Catalyst 6500 Series Switch SSL Services Module Installation and Verification Note

Product number: WS-SVC-SSL-1

This document provides installation procedures for the Catalyst 6500 series SSL Services Module and contains these sections:

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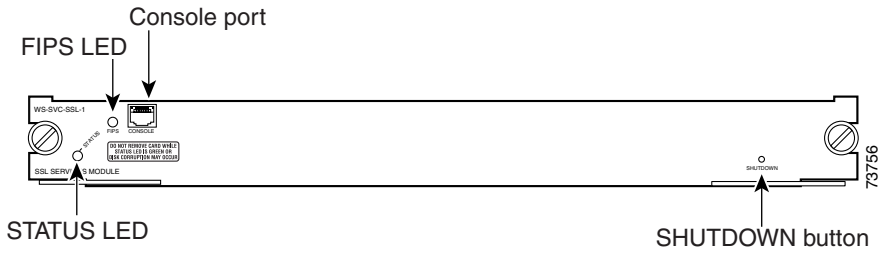
Front Panel Description

The SSL Services Module front panel (see Figure 1) includes a STATUS LED, a Federal Information Processing Standards (FIPS) LED, a SHUTDOWN button, and a console port.

Figure 1 SSL Services Module Front Panel



These sections describe the SSL Services Module front panel:

- Console Port, page 2
- STATUS LED, page 2
- FIPS LED, page 3
- SHUTDOWN Button, page 3

Console Port

The console port is used for the inital configuration of the SSL Services Module. See the *Catalyst 6500 Series SSL Services Module Software Configuration Note* for more information on making the inital configuration.

Note The initial SSL Services Module configuration must be made through a direct connection to the console port. After the initial configurations, you can make an SSH or Telnet connection to the module to further configure the module.

STATUS LED

The STATUS LED indicates the operating states of the module. Table 1 describes the LED operation.

Table 1 STATUS LED Description

Color	State	Description
Green	On	All diagnostic tests pass. The module is receiving power.
Red	On	A diagnostic other than an individual port test failed.

Table 1 STATUS LED Description (Continued)

Color	State	Description
Orange	On	Indicates one of three conditions: • The module is running through its boot and self-test diagnostic sequence. • The module is disabled. • The module is in the shutdown state.
	Off	The module power is off.

FIPS LED

The FIPS LED currently is not used.

SHUTDOWN Button

Caution Do not remove the SSL Services Module from the switch until the module has shut down completely and the STATUS LED is orange. You can damage the module if you remove it from the switch before it completely shuts down.

To avoid corrupting the SSL Services Module hard disk, you must correctly shut down the SSL Services Module before you remove it from the chassis or disconnect the power. You can shut down the module by entering the **hw-mod module** *mod* **shutdown** command in privileged mode from the router CLI.

If the SSL Services Module fails to respond to this command, shut down the module by pressing the SHUTDOWN button on the front panel.

The shutdown procedure may require several minutes. The STATUS LED turns off when the module shuts down.

System Requirements

Before you install the SSL Services Module into the Catalyst 6500 series switch, refer to the *Release Notes for Catalyst 6500 Series SSL Services Module* to make sure that the switch meets the hardware and software requirements.

Safety Overview

Safety warnings appear throughout this publication in procedures that, if performed incorrectly, may harm you. A warning symbol precedes each warning statement.

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

Warning **Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.** Statement 1034

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Preparing to Install the SSL Services Module

Before installing the SSL Services Module, make sure that the following items are available:

- Catalyst 6500 series switch chassis
- Management station that is available through a console connection to perform configuration tasks

Required Tools

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

These tools are required to install the SSL Services Module into the Catalyst 6500 series switch:

- Flat-blade screwdriver
- Wrist strap or other grounding device
- Antistatic mat or antistatic foam

Installing the SSL Services Module

Note Before installing the SSL Services Module, you must install the Catalyst 6500 series switch chassis and at least one supervisor engine. For information on installing the switch chassis, refer to the *Catalyst 6500 Series Switch Installation Guide*.

This section describes how to install the SSL Services Module into the Catalyst 6500 series switch.

Note All modules, including the supervisor engine (if you have redundant supervisor engines), support hot swapping. You can add, replace, or remove modules without interrupting the system power or causing other software or interfaces to shut down. For more information about hot-swapping modules, refer to the *Catalyst 6500 Series Switch Module Installation Guide*.

