



Installing SODIMM Memory Modules in Cisco Network Modules for Caching and Content Delivery

Product Number: MEM-CE-256D=

This document describes how to install small-outline, synchronous dynamic random-access memory, dual inline memory modules (SO DRAM DIMMs, or SODIMMs) in Cisco network modules that provide caching and content delivery. These include Cisco network module NM-CE-BP with any of the following expansion modules installed:

- EM-CE-20G= or EM-CE-40G= with disk drive
- EM-CE-SCSI= with SCSI controller

Use this document with the *Installing Expansion Modules on Cisco CE Network Modules for Caching and Content Delivery* document, which you can access as follows:

- From Cisco.com at <http://www.cisco.com>, select **Products & Services > Interfaces and Modules > Network Modules > Instructions and Guides > Module Installation Guides > Installing Expansion Modules on Cisco CE Network Modules for Caching and Content Delivery**
- On the Documentation CD-ROM or on the previous Cisco website, navigate to the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/cis2600/hw_inst/nm_inst/nm_notes/mem_inst/index.htm

If you have questions or need help, see the “[Obtaining Documentation](#)” section on page 6.

This document contains the following sections:

- [Preventing Electrostatic Discharge Damage, page 2](#)
- [Tools and Equipment Needed, page 2](#)
- [Installing a Memory SODIMM, page 2](#)
- [Obtaining Documentation, page 6](#)
- [Obtaining Technical Assistance, page 7](#)

Preventing Electrostatic Discharge Damage

Memory SODIMMs are sensitive to electrostatic discharge (ESD) damage. ESD damage, which can occur when electronic cards or components are handled improperly, results in complete or intermittent failures.

To prevent ESD damage, follow these guidelines:

- Always use an ESD wrist or ankle strap and ensure that it makes good skin contact.
- Connect the equipment end of the strap to an unfinished chassis surface.
- Place a removed memory SODIMM on an antistatic surface or in a static shielding bag. If the memory SODIMM will be returned to the factory, immediately place it in a static shielding bag.
- Avoid contact between the memory SODIMM and clothing. The wrist strap protects the memory SODIMM from ESD voltages on the body only; ESD voltages on clothing can still cause damage.
- Do not remove the wrist strap until the installation is complete.

**Caution**

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

Tools and Equipment Needed

You need the following tools and equipment to remove and install memory SODIMMs:

- ESD-preventive wrist strap
- Antistatic bag or mat
- Number 2 Phillips screwdriver
- Small flat-blade screwdriver

Installing a Memory SODIMM

To install a memory SODIMM, you need to remove the network module from the router chassis and then remove the expansion module from the network module.

To install a memory SODIMM, complete the following procedure.

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- Step 1** If the network module contains an expansion module with a small computer systems interface (SCSI) controller, disconnect the cable from the front of the network module.
- Step 2** Remove the network module from the router chassis (refer to the *Cisco Network Modules Hardware Installation Guide*).

**Caution**

If your router is a Cisco 2600 series, Cisco 3620, or Cisco 3640, you must turn off the power to the router before you remove the network module, as described in the “Installing Network Modules” chapter of the *Cisco Network Modules Hardware Installation Guide*. Cisco 3660 and Cisco 3700 series routers support hot swapping of network modules, so you can remove network modules from those routers without turning off the power.

Step 3 Place the network module on an ESD-protected surface.



Caution

Minimize contact with the bottom of the network module to avoid damage to components located on the bottom of the card.

Step 4 If the network module contains an expansion module with a SCSI controller, use a small flat-blade screwdriver to remove the two connector screws from the connector in the front panel (see [Figure 1](#)).

Step 5 Using a Phillips screwdriver, remove the expansion-module screw from the front panel (see [Figure 1](#) or [Figure 2](#)) and the two screws on the top of the expansion module (see [Figure 3](#) or [Figure 4](#)).

