



CHAPTER 4

Utilities

This module describes the following utilities:

- [Working with SCE Platform Files, page 4-1](#)
- [The User Log, page 4-5](#)
- [Flow Capture, page 4-8](#)

Working with SCE Platform Files

The CLI commands include a complete range of file management commands. These commands allow you to create, delete, copy, and display both files and directories



Note

Regarding disk capacity: While performing disk operations, the user should take care that the addition of new files that are stored on the SCE disk do not cause the disk to exceed 70%.

- [Working with Directories, page 4-1](#)
- [Working with Files, page 4-3](#)

Working with Directories

- [How to Create a Directory, page 4-1](#)
- [How to Delete a Directory, page 4-2](#)
- [How to Change Directories, page 4-2](#)
- [How to Display your Working Directory, page 4-2](#)
- [How to List the Files in a Directory, page 4-2](#)

How to Create a Directory

mkdir

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- Step 1** From the SCE# prompt, type **mkdir** *directory-name* and press **Enter**.
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How to Delete a Directory

There are two different commands for deleting a directory, depending on whether the directory is empty or not.

- [How to Delete a Directory and All its Files, page 4-2](#)
- [How to Delete an Empty Directory, page 4-2](#)

How to Delete a Directory and All its Files

delete

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- Step 1** From the SCE# prompt, type **delete** *directory-name* **/recursive** and press **Enter**.
The recursive flag deletes all files and sub-directories contained in the specified directory.
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How to Delete an Empty Directory

rmdir

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- Step 1** From the SCE# prompt, type **rmdir** *directory-name* and press **Enter**.
Use this command only for an empty directory.
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How to Change Directories

Use this command to change the path of the current working directory. **cd**

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- Step 1** From the SCE# prompt, type **cd** *new path* and press **Enter**.
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How to Display your Working Directory

pwd

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- Step 1** From the SCE# prompt, type **pwd** and press **Enter**.
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How to List the Files in a Directory

You can display a listing of all files in the current working directory. This list may be filtered to include only application files. The listing may also be expanded to include all files in any sub-directories.

- [How to List the Files in the Current Directory, page 4-3](#)
- [How to List the Applications in the Current Directory, page 4-3](#)
- [How to Include Files in Sub-Directories in the Directory Files List, page 4-3](#)

How to List the Files in the Current Directory

Step 1 From the SCE# prompt, type **dir** and press **Enter**.

How to List the Applications in the Current Directory

Step 1 From the SCE# prompt, type **dir applications** and press **Enter**.

How to Include Files in Sub-Directories in the Directory Files List

Step 1 From the SCE# prompt, type **dir -r** and press **Enter**.

Working with Files

- [How to Rename a File, page 4-3](#)
- [How to Delete a File, page 4-3](#)
- [Copying Files, page 4-3](#)
- [How to Display File Contents, page 4-4](#)
- [How to Unzip a File, page 4-5](#)

How to Rename a File

rename

Step 1 From the SCE# prompt, type **rename** *current-file-name new-file-name* and press **Enter**.

How to Delete a File

delete

Step 1 From the SCE# prompt, type **delete** *file-name* and press **Enter**.

Copying Files

You can copy a file from the current directory to a different directory. You can also copy a file (upload/download) to or from an FTP site.

To copy a file using passive FTP, use the **copy-passive** command.

- [How to Copy a File](#), page 4-4
- [How to Download a File from an FTP Site](#), page 4-4
- [How to Upload a File to a Passive FTP Site](#), page 4-4

How to Copy a File

copy

Step 1 From the SCE# prompt, type **copy** *source-file-name destination-file-name* and press **Enter**.

Copying a File: Example

The following example copies the local `analysis.sli` file located in the root directory to the applications directory.

```
SCE#copy analysis.sli applications/analysis.sli
sce#
```

How to Download a File from an FTP Site

Use the copy command to upload and download commands from and FTP site. In this case, either the source or destination filename must begin with `ftp://`.

Step 1 From the SCE# prompt, type **copy** `ftp://username:password@ip-address/path:/source-file destination-file-name` and press **Enter**.

To upload a file to an FTP site, specify the FTP site as the destination (`ftp://username:password@ip-address/path:/destination-file`)

How to Upload a File to a Passive FTP Site

Step 1 From the SCE# prompt, type **copy-passive** *source-file-name ftp://username:password@10.10.10.10/h:/destination-file* and press **Enter**.

To download a file from a passive FTP site, specify the FTP site as the source (`ftp://username:password@ip-address/path:/source-file`)

Uploading a File to a Passive FTP Site: Example

The following example uploads the `analysis.sli` file located on the local flash file system to the host 10.1.1.1, specifying Passive FTP.

```
SCE#copy-passive /appli/analysis.sli ftp://myname:mypw@10.1.1.1/p:/appli/analysis.sli
sce#
```

How to Display File Contents

Step 1 From the SCE# prompt, type **more** *file-name* and press **Enter**.

