



CHAPTER 2

Catalyst 6500 Series Switch SIPs and SSCs Overview

This chapter describes the SPA interface processors (SIPs) and SPA services cards (SSCs) that are supported on the Catalyst 6500 Series switch and contains the following sections:

- [SIP and SSC Support, page 2-1](#)
- [Identifying Slots and Subslots for SIPs, SSCs, and SPAs, page 2-2](#)
- [Cisco 7600 SIP-200 Overview, page 2-4](#)
- [Cisco 7600 SIP-400 Overview, page 2-8](#)
- [Cisco 7600-SIP-600 Overview, page 2-9](#)
- [Cisco 7600-SSC-400 Overview, page 2-11](#)

SIP and SSC Support

Table 2-1 lists the SIPs and SSCs that are supported on the Catalyst 6500 Series switch.



Note

The Description column indicates the aggregate bandwidth supported by the SIP across all subslots, not per SPA subslot.

Table 2-1 SIP Support

SIP	Product Number	Description	Maximum Number of SPAs	Minimum Cisco IOS Release
Cisco 7600 SIP-200	7600-SIP-200	622-Mbps SPA interface processor	4	12.2(18)SXE
Cisco 7600 SIP-400	7600-SIP-400	2.5-Gbps SPA interface processor	4	12.2(18)SXE
Cisco 7600 SIP-600	7600-SIP-600	1 x 10-Gbps SPA Interface Processor	1	12.2(18)SXF ¹
Cisco 7600 SSC-400	7600-SSC-400	SPA services carrier	2	12.2(18)SXE2

1. Support for the Cisco 7600 SIP-600 was removed in Cisco IOS Release 12.2(33)SXH and restored in Cisco IOS Release 12.2(33)SXI and later releases.

Checking For Hardware and Software Compatibility

To check the minimum software requirements of Cisco IOS software with the hardware installed on your router, Cisco maintains the Software Advisor tool on Cisco.com. This tool does not verify whether SIPs or SPAs within a system are compatible, but it does provide the minimum Cisco IOS requirements for individual hardware modules or components.

**Note**

Access to this tool is limited to users with Cisco.com login accounts.

To access Software Advisor, click **Login** at Cisco.com, type “Software Advisor” in the SEARCH box, and click **GO**. Click the link for the Software Advisor tool.

Choose a product family or enter a specific product number to search for the minimum supported software release needed for your hardware.

Identifying Slots and Subslots for SIPs, SSCs, and SPAs

This section describes how to specify the physical location of a SIP, SSC, or SPA on the Catalyst 6500 Series switch using the command-line interface (CLI) to configure or monitor those devices.

**Note**

For simplicity, any reference to “SIP” in this section also applies to the SSC.

