



# Catalyst 6000 Family MSFC2 Bootflash Device Upgrade Installation Note

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**Product Number:**  
**WS-X6K-MSFC2-KIT=**

This publication describes how to remove and install the bootflash device on the Catalyst 6000 family Multilayer Switch Feature Card 2 (MSFC2).

This installation upgrades the MSFC2 bootflash device from 16 MB to 32 MB.



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A boot loader image and an IOS (c6msfc2) image are provided on the bootflash device.

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## Required Tools

The following tools are required to perform the installation:

- Antistatic mat or foam pad to support the removed supervisor engine
- 3/16-inch flat-blade screwdriver for the captive installation screws on the supervisor engine
- A wrist strap or other grounding device to prevent electrostatic discharge (ESD) damage

Refer to the *Site Preparation and Safety Guide* for ESD details including the locations of the ESD connectors on the Catalyst 6000 family switches.

## Safety Overview

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



### Warning

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. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

### Waarschuwing

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 standaard maatregelen om ongelukken te voorkomen. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.

### Varoitus

Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).

### Attention

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.

|               |  |
|---------------|--|
| Warnung       | Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument <i>Regulatory Compliance and Safety Information</i> (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde. |
| Avvertenza    | Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento <i>Regulatory Compliance and Safety Information</i> (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.                                       |
| Advarsel      | Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarslene som finnes i denne publikasjonen, kan du se i dokumentet <i>Regulatory Compliance and Safety Information</i> (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.  |
| Aviso         | Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. Para ver as traduções dos avisos que constam desta publicação, consulte o documento <i>Regulatory Compliance and Safety Information</i> (Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.   |
| ¡Advertencia! | Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado <i>Regulatory Compliance and Safety Information</i> (Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.                        |
| Varning!      | Denna varningssymbol 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 vanligt förfarande för att förebygga skador. Se förklaringar av de varningar som förekommer i denna publikation i dokumentet <i>Regulatory Compliance and Safety Information</i> (Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.  |



Warning

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Only trained and qualified personnel should be allowed to install or replace this equipment.

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Warning

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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.

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# Verifying the Bootflash Size

The following sections describe the procedures to determine the size of the MSFC2 bootflash device:

- [Catalyst Software, page 4](#)
- [Cisco IOS Software, page 4](#)

## Catalyst Software



### Note

For information on accessing the MSFC2 from the switch, refer to Chapter 2, “Command-Line Interfaces,” in the *Catalyst 6000 Family Configuration Guide*.

From the privileged EXEC router prompt, enter the **dir bootflash:** command to determine the size of the bootflash device installed on the MSFC2.

The following example shows a 16-MB bootflash device:

```
Router# dir bootflash:
Directory of bootflash:/
 1  -rw-      1599488   Nov 29 1999 11:12:29  c6msfc-boot-mz.120-7.XE.bin
15990784 bytes total (14391168 bytes free)
```

## Cisco IOS Software

From the privileged EXEC prompt, enter the following commands to determine the size of the bootflash device installed on the MSFC2:

| Command                            | Purpose  |
|------------------------------------|--|
| Router# <b>dir bootflash:</b>      | Determine the size of the bootflash device on the active MSFC2.  |
| Router# <b>dir slavebootflash:</b> | Determine the size of the bootflash device on the standby MSFC2. |

The following example shows a 16-MB bootflash device:

```
Router# dir bootflash:
Directory of bootflash:/
 1  -rw-      1599488   Nov 29 1999 11:12:29  c6msfc-boot-mz.120-7.XE.bin
15990784 bytes total (14391168 bytes free)
```

# Removing the Supervisor Engine

To install the bootflash device upgrade on the MSFC2, you must first remove the supervisor engine from the chassis.



**Caution**

Always use an ESD wrist strap when handling modules or coming into contact with internal components.



**Caution**

The supervisor engine is a required system component. If only one supervisor engine is present, removing it while the system is operating causes the system to halt.



**Note**

When two supervisor engines are installed, hot swapping allows you to remove and replace one of the supervisor engines without turning off the system power.



