CHAPTER 6

Cabling the GBE Line Ports and Completing the Installation

Revised: December 21, 2012, OL-26786-02

Introduction

This chapter provides instructions for cabling the Cisco SCE 8000 GBE line ports for single and cascaded topologies. In a cascade topology, this includes the cascade ports as well as the line ports.

The GBE line ports are located on the SPA modules, which are installed in the Cisco SCE 8000-SIP module in slot 3 of the Cisco SCE 8000 GBE chassis.

Note When installing a cascaded system, it is extremely important to follow the sequence of procedures outlined in the "Cascaded Systems" section on page 6-17.

Note When installing an External Optical Bypass module, the Cisco SCE 8000 GBE line ports are connected to the module. See the "Cabling the Line Interface Ports: Using the External Optical Bypass Module" section on page 6-11.

Connecting the GBE Line Ports to the Network

Single Cisco SCE 8000 GBE Topologies

In this topology, one or two 8-port GBE SPAs are installed in the Cisco SCE 8000 GBE to support a maximum of eight full duplex GBE links. The Cisco SCE 8000 GBE may be either inline, to support both monitoring and traffic control functionality, or receive-only for traffic monitoring functionality only.

Guidelines for single Cisco SCE 8000 GBE topologies:

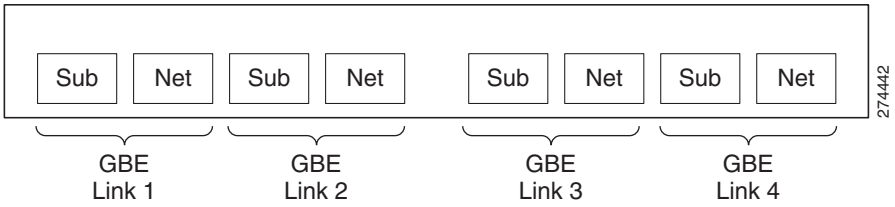
- If only one SPA module (four links) is installed, it must be installed in bay 0 of the SPA jacket card.
- If two SPA modules (eight links) are installed, they must be installed in bays 0 and 1 of the SPA jacket card.

  A maximum of two SPAs is supported.
- GBE SPA ports are connected in adjacent pairs.

  Even ports (0,2,4,6) are the subscriber ports and the neighboring odd ports (1,3,5,7) are the network ports.

Figure 6-1 displays the Cisco SCE 8000 GBE port numbering.

Figure 6-1 Cisco SCE 8000 GBE Port Numbering



- Inline topologies require both Receive and Transmit fibers.
- Receive-only topologies use only Receive fibers.
- If link continuity needs to be maintained at all times when using the inline topology, optical bypass modules should be installed, as follows:
  - 8-port GBE SPA in subslot 0 only: two external bypass modules installed in the left side of slot 4 of the Cisco SCE 8000 GBE
  - 8-port GBE SPA in subslots 0 and1: four external bypass modules installed in slot 4 of the Cisco SCE 8000 GBE (slot 4 is fully populated)

Table 6-1 lists the single Cisco SCE 8000 GBE connectivity.

Table 6-1 Single Cisco SCE 8000 GBE Connectivity

Connect this subscriber port	To this network port	Link Number
SPA in subslot 0		
0	1	0
2	3	1

Table 6-1 Single Cisco SCE 8000 GBE Connectivity (continued)

Connect this subscriber port	To this network port	Link Number
4	5	2
6	7	3
SPA in subslot 1		
0	1	4
2	3	5
4	5	6
6	7	7

Dual Cisco SCE 8000 GBEs Topology

In this topology, two Cisco SCE 8000 GBEs are connected, providing full redundancy through cascading the two Cisco SCE 8000 GBEs. The Cisco SCE 8000 GBEs must be inline.

Note When installing a cascaded system, it is extremely important to follow the sequence of procedures outlined in "Cascaded Systems" section on page 6-17.

When two Cisco SCE 8000 GBEs are used, the SPAs in subslots 0 and 1 are connected to the links, while the SPAs in subslots 2 and 3 are the cascade ports that are used for communicating between the two Cisco SCE 8000 GBEs.