Specifying the Slot Location for a SIP or SSC

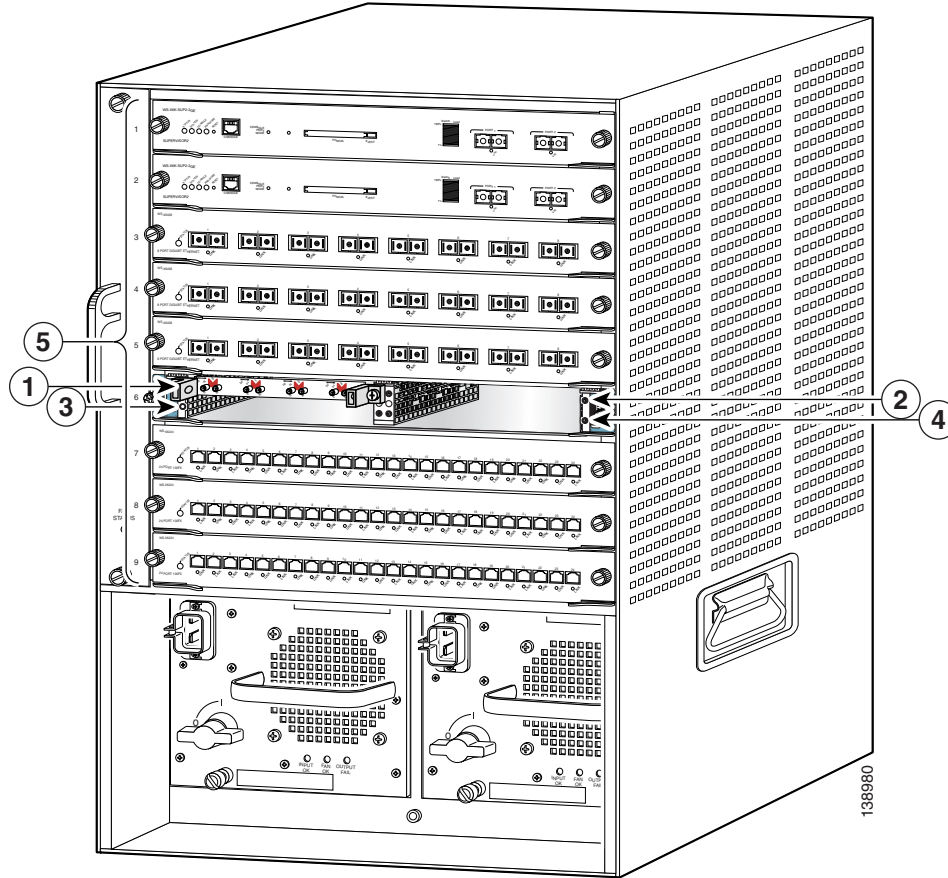
The Catalyst 6500 Series switch supports different chassis models, each of which supports a certain number of chassis slots.

**Note**

The Catalyst 6500 Series switch SIPs are not supported with a Supervisor Engine 1, Supervisor Engine 1A, Supervisor Engine 2, or Supervisor Engine 720-3A.

Figure 2-1 shows an example of a SIP installed in slot 6 on a Catalyst 6509 switch. The Catalyst 6509 switch has nine horizontally-oriented chassis slots, which are numbered 1 to 9 from right to left.

Figure 2-1 SIP and SPA Installed in a Catalyst 6509 Switch



1	SIP subslot 0	4	SIP subslot 3
2	SIP subslot 1	5	Chassis slots 1–9 (numbered from top to bottom)
3	SIP subslot 2		

Some commands allow you to display information about the SIP itself, such as the **show module**, **show sip-disk**, **show idprom module**, **show hw-module slot**, and **show diagbus** commands. These commands require you to specify the chassis slot location where the SIP that you want information about is installed.

For example, to display status and information about the SIP installed in slot 6 as shown in Figure 2-1, enter the following command:

```
Router# show module 6
```

For more information about SIP commands, refer to the [Cisco IOS Software Releases 12.2SX Command References](#).

Specifying the SIP or SSC Subslot Location for a SPA

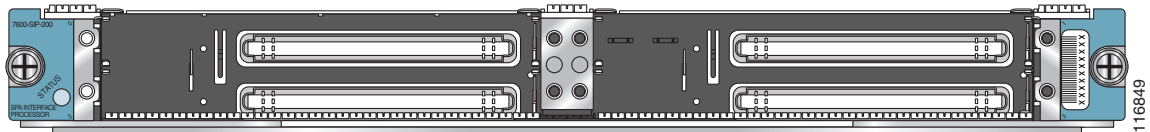
SIP subslots begin their numbering with 0 and have a horizontal or vertical orientation depending on the orientation of the SIP in the router chassis slot, as shown in the “SIP, SSC, and SPA Product Overview” chapter of the *Catalyst 6500 Series Switch SIP, SSC, and SPA Software Configuration Guide*.

Figure 2-1 shows an example of a Cisco 7600 SIP-200 installed with a vertical orientation on a Cisco 7609 router. The Cisco 7600 SIP-200 supports four subslots for the installation of SPAs. In this example, the subslot locations are oriented vertically as follows:

- SIP subslot 0—Top-right subslot
- SIP subslot 1—Bottom-right subslot
- SIP subslot 2—Top-left subslot
- SIP subslot 3—Bottom-left subslot

Figure 2-2 shows the faceplate for the Cisco 7600 SIP-200 in a horizontal orientation.

