



Installing Expansion Modules on Cisco CE Network Modules for Caching and Content Delivery

Product Numbers: EM-CE-20G=, EM-CE-40G=, EM-CE-SCSI=

This document contains information relating to the installation, removal, and replacement of expansion modules for the CE network module for caching and content delivery.

Other network module installation documents provide detailed instructions for network module installation and cabling. See the [“Related Documents” section on page 14](#) for more information.

Sections in this document include:

- [Safety Recommendations, page 2](#)
- [Required Tools and Equipment, page 9](#)
- [Installing an Expansion Module, page 9](#)
- [Removing an Expansion Module, page 12](#)
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- [Obtaining Technical Assistance, page 16](#)



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Information in this document covers the following CE network module expansion modules:

- 20 GB disk expansion module
- 40 GB disk expansion module
- SCSI connector expansion module



Tip

For information on installing and connecting the network module, refer to the *Cisco Network Modules Hardware Installation Guide*.

Safety Recommendations

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Put the removed chassis cover in a safe place.
- Keep tools away from walk areas where you or others could fall over them.
- Do not wear loose clothing that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses when working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a hazard to people or makes equipment unsafe.

Safety Warnings

Safety warnings appear throughout this or related publications in procedures that, if performed incorrectly, may harm you. 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 *Regulatory Compliance and Safety Information* (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 *Regulatory Compliance and Safety Information* (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 *Regulatory Compliance and Safety Information* (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 *Regulatory Compliance and Safety Information* (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 *Regulatory Compliance and Safety Information* (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 förkommer i denna publikation i dokumentet *Regulatory Compliance and Safety Information* (Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.
-
-  **Warning** Read the installation instructions before you connect the system to its power source.
-
-  **Warning** Only trained and qualified personnel should be allowed to install or replace this equipment.
-
-  **Warning** Before working on a chassis or working near power supplies, unplug the power cord on AC units; disconnect the power at the circuit breaker on DC units.
-



Warning

Ultimate disposal of this product should be handled according to all national laws and regulations.

The following warnings apply in Australia:



Warning

This equipment is to be installed and maintained by service personnel only as defined by AS/NZS 3260 Clause 1.2.14.3 Service Personnel.



Warning

Incorrect connection of this or connected equipment to a general purpose outlet could result in a hazardous situation.



Warning

This equipment will be inoperable when mains power fails.

Safety with Electricity



Warning

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.



Warning

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Both LAN and WAN ports may use RJ-45 connectors. Use caution when connecting cables.



Warning

Hazardous network voltages are present in WAN ports regardless of whether power to the router is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the router first.



Warning

Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages.



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity.



Warning

Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is OFF and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.

The following warning applies in Australia:



Warning

The telecommunications lines must be disconnected 1) before unplugging the main power connector and/or 2) while the housing is open.

Follow these guidelines when working on equipment powered by electricity:

- Locate the emergency power-off switch in the room in which you are working. Then, if an electrical accident occurs, you can quickly shut the power OFF.
- Before working on the router, turn OFF the power and unplug the power cord.
- Disconnect all power before doing the following:
 - Installing or removing a router chassis
 - Working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- Never assume that power is disconnected from a circuit. Always check.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, and missing safety grounds.

- If an electrical accident occurs, proceed as follows:
 - Use caution; do not become a victim yourself.
 - Turn OFF power to the router.
 - If possible, send another person to get medical aid. Otherwise, determine the condition of the victim and then call for help.
 - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic printed circuit cards are improperly handled and can result in complete or intermittent failures. Always follow ESD prevention procedures when removing and replacing cards. Ensure that the router chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the clip to an unpainted surface of the chassis frame to safely channel unwanted ESD voltages to ground. To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.



Caution

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

Required Tools and Equipment

You need the following equipment to perform all procedures described in this document:

- ESD-preventive wrist strap
- Nonmagnetic number 1 Phillips screwdriver or small flat-blade screwdriver



Tip

Use the ESD bag in which the network module was shipped to prevent electrostatic damage from a charged surface.

Installing an Expansion Module

To install an expansion module, use the following procedure:

Step 1 Remove the network module from the router chassis (refer to the *Cisco Network Modules Hardware Installation Guide*).

Step 2 Place the network module on an ESD-protected surface.