Guidelines for cascaded Cisco SCE 8000 GBE topologies:

- 8-port GBE SPAs are used in subslots 0 and 1 and are connected to the traffic links. With eight traffic links in each Cisco SCE 8000 GBE, this provides a total of 16 traffic links.
- 1-port 10 GBE SPAs are used in subslots 2 and 3 to provide the cascade ports for communicating between the two Cisco SCE 8000 GBEs.
- Topology with only one 8-port GBE SPA in subslot 0 and one 1-port 10 GBE SPA in subslot 2 is supported.
- Topology with only one 8-port GBE SPA in subslot 0 and two 1-port 10 GBE SPAs in subslots 2 and 3 is not supported.
- Two Cisco SCE 8000 GBE platforms are identified in relevant CLI commands by the **sce-id** parameter (see "sce-id Parameter" section on page 3-13). Possible values are 0 and 1.

Cisco SCE 8000 GBE 0

- Traffic ports are connected as usual (see Table 6-1)
- Port 3/2/0 (1-port 10GBE SPA): Cascade, connect to Port 3/2/0 in Cisco SCE 8000 GBE 1
- Port 3/3/0 (1-port 10GBE SPA): Cascade, connect to Port 3/3/0 in Cisco SCE 8000 GBE 1 (only if there are two 8-port GBE SPAs installed)

Cisco SCE 8000 GBE 1

- Traffic ports are connected as usual (see Table 6-1)
- Port 3/2/0 (1-port 10GBE SPA): Cascade, connect to Port 3/2/0 in Cisco SCE 8000 GBE 0
- Port 3/3/0 (1-port 10GBE SPA): Cascade, connect to Port 3/3/0 in Cisco SCE 8000 GBE 0 (only if there are two 8-port GBE SPAs installed)

Inline topologies require connecting both Receive and Transmit fibers to the Cisco SCE 8000 GBE. Cascade ports always require both Receive and Transmit fibers to be connected.

To maintain link continuity at all times, optical bypass modules must be installed on both platforms and the traffic ports must be connected to these bypass modules.

Optical Bypass Module

The external optical bypass module is an optional component that provides additional protection by enabling automatic preservation of the network traffic link. For more information about the external bypass module, see the "Cisco SCE 8000 GBE Optical Bypass" section on page 2-11.

There are two installation options for the optical bypass module:

- Chassis mount—The optical bypass module may be installed in the panel in slot 4 of the Cisco SCE 8000 GBE chassis. This panel hosts up to four optical bypass modules.
- External mounting panel—The optical bypass module may be installed in a panel that is mounted in a 19" rack. This panel can host up to four optical bypass modules.

Note Make sure to use the correct type of optical bypass module (single-mode or multi-mode) according to the transceivers and cabling that are used for the subscriber and network links.

Note Because the optic bypass module directly connects the subscriber and network side optic paths when bypassing the Cisco SCE 8000 GBE, the subscriber and network optic links must be of the same type (single-mode or multi-mode) and wavelength.

Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Avoid exposure to radiation and do not stare into open aperture.**
Statement 1056

Optical Bypass Module Connectivity

Table 6-2 summarizes the connectivity for the optical bypass module for the Cisco SCE 8000 GBE. Bypass modules are required in the right side only if there is an 8-port GBE SPA in subslot 1.

Table 6-2 Optical Bypass Module Connectivity

Connect this port on the external bypass module.	To this component	Link number
External bypass module #1	—	—
A1	Subscriber side network element 0	0
B1	Network side network element 0	0
C1	SPA port 3/0/0	0
D1	SPA port 3/0/1	0
A2	Subscriber side network element 1	1
B2	Network side network element 1	1
C2	SPA port 3/0/2	1
D2	SPA port 3/0/3	1

Table 6-2 Optical Bypass Module Connectivity (continued)