Figure 2-2 Cisco 7600 SIP-200 Faceplate



In this view, the subslot locations in a horizontal orientation are as follows:

- SIP subslot 0—Top-left subslot
- SIP subslot 1—Top-right subslot
- SIP subslot 2—Bottom-left subslot
- SIP subslot 3—Bottom-right subslot

The SIP subslot numbering is indicated by a small numeric label beside the subslot on the faceplate.

Some commands, such as the **show idprom module** and **show hw-module subslot** commands, allow you to display information about the SPA itself. These commands require you to specify both the physical location of the SIP and SPA in the format *slot/subslot*.

- *slot*—Specifies the chassis slot number in the Catalyst 6500 Series switch where the SIP is installed.
- *subslot*—Specifies the secondary slot of the SIP where the SPA is installed.

For example, to display the operational status for the SPA installed in the first subslot of the SIP in chassis slot 6 shown in Figure 2-1, enter the following command:

```
Router# show hw-module subslot 6/0 oir
```

For more information about SIP commands, refer to the *Cisco IOS Software Releases 12.2SX Command References*.

Cisco 7600 SIP-200 Overview

The following sections describe the 7600-SIP-200:

- [Cisco 7600 SIP-200 Processor, page 2-5](#)

- [Cisco 7600 SIP-200 LEDs, page 2-5](#)
- [Cisco 7600 SIP-200 Physical Specifications, page 2-6](#)
- [Cisco 7600 SIP-200 Memory Options, page 2-6](#)
- [Cisco 7600 SIP-200 Default DIP Switch Settings, page 2-7](#)

Cisco 7600 SIP-200 Processor

Table 2-2 describes the processor on a 7600-SIP-200.

Table 2-2 7600-SIP-200 Processor

Type	Speed	Description
CPU	800 megahertz (MHz) internal operating frequency	Broadcom 1125 MIPS-based design

Cisco 7600 SIP-200 LEDs

The 7600-SIP-200 has one LED as shown in [Figure 2-3](#).

Figure 2-3 7600-SIP-200 Faceplate

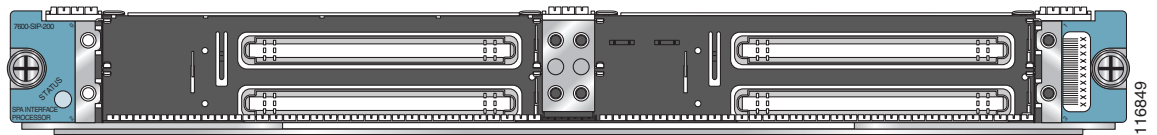


Table 2-3 describes the 7600-SIP-200 LED.

Table 2-3 7600-SIP-200 LED

LED Label	Color	State	Meaning
STATUS	Red	On	The 7600-SIP-200 has encountered an error.
	Green	On	The 7600-SIP-200 is online.
	Yellow	On	The 7600-SIP-200 is loading.
	Off	Off	The 7600-SIP-200 is powered off.

Cisco 7600 SIP-200 Physical Specifications

Table 2-4 describes the 7600-SIP-200 physical specifications.

Table 2-4 7600-SIP-200 Physical Specifications

Description	Specifications
Physical dimensions	The SIP occupies one module slot and can be operated in Cisco 7600 series routers.
Shipping weight	8 lb (3.64 kg)
Operating temperature	32 to 104°F (0 to 40°C)
Relative humidity	10 to 90 percent, noncondensing
Storage temperature	-4 to 149°F (-20 to 65°C)

Cisco 7600 SIP-200 Memory Options

Table 2-5 lists the memory available for the 7600-SIP-200.