Figure 1 Screws to Remove if an Expansion Module with a SCSI Controller Is Installed

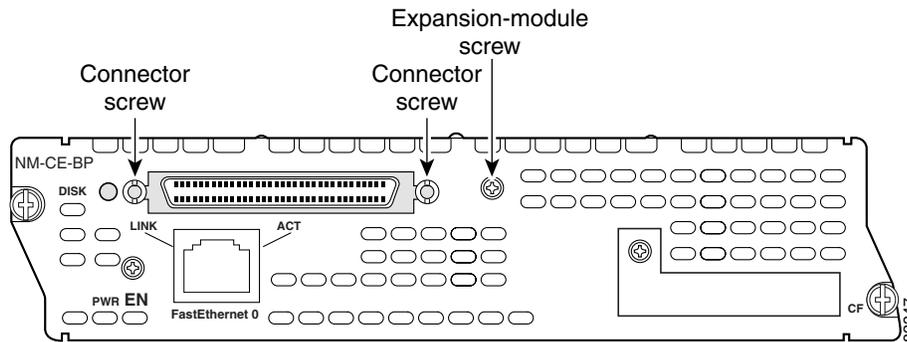
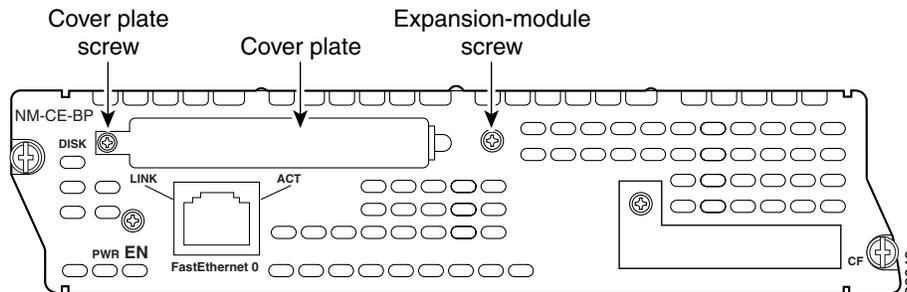


Figure 2 Screws to Remove if an Expansion Module with a Disk Drive Is Installed



Step 6 Carefully unplug the expansion module and lift it away from the network module.



Note

Expansion modules with a disk drive have two connectors that plug into the network module—one at the front and one at the rear. Expansion modules with a SCSI controller have one connector that plugs into the network module—located at the rear.



Tip

For expansion modules with a SCSI controller, confirm that the connector has been removed from the opening in the faceplate before you lift the expansion module away from the network module.

