



# Catalyst 6500 Series Supervisor Engine Flash PC Card Installation Note

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## Product Numbers:

MEM-C6K-FLC16M(=)

MEM-C6K-FLC24M(=)

MEM-C6K-FLC64M(=)

MEM-C6K-ATA-1-64M(=)

This installation note contains the procedure to install a Flash PC card in the Catalyst 6500 series supervisor engines.



## Note

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The 64-MB ATA Flash PC card (MEM-C6K-ATA-1-64M) requires Supervisor Engine 2 with ROMMON software release 7.1(1) or later releases. For ROMMON software upgrade details, refer to [http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/relnotes/78\\_13488.htm](http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/relnotes/78_13488.htm).

The ATA Flash PC card is supported on Catalyst 6500 series switches running Cisco IOS Release 12.1(8a)EX or later releases on both the supervisor engine and the Multilayer Switch Feature Card (MSFC).

The ATA Flash PC card is supported on Catalyst 6500 series switches running Catalyst software release 7.5(1) or later releases on the supervisor engine and Cisco IOS on the MSFC.

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## Note

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The 64-MB linear Flash PC card (MEM-C6K-FLC64M) is supported only on Supervisor Engine 1 and requires ROMMON software release 5.3(1) or later releases.

The 64-MB linear Flash PC card is supported on Catalyst 6500 series switches running Cisco IOS Release 12.1(13)E4 or later releases on both the supervisor engine and the MSFC.

The 64-MB linear Flash PC card is supported on Catalyst 6500 series switches running Catalyst software release 7.5(1) or later releases on the supervisor engine and Cisco IOS software on the MSFC.

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## Supervisor Engine Flash PC Cards

The supervisor engine Flash PC cards conform with the PCMCIA format. These models are available:

- 16-MB MEM-C6K-FLC16M
- 24-MB MEM-C6K-FLC24M
- 64-MB MEM-C6K-FLC64M
- MEM-C6K-ATA-1-64M



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**Note**

The 16-MB MEM-C6K-FLC16M and 24-MB MEM-C6K-FLC24M linear Flash PC cards are formatted for the Catalyst 6500 series supervisor engines and are ready to use.

The MEM-C6K-ATA-1-64M and 64-MB MEM-C6K-FLC64M Flash PC cards *are not* formatted. You must format these cards (See [Table 1 on page 7 Commands for Using and Managing Flash Devices](#) [Table 1](#) for a description of the **format** command.) When you enter the **dir disk0:** or **dir slot0:** commands, an unformatted Flash PC card returns a “bad device block info” or “invalid magic number” error message.

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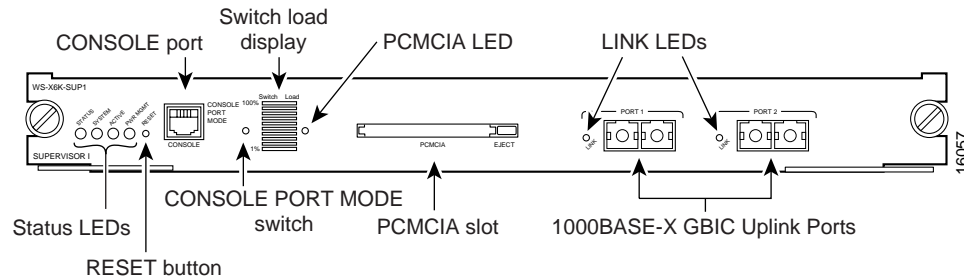
**Note**

Supervisor Engine 1 and Supervisor Engine 2 do not support the same Flash PC card format. To use a Flash PC card with Supervisor Engine 2, you must format the card with Supervisor Engine 2. To use a Flash PC card with Supervisor Engine 1, you must format the card with Supervisor Engine 1.

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You can use Flash PC cards to store and boot software images, or they can be used as servers to store software images for other systems. You can configure each supervisor engine with one Flash PC card in slot 0. [Figure 1](#) shows the front panel of a supervisor engine with the single PCMCIA slot, slot 0.

