Catalyst 6500 Series Switch Content Switching Module Installation Note

Product Number: WS-X6066-SLB-APC

This publication describes how to install the Content Switching Module (CSM) in the Catalyst 6500 series switches including the software and hardware requirements.

Contents

This publication contains these sections:

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Safety Overview

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

Waarschuwing **BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES

Varoitus **TÄRKEITÄ TURVALLISUUSOHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

SÄILYTÄ NÄMÄ OHJEET

Attention **IMPORTANTES INFORMATIONS DE SÉCURITÉ**

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS

Warnung **WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

Avvertenza **IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI

Advarsel **VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia! **INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES

Varning! **VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

SPARA DESSA ANVISNINGAR

FONTOS BIZTONSÁGI ELOÍRÁSOK

Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение **ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告 重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告 安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

Front Panel Description

This section describes the physical attributes of the Content Switching Module.

Figure 1 shows the CSM front panel.

Figure 1 Content Switching Module Front Panel

Note The RJ-45 connector is covered by a removable plate.

Status LED

When the CSM powers up, it initializes various hardware components and communicates with the supervisor engine. The Status LED indicates the supervisor engine operations and the initialization results. During the normal initialization sequence, the status LED changes from off to red, orange, and green.

Note For more information on the supervisor engine LEDs, refer to the *Catalyst 6500 Series Switch Module Installation Guide*.

Table 1 describes the Status LED operation.

Table 1 Content Switching Module Status LED

Color	Description
Off	• The module is waiting for the supervisor engine to provide power. • The module is not online. • The module is not receiving power, which could be caused by the following: – Power is not available to the CSM. – Module temperature is over the limit[1].
Red	• The module is released from reset by the supervisor engine and is booting. • If the boot code fails to run, the LED stays red after power up.

Table 1 Content Switching Module Status LED (continued)

Color	Description
Orange	• The module is initializing hardware or communicating with the supervisor engine. • A fault occurred during the initialization sequence. • The module has failed to download its Field Programmable Gate Arrays (FPGAs) on power up but continues with the remainder of the initialization sequence and provides the module online status from the supervisor engine. • The module has not received module online status from the supervisor engine. This problem could be caused by the supervisor engine detecting a failure in an external loopback test that it issued to the CSM.
Green	• The module is operational; the supervisor engine has provided module online status.
Green to orange	• The module is disabled through the supervisor engine CLI [2] using the **set module disable** *mod* command.

1. Enter the **show environment temperature** *mod* command to display the temperature of each of four sensors on the CSM.
2. CLI = command-line interface.

RJ-45 Connector

The RJ-45 connector, which is covered by a removable plate, is used to connect a management station device or a test device. This connector is used by field engineers to perform testing and to obtain dump information.

Environmental and System Requirements

This section describes the environmental and system requirements.

Environmental Requirements

Table 2 lists the environmental requirements for the CSM.

Table 2 CSM Environmental Requirements

Item	Specification
Temperature, ambient operating	0° to 40°C (32° to 104°F)
Temperature, ambient nonoperating	–40° to 70°C (–40° to 158°F)
Humidity (RH), ambient (noncondensing) operating	10% to 90%
Nonoperating relative humidity (noncondensing)	5% to 95%

System Requirements

Before you install the CSM into the Catalyst 6500 series switch, make sure that the switch meets the hardware and software requirements listed in this section.

Caution You can use the Multilayer Switch Feature Card (MSFC), which is internal to the Catalyst 6500 series switch, to route traffic on either the client side or the server side of the CSM, but not both simultaneously (unless policy-based routing is used).

Memory Requirements

The CSM memory is not configurable.

Supported Hardware

Before you can use the CSM, you must have a Supervisor Engine 1A with an MSFC, a Policy Feature Card (PFC) or a Supervisor Engine 2 with an MSFC, and any module that has ports to connect server and client networks.

Caution The WS-X6066-SLB-APC CSM is not fabric enabled, but the module can operate in a fabric-enabled chassis like any other nonfabric module.

Table 3 lists the supported hardware and software for the CSM.

Table 3 CSM Supported Hardware and Software

Product Number	Product Description	Minimum Software Version	Recommended Software Version	Cisco IOS Release
Content Switching Module				
WS-X6066-SLB-APC with Supervisor Engine 2	Content Switching Module	3.2(1)	3.2(1) or higher	12.1(13)E
Console Cable				
72-876-01	Console Cable	Not applicable	Not applicable	Not applicable
Accessories Kit				
800-05097-01	Accessories kit (contains the Console Cable)	Not applicable	Not applicable	Not applicable

Power Supply

You can place the CSM in any slot in the Catalyst 6500 series chassis except for the slots that are occupied by the supervisor engine and the standby supervisor engine. The CSM operates on power that is supplied by the chassis.