Connect this port on the external bypass module.	To this component	Link number
CTRL (use the short leg of the ‘Y’ control cable labeled OPB CTRL1)	left 'Optical Bypass' port on Cisco SCE 8000-SCM-E module (use the long leg of the ‘Y’ control cable; it is labeled SCE 8000 GBE-2L BYPASS)	—
External bypass module #2	—	—
A1	Subscriber side network element 2	2
B1	Network side network element 2	2
C1	SPA port 3/0/4	2
D1	SPA port 3/0/5	2
A2	Subscriber side network element 3	3
B2	Network side network element 3	3
C2	SPA port 3/0/6	3
D2	SPA port 3/0/7	3
CTRL (use the short leg of the ‘Y’ control cable labeled OPB CTRL2)	left 'Optical Bypass' port on Cisco SCE 8000-SCM-E module (use the long leg of the ‘Y’ control cable; it is labeled SCE 8000 GBE-2L BYPASS)	—
External bypass module #3	—	—
A1	Subscriber side network element 4	4
B1	Network side network element 4	4
C1	SPA port 3/1/0	4
D1	SPA port 3/1/1	4
A2	Subscriber side network element 5	4
B2	Network side network element 5	5
C2	SPA port 3/1/2	5
D2	SPA port 3/1/3	5
CTRL (use the short leg of the ‘Y’ control cable labeled OPB CTRL1)	right 'Optical Bypass' port on Cisco SCE 8000-SCM-E module (use the long leg of the ‘Y’ control cable; it is labeled SCE 8000 GBE-2L BYPASS)	5
External bypass module #4	—	—
A1	Subscriber side network element 6	6
B1	Network side network element 6	6
C1	SPA port 3/1/4	6
D1	SPA port 3/1/5	6
A2	Subscriber side network element 7	7
B2	Network side network element 7	7
C2	SPA port 3/1/6	7

Table 6-2 Optical Bypass Module Connectivity (continued)

Connect this port on the external bypass module.	To this component	Link number
D2	SPA port 3/1/7	7
CTRL (use the short leg of the ‘Y’ control cable labeled OPB CTRL2)	right 'Optical Bypass' port on Cisco SCE 8000-SCM-E module (use the long leg of the ‘Y’ control cable; it is labeled SCE 8000 GBE-2L BYPASS)	—

Cabling the GBE Line Interface Ports

Note When installing an External Optical Bypass module, the Cisco SCE 8000 GBE line ports are connected to the module. See the"Cabling the Line Interface Ports: Using the External Optical Bypass Module" section on page 6-11.

Warning **Class 1 laser. Avoid exposure to radiation and do not stare into open aperture.**
Statement 1008

SFP Module Cabling and Connection Equipment

Table 6-3 provides cabling specifications for the SFP modules that can be installed on the 8-Port Gigabit Ethernet SPA. Note that all SFP ports have LC-type connectors.

Minimum cable distances are as follows:

- SFP-GE-S: 6.5 feet (2 m)
- SFP-GE-Z with an 8-dB attenuator installed at each end of the link: 6.2 miles (10 km)
- SFP-GE-Z without attenuators: 24.9 miles (40 km).

Table 6-3 SFP Module Port Cabling Specifications

Cisco SCE Model	Wavelength (nm)	Fiber Type	Core Size (micron)	Modal Bandwidth (MHz/km)	Maximum Cable Distance
SFP-GE-S	850	MMF[1]	62.5	160	722 ft (220 m)
			62.5	200	984 ft (300 m)
			50.0	400	1640 ft (500 m)
			50.0	500	1804 ft (550 m)
SFP-GE-L	1300	MMF and SMF[2]	62.5	500	1804 ft (550 m)
			50.0	400	1804 ft (550 m)
			50.0	500	1804 ft (550 m)
			9/10	—	6.2 miles (10 km)
SFP-GE-Z	1550	SMF	9/10	—	49.7 miles (80 km)
		SMF[3]	8	—	62.1 miles (100 km)

[1] Multimode fiber (MMF) only.

[2] A mode-conditioning patch cord is required.

When using the SFP-GE-L with 62.5-micron diameter MMF, you must install a mode-conditioning patch cord between the SFP module and the MMF cable on both the send and the receive ends of the link when link distances are greater than 984 ft (300 m).

We do not recommend using the SFP-GE-L and MMF with no patch cord for very short link distance (tens of meters). The result could be an elevated bit error rate (BER).