**Figure 1** Supervisor Engine Flash PC Card Slot



For information about using the PCMCIA Flash PC cards, see the [“Using Flash PC Cards”](#) section on page 6.

## Preventing Electrostatic Discharge Damage

Follow these guidelines to prevent electrostatic discharge (ESD) damage:

- Always use an ESD wrist or ankle strap, and ensure that it makes good skin contact.
- Connect the equipment end of the strap to the ESD connector on the switch.
- Place a removed Flash PC card on an antistatic surface or in a static shielding bag. If the card will be returned to the factory, immediately place it in a static shielding bag.
- Avoid contact between the card and clothing. The wrist strap only protects the card from ESD voltages on the body; ESD voltages on clothing can still cause damage.



### Caution

For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms.

## Installing and Removing a Flash PC Card

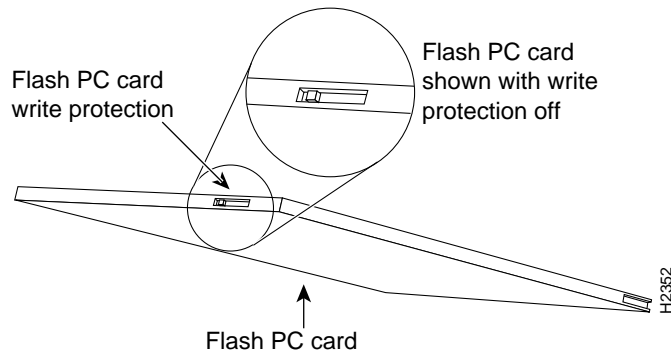
Before you install a Flash PC card, verify that the card’s write-protect switch is off. When the card is oriented with the printing side up and the edge connector end away from you, the write-protect switch is located on the front edge of the card, as shown in [Figure 2](#).



### Note

Not all Flash PC cards have the write-protect switch.

**Figure 2** Locating the Flash PC Card Write Protection Switch



To install and remove a Flash PC card (see [Figure 3](#)), perform these steps:



**Note**

You can insert and remove the Flash PC card with the power on.

- Step 1** Connect an ESD-preventive strap to the ESD connector on the switch.
- Step 2** Face the front panel of the switch, and hold the Flash PC card with the connector end toward the slot, as shown in [Figure 3a](#).
- Step 3** Insert the card into the slot until it completely seats in the connector at the back of the slot and the eject button pops out toward you, as shown in [Figure 3b](#).