Table 2-5 SIP Memory Options

SIP	Memory Options
7600-SIP-200	512 MB and 1 GB (2 x 256-MB or 2 x 512-MB DIMMs)



Note

The SIP DIMMs must be a matched set. A warning message will appear on the console if the DIMMs on the SIP are different sizes. If the sizes are not the same, the following message will appear at bootup/OIR:

```
C7600_SIP200-3-MEM_MODULE_MISMATCH: Memory modules are not identical
```

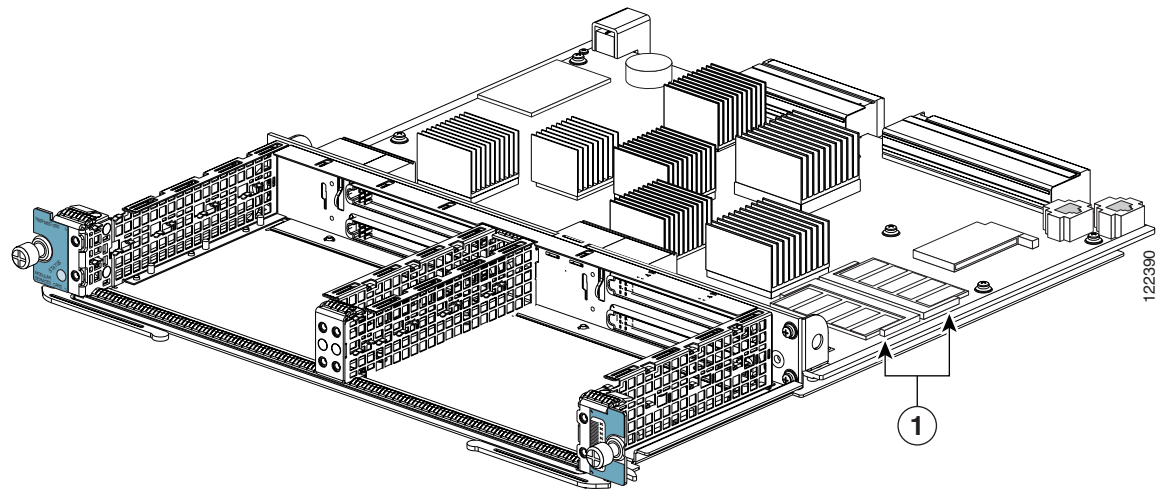
Cisco 7600 SIP-200 Memory Installation and Removal

Figure 2-4 shows the location of the DIMMs on a 7600-SIP-200.

To install a DIMM, slide the DIMM into the slot. The retaining clips will secure the DIMM in place.

To remove a DIMM, separate the two retaining clips and pull the DIMM from the slot.

Figure 2-4 SIP DIMM Location



1	DIMMs
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Cisco 7600 SIP-200 Default DIP Switch Settings

If SW3 and SW10 switches are present on the board, make sure that they are set to the default settings, as shown in [Table 2-6](#). See [Figure 2-5](#) for the location of the switches.

The switches are set to their defaults during manufacture. However, the switch settings may get inadvertently changed during handling.



