



CHAPTER 5

Troubleshooting the SIPs

This chapter describes techniques that you can use to troubleshoot the operation of the Cisco Wideband SIP or Cisco SIP-600. It includes the following sections:

- [General Troubleshooting Information, page 5-1](#)
- [Preparing for Online Insertion and Removal of SIPs and SPAs, page 5-2](#)

General Troubleshooting Information

This section describes general information for troubleshooting SIPs and SPAs. It includes the following sections:

- [Interpreting Console Error Messages, page 5-1](#)
- [Using debug Commands, page 5-1](#)
- [Using show Commands, page 5-2](#)

Interpreting Console Error Messages

To view the explanations and recommended actions for Cisco uBR10012 router system messages, including messages related to SIPs, refer to the [Cisco IOS CMTS Cable System Messages Guide](#).

System messages are organized in the documentation according to the particular system facility that produces the messages. The Cisco Wideband SIP error messages use the facility name C10KJACKET, and the Cisco SIP-600 error messages use the facility name C10K_JACKET4SPA.

Using debug Commands

Along with the other **debug** commands supported on the Cisco uBR10012 router, you can obtain specific debug information for SIPs on the Cisco uBR10012 router using the **debug c10k-jacket** privileged EXEC command.

The **debug c10k-jacket** command is intended for use by Cisco technical support personnel. For more information about the **debug c10k-jacket** command, see [Cisco IOS CMTS Cable Command Reference](#) at the following URL:

http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html

**Caution**

Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, use **debug** commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff. Moreover, it is best to use **debug** commands during periods of lower network traffic and fewer users. Debugging during these periods decreases the likelihood that increased **debug** command processing overhead will affect system use.

Using show Commands

The **show diag** and **show controllers jacket** commands allow you to monitor and troubleshoot the SIPs on the Cisco uBR10012 router.

- The **show diag** command shows revision-level information on a SIP and on any SPAs installed in the SIP. For information about the **show diag** command, see the [“Example of the show diag Command” section on page 3-5](#).
- The **show controllers jacket** command shows register values of a SIP.

Preparing for Online Insertion and Removal of SIPs and SPAs

The Cisco uBR10012 router supports online insertion and removal (OIR) of the SPA interface processor (SIP) and of the shared port adapters (SPAs). Therefore, you can remove a SIP with its SPAs still intact, or you can remove a SPA independently from the SIP, leaving the SIP installed in the router.

This section includes the following topics on OIR support:

- [Preparing for Online Removal of a SIP, page 5-2](#)
- [Preparing for Online Removal of a SPA, page 5-4](#)

Preparing for Online Removal of a SIP

The Cisco uBR10012 router supports OIR of the SIP. To do this, you can power down a SIP (which automatically deactivates any installed SPAs) and remove the SIP with the SPAs still intact.

Although graceful deactivation of a SIP is preferred using the **hw-module shutdown** command, the Cisco uBR10012 router does support removal of the SIP without deactivating it first. If you plan to remove a SIP, you can deactivate the SIP first, using the **hw-module shutdown** global configuration command. When you deactivate a SIP using this command, it automatically deactivates each of the SPAs that are installed in that SIP. Therefore, it is not necessary to deactivate each of the SPAs prior to deactivating the SIP.

Either a blank filler plate or a functional SPA should reside in every bay (subslot) of a SIP during normal operation.

For more information about the recommended procedures for physical removal of the SIP, see the *Cisco uBR10012 Universal Broadband Router SIP and SPA Hardware Installation Guide*.

Deactivating a SIP

To deactivate a SIP and its installed SPAs prior to removal of the SIP, use the following command in global configuration mode:

Command	Purpose
Router(config)# hw-module subslot slot/subslot shutdown	Deactivates the SIP in the specified slot, where: <ul style="list-style-type: none"> • <i>slot</i>—Specifies the slot where the SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for the SIPs. • <i>subslot</i>—Specifies the subslot where the SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.

For more information about chassis slot numbering, refer to the [“Identifying the Location of the Cisco Wideband SIP and Cisco Wideband SPA”](#) section on page 4-2.

Reactivating a SIP

Once you deactivate a SIP, whether or not you have performed an OIR, you must use the **no hw-module shutdown** global configuration command to reactivate the SIP.

If you did not issue a command to deactivate the SPAs installed in a SIP, but you did deactivate the SIP using the **hw-module subslot shutdown** command, then you do not need to reactivate the SPAs after an OIR of the SIP. The installed SPAs automatically reactivate upon reactivation of the SIP in the router.

For example, consider the case where you remove a SIP from the router to replace it with another SIP. You reinstall the same SPAs into the new SIP. When you enter the **no hw-module subslot shutdown** command on the router, the SPAs will automatically reactivate with the new SIP.

