



# CHAPTER 3

## Operations

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### Introduction

This module describes basic operations necessary for managing the SCE platform.

- [Managing Configurations, page 3-1](#)
- [Upgrading the SCE Platform Firmware, page 3-7](#)
- [Downgrading the SCE Platform to a Previous Version, page 3-8](#)
- [Managing Application Files, page 3-9](#)
- [Monitoring the Operational Status of the SCE Platform, page 3-12](#)
- [Displaying the SCE Platform Version Information, page 3-13](#)
- [Displaying the SCE Platform Inventory, page 3-14](#)
- [Displaying the System Uptime, page 3-15](#)
- [Rebooting and Shutting Down the SCE Platform, page 3-15](#)

### Managing Configurations

This section explains how to view, save, and recover configuration files, as well as how to create a backup configuration file.

- [Viewing Configurations, page 3-2](#)
- [Removing the Configuration, page 3-3](#)
- [Saving the Configuration Settings, page 3-4](#)
- [Restoring a Previous Configuration, page 3-5](#)
- [Backing Up Configuration Files, page 3-6](#)

The SCE platform uses two configuration files:

- Startup configuration — This file contains the non-default configuration as saved by the user. The **startup-config** file is loaded each time the SCE platform reboots.
- Running configuration — This file contains results of configuration commands entered by the user. The **running-config** file is saved in the SCE platform volatile memory and is effective only as long as the SCE platform is up and running.

Use the following commands to view and save the configuration files.

You can also recover a previous configuration from a saved configuration file, as well as completely remove all current user configuration.

## Viewing Configurations

When you enter configuration commands, it immediately effects the SCE platform operation and configuration. This configuration, referred to as the **running-config**, is saved in the SCE platform volatile memory and is effective while the SCE platform is up. After reboot, the SCE platform loads the **startup-config**, which includes the non-default configuration as saved by the user, into the **running-config**.

The SCE platform provides commands for:

- Viewing the running configuration
- Viewing the startup configuration

After configuring the SCE platform, you may query for the running configuration using the command **show running-config**. This command displays the non-default running configuration. To view all SCE platform running configuration, whether it is the default or not, you may use the option **all-data** in the **show running-config** command.

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**Step 1** At the SCE# prompt, type **show running-config** and press **Enter**.

The specified configuration file is displayed.

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## Viewing Configurations: Example

This example shows how to view the running configuration.

```
SCE#show running-config
#This is a general configuration file (running-config).
#Created on 15:50:56 CET MON December 11 2006
#cli-type 1
#version 1
clock timezone CET 1
snmp-server community "public" ro
snmp-server host 10.1.1.253 traps version 1 "public"
interface LineCard 0
connection-mode active
no silent
no shutdown
flow-aging default-timeout UDP 60
interface FastEthernet 0/0
ip address 10.1.5.109 255.255.0.0
interface FastEthernet 0/1
interface FastEthernet 0/2
exit
line vty 0 4
no timeout
exit
sce#
```

## Removing the Configuration

You can completely remove all current configuration by removing all configuration files. The following data is deleted by this command:

- General configuration files
- Application configuration files
- Static party DB files
- Management agent installed MBeans

The following data is not deleted by this command:

- Network configuration (IP address and default gateway configuration)

**Note**

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After using this command, the SCE platform should be reloaded immediately to ensure that it returns to the 'factory default' state.

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**Step 1**

At the SCE(config)# prompt, type **erase startup-config-all** and press **Enter**.

All configuration files are removed, including configuration files not explicitly managed by the user, as listed above.

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## Saving the Configuration Settings

When you make changes to the current running configuration and you want those changes to continue to be valid when the system restarts, you must save the changes before leaving the management session, that is, you must save the running configuration to the startup configuration file.

For backup purposes, the old startup-config file is saved under the directory: **tffs0:system/prevconf**. Refer to [Restoring a Previous Configuration, page 3-5](#) for an explanation of how to recover a previous configuration.