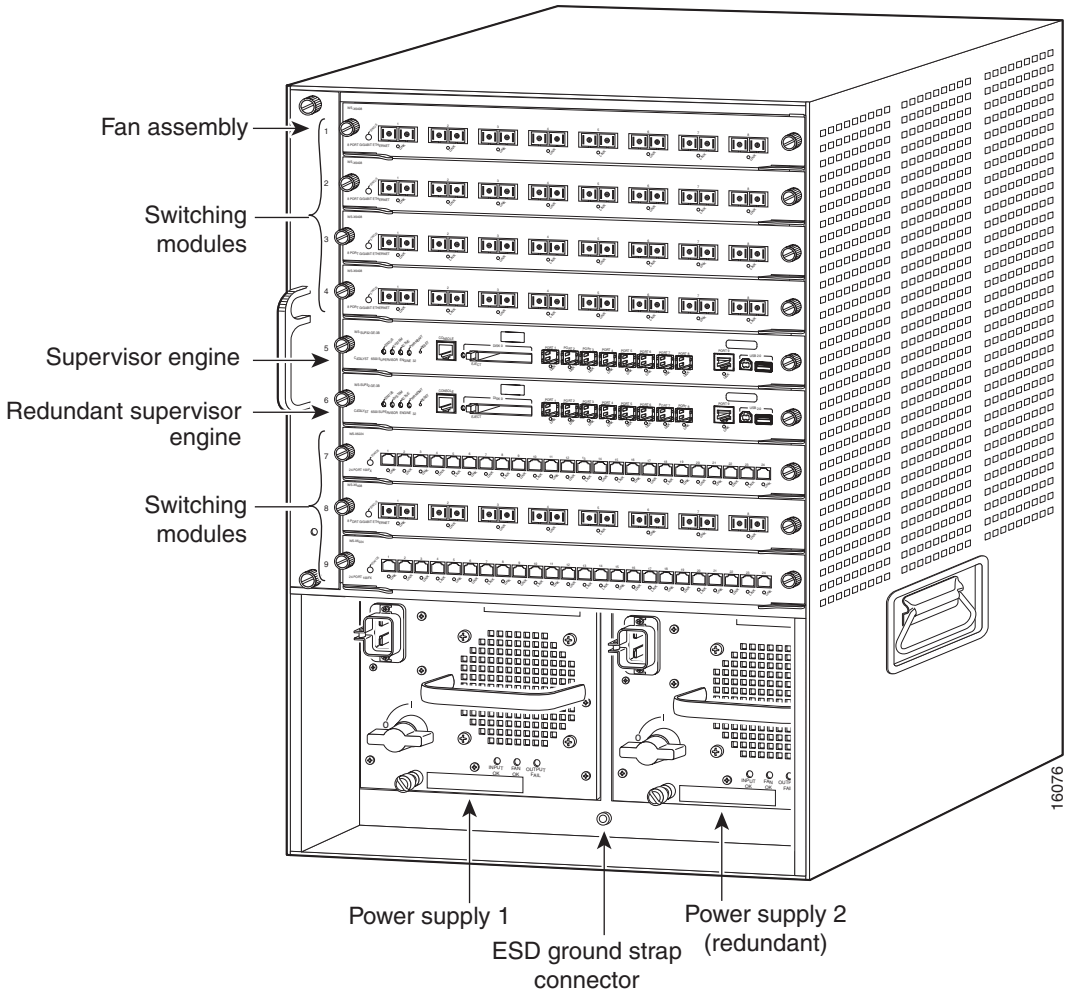
Warning **During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.**

To install the SSL Services Module into the Catalyst 6500 series switch, perform these steps:

Step 1 Make sure that you take the necessary precautions to prevent ESD damage.

Step 2 Choose a slot for the SSL Services Module. See Figure 2 for the slot numbers on a Catalyst 6500 series switch.

Figure 2 Slot Numbers on Catalyst 6500 Series Switches



Step 3 Check that there is enough clearance to accommodate any interface equipment that you will be connecting directly to the supervisor engine or switching module ports.

Note If possible, place switching modules between the empty slots that contain only switching-module filler plates (Cisco part number 800-00292-01).