[3] Dispersion-shifted single-mode fiber-optic cable

Note The 1000BASE-ZX SFP modules provide an optical power budget of 21.5 dB. You should measure your cable plant with an optical loss test set to verify that the optical loss of the cable plant (including connectors and splices) is less than or equal to 21.5 dB. The optical loss measurement must be performed with a 1550-nm light source.

Table 6-4 provides power information and specifications.

Table 6-4 SFP-GE-L, SFP-GE-S, and SFP-GE-Z Module Power Specifications

SFP Module	Transmit Power (dBm)		Receive Power (dBm)		Power Budget (dBm)
	Minimum	Maximum	Minimum	Maximum	
SFP-GE-L	-9.5[1] -11.5[2]	-3 .0[3]	-19.0	-3.0	7.5[4] and 9.5[5]
SFP-GE-S	9.5 [6]	-3.0	-17.0	0.0	7.5[7]
SFP-GE-Z	0.0	5.0	-22.0	0.0	22

[1] For fiber types 9/125 mm SMF.

[2] For fiber types 62.5/125 mm MMF and 50/125 mm MMF.

[3] For fiber types 9/125 mm SMF, 62.5/125 mm MMF, and 50/125 mm MMF.

[4] For fiber types 50/125 mm MMF and 62.5/125 mm MMF.

[5] For fiber type 10 mm SMF.

[6] For fiber types 50/125 mm, NA = 0.20 fiber and 62.5/125 mm, NA = 0.275 fiber.

[7] For fiber types 50/125 mm MMF and 62.5/125 mm MMF.

Optical Device Maintenance

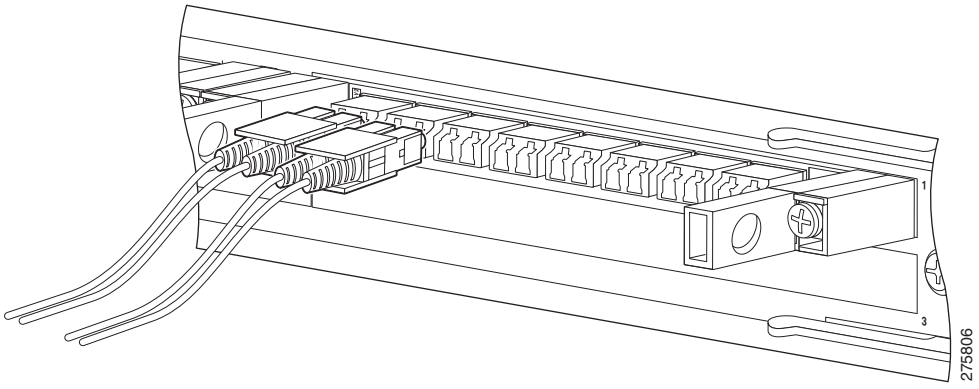
Any contamination of the fiber connection can cause failure of the component or failure of the whole system. A particle that partially or completely blocks the core generates strong back reflections, which can cause instability in the laser system. Inspection, cleaning, and reinspection are critical steps to take before making fiber-optic connections.

How to Cable the GBE Line Interface Ports

Step 1 Take the appropriate fiber optic cable (see the "SFP Module Cabling and Connection Equipment" section on page 6-9 and plug it into the appropriate port on the SPA module in slot 3 of the Cisco SCE 8000 GBE. (See Figure 6-2 below.)

Make sure to push on the connector until you hear a click, which indicates that the connector is fully inserted and secured in the receptacle. Always make sure that you insert the connector completely into the socket.

Figure 6-2 Cabling the GBE Line Interface



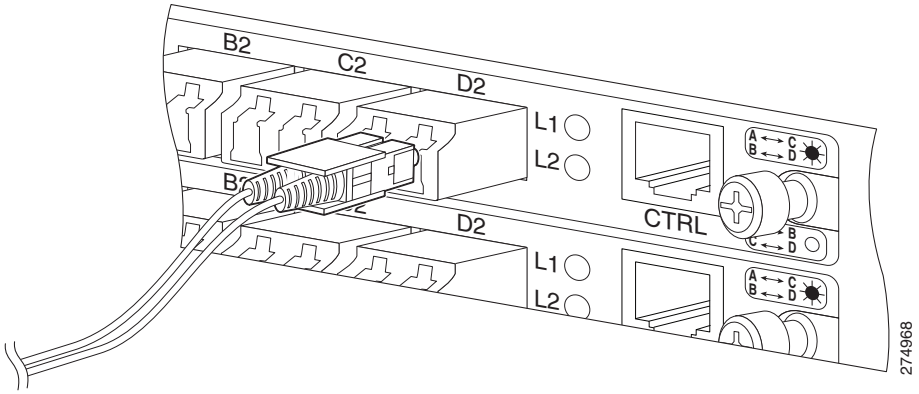
Step 2 Verify that the link LED is green.