The SCE platform provides multiple interfaces for the purpose of configuration and management. All interfaces supply an API to the same database of the SCE platform, so that any configuration change made through one interface is reflected through all interfaces. Furthermore, when saving the running configuration to the startup configuration from any management interface, all configuration settings are saved regardless of the management interface used to set the configuration.

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- Step 1** At the SCE# prompt, type **show running-config** and press **Enter**.  
Displays the running configuration.
- Step 2** Check the displayed configuration to make sure that all parameters are set to the desired values. If not, make the changes you want before saving.  
Refer to the relevant sections of this guide for more information regarding specific configuration parameters.
- Step 3** At the SCE# prompt, type **copy running-config startup-config** and press **Enter**.  
The system saves all running configuration information to the configuration file, which is used when the system reboots.  
The configuration file holds all information that is different from the system default in a file called **config.txt** located in the directory: **tffs0:system**.
- 

## Saving the Configuration Settings: Example

The following example shows how to review and then save the running configuration file.

```
SCE#show running-config
#This is a general configuration file (running-config).
#Created on 15:50:56 CET MON February 11 2006
#cli-type 1
#version 1
clock timezone CET 1
snmp-server community "public" ro
snmp-server host 10.1.1.253 traps version 1 "public"
interface LineCard 0
connection-mode active
no silent
no shutdown
flow-aging default-timeout UDP 60
interface FastEthernet 0/0
ip address 10.1.5.109 255.255.0.0
interface FastEthernet 0/1
interface FastEthernet 0/2
exit
line vty 0 4
no timeout
exit
```

```
SCE#
SCE#copy running-config startup-config
Writing general configuration file to temporary location...
Backing-up general configuration file...
Copy temporary file to final location...
sce#
```

To remove a configuration command from the running-config, use the **no** form of the command.

The following example illustrates how to remove all DNS settings from the running configuration.

```
SCE(config)#no ip name-server
```

## Restoring a Previous Configuration

When you save a new configuration, the system automatically backs up the old configuration in the directory **tffs0:system/prevconf/**. Up to nine versions of the startup configuration file are saved, namely **config.tx1-config.tx9**, where **config.tx1** is the most recently saved file.

Use the CLI command **more** to view the old startup configuration files. See [How to Display File Contents, page 4-8](#)

Restoring a previous startup configuration means renaming the file so it overwrites the startup configuration (**config.txt**) file.

Since the restore operation overwrites the current configuration file, you cannot undo the configuration restore operation. It is recommended to always backup the current configuration file first.

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- Step 1** At the SCE# prompt, type **more tffs0:system/prevconf/filename** and press **Enter**.  
Displays the contents of the specified backup configuration file. Backup configuration filenames are **config.tx1-config.tx9**.
- Step 2** Read the configuration information to make sure it is the configuration you want to restore.  
Be sure that you are restoring the proper configuration file, since the restore operation is not reversible. It is recommended to always backup the current configuration file first.
- Step 3** At the SCE# prompt, type **copy tffs0:system/prevconf/filename tffs0:system/filename** and press **Enter**.  
Overwrites the current startup configuration file with the contents of the specified backup configuration file.  
Backup configuration filenames are **config.tx1-config.tx9**.
-

## Restoring a Previous Configuration: Example

The following example displays a saved configuration file and then restores the file to overwrite the current configuration.

```
SCE#more tffs0:system/prevconf/config.txt1
#This is a general configuration file (running-config).
#Created on 19:36:07 UTC THU February 14 2006
#cli-type 1
#version 1
interface LineCard 0
no silent
no shutdown
interface FastEthernet 0/0
ip address 10.1.5.109 255.255.0.0
interface FastEthernet 0/1
interface FastEthernet 0/2
exit
line vty 0 4
exit
SCE#copy tffs0:system/prevconf/config.txt1 tffs0:system/config.txt
sce#
```

## Backing Up Configuration Files

- [Options, page 3-6](#)
- [How to Create a Backup Configuration File, page 3-7](#)
- [How to Upload a Backup Configuration File, page 3-7](#)

Although a backup of the configuration file is created automatically under certain circumstances, it is useful to be able to explicitly create a backup configuration file.