Software Requirements

Caution The CSM cannot be used in a Catalyst 6500 series switch with the Catalyst operating system prior to the 7.5 release.

Table 4 lists the software versions for the CSM:

Table 4 CSM Software Requirements

CSM Software Release	Software Part Number	Hardware	Catalyst Operating System	Cisco IOS Release
3.2(1)	SC6K-3.2-CSM	Supervisor Engine 1A with MSFC and PFC or Supervisor Engine 2 Module with MSFC 2	7.5	12.1(13)E

Software Compatibility

Beginning with software release 2.1(1), backward compatibility is not allowed.

If the CSM software image version that you are using is more recent than the Cisco IOS software that is specified for that release in Table 4, you will not have all the CSM features available to you. For example, if you are running CSM software release 3.2(1) with Cisco IOS software release 12.1(11b)E, the Cisco IOS software will not have the new CLI commands that support the CSM 3.2(1) features.

If the CSM software image version that you are using is older than the Cisco IOS software that is specified for that release in Table 4, the older CSM application software will not understand the newer Cisco IOS commands. The CSM software will still run, but the new Cisco IOS commands will have no effect.

Installing the CSM

These sections describe how to install the CSM:

- Preparing to Install the CSM, page 9
- Required Tools, page 9
- Installing and Removing the Module, page 9

Caution The WS-X6066-SLB-APC Content Switching Module is not fabric enabled.

Preparing to Install the CSM

Before installing the CSM, make sure that the following items are available:

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

Required Tools

These tools are required to install the module in the Catalyst 6500 series switches:

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

Whenever you handle the module, always use a wrist strap or other grounding device to prevent electrostatic discharge (ESD).

Installing and Removing the Module

Caution 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.

All Catalyst 6500 series switches support hot swapping, which allows you to install, remove, replace, and rearrange modules without turning off the system power. For more information on removing the module from a switch, see the "Removing the Module" section on page 10.

When the system detects that a module has been installed or removed, the system automatically runs diagnostic and discovery routines, acknowledges the presence or absence of the module, and resumes system operation.

These sections describe how to install and verify the operation of the CSM in the Catalyst 6500 series switches:

Slot Assignments

The Catalyst 6006 and 6506 switch chassis have 6 slots, the Catalyst 6009 and 6509 switch chassis have 9 slots, and the Catalyst 6513 switch chassis has 13 slots.

Note The Catalyst 6509-NEB switch has vertical slots, which are numbered 1 to 9 from right to left. Install the modules with the component side facing to the right.

- Slot 1 is reserved for the supervisor engine.
- Slot 2 can be used for a redundant supervisor engine if the supervisor engine in slot 1 fails.
- If a redundant supervisor engine is not required, slots 2 through 6 on the 6-slot chassis, slots 2 through 9 on the 9-slot chassis, and slots 2 through 13 on the 13-slot chassis are available for switching modules, such as the CSM.
- The empty slots require filler plates, which are blank switching-module carriers that maintain consistent airflow through the switch chassis.

Removing the Module

This section describes how to remove an existing module from a Catalyst 6500 series switch chassis slot.

Caution 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.

Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**

To remove a supervisor engine or module from the chassis, perform these steps:

Step 1 Disconnect any network interface cables that are attached to the supervisor engine or module.

Step 2 Verify that the captive installation screws on all of the modules in the chassis are tight.

This step assures that the space that is created by the removed module is maintained.

Note If the captive installation screws are loose, the electromagnetic interference (EMI) gaskets on the installed modules will push the modules toward the open slot, reducing the opening size and making it difficult to install the replacement module.

Step 3 Loosen the two captive installation screws on the supervisor engine or module.

Step 4 Depending on the orientation of the slots in the chassis (horizontal or vertical), perform one of the following set of substeps:

Horizontal slots

a. Place your thumbs on the left and right ejector levers, and simultaneously rotate the levers outward to unseat the module from the backplane connector.

b. Grasp the front edge of the module, and slide the module part of the way out of the slot. Place your other hand under the module to support the weight of the module. Do not touch the module circuitry.

Vertical slots

a. Place your thumbs on the ejector levers that are located at the top and bottom of the module, and simultaneously rotate the levers outward to unseat the module from the backplane connector.

b. Grasp the edges of the module, and slide the module straight out of the slot. Do not touch the module circuitry.