**Caution**

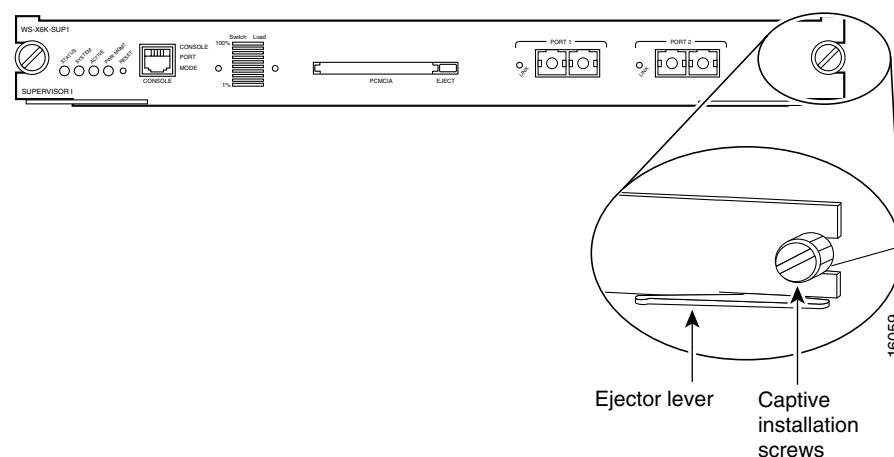
To avoid erroneous failure messages, note the current configuration of all interfaces before you remove or replace another switching module, and allow at least 15 seconds for the system to reinitialize after a module has been removed or replaced.

When removing the supervisor engine, use the ejector levers to ensure that the connector pins disconnect from the backplane properly. Any supervisor engine or switching module that is only partially connected to the backplane can disrupt the system. Detailed instructions for removing and installing modules are described in the *Catalyst 6000 Family Module Installation Guide*.

To remove a supervisor engine, perform these steps:

- Step 1** If you do not plan to immediately reinstall the supervisor engine you are removing, disconnect any network interface cables attached to the uplink ports.
- Step 2** Use a screwdriver to loosen the captive installation screws at the left and right sides of the supervisor engine (see [Figure 1](#)).

**Figure 1 Ejector Levers and Captive Installation Screws**



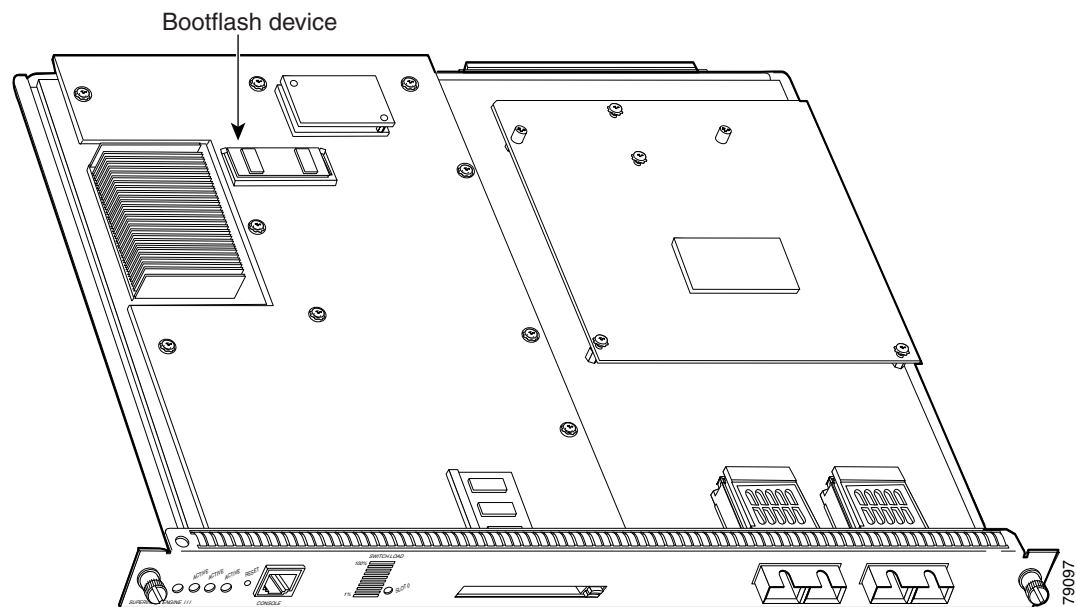
- Step 3** Grasp the left and right ejector levers; simultaneously pull the left lever to the left and the right lever to the right to release the supervisor engine from the backplane connector.
- Step 4** As you pull the supervisor engine out of the slot, place one of your hands under the carrier to support it. Avoid touching the supervisor engine itself.
- Step 5** Carefully pull the supervisor engine straight out of the slot, keeping one hand under the carrier to guide it. Keep the supervisor engine at a 90-degree orientation to the backplane (horizontal to the floor).
- Step 6** Place the removed supervisor engine on an antistatic mat or antistatic foam pad.