Figure 3 Expansion Module with Disk Drive

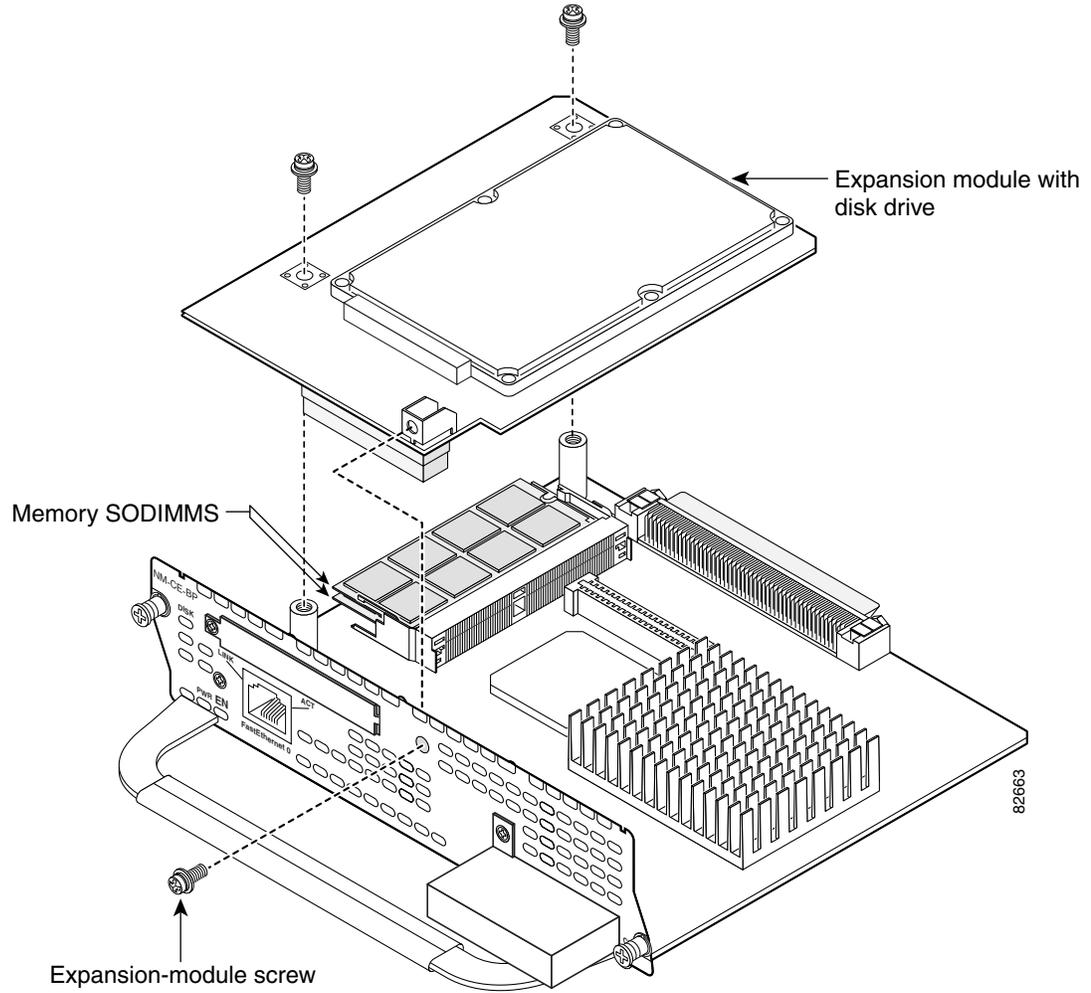
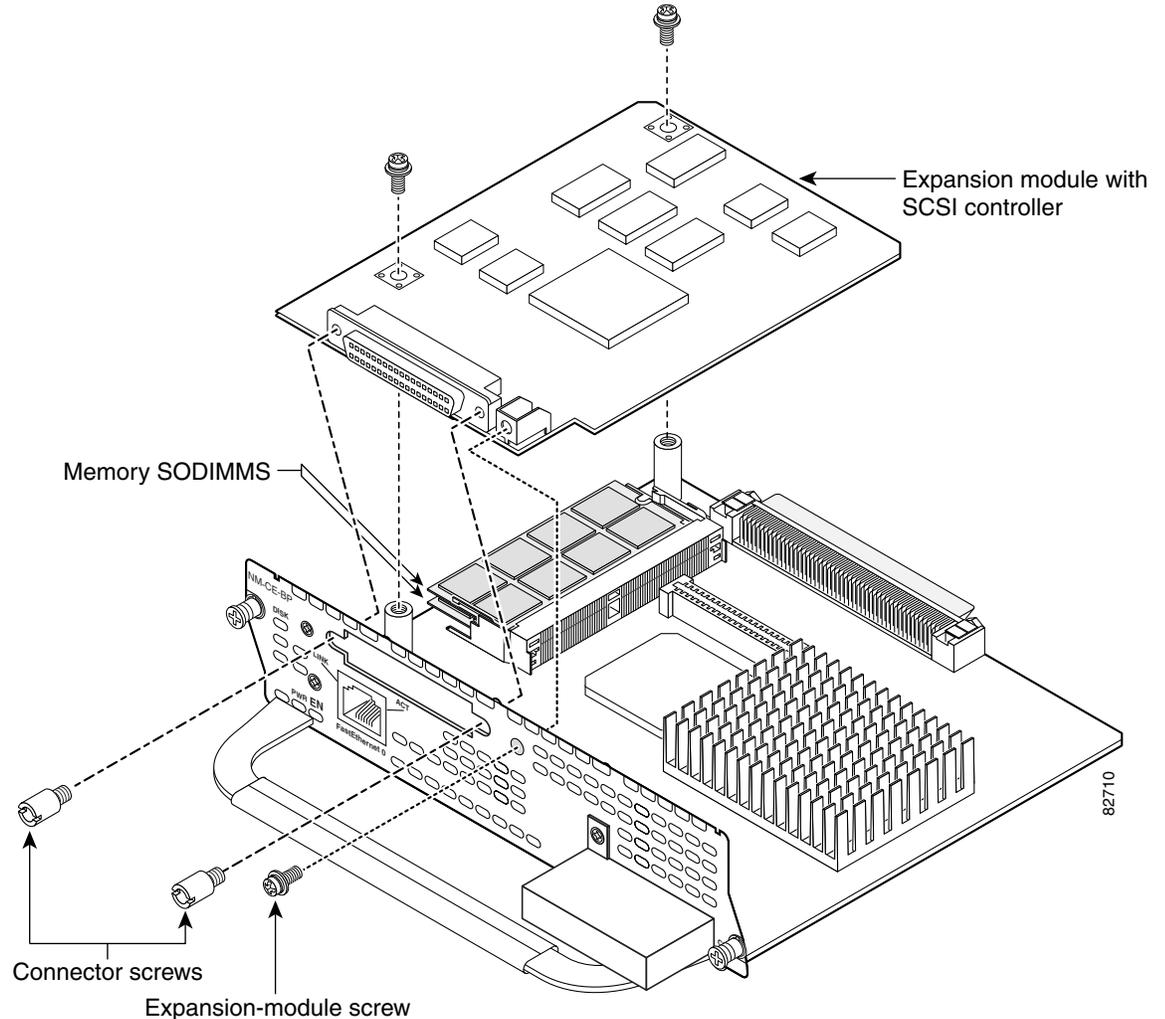