Step 5 Place the module on an antistatic mat or antistatic foam, or immediately reinstall it in another slot.

Step 6 If the slot from which you removed the module is to remain empty, install a module filler plate to keep dust out of the chassis and to maintain proper airflow through the chassis.

Warning **Blank faceplates (filler 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 and faceplates are in place.**

Installing a Module

This section describes how to install a supervisor engine or module in the Catalyst 6500 series switches.

Caution To prevent ESD damage, handle modules by the carrier edges only.

Caution 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.

Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**

To install a supervisor engine or module in the chassis, perform these steps:

Step 1 Choose a slot for the supervisor engine or module.

Step 2 Verify that there is enough clearance to accommodate any interface equipment that you will connect directly to the supervisor engine or module ports. If possible, place modules between empty slots that contain only module filler plates.

Step 3 Verify that the captive installation screws are tightened on all modules installed in the chassis.

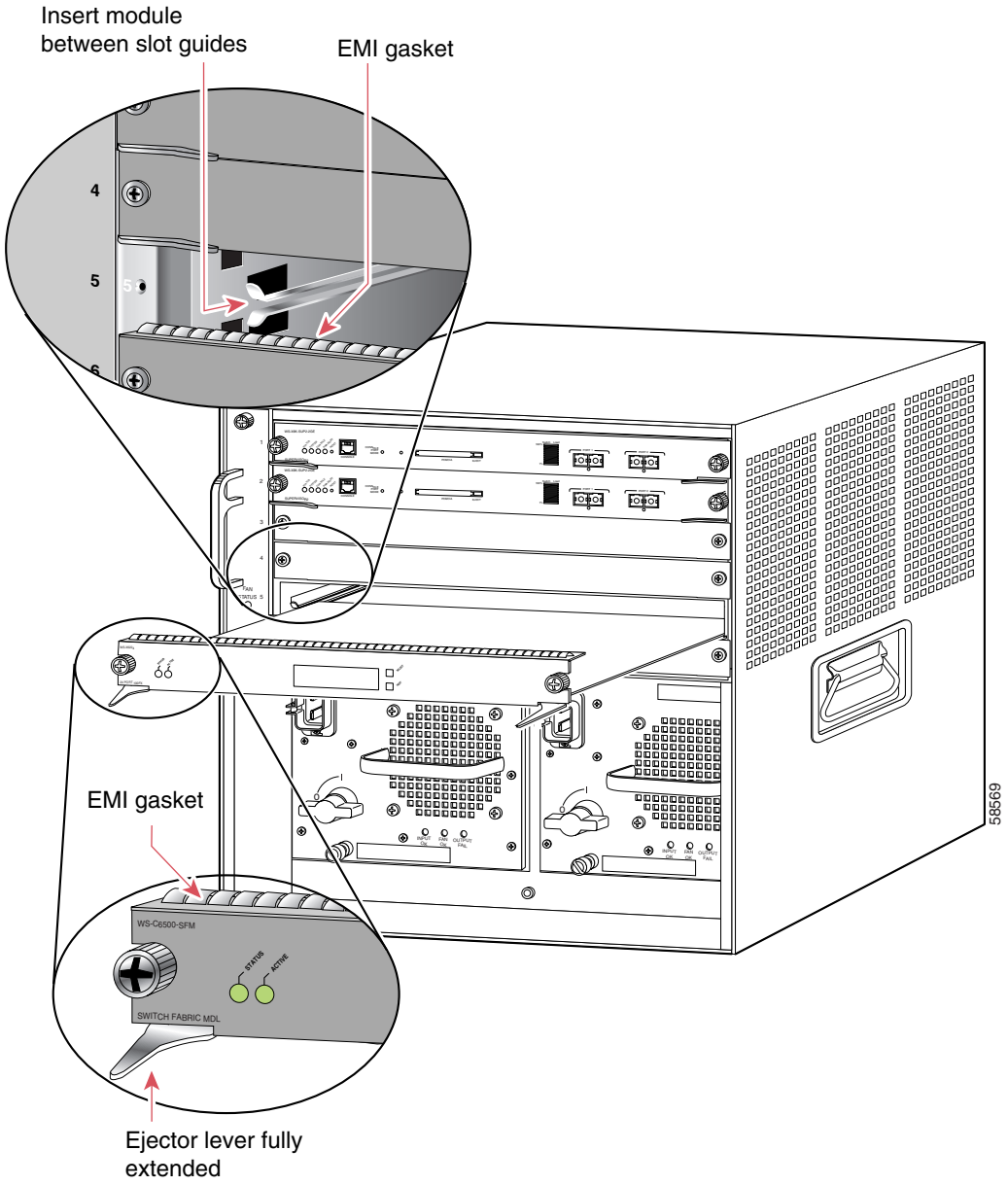
This action ensures that the EMI gaskets on all modules are fully compressed in order to maximize the opening space for the replacement module.