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029

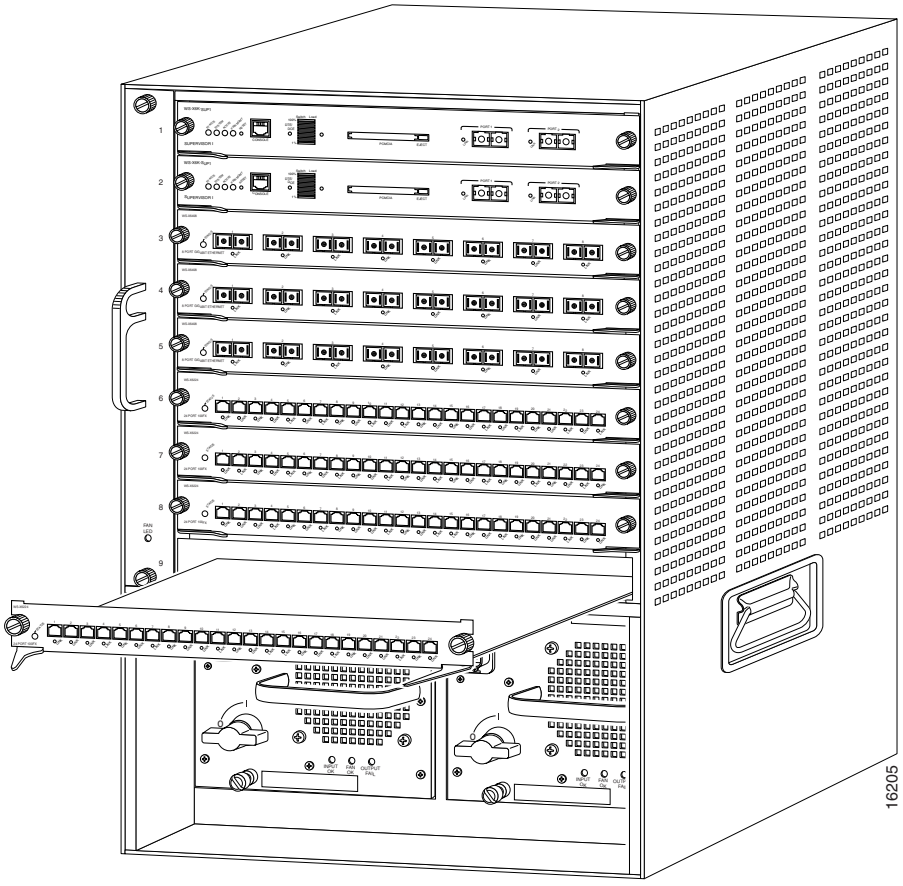
Step 4 Loosen the captive installation screws that secure the switching module filler plate (or an existing switching module) to the desired slot.

Step 5 Remove the switching module filler plate (or an existing switching module).

Step 6 Hold the handle of the SSL Services Module with one hand, and place your other hand under the carrier support. Do not touch the printed circuit boards or connector pins.

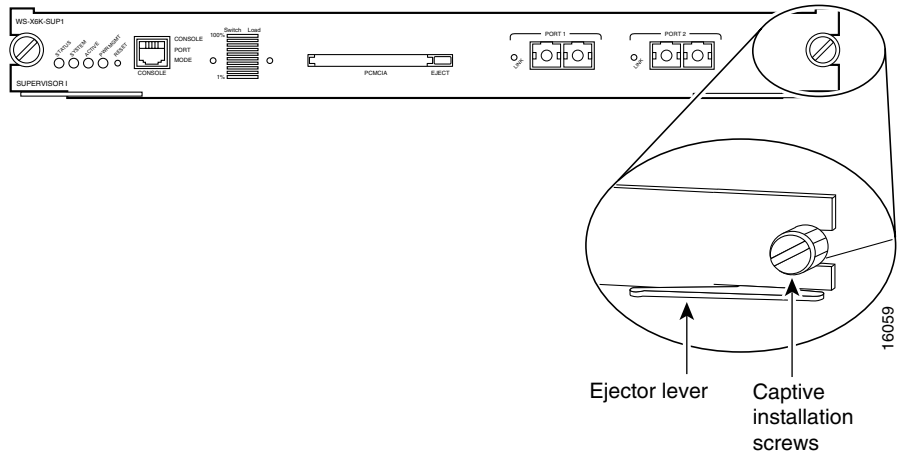
Step 7 Place the SSL Services Module in the slot. Align the notch on the sides of the switching module carrier with the groove in the slot. (See Figure 3.)

Figure 3 Installing Modules in the Catalyst 6500 Series Switch



Step 8 Keep the SSL Services Module at a 90-degree angle to the backplane and carefully slide the SSL Services Module into the slot until the switching module faceplate contacts the ejector levers. (See Figure 4.)