If the link LED does not light, try removing the network cable plug and reinserting it firmly into the module socket.

Cabling the Line Interface Ports: Using the External Optical Bypass Module

See the "Optical Bypass Module Connectivity" section on page 6-5 for specific connectivity. Figure 6-3 displays the External Optical Bypass Module line interfaces.

Figure 6-3 External Optical Bypass Module Line Interfaces: Cisco SCE 8000 GBE



Step 1 Take the fiber optic cable (see the "SFP Module Cabling and Connection Equipment" section on page 6-9 from the subscriber or network element and plug it into the appropriate port on the external bypass module.

Step 2 Using a cable with Lucent Connectors (LC) connectors on both ends, plug one end into the appropriate port on the external bypass module and the other end into the appropriate line interface in slot 3 of the Cisco SCE 8000 GBE chassis.

Step 3 Repeat Step 1 and Step 2 for all traffic links.

Step 4 Using the control cable provided, which has RJ11 connectors on both ends, plug one end into the CTRL interface on the external bypass module (see Figure 6-4) and plug the other end into the External Bypass interface on the Cisco SCE 8000-SCM-E in slot 1 of the Cisco SCE 8000 GBE chassis (see item no. 1 in Figure 6-5 below).

If using only two external bypass modules, use one ''Y' control cable. Plug the short ends of the 'Y' into the CNTL ports on the two bypass modules and the long leg of the 'Y' into the External Bypass port 1 on the Cisco SCE 8000-SCM-E in slot 1.

If using four external bypass modules, use two control cables and both External Bypass ports on the Cisco SCE 8000-SCM-E in slot 1.

Step 5 Complete the installation and powering up of the Cisco SCE 8000 GBE.

By its nature, the optic bypass module does not connect the link to the Cisco SCE 8000-SIP module until the entire Cisco SCE 8000 GBE system is fully functional. It is necessary to bring the Cisco SCE 8000 GBE to fully operational, non-bypassed status, to confirm correct functioning of the link through the optic bypass module to the Cisco SCE 8000-SIP module.

Step 6 Verify link connectivity by checking that the link LED on the GBE interface is green, or by using the **show interface GigabitEthernet** command (see the "How to View the Gigabit Ethernet Port Status" section on page 6-14.

Figure 6-4 Cabling the CTRL Interface on the External Bypass Module

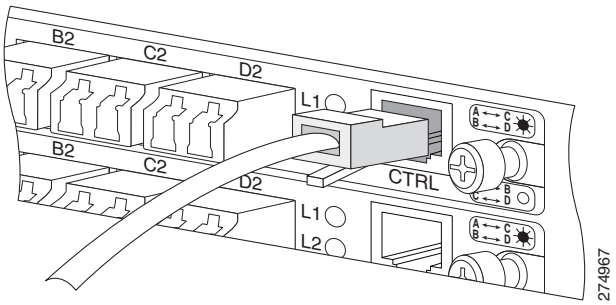
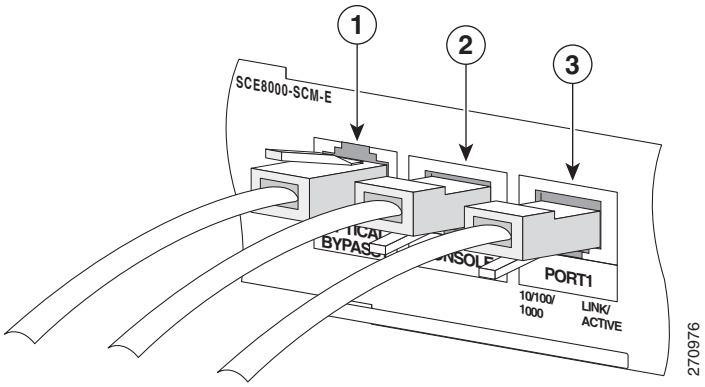