Note If the captive installation screws are loose, the EMI gaskets on the installed modules will push adjacent modules toward the open slot, reducing the opening size and making it difficult to install the replacement module.

Step 4 Remove the module filler plate by removing the two Phillips pan-head screws from the filler plate. (To remove a module, refer to the "Removing the Module" section on page 10.)

Step 5 Fully open both ejector levers on the new or replacement module. (See Figure 2.)

Figure 2 Positioning the Module in a Horizontal Slot Chassis



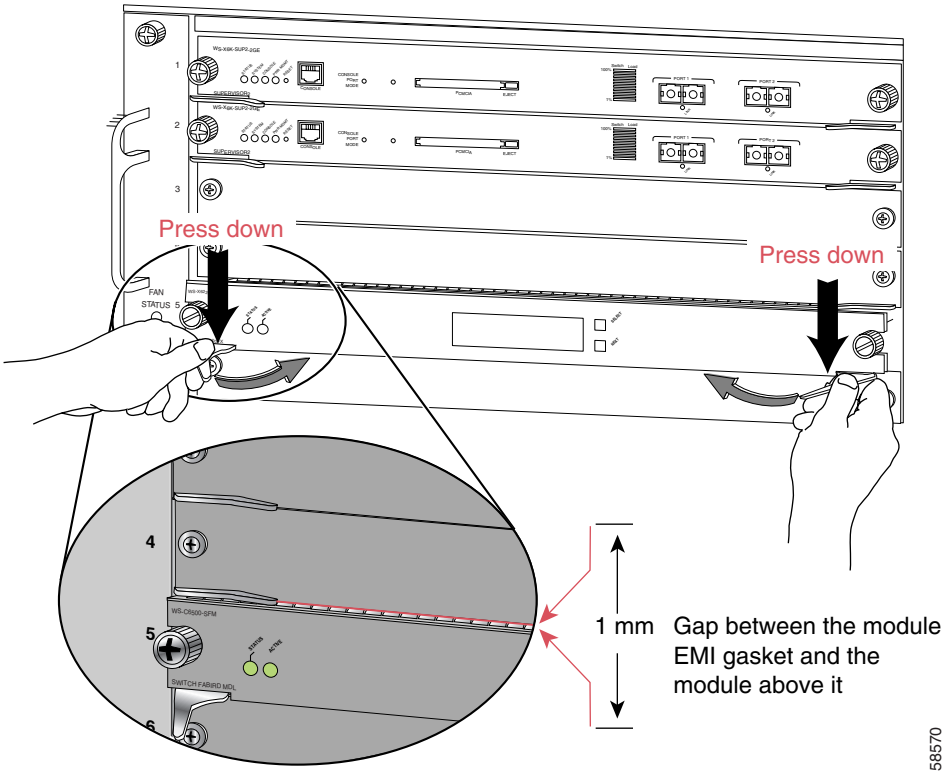
Step 6 Depending on the orientation of the slots in the chassis (horizontal or vertical), perform one of the following sets of substeps:

Horizontal slots

a. Position the supervisor engine or module in the slot. Make sure that you align the sides of the module carrier with the slot guides on each side of the slot. (See Figure 2.)

b. Carefully slide the supervisor engine or module into the slot until the EMI gasket along the top edge of the module makes contact with the module in the slot above it and both ejector levers have closed to approximately 45 degrees with respect to the module faceplate. (See Figure 3.)