Figure 4 Expansion Module with SCSI Controller



- Step 7** If the memory SODIMM is in the upper slot of the SODIMM connector, remove the memory SODIMM and reinstall it in the lower slot as follows:
- Carefully spread the clips at each edge to release the SODIMM.
 - Lift the SODIMM up slightly and remove it from the SODIMM connector.
 - Hold the SODIMM so that it is angled upward about 30 degrees from horizontal, and insert it into the lower slot of the SODIMM connector until it is completely seated. The notch in the SODIMM prevents incorrect orientation.
 - Carefully press the SODIMM into place so that the clips latch on both edges. The SODIMM must be horizontal when properly installed.
- Step 8** Install the new memory SODIMM in the upper slot of the SODIMM connector as follows:
- Hold the SODIMM so that it is angled upward about 30 degrees from horizontal, and insert it into the upper slot of the SODIMM connector until it is completely seated. The notch in the SODIMM prevents incorrect orientation.
 - Carefully press the SODIMM into place so that the clips latch on both edges. The SODIMM must be horizontal when properly installed.

- Step 9** Plug the expansion module into the network module. Expansion modules with a disk drive have two connectors that plug into the network module—one at the front and one at the rear. Expansion modules with a SCSI controller have one connector that plugs into the network module—located at the rear. See [Figure 3](#) or [Figure 4](#).

**Caution**

Align the connectors carefully and use gentle pressure when installing an expansion module. Misalignment or excessive force can damage connector pins or other board components.

**Note**

For expansion modules with a SCSI controller, be sure to insert the connector on the expansion module through the opening in the faceplate before you seat the expansion module.

- Step 10** Using a Phillips screwdriver, reinstall the expansion-module screw in the front panel and the two standoff screws.
- Step 11** For expansion modules with a SCSI controller, insert the two connector screws (see [Figure 1](#)) into the holes on the connector, and tighten the screws carefully using a small flat-blade screwdriver.
- Step 12** Install the network module into the router chassis and connect the network module to the network (refer to the *Cisco Network Modules Hardware Installation Guide*).

Obtaining Documentation

These 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 this URL:

<http://www.cisco.com>

Translated documentation is available at this URL:

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.

Ordering Documentation

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/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

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

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

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San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

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

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Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries 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.

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

Cisco TAC Web Site

You can use the Cisco TAC Web Site 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 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 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 this URL to register:

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

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

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

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. 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 automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this 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). When you call the center, please have available your service agreement number and your product serial number.

Use this document with the *Regulatory Compliance and Safety Information* document for Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series routers.

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