Figure 6-5 Cabling the Cisco SCE 8000-SCM-E Module



Testing Connectivity: Examining Link LEDs and Counters

If the Cisco SCE 8000 GBE platform has been powered up, test now to verify that connectivity has been established on all links. If the Cisco SCE 8000 GBE platform is not powered up, perform this step after starting the Cisco SCE 8000 GBE platform.

Examining the LEDs

The Link LEDs should be green, verifying that an active connection exists for all connected links.

How to View the Gigabit Ethernet Port Status

Step 1 At the **SCE>** prompt, enter **show interface GigabitEthernet 3/** ***baynumber /portnumber***.

This displays the port link status.

The following example displays a system response.

```
SCE> show interface GigabitEthernet 3/1/6
Auto negotiation configured: Enabled
Actual Status:
Link is on
Autonegotiation: Enabled
Bandwidth: 100000Kbps
Burst-size: 50000bytes
```

Viewing the GBE Line Interface Counters

In an inline topology, you can monitor traffic via the platform counters for both the Rx and Tx connections. The counters increase as packets flow through the Cisco SCE 8000 GBE or both Rx and Tx.

However, in receive-only topologies, the counters for the Tx do not increment, as the Cisco SCE 8000 GBE is only monitoring traffic, and not resending it.

How to View the Gigabit Ethernet Line Interface Counters

In an inline topology, you can monitor traffic via the platform counters for both the Rx and Tx connections. The counters increase, together with the increased number of packets that flow through the Cisco SCE 8000 GBE for both Rx and Tx.

However, in external switch topologies, the counters for the Tx do not increment, that is, Tx does not have a function in monitoring traffic, as it is disconnected.

Step 1 At the **SCE>** prompt, type **show interface GigabitEthernet 3/*baynumber/portnumber* counters**.

This displays the GigabitEthernet counters. This command enables you to verify that traffic is taking place. You can see that the counters increase, together with the increased number of packets that flow through the Cisco SCE 8000 GBE .

The following example shows the counters for a Gigabit Ethernet in subslot 1.

```
SCE> show interface GigabitEthernet 3/1/6 counters
In total octets: 100
In good unicast packets: 90
In good multicast packets: 0
In good broadcast packets: 10
In packets discarded: 0
In packets with CRC/Alignment error: 0
In undersized packets: 0
In oversized packets: 0
Out total octets: 93*2^32+1022342538
Out unicast packets: 858086051
Out non unicast packets: 0
Out packets discarded: 0
```

How to View the User Log Counters

You should view the user log for errors that occurred during the installation process.

Step 1 At the **SCE>** prompt, enter **show logger device User-File-Log counters** and press **Enter**.

```
SCE> show logger device user-file-log counters
Logger device User-File-Log counters:
Total info messages: 1
Total warning messages: 0
Total error messages: 0
Total fatal messages: 0
```

If there are *Total error messages* or *Total fatal messages*, use the **show logger device User-File-Log** command to display details about the errors.

How to Install a Service Control Application

The Service Control solution requires that the Service Control application be installed on the Cisco SCE platform. This is a pqi file that is installed and configured using the Cisco Service Control Application for Broadband (SCA BB) console.

For an explanation of how to install the pqi file, see "Installing the Application and Protocol Pack on the SCE Platform" in the *Cisco Service Control Product Installation Guide*.

For information on initial configuration of the application, see "Initial SCA BB Configuration" in the *Cisco Service Control Product Installation Guide*.

For complete instructions on how to install and configure the SCA BB application, see the *Cisco Service Control Application for Broadband User Guide*.

Cascaded Systems

How to Install a Cascaded System

This section outlines the installation procedures for a redundant solution with two cascaded Cisco SCE 8000 GBE platforms. See the *Cisco SCE8000 CLI Command Reference* for details of the CLI commands.