Figure 3 Clearing the EMI Gasket in a Horizontal Slot Chassis

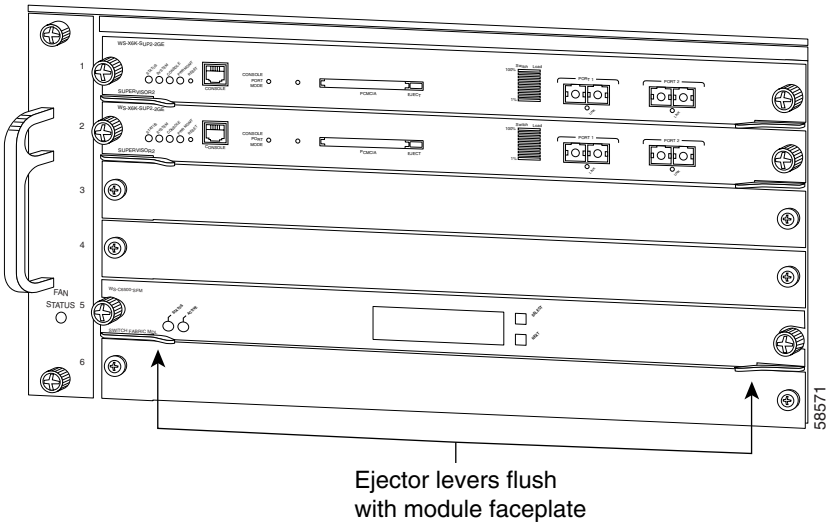


c. Using the thumb and forefinger of each hand, grasp the two ejector levers and press down to create a small (0.040 inch [1 mm]) gap between the module's EMI gasket and the module above it. (See Figure 3.)

Caution Pressing down too firmly on the levers will bend and damage them.

d. While pressing down, simultaneously close the left and right ejector levers to fully seat the supervisor engine or module in the backplane connector. The ejector levers are fully closed when they are flush with the module faceplate. (See Figure 4.)

Figure 4 Ejector Lever Closure in a Horizontal Slot Chassis



Note Failure to fully seat the module in the backplane connector can result in error messages.

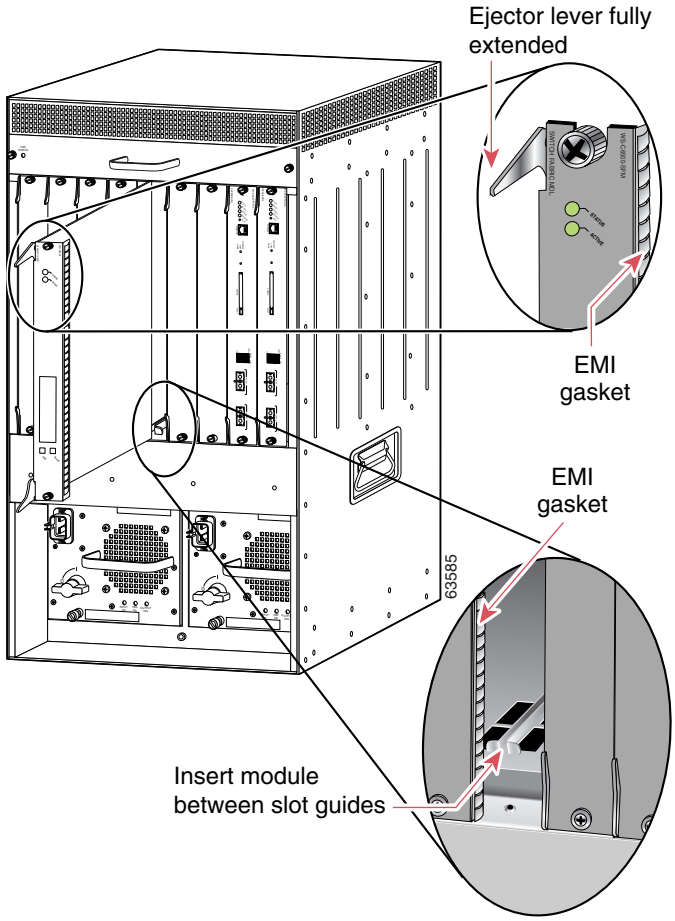
e. Tighten the two captive installation screws on the supervisor engine or module.

Note Make sure that the ejector levers are fully closed before tightening the captive installation screws.

Vertical slots

a. Position the supervisor engine or switching module in the slot. (See Figure 5.) Make sure that you align the sides of the switching-module carrier with the slot guides on the top and bottom of the slot.