To activate a SIP and its installed SPAs after the SIP has been deactivated, use the following command in global configuration mode:

Command	Purpose
Router(config)# no hw-module subslot slot/subslot shutdown	Activates the SIP in the specified slot and its installed SPAs, where: <ul style="list-style-type: none"> • <i>slot</i>—Specifies the slot where the SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for the SIPs. • <i>subslot</i>—Specifies the subslot where the SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.

For more information about chassis slot numbering, refer to the [“Identifying the Location of the Cisco Wideband SIP and Cisco Wideband SPA”](#) section on page 4-2.

Verifying Deactivation and Activation of a SIP

To verify the deactivation of a SIP, enter the **show diag** command in privileged EXEC mode. When a SIP is powered down, the SIP no longer appears in the output of the **show diag** command or any other Cisco IOS command.

The following example shows how to deactivate and verify deactivation for the Cisco Wideband SIP located in slot 1, subslot 0. Notice that there is no output for the **show diag** command after the SIP is deactivated.

```
Router# configure terminal
Router(config)# hw-module subslot 1/0 shutdown
Router(config)#
00:44:02: %IPCOIR-3-TIMEOUT: Timeout waiting for a response from slot 1/0.
00:44:02: %IPCOIR-2-CARD_UP_DOWN: Card in slot 1/0 is down. Notifying 2jacket-1 driver.
00:44:04: %LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:0, changed state to down
00:44:04: %LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:1, changed state to down
...
Router# show diag 1/0 // Displays no output
```

The following example shows how to activate and verify activation for the Cisco Wideband SIP located in slot 1, subslot 0. If there is output for the **show diag** command, the SIP has been powered on.

```
Router(config)# no hw-module subslot 1/0 shutdown
Router(config)#
00:44:28: %IPCOIR-5-CARD_DETECTED: Card type 2jacket-1 (0x415) in slot 1/0
00:44:28: %IPCOIR-5-CARD_LOADING: Loading card in slot 1/0
00:44:38: %C10K-5-LC_NOTICE: Slot[1/0] Line-card Image Downloaded...Booting...
00:45:11: %IPCOIR-5-CARD_DETECTED: Card type 2jacket-1 (0x415) in slot 1/0
00:45:11: %IPCOIR-2-CARD_UP_DOWN: Card in slot 1/0 is up. Notifying 2jacket-1 driver.
00:45:21: %C10K-5-LC_NOTICE: Slot[1/0] Line-card WB Chan 1/0/0:0 Disabled
00:45:21: %SPAWBCMTS-4-SFP_OK: Wideband-Cable 1/0/0, 1000BASE-SX SFP inserted in port 0
...
Router# show diag 1/0
Slot/Subslot 1/0:
    2jacket-1 card, 0 ports
    Card is full slot size
    Card is analyzed
    Card detected 0:3:16 ago
    Card uptime 0 days, 0 hours, 3 minutes, 17 seconds
...
```

Preparing for Online Removal of a SPA

The Cisco uBR10012 router supports OIR of a SPA independently of removing the SIP. This means that a SIP can remain installed in the router with one SPA remaining active, while you remove another SPA from one of the SIP bays. If you are not planning to immediately replace a SPA into the SIP, then be sure to install a blank filler plate in the bay. The SIP should always be fully installed with either functional SPAs or blank filler plates.

The interface configuration is retained (recalled) if a SIP or SPA is removed and then replaced with one of the same type.

If you are planning to remove a SIP along with its SPAs, then you do not need to follow the instructions in this section. To remove a SIP along with its SPAs, see the [“Preparing for Online Removal of a SIP” section on page 5-2](#).

Deactivating a SPA

Although graceful deactivation of a SPA is preferred using the **hw-module bay shutdown** command, the Cisco uBR10012 router does support removal of the SPA without deactivating it first. Before deactivating a SPA, ensure that the SIP is seated securely into the slot before pulling out the SPA itself.



Note

If you are preparing for an OIR of a Cisco Wideband SPA, there are no standard interfaces to be shut down prior to deactivation of the SPA. The **hw-module bay shutdown** command automatically stops traffic on the Gigabit Ethernet interfaces and deactivates them along with the SPA in preparation for OIR. In similar fashion, you do not need to independently restart any Gigabit Ethernet interfaces on a Cisco Wideband SPA after OIR of a Cisco Wideband SPA or a SIP.

