, 13:06
Number of active users	4
Load Averages (1m/5m/15m)	0.19/0.22/0.18

**Memory**

Total	15G
Free	6955M

**CPU Info**

Number of CPU	4
CPU Model	Dual Core AMD Opteron(tm) Processor 265
Clock Speed	1804.158 MHz

**Disk Information**

Mountpoint	Total	Used	Use%
/	2015M	1310M	64%
/altroot	2015M	35M	1%
/altvar	29G	75M	0%
/boot	98M	14M	14%
/var	31G	1850M	5%

**Temperature**

System	+27 C
CPU-1	+37 C
CPU-2	+40 C

**Fan Speed**

Fan-1	9375 RPM
Fan-2	9375 RPM

- To display version and status information for each component installed on the C-series Controller, in operational mode type the following command:

```
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	disabled
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	disabled
webadm	Release: 7.0 Build: WEBADM.A.7.0.0.0173	disabled

## Restarting an SRC Component

In some instances, you may need to restart a SRC component. You can restart a component gracefully, immediately, or by sending a hangup signal before restarting the component. Table 8 shows options available for the **restart** command.

**Table 8: Options to Restart an SRC Component**

Option	Description
<i>component</i>	Name of SRC component to restart.
<i>gracefully component</i>	Restart a specified SRC component by sending the equivalent of a UNIX SIGTERM signal.
<i>immediately component</i>	Immediately restart an SRC component by sending the equivalent of a UNIX SIGKILL signal.
<i>soft component</i>	Reread and reactivate the configuration without completely restarting the SRC component. This option is the equivalent of a UNIX SIGHUP signal; omitting this option is the equivalent of a UNIX SIGTERM (kill) operation.

To restart a component:

- In operational mode, enter a **restart** command.

For example, to gracefully restart the NIC component:

```
user@host> restart gracefully component UMCnic
Shutting down the NICHOST server: done
Starting NICHOST: may take a few minutes...
```

## Stopping the SRC Software

To gracefully shut down the SRC software and power off the system, in operational mode, enter the following command:

```
user@host> request system halt
```

This command stops all system components, halts the operating system, and powers down the C-series Controller.



**NOTE:** The **request system halt** command does not give you the opportunity to restart the system from the CLI.



For example:

```
user@host> request system halt
Halt the system [yes,no] ? (no) y
BroadcaStopping HAL daemon: [ OK ]
Stopping system message bus: [ OK ]
Stopping atd: [ OK ]
Shutting down xfs: [ OK ]
Stopping sshd:[ OK ]
Shutting down smartd: [ OK ]
Stopping snmpd: [ OK ]
Stopping xinetd: [ OK ]
Stopping acpi daemon: [ OK ]
Stopping crond: [ OK ]
Stopping autofs: [ OK ]
Stopping nscd: [ OK ]
Shutting down ntpd: [ OK ]
Stopping NFS statd: [ OK ]
Stopping irqbalance: [ OK ]
Stopping portmap: [ OK ]
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Stopping pcmcia: unloading Kernel Card Services
[ OK ]
Stopping sysstat: [ OK ]
Starting killall: [ OK ]
Sending all processes the TERM signal...
Sending all processes the KILL signal...
Saving random seed:
Syncing hardware clock to system time
Turning off swap:
Turning off quotas:
Unmounting pipe file systems:
Unmounting file systems:
Halting system...
md: stopping all md devices.
md: md0 switched to read-only mode.
Synchronizing SCSI cache for disk sda:
Power down.
acpi_power_off called
```

## Rebooting the SRC Software

In some instances, such as after software upgrades that make changes to the operating system kernel, you need to reboot the SRC software. Reboot requests are recorded to the system log files and the messages about the final stages of system appear on the screen when the command to reboot the system is run.

To reboot the SRC software, enter the following command in operational mode:

```
user@host> request system reboot

Reboot the system [yes,no] ? (no) y
BroadcasStopping HAL daemon: [ OK ]
Stopping system message bus: [ OK ]
Stopping atd: [ OK ]
Shutting down xfs: [ OK ]
Stopping sshd:[ OK ]
Shutting down smartd: [ OK ]
```

```
Stopping snmpd: [ OK ]
Stopping xinetd: [ OK ]
Stopping acpi daemon: [ OK ]
Stopping crond: [ OK ]
Stopping autofs: [ OK ]
Stopping nsd: [ OK ]
Shutting down ntpd: [ OK ]
Stopping NFS statd: [ OK ]
Stopping irqbalance: [ OK ]
Stopping portmap: [ OK ]
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Stopping pcmcia: unloading Kernel Card Services
[ OK ]
Stopping sysstat: [ OK ]
Starting killall: [ OK ]
Sending all processes the TERM signal...
Sending all processes the KILL signal...
Saving random seed:
Syncing hardware clock to system time
Turning off swap:
Turning off quotas:
Unmounting pipe file systems:
Unmounting file systems:
Please stand by while rebooting the system...
md: stopping all md devices.
md: md0 switched to read-only mode.
Synchronizing SCSI cache for disk sda:
Restarting system.
```

## Viewing Information about Users Logged Into the SRC Software

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You can get information about users currently logged into the SRC software from the SRC CLI.

To get information about users who are logged in:

```
user@host> show system users
 4:41pm up 3 day(s), 1:01, 0 users, load average: 0.04, 0.04, 0.12
User   tty      login@  idle  JCPU  PCPU  what
admin1 pts/6     9:30am  12    9     5    cli
user2  pts/10    4:40pm             cli
admin1 pts/3     1:25pm  1:19             telnet server2
```

where

- **User**—Specifies the name of the user logged in to the SRC software.
- **tty**—Specifies the terminal used for the user's connection.
- **login@**—Specifies the time at which the user logged in to the SRC software.
- **idle**—Specifies how long the connection the connection has not had any activity.
- **JCPU**—Specifies the length of time used by processes for this terminal, including processes currently running in the background.
- **PCPU**—Specifies the time used by the process specified in the **what** field.
- **what**—Specifies the name of the processes currently in use by the specified user.