When working with two Cisco SCE 8000 GBE platforms with split-flow and redundancy, it is extremely important to follow this installation procedure.

Step 1 Install both Cisco SCE 8000 GBE platforms, power them up, and perform the initial system configuration. (SeeChapter 4, "Installing the Cisco SCE 8000 Chassis" and Chapter 5, "Connecting the Management Interfaces"and "Starting the Cisco SCE 8000 GBE Platform" section on page 7-2.)

To maintain link continuity at all times, including during the reload sequence and power failure events, optical bypass modules must be installed.

Step 2 Connect both Cisco SCE 8000 GBE platforms to the management station. (See the "Connecting the Management Interfaces" section on page 5-5.

Step 3 Connect the cascade ports. See the "Dual Cisco SCE 8000 GBEs Topology" section on page 6-3.

The cascade ports must be either be connected directly in Layer 1 (dark fibers), or using the following procedure to connect through a switch.

- Connect one set of cascade ports to a single switch (3/2/0 <-> 3/2/0). Configure them both on the same access VLAN, which is used only by the interfaces connected to these ports. No other interfaces in the switch should reside on that VLAN.
- Connect the other set of cascade ports (3/3/0 <-> 3/3/0) to a switch on a different VLAN. Again, the access ports should be configured as access ports on this VLAN, which is used only by the interfaces connected to these ports. No other interfaces in the switch should reside on the VLAN.

Step 4 Set topology configurations for each Cisco SCE 8000 GBE platform via the connection-mode options. (See the "How to Configure the Connection Mode" section on page 6-19.

Step 5 Make sure that the Cisco SCE 8000 GBE platforms have synchronized and active Cisco SCE 8000 GBE platform was selected.

Use the **show interface linecard 0 connection-mode** command.

Step 6 If you want to start with bypass, change the link mode to your required mode in both Cisco SCE 8000 GBE platforms on all links. The bypass mode is applied only to the active Cisco SCE 8000 GBE platform. (See the "How to Set the Link Mode" section on page 6-19.)

Step 7 Make sure that the link mode is as you required. (See the "Monitoring a Cascaded System" section on page 6-20.)

Use the **show interface linecard 0 link mode** command.

Step 8 Connect the traffic ports of Cisco SCE 8000 GBE platform #0. This causes a momentary down time until the network elements from both sides of the Cisco SCE 8000 GBE platform auto-negotiate with it and start working (when working inline). See the "Dual Cisco SCE 8000 GBEs Topology" section on page 6-3.

Step 9 Connect the traffic ports of Cisco SCE 8000 GBE platform #1. This causes a momentary down time until the network elements from both sides of the Cisco SCE 8000 GBE platform auto-negotiate with it and start working (when working inline). See the "Dual Cisco SCE 8000 GBEs Topology" section on page 6-3.

Step 10 When full control is needed, change the link mode on both Cisco SCE 8000 GBE platforms on all links to 'forwarding'. It is recommended to first configure the active Cisco SCE 8000 GBE platform and then the standby. (See the "How to Set the Link Mode" section on page 6-19.

CLI Commands for Cascaded Systems

This section presents CLI commands relevant to the configuration and monitoring of a redundant system.

Topology-Related Parameters for Redundant Topologies

All four of the topology-related parameters are required when configuring a redundant topology.

- **Connection mode**—Redundancy is achieved by cascading two Cisco SCE platforms. Therefore the connection mode for both Cisco SCE platforms is inline-cascade.
- **sce-id**—For each of the cascaded Cisco SCE platforms, this parameter specifies the Cisco SCE platform (0 or 1) to be configured by the command.

Note The sce-id parameter, which identifies the Cisco SCE platform, replaces the physically-connected-link parameter, which identified the link. This change was required because the Cisco SCE 8000 GBE platform supports multiple links. However, for backward compatibility, the physically-connected-link parameter is still recognized and the number of the link assigned to that parameter (0 or 1) is defined as the sce-id.

- **Priority**—For each of the cascaded Cisco SCE platforms, this parameter defines whether it is the primary or secondary device.
- **On-failure**—For each of the cascaded Cisco SCE platforms, this parameter determines whether the system cuts the traffic or bypasses it via an external optical bypass module when the Cisco SCE platform either has failed or is booting.