To deactivate a SPA and all of its interfaces prior to removal of the SPA, use the following command in global configuration mode:

Command	Purpose
<p>Cisco IOS Releases 12.2(33)SCA and 12.3BC</p> <pre>Router(config)# hw-module bay slot/subslot/bay shutdown unpowered</pre>	<p>Deactivates the specified SPA, where:</p> <ul style="list-style-type: none"> <i>slot</i>—Specifies the slot where the SIP resides. On the Cisco uBR10012 router, slots 1 and 3 are used for a SIP. <i>subslot</i>—Specifies the subslot where the Cisco Wideband SIP resides (Cisco IOS Releases 12.2(33)SCA and 12.3BC). On the Cisco uBR10012 router, subslot 0 is always specified. <i>bay</i> —Specifies the SIP subslot where a SPA resides . Valid values are 0 (upper bay) and 1 (lower bay). unpowered—Shuts down the SPA and all of its interfaces, and leaves them in an administratively down state without power.
<p>Cisco IOS Release 12.2(33)SCB</p> <pre>Router(config)# hw-module bay slot/bay shutdown unpowered</pre>	

For more information about chassis slot and SIP bay numbering, refer to the [“Identifying the Location of the Cisco Wideband SIP and Cisco Wideband SPA”](#) section on page 4-2.

Reactivating a SPA



Note

You do not need to reactivate a SPA after an OIR of either the SIP or a SPA if you did not deactivate the SPA prior to removal. If the router is running, then the SPAs automatically start upon insertion into the SIP or with insertion of a SIP into the router.

If you deactivate a SPA using the **hw-module bay shutdown** global configuration command and need to reactivate it without performing an OIR, you must use the **no hw-module bay shutdown** global configuration command to reactivate the SPA and its interfaces.

To activate a SPA and its interfaces after the SPA has been deactivated, use the following command in global configuration mode:

Command	Purpose
Cisco IOS Releases 12.2(33)SCA and 12.3BC Router(config)# no hw-module bay slot/subslot/bay shutdown	Activates the SPA and its interfaces in the specified slot and subslot of the SIP, where: <ul style="list-style-type: none"> • <i>slot</i>—Specifies the slot where the SIP resides. On the Cisco uBR10012 router, slots 1 and 3 are used for a SIP. • <i>subslot</i>—Specifies the subslot where the Cisco Wideband SIP resides (Cisco IOS Releases 12.2(33)SCA and 12.3BC). On the Cisco uBR10012 router, subslot 0 is always specified. • <i>bay</i>—Specifies the SIP subslot where a SPA resides . Valid values are 0 (upper bay) and 1 (lower bay).
Cisco IOS Release 12.2(33)SCB Router(config)# no hw-module bay slot/bay shutdown	

For more information about chassis slot and SIP bay numbering, refer to the [“Identifying the Location of the Cisco Wideband SIP and Cisco Wideband SPA”](#) section on page 4-2

Verifying Deactivation and Activation of a SPA

To verify the deactivation of a SPA, enter the **show hw-module bay oir** command in privileged EXEC configuration mode, and look at the Operational Status of the SPA. The following example shows how to deactivate and verify deactivation for the Cisco Wideband SPA located in slot 1, subslot 0, bay 0. In the output of the **show hw-module bay oir** command, notice “admin down” in the Operational Status field.



Note

This example shows the syntax supported prior to Cisco IOS Release 12.2(33)SCB.

```
Router# configure terminal
Router(config)# hw-module bay 1/0/0 shutdown unpowered
%SPAWBCMTS-4-SFP_MISSING: Wideband-Cable 1/0/0, 1000BASE-SX SFP missing from port 0
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:1, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:2, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:3, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:4, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:5, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:6, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:7, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:8, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:9, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:10, changed state to down
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:11, changed state to down
...
```

```
Router# show hw-module bay 1/0/0 oir
```

```
Module           Model                Operational Status
-----
bay 1/0/0        SPA-24XDS-SFP        admin down
```

The following example shows how to activate and verify activation for the Cisco Wideband SPA located in slot 1, subslot 0, bay 0. In the output of the **show hw-module bay oir** command, notice “ok” in the Operational Status field.

```
Router# configure terminal
Router(config)# no hw-module bay 1/0/0 shutdown
%SPAWBCMTS-4-SFP_OK: Wideband-Cable 1/0/0, 1000BASE-SX SFP inserted in port 0
%SPAWBCMTS-4-SFP_LINK_OK: Wideband-Cable 1/0/0, port 0 link changed state to up
%SNMP-5-LINK_UP: LinkUp:Interface Wideband-Cable1/0/0:0 changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:0, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:1, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:2, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:3, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:4, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:5, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:6, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:7, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:8, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:9, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:10, changed state to up
%LINK-3-UPDOWN: Interface Wideband-Cable1/0/0:11, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Wideband-Cable1/0/0:0, changed state to up
...

Router# show hw-module bay 1/0/0 oir
```

Module	Model	Operational Status
bay 1/0/0	SPA-24XDS-SFP	ok