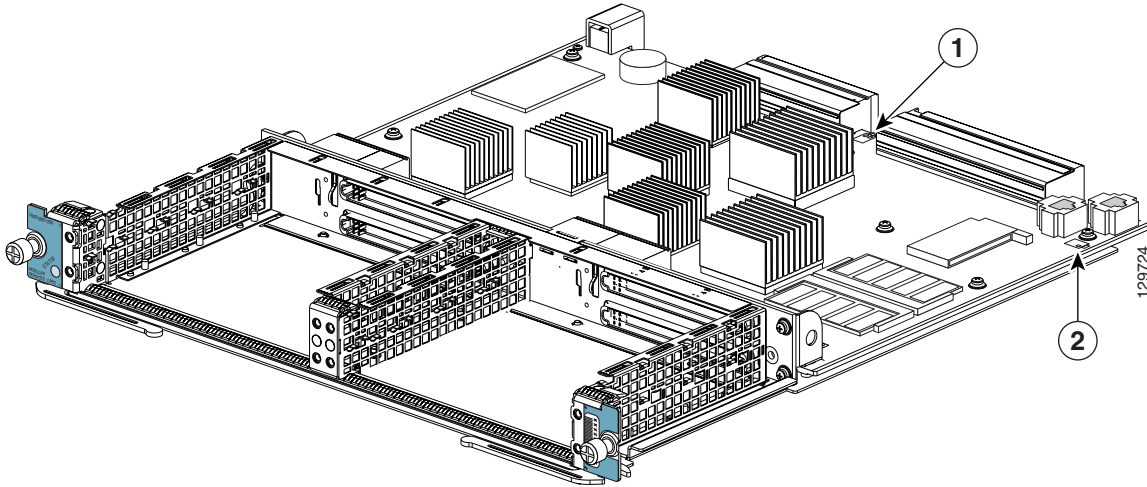
Note

If the switches are not set to their default settings, there may be momentary packet drops during OIR of the board.

Table 2-6 7600-SIP-200 Default DIP Settings

Switch	Default Position
SW3	Up
SW10	Down

Figure 2-5 7600-SIP-200 DIP Switch Locations



1 SW3

2 SW10

Cisco 7600 SIP-400 Overview

The following sections describe the 7600-SIP-400:

- [Cisco 7600 SIP-400 Processor, page 2-8](#)
- [Cisco 7600 SIP-400 LEDs, page 2-9](#)
- [Cisco 7600 SIP-400 Physical Specifications, page 2-9](#)

Cisco 7600 SIP-400 Processor

[Table 2-7](#) describes the processor on a 7600-SIP-400.

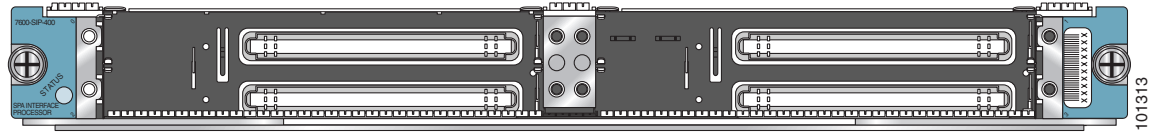
Table 2-7 7600-SIP-400 Processor

Type	Speed	Description
CPU	400 megahertz (MHz) internal operating frequency	Broadcom 1125 MIPS-based design

Cisco 7600 SIP-400 LEDs

The 7600-SIP-400 has one LED as shown in [Figure 2-6](#).

Figure 2-6 7600-SIP-400 Faceplate



[Table 2-8](#) describes the 7600-SIP-400 LED.

Table 2-8 7600-SIP-400 LED

LED Label	Color	State	Meaning
STATUS	Red	On	The 7600-SIP-400 has encountered an error.
	Green	On	The 7600-SIP-400 is online.
	Yellow	On	The 7600-SIP-400 is loading.
	Off	Off	The 7600-SIP-400 is powered off.

Cisco 7600 SIP-400 Physical Specifications

[Table 2-9](#) describes the 7600-SIP-400 physical specifications.

Table 2-9 7600-SIP-400 Physical Specifications

Description	Specifications
Physical dimensions	The SIP occupies one module slot and can be operated in Cisco 7600 series routers.
Shipping weight	8 lb (3.64 kg)
Operating temperature	32 to 104°F (0 to 40°C)
Relative humidity	10 to 90 percent, noncondensing
Storage temperature	-4 to 149°F (-20 to 65°C)

Cisco 7600-SIP-600 Overview



Note

Support for the Cisco 7600 SIP-600 was removed in Cisco IOS Release 12.2(33)SXH and restored in Cisco IOS Release 12.2(33)SXI and later releases.

The following sections describe the 7600-SIP-600:

- [7600-SIP-600 Processor](#), page 2-10
- [7600-SIP-600 LEDs](#), page 2-10

- [7600-SIP-600 Physical Specifications, page 2-10](#)

7600-SIP-600 Processor

Table 2-13 describes the processor on a 7600-SIP-600.

Table 2-10 7600-SIP-600 Processor

Type	Speed	Description
CPU	400 megahertz (MHz) internal operating frequency	Broadcom 1125 MIPS-based design

7600-SIP-600 LEDs

The 7600-SIP-600 has one LED as shown in [Figure 2-7](#).