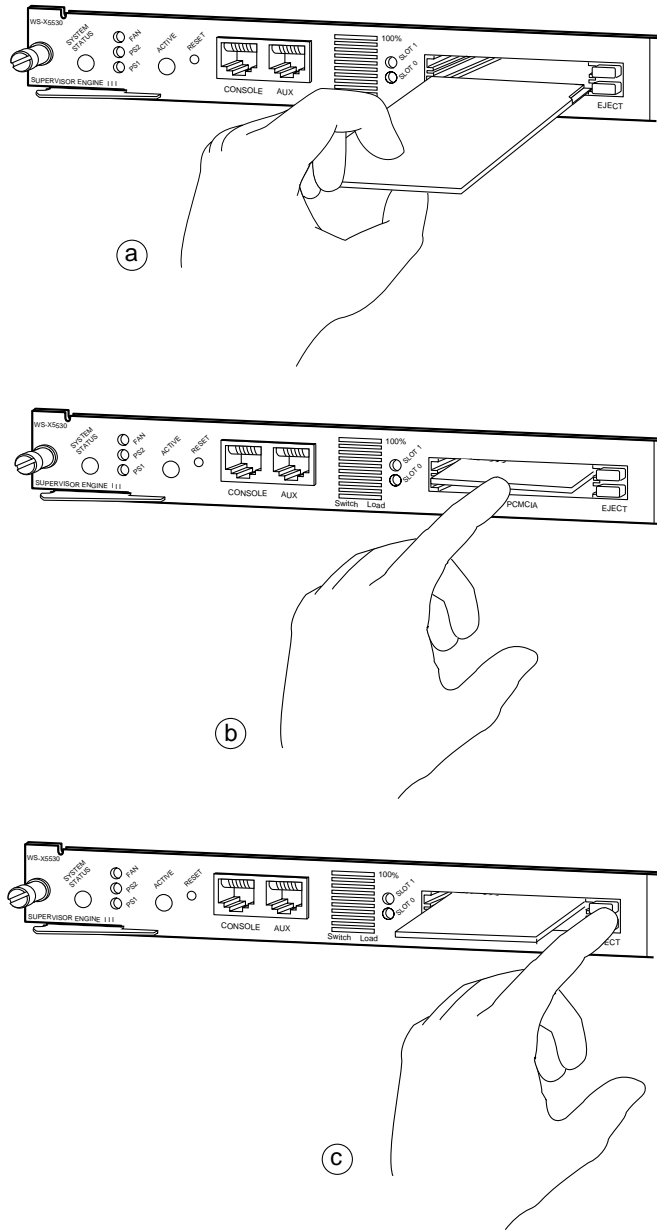


**Note**

The card does not insert all the way inside the slot; a portion of the card remains outside the slot. *Do not attempt to force the card past this point.*

- Step 4** To eject a Flash PC card, press the ejector button until the card is free of the connector at the back of the slot, as shown in [Figure 3c](#).
- Step 5** Remove the card from the slot and place it in an antistatic bag.

Figure 3 Installing and Removing a Flash PC Card



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# Using Flash PC Cards


**Note**

An MS-DOS formatted ATA Flash PC card or linear Flash PC card can be accessed successfully (including the **dir** command) with the Catalyst and Cisco IOS operating systems but will not boot from ROMMON.


**Note**

The 16-MB MEM-C6K-FLC16M and 24-MB MEM-C6K-FLC24M linear Flash PC cards are formatted for the Catalyst 6500 series supervisor engines and are ready to use.

The MEM-C6K-ATA-1-64M and 64-MB MEM-C6K-FLC64M Flash PC cards *are not* formatted. You must format these cards (see [Table 1 on page 7](#) for a description of the **format** command.) When you enter the **dir disk0:** or **dir slot0:** commands, an unformatted Flash PC card returns a “bad device block info” or “invalid magic number” error message.


**Note**

Supervisor Engine 1 and Supervisor Engine 2 do not support the same Flash PC card format. To use a Flash PC card with Supervisor Engine 2, you must format the card with Supervisor Engine 2. To use a Flash PC card with Supervisor Engine 1, you must format the card with Supervisor Engine 1.

[Table 1](#) [Table 1](#) [Table 1](#) [Table 1](#) shows many of the commands that are available for using and managing Flash devices, including the Flash PC cards. To perform specific tasks, use these commands either alone or combined with other commands. For example, to copy a file from a TFTP server to a Flash PC card, set the BOOT environment variable so that the system will boot from this new image and then verify the boot sequence as shown in the following steps:


**Note**

The following commands listed in [Table 1](#) are not applicable to the ATA Flash (disk0:) PC card: **undelete**, **squeeze**, **show flash devices**, **show flash**, and **verify**.


**Note**

The ATA Flash PC card is accessed through disk0: and the 16-MB, 24-MB, and 64-MB Flash PC cards are accessed through slot0:. The following procedure uses slot0:.

**Step 1** Copy a file from a TFTP server to the Flash PC card in slot0:

```
Console (enable) copy tftp slot0:
```

**Step 2** Set the BOOT environment variable so that the system boots from slot0:

```
Console (enable) set boot system flash slot0:cat6000-sup-5-1-1-CSX.bin prepend
```

**Step 3** Display the contents of the BOOT environment variable:

```
Console (enable) show boot
```

For complete descriptions of these commands and how to use them, refer to the *Catalyst 6500 Series Software Configuration Guide* and the *Catalyst 6500 Series Command Reference* publication.