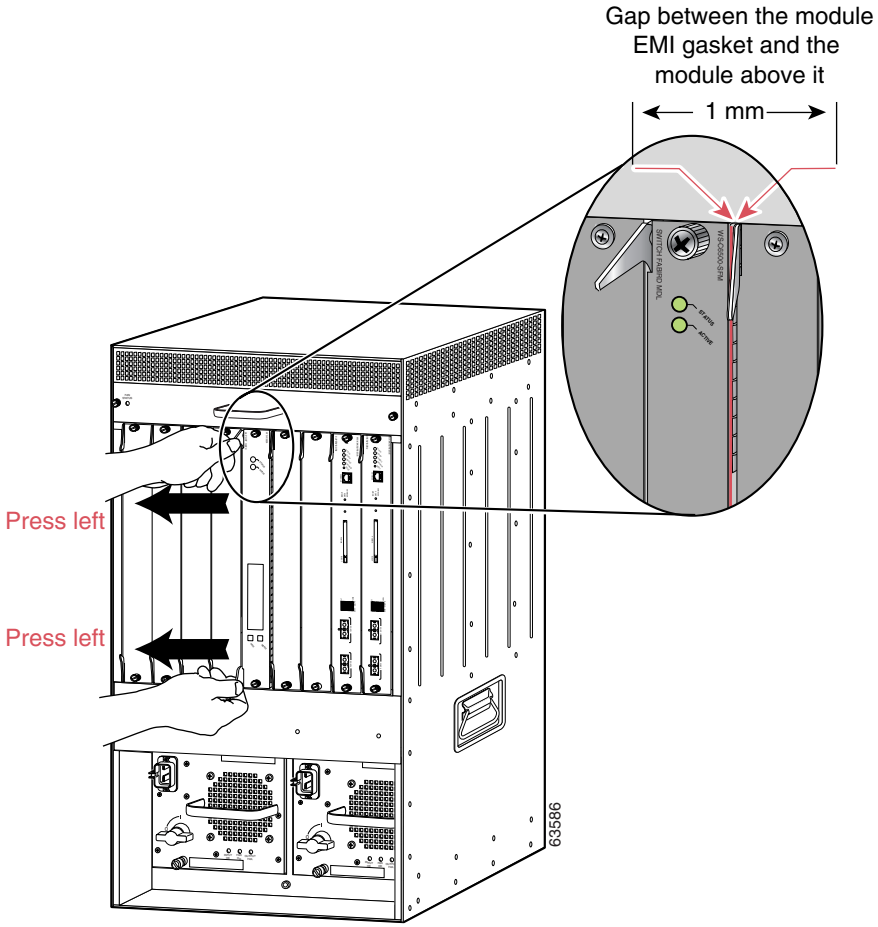
Figure 5 Positioning the Module in a Vertical Slot Chassis



b. Carefully slide the supervisor engine or module into the slot until the EMI gasket along the right edge of the module makes contact with the module in the slot adjacent to it and both ejector levers have closed to approximately 45 degrees with respect to the module faceplate. (See Figure 6.)

c. Using the thumb and forefinger of each hand, grasp the two ejector levers and exert a slight pressure to the left, deflecting the module approximately 0.040 inches (1 mm) to create a small gap between the module's EMI gasket and the module adjacent to it. (See Figure 6.)

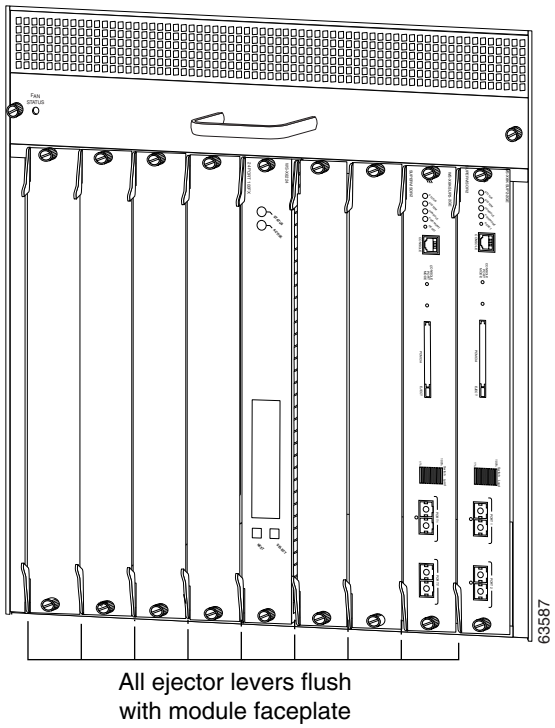
Figure 6 Clearing the EMI Gasket in a Vertical Slot Chassis



Caution Exerting too much pressure on the ejector levers will bend and damage them.

d. While pressing on the ejector levers, simultaneously close them to fully seat the supervisor engine or module in the backplane connector. The ejector levers are fully closed when they are flush with the module faceplate. (See Figure 7.)

Figure 7 Ejector Lever Closure in a Vertical Slot Chassis



e. Tighten the two captive installation screws on the module.

Note Make sure that the ejector levers are fully closed before tightening the captive installation screws.

This completes the CSM installation procedure.

Verifying the Installation

When you install the CSM 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 does not show green, or if it shows a different color, refer to Table 1 on page 5 to determine the module's status.