When you remove and replace the redundant supervisor engine, the system provides status messages on the console screen. The messages are for information only. For additional information, refer to the *Catalyst 6000 Family Software Configuration Guide* and *Catalyst 6000 Family Command Reference* publication.

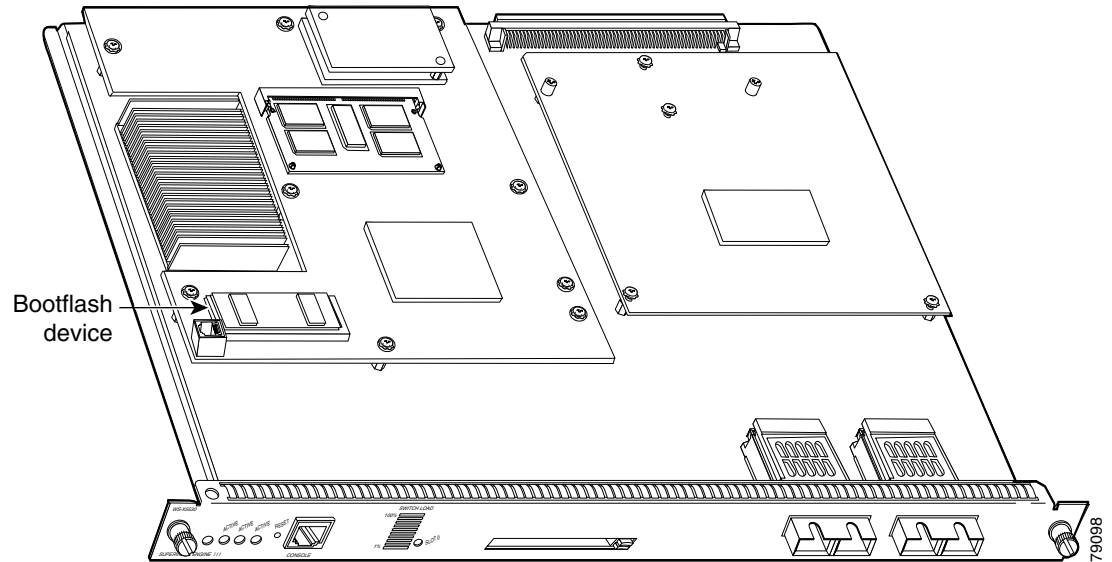
## Installing the Bootflash Device

This section describes how to remove the existing bootflash device and replace it with the upgrade bootflash device. The bootflash device location is shown in [Figure 2](#) for the MSFC2 shipped before November 2001 and [Figure 3](#) for the MSFC2 shipped after November 2001.

**Figure 2** MSFC2 Shipped Before November 2001—Bootflash Device Location



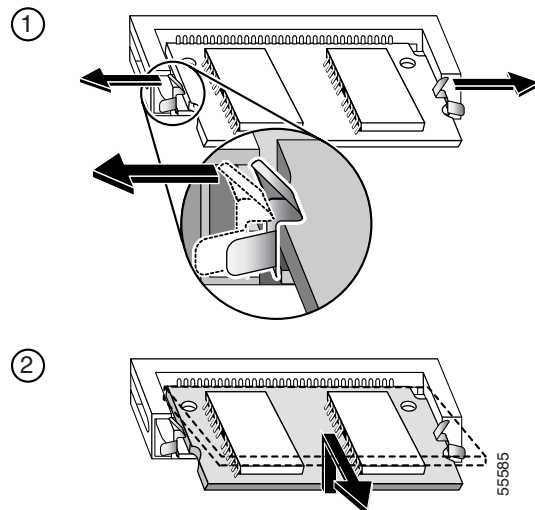
**Figure 3 MSFC2 Shipped After November 2001—Bootflash Device Location**