For example, it can be used in a cascaded solution to copy the configuration from one SCE platform to the other, as follows:

1. To create a backup configuration file, execute this command on the first SCE platform, specifying an FTP backup file:  
**copy startup-config *backup-file***
2. To upload the backup configuration file to the cascaded SCE platform, execute this command on that SCE platform, specifying the previously created backup file:  
**copy *backup-file* startup-config**

## Options

The following option is available:

- *backup-file* — The name of the backup configuration file to be created. The file name should be in 8.3 format, that is, there are a maximum of 8 characters before the period and three characters following it.

The backup file may be created via FTP or it may be a local file, as shown in the following examples:

- via FTP: **ftp://user:pass@host/drive:/dir/bckupcfg.txt**
- local: **/tffs0/bckupcfg.txt**

## How to Create a Backup Configuration File

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- Step 1** At the SCE# prompt, type **copy startup-config backup-file** and press **Enter**.  
Backs up the startup-config file to the specified file.

## How to Upload a Backup Configuration File

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- Step 1** At the SCE# prompt, type **copy backup-file startup-config** and press **Enter**.
- 

### Copying a Backup Configuration File to a Different SCE Platform: Example

This example shows how to copy the configuration from one SCE platform to another.

On the first SCE platform, enter the following command:

```
SCE1#copy startup-config ftp://adminuser:mypassword@10.10.10.10/c:/config/bckupcfg.txt
SCE1#
```

On the second SCE platform, enter the following command:

```
SCE2#copy ftp://adminuser:mypassword@10.10.10.10/c:/config/bckupcfg.txt startup-config
SCE2#
```

## Upgrading the SCE Platform Firmware

Cisco distributes upgrades to the software and firmware on the SCE platform. Cisco distributes upgrade software as a file with the extension.pkg that is installed directly from the ftp site without being copied to the disk. This procedure walks you through installation and rebooting of the SCE platform with the new firmware.

- 
- Step 1** At the command prompt, type **configure** and press **Enter**.  
Enters Global Configuration mode.
- Step 2** Type **boot system ftp://user:password @host /drive:dir /seNum.pkg**, where *seNum.pkg* is the file name on the ftp site.  
The **boot** command verifies that the package is a legal, appropriate update for the SCE platform and that the file was not corrupted. It does not perform an upgrade, but does keep in the system memory that a pkg file is available.
- Step 3** Type **exit**.  
Exits Global Configuration mode.
- Step 4** Type **copy running-config startup-config**.  
This command re-verifies that the package is valid, and extracts the upgrade to the Flash file system.  
The system notifies you that it is performing the extraction as follows:
- ```
Backing-up configuration file...
Writing configuration file...
Extracting new system image...
Extracted OK.
```

**Step 5** Type **reload**.

Reboots the system.

The system first prompts you for confirmation:

Are you sure?

**Step 6** Type **Y** and press **Enter**.

The system sends the following message and reboots.

The system is about to reboot, this will end your CLI session

---

## Upgrading SCE Platform Firmware: Example

The following example shows the full procedure for performing a firmware update.

```
SCE#configure
SCE(config)# boot system ftp://vk:vk@10.1.1.230/downloads/SE2000.pkg
SCE(config)#exit
SCE#copy running-config startup-config
Backing-up configuration file..
Writing configuration file..
Extracting new system image..
Extracted OK.
SCE#>reload
Are you sure? y
the system is about to reboot, this will end your CLI session
```

## Downgrading the SCE Platform to a Previous Version

**Note**

To downgrade a cascaded system, follow the procedure described in [Simultaneous Upgrade of Firmware and Application, page 10-15](#), using the relevant downgrade files rather than upgrade files.