Using the CLI

The software interface for the module is the Cisco IOS and the Catalyst operating system command-line interface accessed through a Telnet connection to the switch or through the switch console interface. Refer to the *Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide* and the *Catalyst 6500 Series Switch Software Configuration Guide* for details.

To understand the Cisco IOS command-line interface and Cisco IOS command modes, refer to Chapter 2, "Command-Line Interfaces," in the *Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide*.

To understand the Catalyst operating system command-line interface and Catalyst operating system command modes, refer to Chapter 2, "Command-Line Interfaces," in the *Catalyst 6500 Series Switch Configuration Guide*.

Unless your switch is located in a fully trusted environment, we recommend that you configure the module through a Telnet connection using Secure Shell (SSH) encryption.

You can session into the module from the switch console and configure the CSM. The session is a Telnet interface through the Ethernet out-of-band channel (EOBC) of the switch backplane.

You can also make a Telnet connection into the module from a specified host and on a specific interface. Telnet support for this host should be configured or enabled from the module console.

Console output is redirected to all active Telnet sessions. When no Telnet session is available, the output is saved to a buffer. The buffer output can be subsequently examined when you make a Telnet connection into the module.

Related Documentation

Use this document with the following Cisco documents:

- *Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide*
- *Catalyst 6500 Series Switch Software Configuration Guide*
- *Catalyst 6500 Series Switch Content Switching Module Command Reference Release 3.2*
- *Catalyst 6500 Series Switch Content Switching Module Installation Guide Release 3.2*
- *Catalyst 6500 Series Switch Content Switching Module and Installation and Configuration Guide Release 3.2*
- *Release Notes for the Catalyst 6500 Series Switch Content Switching Module Release 3.2.*

Translated Safety Warnings

Warning	**Invisible laser radiation present.** Statement 1016
Waarschuwing	**Onzichtbare laserstraling aanwezig.**
Varoitus	**Näkymättömiä lasersäteitä.**
Attention	**Rayonnement laser actif mais invisible.**
Warnung	**Unsichtbare Laserstrahlung.**
Avvertenza	**Radiazione laser invisibile.**

Advarsel **Usynlig laserstråling.**

Aviso **Radiação laser invisível presente.**

¡Advertencia! **Existe radiación láser invisible.**

Varning! **Nu pågående osynlig laserstrålning.**

Láthatatlan lézersugárzás van jelen.

Предупреждение Присутствует невидимое лазерное излучение.

警告 还存在不可见的激光辐射。

警告 目に見えないレーザー光線が放射されています。

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

Waarschuwing **Lege vlakplaten en afdekpanelen vervullen drie belangrijke functies: ze voorkomen blootstelling aan gevaarlijke voltages en stroom binnenin het frame, ze bevatten elektromagnetische storing (EMI) hetgeen andere apparaten kan verstoren en ze leiden de stroom van koellucht door het frame. Het systeem niet bedienen tenzij alle kaarten, vlakplaten en afdekkingen aan de voor- en achterkant zich op hun plaats bevinden.**

Varoitus **Tyhjillä tasolaikoilla ja suojapaneeleilla on kolme tärkeää käyttötarkoitusta: Ne suojaavat asennuspohjan sisäisille vaarallisille jännitteille ja sähkövirralle altistumiselta; ne pitävät sisällään elektromagneettisen häiriön (EMI), joka voi häiritä muita laitteita; ja ne suuntaavat tuuletusilman asennuspohjan läpi. Järjestelmää ei saa käyttää, elleivät kaikki tasolaikat, etukannet ja takakannet ole kunnolla paikoillaan.**

Attention **Ne jamais faire fonctionner le système sans que l'intégralité des cartes, des plaques métalliques et des panneaux avant et arrière ne soient fixés à leur emplacement. Ceux-ci remplissent trois fonctions essentielles : ils évitent tout risque de contact avec des tensions et des courants dangereux à l'intérieur du châssis, ils évitent toute diffusion d'interférences électromagnétiques qui pourraient perturber le fonctionnement des autres équipements, et ils canalisent le flux d'air de refroidissement dans le châssis.**

Warnung **Blanke Faceplates und Abdeckungen haben drei wichtigen Funktionen: (1) Sie schützen vor gefährlichen Spannungen und Strom innerhalb des Chassis; (2) sie halten elektromagnetische Interferenzen (EMI) zurück, die andere Geräte stören könnten; (3) sie lenken den kühlenden Luftstrom durch das Chassis. Das System darf nur betrieben werden, wenn alle Karten, Faceplates, Voder- und Rückabdeckungen an Ort und Stelle sind.**