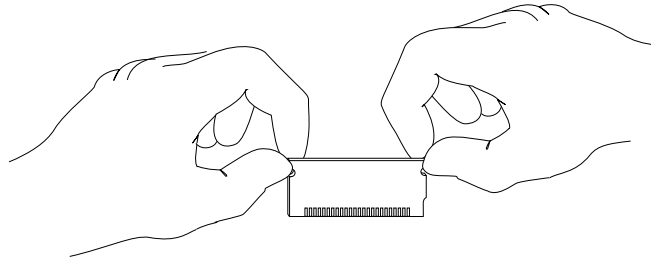
To upgrade the bootflash device from 16 MB to 32 MB, follow these steps:

- Step 1** Pull the locking spring clips on both sides of the bootflash device SIMM holder outward and tilt the SIMM up and away from the clips (see [Figure 4](#)). Be careful not to break the clips on the SIMM connector.

**Figure 4 Removing and Installing the Bootflash Device SIMM**



- Step 2** Hold the SIMM by its edges and gently lift and remove it, placing it on an antistatic mat or foam. (See [Figure 5](#).)

**Figure 5 Handling a SIMM****Caution**

SIMMs are sensitive components that are susceptible to ESD damage. To prevent ESD damage, handle SIMMs by the edges only; avoid touching the memory modules, pins, or traces (the metal fingers along the connector edge of the SIMM). (See [Figure 5](#).)

**Step 3** Remove the upgrade SIMM from the antistatic container.

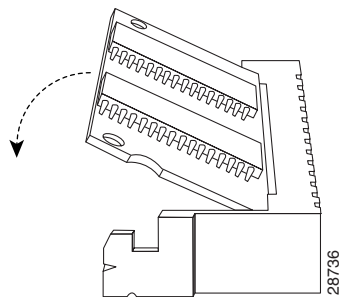
**Step 4** Hold the SIMM by its edges. (See [Figure 5](#).)

**Step 5** Tilt the SIMM to approximately the same angle as the socket, and insert the connector edge into the socket. Note the notch (key) on the right connector edge of the SIMM. (See [Figure 5](#).) This key assures correct orientation of the SIMM in the socket.

**Caution**

When inserting the SIMM, use firm but not excessive pressure. If you damage a socket, you will have to return the MSFC2 to Cisco for repair.

**Step 6** Press the SIMM down until it is secured by the spring clips. (See [Figure 6](#).)

**Figure 6 Installing the SIMM in the Socket**

**Step 7** When the SIMM is installed, check the two alignment holes and ensure that the spring retainer is visible. If it is not visible, the SIMM is not seated properly. If the SIMM appears misaligned, carefully remove it and reseat it in the socket. Push the SIMM firmly back into the socket until the retainer springs snap into place.

# Replacing the Supervisor Engine

The ejector levers on the supervisor engine and switching modules align and seat the module connectors in the backplane (see [Figure 1](#)). If you fail to use the ejector levers to insert the supervisor engine, you can disrupt the order in which the pins contact the backplane. You must pull out the ejector levers as you slide the supervisor engine in. Detailed instructions for removing and installing the supervisor engine are described in the *Catalyst 6000 Family Module Installation Guide*.

To replace the supervisor engine, follow [Step 1](#) through [Step 6](#) in the “[Removing the Supervisor Engine](#)” section on [page 5](#) in reverse order. Note that the supervisor engine must go in slot 1 (if a second, redundant supervisor is installed, install it in slot 2).

## Related Documentation

For additional information on Catalyst 6000 family switches and command-line interface (CLI) commands, refer to the following publications:

- *Regulatory Compliance and Safety Information for the Catalyst 6000 Family Switches*
- *Catalyst 6000 Family Installation Guide*
- *Catalyst 6000 Family Module Installation Guide*
- *Catalyst 6000 Family Software Configuration Guide*
- *Catalyst 6000 Family Command Reference*
- *Catalyst 6000 Family IOS Software Configuration Guide*
- *Catalyst 6000 Family IOS Command Reference*
- *Site Preparation and Safety Guide*

## Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

### World Wide Web

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

<http://www.cisco.com>

Translated documentation is available at the following URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

### Documentation CD-ROM

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

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- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:  
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Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires 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 the following URL to register:

<http://www.cisco.com/register/>

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

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

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

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

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