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To downgrade the SCE platform to a previous release, complete the following steps

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**Step 1** Uninstall the current application.

Use the **pqi uninstall file** command (see [How to Uninstall an Application, page 3-10](#)).

**Step 2** Install the desired firmware version.

Use the procedure described in [Upgrading the SCE Platform Firmware, page 3-7](#).

**Step 3** Install the desired application version.

Use the **pqi install file** command (see [How to Install an Application, page 3-10](#)).

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# Managing Application Files

This module explains how to install and upgrade application files.

- [Configuring Applications, page 3-9](#)
- [Managing Application Files, page 3-9](#)
- [How to Display Information about an Application File, page 3-10](#)
- [How to Install an Application, page 3-10](#)
- [How to Uninstall an Application, page 3-10](#)
- [How to Upgrade an Application, page 3-11](#)
- [How to Undo an Upgrade of an Application, page 3-11](#)
- [How to Display the Last pqi File that was Installed, page 3-11](#)

## Configuring Applications

The SCE platform can be configured to run with different Service Control applications by installing the appropriate file. All SCE platform application files are **pqi** files, that is, the filename must end with the pqi extension.

Once a specific Service Control application is installed it can be configured by applying a configuration file. The configuration file is application-specific, and is produced by application-specific means, not covered in this documentation. Configuration files have no specific extension.



**Note**

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These configuration changes are automatically saved to the start-up configuration after execution, and therefore do not appear when the running configuration is displayed (**more running-config** command).

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**Note**

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These configurations cannot be manipulated by changing the **system/config.txt** file

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## Managing Application Files

Use the following commands to install, uninstall, and upgrade an application. You can use the show pqi file info command before installing or upgrading an application to display the options that are available when installing the pqi file. These options can then be specified in the install or upgrade command as needed.

The documentation of the application will tell the user whether the application is stand-alone (in which case install should be used), or an upgrade to an existing application that is assumed to be installed already (in this case upgrade should be used).

You should always run the **pqi uninstall** command before installing a new pqi file. This prevents old files from accumulating on the disk.

The following commands are relevant for installing and uninstalling an application:

- **pqi install file** (interface linecard configuration mode)
- **pqi uninstall file** (interface linecard configuration mode)
- **pqi upgrade file** (interface linecard configuration mode)
- **pqi rollback file** (interface linecard configuration mode)
- **show pqi file info** (viewer mode)
- **show pqi last-installed** (viewer mode)

## How to Display Information about an Application File

- 
- Step 1** From the SCE> prompt, type **show pqi file filename info** and press **Enter**.  
Displays installation options available for this application file, if any.
- 

## How to Install an Application

- 
- Step 1** From the SCE(config if)# prompt, type **pqi install file filename [options]** and press **Enter**.  
Installs the specified pqi file, using the installation options specified (if any). Use the **show pqi file filename info** command to display installation options available for the application file. (See [How to Display Information about an Application File, page 3-10.](#))  
Note that this may take up to five minutes.



- 
- Note** Always run the **pqi uninstall** command before installing a new pqi file. (See [How to Uninstall an Application, page 3-10.](#))
- 

## How to Uninstall an Application

- 
- Step 1** From the SCE(config if)# prompt, type **pqi uninstall file filename** and press **Enter**.  
Uninstalls the specified pqi file.  
You must specify the last pqi file that was installed.  
Note that this may take up to five minutes.
-

## How to Upgrade an Application

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- Step 1** From the SCE(config if)# prompt, type **pqi upgrade file** *filename [options]* and press **Enter**.
- Upgrades the current application with the specified pqi file using the installation options specified (if any). Use the **show pqi file filename info** command to display installation options available for the application file. (See [How to Display Information about an Application File, page 3-10.](#))
- Note that this may take up to five minutes.
- 

## How to Undo an Upgrade of an Application

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- Step 1** From the SCE(config if)# prompt, type **pqi rollback file** *filename* and press **Enter**.
- Undoes the upgrade of the specified pqi file.
- Note that this may take up to five minutes.
- 