Avvertenza **Le piattaforme bianche e i panelli di protezione hanno tre funzioni importanti: Evitano l'esposizione a voltaggi e correnti elettriche pericolose nello chassis, trattengono le interferenze elettromagnetiche (EMI) che potrebbero scombussolare altri apparati e dirigono il flusso di aria per il raffreddamento attraverso lo chassis. Non mettete in funzione il sistema se le schede, le piattaforme, i panelli frontali e posteriori non sono in posizione.**

Advarsel **Blanke ytterplater og deksler sørger for tre viktige funksjoner: de forhindrer utsettelse for farlig spenning og strøm inni kabinettet; de inneholder elektromagnetisk forstyrrelse (EMI) som kan avbryte annet utstyr, og de dirigerer luftavkjølingsstrømmen gjennom kabinettet. Betjen ikke systemet med mindre alle kort, ytterplater, frontdeksler og bakdeksler sitter på plass.**

Aviso **As faces furadas e os painéis de protecção desempenham três importantes funções: previnem contra uma exposição perigosa a voltagens e correntes existentes no interior do chassis; previnem contra interferência electromagnética (EMI) que poderá danificar outro equipamento; e canalizam o fluxo do ar de refrigeração através do chassis. Não deverá operar o sistema sem que todas as placas, faces, protecções anteriores e posteriores estejam nos seus lugares.**

¡Advertencia! **Las placas frontales y los paneles de relleno cumplen tres funciones importantes: evitan la exposición a niveles peligrosos de voltaje y corriente dentro del chasis; reducen la interferencia electromagnética (EMI) que podría perturbar la operación de otros equipos y dirigen el flujo de aire de enfriamiento a través del chasis. No haga funcionar el sistema a menos que todas las tarjetas, placas frontales, cubiertas frontales y cubiertas traseras estén en su lugar.**

Varning! **Tomma framplattor och skyddspaneler har tre viktiga funktioner: de förhindrar att personer utsätts för farlig spänning och ström som finns inuti chassit; de innehåller elektromagnetisk interferens (EMI) som kan störa annan utrustning; och de styr riktningen på kylluftsflödet genom chassit. Använd inte systemet om inte alla kort, framplattor, fram- och bakskydd är på plats.**

Az előlapok és burkolópanelek három fontos funkciót töltenek be: biztosítják a veszélyes feszültségű és áramerősségű területek érintésvédelmét; elnyelik a más berendezések működésében működési zavarokat okozó elektromágneses interferenciát (EMI); a gépházon belül terelik a hűtőlevegőt. Csak úgy működtesse a rendszert, ha minden kártya, lemez, elülső és hátulsó burkolat a helyén van.

Предупреждение Заглушки передней панели и защитные панели выполняют три важные функции: помогают избежать поражения электротоком высокого напряжения при прикосновении к внутренним элементам, экранируют электромагнитное излучение, которое может нарушить работу другого оборудования, а также направляют охлаждающий воздушный поток внутри корпуса. Не пользуйтесь устройством со снятыми крышками, заглушками, передними и задними защитными панелями.

警告　空白面板和盖板具有三个重要的功能：它们可以防止接触到底盘内危险的电压和电流；它们将可能破坏其它设备的电磁干扰 (EMI) 封闭起来；它们可以使冷气流从底盘通过。请勿在全部卡、面板、前盖和后盖未安装完毕时操作系统。

警告　ブランクの前面プレートおよびカバー パネルは、3つの重要な役割を果たします。シャーシ内部の危険な電圧および電流に接触しないように防御の役割を果たします。他の機器に悪影響を与えるEMI(電磁波干渉)を外に出しません。さらに、シャーシ全体に冷却用の空気を流します。カード、前面プレート、前面カバー、および背面カバーがすべて取り付けられてから、システムを稼働させてください。

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:

http://www.cisco.com/cisco/web/psa/default.html?mode=prod

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/web/siteassets/locator/index.html

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/web/ordering/root/index.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

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

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/web/ordering/root/index.html

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/web/ordering/root/index.html

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can send your comments in e-mail to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance.

Cisco TAC Website

The Cisco TAC website (http://www.cisco.com/tac) provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year.

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

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

Opening a TAC Case

The online TAC Case Open Tool (https://tools.cisco.com/RPF/register/register.do) is the fastest way to open P3 and P4 cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For P1 or P2 cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

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

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your 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.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- 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:

  http://www.cisco.com/en/US/products/index.html

- 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.