Figure 2-7 7600-SIP-600 Faceplate

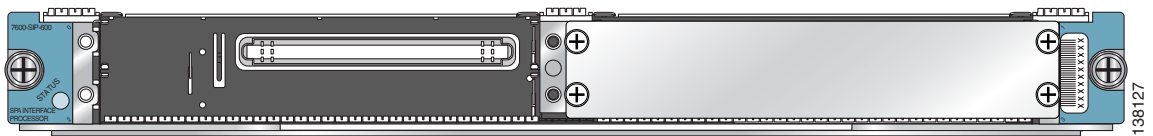


Table 2-11 describes the 7600-SIP-600 LED.

Table 2-11 7600-SIP-600 LED

LED Label	Color	State	Meaning
STATUS	Red	On	The 7600-SIP-600 has encountered an error.
	Green	On	The 7600-SIP-600 is online.
	Yellow	On	The 7600-SIP-600 is loading.
	—	Off	The 7600-SIP-600 is powered off.

7600-SIP-600 Physical Specifications

Table 2-12 describes the 7600-SIP-600 physical specifications.

Table 2-12 7600-SIP-600 Physical Specifications

Description	Specifications
Physical dimensions	The SIP occupies one module slot and can be operated in Cisco 7600 series routers. The Cisco 7600-SIP-600 supports installation of only a single SPA in the first subslot.
Shipping weight	8 lb (3.64 kg)
Operating temperature	32 to 104°F (0 to 40°C)

Table 2-12 7600-SIP-600 Physical Specifications (continued)

Description	Specifications
Relative humidity	10 to 90 percent, noncondensing
Storage temperature	-4 to 149°F (-20 to 65°C)

Cisco 7600-SSC-400 Overview

The following sections describe the SPA services carrier, 7600-SSC-400:

- [Cisco 7600 SSC-400 Processor, page 2-11](#)
- [Cisco 7600 SSC-400 LED, page 2-11](#)
- [Cisco 7600 SSC-400 Physical Specifications, page 2-12](#)

Cisco 7600 SSC-400 Processor

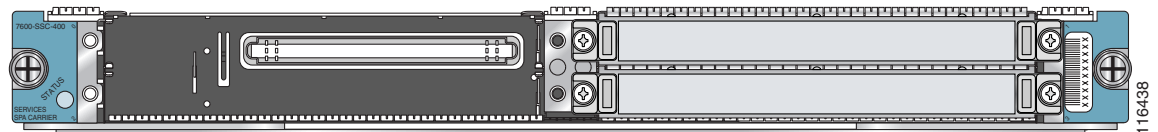
[Table 2-13](#) describes the processor on a 7600-SSC-400.

Table 2-13 7600-SSC-400 Processor

Type	Speed	Description
CPU	400 megahertz (MHz) internal operating frequency	Broadcom 1125 MIPS-based design

Cisco 7600 SSC-400 LED

The 7600-SSC-400 has one LED as shown in [Figure 2-8](#).

Figure 2-8 7600-SSC-400 Faceplate

[Table 2-14](#) describes the 7600-SSC-400 LED.

Table 2-14 7600-SSC-400 LED

LED Label	Color	State	Meaning
STATUS	Red	On	The 7600-SSC-400 has encountered an error.
	Green	On	The 7600-SSC-400 is online.
	Yellow	On	The 7600-SSC-400 is loading.
	Off	Off	The 7600-SSC-400 is powered off.

Cisco 7600 SSC-400 Physical Specifications

Table 2-15 describes the 7600-SSC-400 physical specifications.

Table 2-15 7600-SSC-400 Physical Specifications

Description	Specifications
Physical dimensions	The Cisco 7600 SSC-400 occupies one module slot and can be operated in Cisco 7600 series routers.
Shipping weight	8 lb (3.64 kg)
Operating temperature	32 to 104°F (0 to 40°C)
Relative humidity	10 to 90 percent, noncondensing
Storage temperature	−4 to 149°F (−20 to 65°C)