Figure 4 Ejector Levers and Captive Installation Screws



Step 9 Using the thumb and forefinger of each hand, simultaneously push in the left and right levers to fully seat the SSL Services Module in the backplane connector.

Caution Always use the ejector levers when installing or removing the SSL Services Module. A module that is partially seated in the backplane will cause the system to halt and subsequently crash.

Note If you perform a hot swap, the console displays the message "Module *n* has been inserted." This message does not appear if you are connected to the Catalyst 6500 series switch through a Telnet session.

Step 10 Use a screwdriver to tighten the captive installation screws on the left and right ends of the SSL Services Module.

This completes the SSL Services Module installation procedure.

Verifying the Installation

When you install the SSL Services Module into the Catalyst 6500 series switch, the module goes through a boot sequence that requires no intervention. At the successful conclusion of the boot sequence, the green STATUS LED will light and remain on. If the STATUS LED is not green, or is a different color, see Table 1 on page 2 to determine the module's status.

Removing the SSL Services Module

This section describes how to remove the SSL Services Module from the Catalyst 6500 series switch.

Caution Do not remove the SSL Services Module from the switch until the module has shut down completely and the STATUS LED is orange or off. You can damage the module if you remove it from the switch before it completely shuts down.

Warning **During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.**

To remove the SSL Services Module, perform these steps:

Step 1 Shut down the module by one of these methods:

- In privileged mode from the router prompt, enter the **hw-mod module** *mod* **shutdown** command.

  Note If you enter this command to shut down the module, you will have to enter the following commands in config mode to restart (power down, and then power up) the module:

  ```
  Router# no power enable module mod
  Router# power enable module mod
  ```

- If the module does not respond to any commands, press the SHUTDOWN button located on the front panel of the module.

Note Shutdown may require several minutes.

Step 2 Verify that the SSL Services Module shuts down. Do not remove the module from the switch until the STATUS LED is off or orange.

Step 3 Use a screwdriver to loosen the captive installation screws at the left and right sides of the module.

Step 4 Grasp the left and right ejector levers. Simultaneously, pull the left lever to the left and the right lever to the right to release the module from the backplane connector.

Step 5 As you pull the module out of the slot, place one hand under the carrier to support it. Avoid touching the module itself.

Step 6 Carefully pull the module straight out of the slot, keeping one hand under the carrier to guide it. Keep the module at a 90-degree orientation to the backplane (horizontal to the floor).

Step 7 Place the removed module on an antistatic mat or antistatic foam.

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029

Step 8 If the slot is to remain empty, install a module filler plate to keep dust out of the chassis and to maintain proper airflow through the module compartment.

Related Documentation

For more detailed installation and configuration information, refer to the following publications:

- *Release Notes for Catalyst 6500 Series SSL Services Module*
- *Catalyst 6500 Series SSL Services Module Software Configuration Note*
- *Catalyst 6500 Series SSL Services Module Command Reference*
- *Catalyst 6500 Series SSL Services Module System Messages*
- *Catalyst 6500 Series Switch Installation Guide*
- *Catalyst 6500 Series Switch Module Installation Guide*
- *Catalyst 6500 Series Switch Software Configuration Guide*
- *Catalyst 6500 Series Switch Command Reference*
- *Catalyst 6500 Series Switch IOS Software Configuration Guide*
- *Catalyst 6500 Series Switch IOS Command Reference*
- *Regulatory Compliance and Safety Information for the Catalyst 6500 Series Switches*
- *Site Preparation and Safety Guide*

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

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170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

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Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

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Technical Assistance Center

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We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration. There is little or no impact to your business operations.
- Priority level 3 (P3)—Operational performance of the network is impaired, but most business operations remain functional. You and Cisco are willing to commit resources during normal business hours to restore service to satisfactory levels.
- Priority level 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively impacted by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.
- Priority level 1 (P1)—An existing network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Cisco TAC Website

The Cisco TAC website provides online documents and tools to help troubleshoot and resolve technical issues with Cisco products and technologies. To access the Cisco TAC website, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://tools.cisco.com/RPF/register/register.do

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

https://tools.cisco.com/RPF/register/register.do

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation and attach any necessary files.

Cisco TAC Escalation Center

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To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

Before calling, please check with your network operations center to determine the Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

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- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

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- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide,* and the *Internetworking Design Guide.* For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access *Packet* magazine at this URL:

  http://www.cisco.com/go/packet

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives.

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/web/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/web/learning/index.html

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.