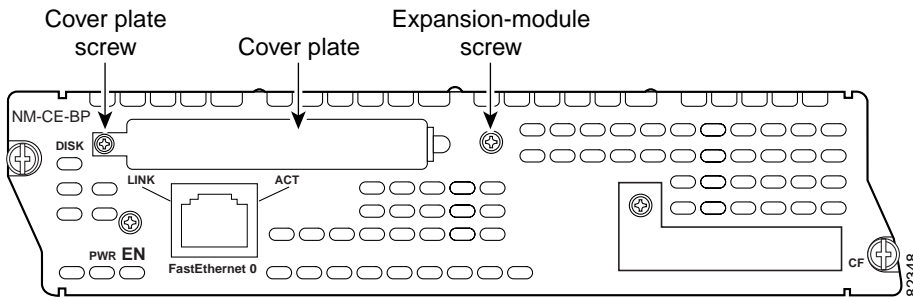
Caution

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

Step 3 (optional) Remove the current expansion module, using the procedure listed in the [“Removing an Expansion Module”](#) section on page 12.

Step 4 Using a Phillips screwdriver, remove the left faceplate screw from the connector outlet cover plate (see [Figure 1](#)).

Figure 1 Cisco CE Network Module for Caching and Content Delivery Faceplate



Note

Some early Cisco CE network modules have an inactive USB port on the faceplate. This USB port has been removed in later Cisco CE network modules.

Step 5

Using a nonmagnetic Phillips screwdriver, remove the right faceplate screw next to the SCSI connector outlet and the two screws from their standoffs on the network module (see [Figure 1](#) and [Figure 2](#)).

Step 6

Align the expansion module with the standoffs on the network module, then press downward to engage the connector (see [Figure 2](#)).



Caution

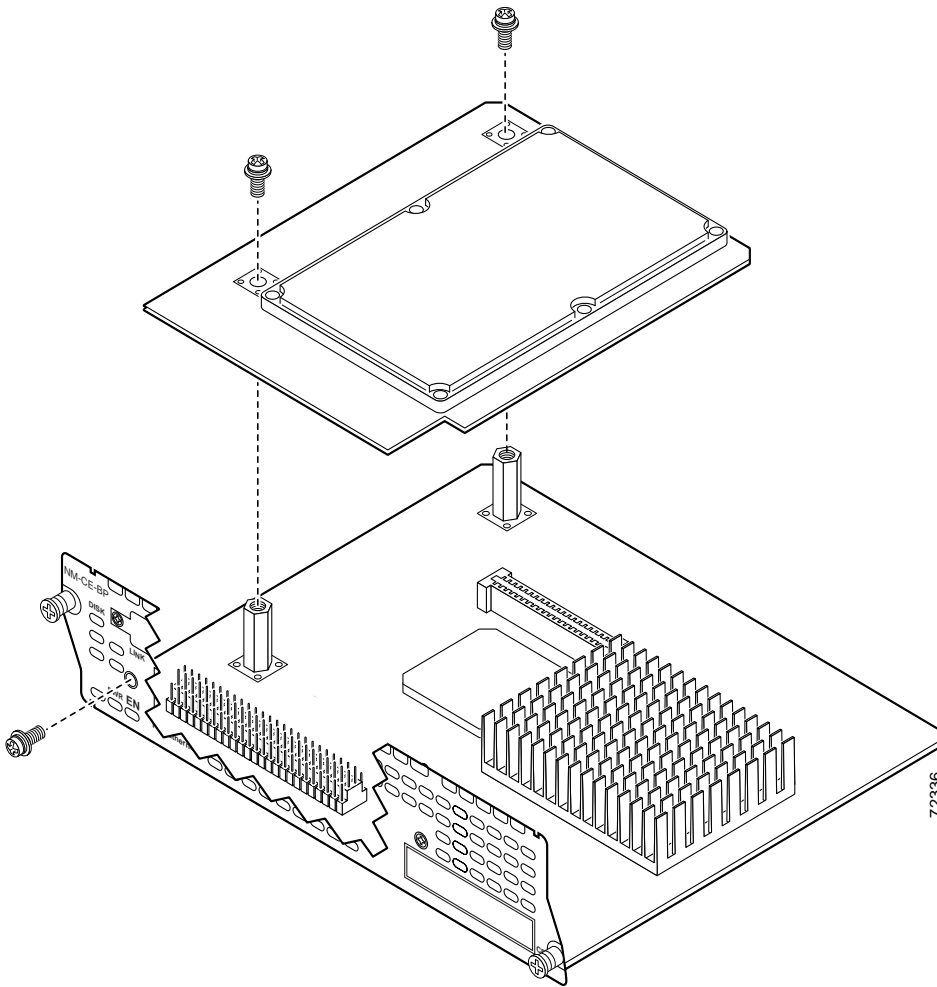
Use gentle pressure when removing or installing an expansion module. Excessive force can damage connector pins or other board components.



Tip

Confirm the SCSI connector on the EM-CE-SCSI is inserted through the SCSI connector outlet on the network module faceplate before pressing downward on the expansion module.