## How to Display the Last pqi File that was Installed

- 
- Step 1** From the SCE> prompt, type **pqi last-installed** and press **Enter**
-

# Monitoring the Operational Status of the SCE Platform

- [How to Display the Current Operational Status of the SCE Platform, page 3-13](#)
- [Displaying the Current Operational Status of the SCE Platform: Example, page 3-13](#)

Table 3-1 the operational states of the SCE platform. You can monitor the operational status of the SCE platform via:

- The Status LED on the SCE platform front panel
- The `show system operation-status` CLI command

**Table 3-1 SCE Platform Operational States**

| SCE platform Operational Status | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Status LED State |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Booting                         | Initial state after reset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Orange           |
| Operational                     | <p>SCE platform becomes operational after completing the following process:</p> <ul style="list-style-type: none"> <li>• Boot is completed</li> <li>• Power self-tests are completed without failure</li> <li>• Platform configuration is applied</li> </ul>                                                                                                                                                                                                                                                                                                                             | Flashing green   |
| Warning                         | <p>SCE platform is fully operational (as above) but one of the following occurred:</p> <ul style="list-style-type: none"> <li>• Link on one of the line ports is down</li> <li>• Management port link is down</li> <li>• Temperature raised above threshold</li> <li>• Voltage not in required range</li> <li>• Fans problem</li> <li>• Power supply problem</li> <li>• Insufficient space on the disk</li> </ul> <p>Note: If the condition that caused the SCE platform to be in Warning state is resolved (for example, link is up) the SCE platform reverts to Operational state.</p> | Flashing orange  |
| Failure                         | <p>System is in Failure state after Boot due to one of the following conditions:</p> <ul style="list-style-type: none"> <li>• Power on test failure</li> <li>• Three abnormal reboots in less than 20 minutes</li> <li>• Platform configured to enter Failure mode consequent to failure-induced reboot (this is configurable using CLI command)</li> </ul> <p>Note: Depending on the cause of failure, the management interface and the platform configuration may or may not be active/available.</p>                                                                                  | Red              |

## How to Display the Current Operational Status of the SCE Platform

---

**Step 1** From the SCE> prompt, type `show system operation-status` and press **Enter**

---

## Displaying the Current Operational Status of the SCE Platform: Example

This example shows how to display the current operational status of the SCE platform.

```
SCE>show system operation-status
System Operation status is Operational
```

## Displaying the SCE Platform Version Information

Use this command to display global static information on the SCE platform, such as software and hardware version, image build time, system uptime, last open packages names and information on the SLI application assigned.

---

**Step 1** From the SCE> prompt, type `show version` and press **Enter**

---

## Displaying the SCE Platform Version Information: Example

This example shows how to display the SCE platform version information.

```
SCE>show version
System version: Version 3.0.0 Build 240
Build time: Jan 11 2006, 07:34:47
Software version is: Version 2.5.2 Build 240
Hardware information is:
rx           : 0x0075
dp           : 0x1808
tx           : 0x1708
ff           : 0x0077
cls         : 0x1721
cpld        : 0x0025
Lic         : 0x0176
rev         : G001
Bootrom     : 2.1.0
L2 cache    : Samsung 0.5
lic type    : MFE
optic mode  : MM
Product S/N : CAT093604K3
Product ID  : SCE2020-4XGBE-MM
Version ID  : V01
Deviation   :
Part number  : 800-26601-01
Revision    : B0
Software revision : G001
LineCard S/N : CAT09370L1Q
Power Supply type : AC
SML Application information is:
```

```

Application file: /tffs0/temp.sli
Application name:
Application help:
Original source file: H:\work\Emb\jrt\V2.5\sml\actions\drop\drop_basic_anyflow.san
Compilation date: Wed, November 12 2006 at 21:25:21
Compiler version: SANc v2.50 Build 32 gcc_codelets=true built on: Tue September 23 2006
09:51:57 AM.;SME plugin v1.1
Default capacity option used.
Logger status: Enabled
Platform: SCE 2000 - 4xGBE
Management agent interface version: SCE Agent 3.0.5 Build 18
Software package file: ftp://vk:vk@10.1.8.22/P:/EMB/LatestVersion/3.0.5/se1000.pkg
SCE 2000 uptime is 21 minutes, 37 seconds
SCE>