How to Unzip a File

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- Step 1** From the SCE# prompt, type **unzip** *file-name* and press **Enter**.
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The User Log

The user log is an ASCII file that can be viewed in any editor. It contains a record of system events, including startup, shutdown and errors. You can use the Logger to view the user log to determine whether or not the system is functioning properly, as well as for technical support purposes.

- [The Logging System, page 4-5](#)
- [Generating a File for Technical Support, page 4-7](#)

The Logging System

- [Copying the User Log, page 4-5](#)
- [Enabling and Disabling the User Log, page 4-6](#)
- [Viewing the User Log Counters, page 4-6](#)
- [Viewing the User Log, page 4-7](#)
- [Clearing the User Log, page 4-7](#)

Events are logged to one of two log files. After a file reaches maximum capacity, the events logged in that file are then temporarily archived. New events are then automatically logged to the alternate log file. When the second log file reaches maximum capacity, the system then reverts to logging events to the first log file, thus overwriting the temporarily archived information stored in that file.

Basic operations include:

- Copying the User Log to an external location
- Viewing the User Log
- Clearing the User Log
- Viewing/clearing the User Log counters

Copying the User Log

You can view the log file by copying it to an external location or to disk. This command copies both log files to the local SCE platform disk or any external host running a FTP server.

- [Copying the User Log to an External Location, page 4-6](#)
- [Copying the User Log to an Internal Location, page 4-6](#)

Copying the User Log to an External Location

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- Step 1** From the SCE# prompt, type **logger get user-log file-name** *ftp://username:password@ipaddress/path* and press **Enter**.
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Copying the User Log to an Internal Location

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- Step 1** From the SCE# prompt, type **logger get user-log file-name** *target-filename* and press **Enter**.
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Enabling and Disabling the User Log

By default, the user log is enabled. You can disable the user log by configuring the status of the logger.

- [Disabling the User Log, page 4-6](#)
- [Enabling the User Log, page 4-6](#)

Disabling the User Log

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- Step 1** From the SCE# prompt, type `configure` and press **Enter**.
- Step 2** From the SCE (config)# prompt, type **logger device User-File-Log disabled** and press **Enter**.
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Enabling the User Log

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- Step 1** From the SCE# prompt, type `configure` and press **Enter**.
- Step 2** From the SCE (config)# prompt, type **logger device User-File-Log enabled** and press **Enter**.
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Viewing the User Log Counters

- [Viewing the user log counters for the current session, page 4-6](#)
- [Viewing the non-volatile counter for the user-file-log, page 4-7](#)

There are two types of log counters:

- User log counters — count the number of system events logged from the SCE platform last reboot.
- Non-volatile counters — are not cleared during boot time

Viewing the user log counters for the current session

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- Step 1** From the SCE# prompt, type **show logger device user-file-log counters** and press **Enter**.
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Viewing the non-volatile counter for the user-file-log

Step 1 From the SCE# prompt, type `show logger device user-file-log nv-counters` and press **Enter**.

Viewing the User Log

**Note**

This command is not recommended when the user log is large. Copy a large log to a file to view it (see [Copying the User Log, page 4-5](#))

Step 1 From the SCE# prompt, type `more user-log` and press **Enter**.

Clearing the User Log

Step 1 From the SCE# prompt, type `clear logger device user-file-log` and press **Enter**.

Step 2 The system asks **Are you sure?**

Step 3 Type **Y** and press **Enter**.

Generating a File for Technical Support

In order for technical support to be most effective, the user should provide them with the information contained in the system logs. Use the `logger get support-file` command to generate a support file via FTP for the use of Cisco technical support staff.

Step 1 From the SCE# prompt, type `logger get support-file filename` and press **Enter**.

The support information file is created using the specified filename. The specified file must be a file located on an FTP site, not on the local file system.

This operation may take some time.

Generating a File for Technical Support: Example

```
SCE# logger get support-file ftp://user:1234@10.10.10.10/c:/support.zip
```

Flow Capture

- [Limitations, page 4-8](#)
- [The Flow Capture Process, page 4-8](#)

The flow capture utility is a CLI-controlled utility used to capture traffic according to layer 4 attributes. Traffic captured by this utility is accumulated in a cap format file. Traffic that is identified by the capture mechanism is not available for traffic control or any service for the duration of the capture. At the completion of the capture, the normal service to all traffic is resumed.

The recorded data is sent online to a distant location using FTP. The data is sent in a standard format and may have an unlimited size on the SCE 2000 and up to 128MB on SCE8000 (configurable by a const DB).

Limitations

Note the following known limitations of the flow capture utility:

- The actual capture starts only for newly opened flows. Therefore, already opened flows cannot be captured by this utility.
- The termination of a capture flow is verified for every new relevant packet that is being captured. As long as no packets matching the capturing attributes arrives after the time is exceeded, the capturing is not stopped and must be stopped manually.
- File size limitation: the maximum captured file size is limited on SCE8000 platform to 128Mbytes (configurable by a const DB). In this platform the FTP connection is opened when the capturing starts, but the data is first kept on the system disk and is transferred to the FTP destination only when the capturing procedure is concluded.
- FTP timeout: As the recorded traffic might be sparse, and since on the SCE8000 platform the data is sent only upon termination of the capture, it is required to disable any connection timeout on the destination FTP server.
- Capture may end prematurely due to a shortage event on the SCE platform.
- Capturing throughput is limited by the following:
 - system architectural limitations
 - line capacity to the remote FTP destination (for non-Linux platforms only, such as the SCE 2000 platform).