  If either the *bypass* or *external-bypass* option is configured, the optical bypass module must be properly installed. If an optical bypass device is not detected, the command is executed but a warning is issued. The system then enters warning mode until either the command is changed, or the presence of an optical bypass device is detected

How to Configure the Connection Mode

Use the following command to configure the connection mode, including the following parameters:

- inline
- sce-id
- behavior upon failure of the Cisco SCE platform
- primary/secondary

Step 1 From the SCE(config if)# prompt, type **connection-mode** ***inline-cascade*** **sce-id** (***0*** | ***1***) **priority** ***(primary*** | ***secondary)*** **on-failure** ***(external-bypass*** | ***bypass*** | ***cutoff)*** and press **Enter**.

EXAMPLE 1

Use the following command to configure the primary Cisco SCE platform in a two-Cisco SCE 8000 GBE platform inline topology. The behavior of the Cisco SCE platform if a failure occurs is bypass.

```
SCE(config if)# connection-mode inline-cascade sce-id 0 priority primary on-failure bypass
```

EXAMPLE 2

Use the following command to configure the Cisco SCE platform that might be cascaded with the Cisco SCE platform in Example 1. This Cisco SCE platform would have to be the secondary Cisco SCE platform. The connection mode would be the same as the first, and the behavior of the Cisco SCE platform if a failure occurs is also bypass.

```
SCE(config if)# connection-mode inline-cascade sce-id 1 priority secondary on-failure
bypass
```

How to Set the Link Mode

The Cisco SCE platform has an internal hardware card used to maintain the links even when the Cisco SCE platform fails. This hardware card has three possible modes of operation:

- bypass
- forwarding
- cutoff

Normally, the link mode is selected by the Cisco SCE platform software according to the configured connection-mode. However, the **link mode** command can be used to enforce a specific desired mode. This may be useful when debugging the network, or in cases where we would like the Cisco SCE platform just to forward the traffic. (Note that this is only relevant to inline topologies even though the configuration is available also when in receive-only mode.)

The following link mode options are available:

- **Forwarding**—Forwards traffic on the specified link to the Cisco SCE platform for processing.
- **Bypass**—Stops all forwarding of traffic on the specified link to the Cisco SCE platform. Traffic still flows on the link, but is not processed in any way by the Cisco SCE platform.

  This does not affect the redundancy states.
- **Cutoff**—Completely cuts off flow of traffic through the specified link.

Note the following recommendations and restrictions:

- Link mode is relevant only to inline topologies.
- It is recommended that in cascaded topologies, both Cisco SCE platforms be configured for the same link mode, otherwise the service is unpredictable.
- Default link mode is forwarding. When other link modes are selected, active service control is not available and any service control configuration is not applicable.

Step 1 From the **SCE(config if)#** prompt, enter **link mode [forwarding | bypass | cutoff]** and press **Enter**.

Monitoring a Cascaded System

Use the following commands to monitor a cascaded system. They provide information regarding the connection status and link configuration.

To view the current connection mode, from the **SCE>** prompt, enter **show interface linecard 0 connection-mode** and press **Enter**.

To view the Cisco SCE ID, from the **SCE>** prompt, enter **show interface linecard 0 sce-id** and press **Enter**.

To view the current link mode, from the **SCE>** prompt, enter **show interface linecard 0 link mode** and press **Enter**.

To view the current link to port mappings, from the **SCE>** prompt, enter **show interface linecard 0 link-to-port-mapping** and press **Enter**.

To view the current redundancy status of the Cisco SCE platform, from the **SCE>** prompt, enter **show interface linecard 0 cascade redundancy-status** and press **Enter**.

To view information about the peer Cisco SCE platform, from the **SCE>** prompt, enter **show interface linecard 0 cascade peer-sce-information** and press **Enter**.

To view information about the cascade connections, from the **SCE>** prompt, enter **show interface linecard 0 cascade connection-status** and press **Enter**.

To view the current link mappings, from the **SCE>** prompt, enter **show interface linecard 0 physically-connected-links** and press **Enter**.