```

## Displaying the SCE Platform Inventory

Unique Device Identification (UDI) is a Cisco baseline feature that is supported by all Cisco platforms. This feature allows network administrators to remotely manage the assets in their network by tracing specific devices through either CLI or SNMP. The user can display inventory information for a remote device via either:

- Entity MIB (see [ENTITY-MIB](#), page 5-38)
- CLI **show inventory** command

The **show inventory** CLI command displays the following information:

- Device name
- Description
- Product identifier
- Version identifier
- Serial number

---

**Step 1** From the SCE> prompt, type **show inventory** and press **Enter**

---

## Displaying the SCE Platform Inventory: Example

This example shows how to display the inventory (UDI) of the SCE platform.

```

SCE>show inventory
NAME: "Chassis",
DESCR: "Cisco SCE 2020 Service Control Engine, Multi Mode, 4-port GE"
PID: SCE2020-4XGBE-MM , VID: V01, SN: CAT093604K3
SCE>

```

## Displaying the System Uptime

Use this command to see how long the system has been running since the last reboot.

---

**Step 1** From the SCE> prompt, type **show system-uptime** and press **Enter**

---

## Displaying the System Uptime: Example

```
SCE>show system-uptime
SCE uptime is 21 minutes, 37 seconds
SCE>
```

## Rebooting and Shutting Down the SCE Platform

- [Rebooting the SCE Platform, page 3-15](#)
- [Shutting Down the SCE Platform, page 3-16](#)

## Rebooting the SCE Platform

Rebooting the SCE platform is required after installing a new firmware, in order for that firmware to take effect. There might be other occasions where rebooting the SCE platform is necessary.

**Note**

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When the SCE restarts, it loads the startup configuration, so all changes made in the running configuration will be lost. You are advised to save the running configuration before performing reload, as described in [Saving the Configuration Settings, page 3-4](#).

---

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

A confirmation message appears.

**Step 2** Type **Y** to confirm the reboot request and press **Enter**.

---

## Rebooting the SCE Platform: Example

```
SCE# reload
Are you sure? y
the system is about to reboot, this will end your CLI session
```

## Shutting Down the SCE Platform

Shutting down the SCE platform is required before turning the power off. This helps to ensure that non-volatile memory devices in the SCE platform are properly flushed in an orderly manner.



### Note

When the SCE platform restarts, it loads the startup configuration, so all changes made in the running configuration will be lost. You are advised to save the running configuration before performing reload, as described in. [Saving the Configuration Settings, page 3-4](#)

- 
- Step 1** Connect to the serial console port (The CON connector on the SCE platform front panel, 9600 baud).  
Provides connection to a local terminal for restarting the SCE platform.
- Step 2** From the SCE# prompt, type **reload shutdown** and press **Enter**.  
A confirmation message appears.
- Step 3** Type **Y** to confirm the shutdown request and press **Enter**.  
Performs the shutdown operation.
- 

## Shutting Down the SCE Platform: Examples

The following example shows the commands for system shutdown.

```
SCE#reload shutdown
You are about to shut down the system.
The only way to resume system operation after this
is to cycle the power off, and then back on.
Continue?
Y
IT IS NOW SAFE TO TURN THE POWER OFF.
```



### Note

Since the SCE platform can recover from the power-down state only by being physically turned off (or cycling the power), this command can only be executed from the serial CLI console. This limitation helps prevent situations in which a user issues this command from a Telnet session, and then realizes that he or she has no physical access to the SCE platform.

---