The approximated throughput on a live setup is 2Mbps. When this throughput is exceeded, packets are absent from the cap file and the appropriate field in the consequent captured packet is updated to note the number of lost packets. The maximum allowed number of sequential lost packets is configurable by a const DB.

The Flow Capture Process

There are three main steps in the overall flow capture process:

1. Configure the traffic rules to define the traffic to be captured. ([Configuring a Flow Capture Traffic Rule, page 4-9](#))
2. Configure the flow capture settings. (Optional) ([Configuring the Flow Capture Settings, page 4-9](#))

3. Perform the actual flow capture. ([Performing the Flow Capture, page 4-10](#))

Configuring a Flow Capture Traffic Rule

The flow capture traffic rules define the traffic to be captured. You can configure a flow capture traffic rule by specifying the **flow-capture** action for the relevant flows.

For example, in order to capture all the traffic sent to or coming from subscribers whose IP addresses are in the range.2.3.0-1.2.3.255, define a traffic rule as follows:

```
SCE(config if)# traffic-rule name flowcapture rule IP-addresses subscriber-side 1.2.3.0/24
network-side all protocol all direction both traffic-counter none action flow-capture
```

Multiple rules can be configured, but note that all configured flow capture rules are in effect during the flow capture process. It is not possible to apply only a subset of the configured rules.

For more information regarding configuring traffic rules, see [Configuring Traffic Rules and Counters, page 6-8](#).

Configuring the Flow Capture Settings

The flow capture settings control aspects of the flow capture process, as opposed to defining the flow to be captured. These settings limit the scope of the process to maximize the recorded information while minimizing the effect on traffic.

- **Maximum duration of the capture:** By limiting the duration of the capture, you can limit the effect of the capture on live traffic.

You can stop the capture at any time before the maximum duration has been reached.

- **Maximum length of the L4 payload of each captured packet:** If you want to capture mainly the L2-L4 headers, you need only a small portion of the payload of each packet. Setting a limit on the length of the payload makes the capture more efficient, as it allows more packets to be captured within a given time frame and for a given throughput.

Guidelines and Information:

- If maximum L4 payload length is not configured, all bytes of each captured packet are recorded.
- If maximum L4 payload length is configured, each captured packet will contain the entire L2/L3/L4 headers and no more than the configured maximum bytes of L4 payload.
- Only one maximum L4 payload length value can be configured. This value applies to all recorded packets.
- If the maximum L4 payload length value is changed while recording is performed, it will not take effect until the next recording session.
- The cap file contains marking for packets which had TCP or UDP checksum error when received in the SCE platform, since the validity of the TCP and UDP checksum cannot be checked for the captured packets due to missing bytes.
- The cap file contains the information to retrieve the original length of each packet that was truncated.

How to Configure the Maximum Flow Capture Duration

The following options are available:

- **duration** — the maximum duration of the flow capture in seconds.

Default = 3600 seconds

- **unlimited** — there is no time limit to the flow capture, and it will continue until stopped by the operator.

Step 1 From the SCE(config if)# prompt, type **flow-capture controllers time** (*duration* | **unlimited**) and press **Enter**.

How to Configure the Maximum Length of the L4 Payload

The following options are available:

- **length** — the maximum number of L4 payload bytes to capture from each packet.
- **unlimited** — there is no limit on the number of L4 payload bytes. (Default)

Step 1 From the SCE(config if)# prompt, type **flow-capture controllers max-l4-payload-length** (*length* | **unlimited**) and press **Enter**.

How to Restore the Default Flow Capture Settings

Step 1 From the SCE(config if)# prompt, type **default flow-capture controllers** (**time** | **max-l4-payload-length**) and press **Enter**.

Performing the Flow Capture

The flow capture begins when you execute the flow-capture command. You can stop the capture at any time. If the capture is not stopped, it continues for the configured maximum duration ([Configuring the Flow Capture Settings, page 4-9](#)).

How to Start a Flow Capture

The following option is available:

- **filename** — name and FTP location to which to record the flow capture data in the format *ftp://<username>:<password>@<IP_address>/<path>/<file_name>*.

Step 1 From the SCE(config if)# prompt, type **flow-capture start format cap filename** and press **Enter**.

How to Stop a Flow Capture

Step 1 From the SCE(config if)# prompt, type **flow-capture stop** and press **Enter**.

Monitoring the Flow Capture

Use the following command to monitor the flow capture process. It displays the following information:

- status of the recording process
- current target file size
- number of packets captured
- number of packets lost
- configured values of the different controllers

How to Monitor the Flow Capture

Step 1 From the SCE> prompt, type **show interface linecard 0 flow-capture** and press **Enter**.