**Table 1** *Commands for Using and Managing Flash Devices*

<b>Task</b>	<b>Command</b>
Copy a Flash file to a TFTP server, another Flash device, or to the running configuration.	<b>copy</b> <i>m/device:filename</i> { <b>tftp</b>   <b>flash</b>   <i>m/device:filename</i>   <b>config</b> }
Copy a file from a TFTP server to a Flash device or to the running configuration.	<b>copy tftp</b> { <b>flash</b>   <i>m/device:filename</i>   <b>config</b> }
Copy a file from Flash memory to a TFTP server or to a Flash device, or to the running configuration.	<b>copy flash</b> { <b>tftp</b>   <i>m/device:filename</i>   <b>config</b> }
Copy the running configuration to another Flash device or to a TFTP server.	<b>copy config</b> { <b>flash</b>   <i>m/device:filename</i>   <b>tftp</b> }
Set the BOOT environment variable.	<b>set boot system flash</b> <i>device:[filename]</i> [ <b>prepend</b> ] [ <i>mod_num</i> ]
Format a Flash PC device.	<b>format</b> [ <i>spare spare-number</i> ] [ <i>m/</i> ] <i>device1</i> : [[ <i>device2</i> :] [ <i>monlib-filename</i> ]]
Specify the boot field in the configuration register, which determines the boot method the switch will use at the next startup.	<b>set boot config-register boot</b> { <b>rommon</b>   <b>bootflash</b>   <b>system</b> } [ <i>mod_num</i> ]
Display the contents of the BOOT environment variable.	<b>show boot</b> [ <i>mod_num</i> ]
Clear a specific image from the BOOT environment variable.	<b>clear boot system flash</b> <i>device:[filename]</i> [ <i>mod_num</i> ]
Clear the entire BOOT environment variable.	<b>clear boot system all</b> [ <i>mod_num</i> ]
Display a list of files on a Flash device.	<b>dir</b> [[ <i>m/</i> ] <i>device</i> :][ <i>filename</i> ] [ <b>all</b>   <b>deleted</b>   <b>long</b> ]
Set the default Flash device for the system.	<b>cd</b> [[ <i>m/</i> ][ <b>bootflash</b> :   <b>slot0</b> :]]
Verify the default Flash device for the system.	<b>pwd</b> [ <i>mod_num</i> ]
Delete a file on a Flash device.	<b>delete</b> [[ <i>m/</i> ] <i>device</i> :] <i>filename</i>
Undelete a file on a Flash device.	<b>undelete</b> <i>index</i> [[ <i>m/</i> ] <i>device</i> :]
Permanently remove all deleted files on a Flash device.	<b>squeeze</b> [ <i>m/</i> ] <i>device</i> :
Identify the supported Flash devices on the system.	<b>show flash devices</b>
Display information about the Flash PC.	<b>show flash</b> [[ <i>m/</i> ] <i>device</i> :] [ <b>all</b>   <b>chips</b>   <b>filesystem</b> ]
Verify the checksum of a file on a Flash device.	<b>verify</b> [[ <i>m/</i> ] <i>device</i> :] <i>filename</i>

## Additional Documentation

Refer to the following documents for additional information on supervisor engine Flash devices:

- *Release Notes for Catalyst 6500 Series and Cisco 7600 Series Internet Router Supervisor Engine 2 ROMMON*
- *Catalyst 6500 Series Software Configuration Guide*
- *Catalyst 6500 Series Command Reference*

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain 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 at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

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

### Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

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[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

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[http://www.cisco.com/en/US/products/products\\_psirt\\_rss\\_feed.html](http://www.cisco.com/en/US/products/products_psirt_rss_feed.html)

## Reporting Security Problems in Cisco Products

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- Emergencies—[security-alert@cisco.com](mailto:security-alert@cisco.com)

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—[psirt@cisco.com](mailto:psirt@cisco.com)

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



Tip

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We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

The link on this page has the current PGP key ID in use.

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## Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

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**Note**

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request 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 list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

**Severity 1 (S1)**—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.

**Severity 2 (S2)**—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.

**Severity 3 (S3)**—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.

**Severity 4 (S4)**—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

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