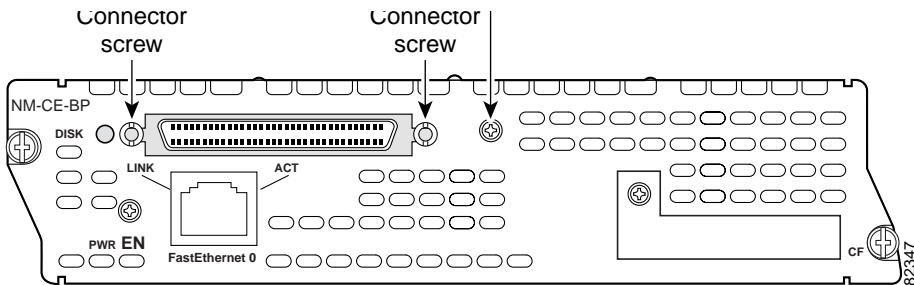
Figure 2 Installing an Expansion Module on a CE Network Module



- Step 7** Using a Phillips screwdriver, reinsert the right faceplate screw and the two standoff screws, then tighten the screws until the card is firmly attached to the network module.

- Step 8** (for EM-CE-SCSI only) Using a small flat-blade screwdriver, insert the SCSI screws (see [Figure 3](#)) into the holes on the connector, then tighten the screws until the connector is firmly seated against the faceplate.

Figure 3 Cisco CE Network Module for Caching and Content Delivery Faceplate with Installed EM-CE-SCSI



- Step 9** (for EM-CE-20GB only) Reinstall the connector outlet cover plate. Using a Phillips screwdriver, insert the left faceplate screw and tighten until the connector outlet cover plate is firmly in place.
- Step 10** 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*).

Removing an Expansion Module

To remove an expansion module, use the following procedure:

- Step 1** (for EM-CE-SCSI only) Disconnect the SCSI cable from the SCSI connector.
- Step 2** Remove the network module from the router chassis (refer to the *Cisco Network Modules Hardware Installation Guide*).
- 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

(for EM-CE-SCSI only) Using a small flat-blade screwdriver, remove the SCSI screws from the SCSI connector (see [Figure 3](#)).

Step 5

Using a Phillips screwdriver, remove the left faceplate screw and the two screws on the top of the expansion module (see [Figure 1](#) and [Figure 2](#)).

Step 6

Lift the expansion module away from the network module.

**Tip**

Confirm the SCSI connector on the SCSI connector expansion module has been removed from the SCSI connector outlet on the network module faceplate before lifting the expansion module away from the network module.

**Caution**

Use gentle pressure when removing or installing an expansion module. Excessive force can damage connector pins or other board components.

Step 7

Using a Phillips screwdriver, insert the three screws into the standoffs on the network module, then tighten screws slightly to avoid losing the screws.

Step 8

Reinstall the connector outlet cover plate. Using a Phillips screwdriver, insert the left faceplate screw and tighten until the connector outlet cover plate is firmly in place.

**Timesaver**

If you are installing a new expansion module right away, install the connector outlet cover plate after you have finished installing the new expansion module. The EM-CE-SCSI does not require installation of the connector outlet cover plate.

Step 9

Install the network module into the router chassis (refer to the *Cisco Network Modules Hardware Installation Guide*), or install a new expansion module using the procedure described in the [“Installing an Expansion Module”](#) section on [page 9](#).

Related Documents

For additional information, see the following documents.



Tip

For information on obtaining documentation, see the [“Obtaining Documentation” section on page xviii](#). For a list of orderable documentation, search the Cisco Price List under “Documentation.”

Hardware Documentation

For the Cisco 2600 series, see documents listed under *Cisco 2600 Series Routers*.

For the Cisco 3600 series, see documents listed under *Cisco 3600 Series Routers*.

For the Cisco 3700 series, see documents listed under *Cisco 3700 Series Routers*.

For information on the Cisco -48 VDC power supply, see the *Installing Cisco -48 VDC Power Supplies* document.

Cisco IOS Software Documentation

For information on Cisco IOS Release 12.2(11)YT, see appropriate documents listed under *Cisco IOS Release 12.2(11)YT*.

For a description of the Cisco IOS features supported on CE network modules, see *Content Engine Network Module*.

Content Engine Documentation

For information on the Cisco Content Engine, see documents listed under *Cisco Content Engine*.



Timesaver

Start with the *Cisco ACNS Software Documentation Roadmap* to find task-related documents quickly.

Cisco Storage Array Documentation

For information on the external Cisco storage arrays supported on the 1-NM with SCSI Controller Expansion Module and the 2-NM, see the following documents:

- For information on installing and configuring the Cisco Storage Array 6, see the *Cisco Storage Array 6 Installation and Configuration 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

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

Cisco documentation is available in the following ways:

- Registered 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 corporate headquarters (California, USA) 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

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<http://www.cisco.com>

Technical Assistance Center

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

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.

This document is to be used in conjunction with the *Cisco Network Modules Hardware Installation Guide*.

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