Quick Start Guide

Cisco uBR7225VXR Universal Broadband Router

1 Overview

The Cisco uBR7225VXR universal broadband router is used in Cisco Cable Modem Termination System (CMTS) solutions. The router allows high-speed data services to be packaged similar to basic cable television service or video fare.

The Cisco uBR7225VXR router:

- Supports data and packetized voice connectivity over a bidirectional cable television and IP backbone network.
- Supports high-speed Internet access, IP telephony, and Virtual Private Network (VPN) applications.
- Supports PacketCable 1.0, Data-over-Cable Service Interface Specification (DOCSIS) 1.1, and EuroDOCSIS 1.1.
- Supports DOCSIS- or EuroDOCSIS-based cable interfaces and cable modems (or set-top boxes with integrated DOCSIS or EuroDOCSIS cable modems).
- Supports DOCSIS 2.0 A-TDMA only.

- Supports both 6-MHz North American channel plans using ITU-T J.83 Annex B operation and 8-MHz phase alternating line (PAL) and Sequential Coulour Avec Memoire (SECAM) channel plans using ITU-T J.83 Annex A operation.
- Works in conjunction with dialup access products to support upstream traffic from DOCSIS-based cable interfaces connected to the public switched telephone network (PSTN).
- Includes environmental monitoring and reporting functions.
- Supports online insertion and removal (OIR). The network processing engines (NPE-G1 and NPE-G2) do not support OIR. You must power down the chassis before removing this component.
- Is fully radio frequency (RF) hardened to ensure virtually noise-free transmission.
- Supports N + 1 redundancy solutions using the Cisco RF switch.
- Supports 1+1 interchassis redundancy (does not require the Cisco RF switch).

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

Warning **High leakage current—earth connection essential before connecting to system power supply**. Statement 342

Warning **This product is not intended to be directly connected to the Cable Distribution System. Additional regulatory compliance and legal requirements may apply for direct connection to the Cable Distribution System. This product may connect to the Cable Distribution System ONLY through a device that is approved for direct connection**. Statement 1078

For translations of the warnings used in this document, see the *Regulatory Compliance and Safety Information for Cisco uBR7200 Series Universal Broadband Routers* document that comes with this router. Reference the translations by statement number (example: Statement 1020).

Cisco uBR7225VXR Components

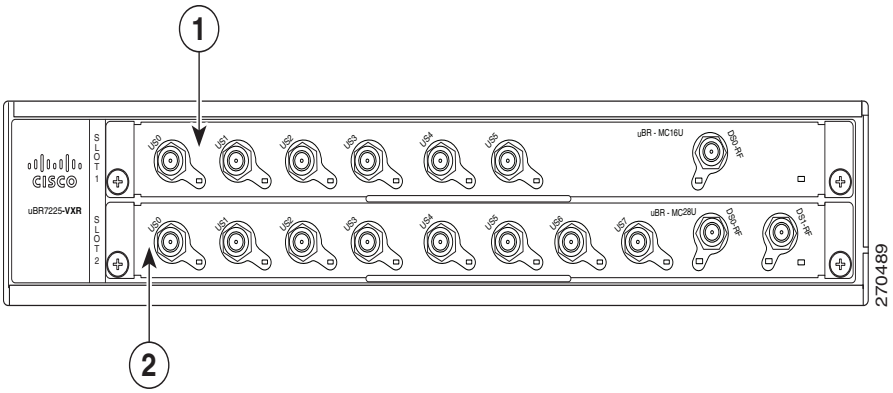
The Cisco uBR7225VXR universal broadband router components include: (See Figure 1 and Figure 2.)

- Cable interface line cards (also called line cards) that interface to the cable television network.
- Dual fan trays. One fan cools the line card side while the other fan cools the NPE and power board side.
- Two AC power supplies—The Cisco uBR7225VXR supports an optional redundant power supply.
- One network processing engine (NPE-G1 or NPE-G2) that performs packet routing and system management functions for the chassis.
- One console port and one auxiliary port.

For specific instructions to install, remove, or replace system components, refer to the Configuration Notes directory at the following URL:

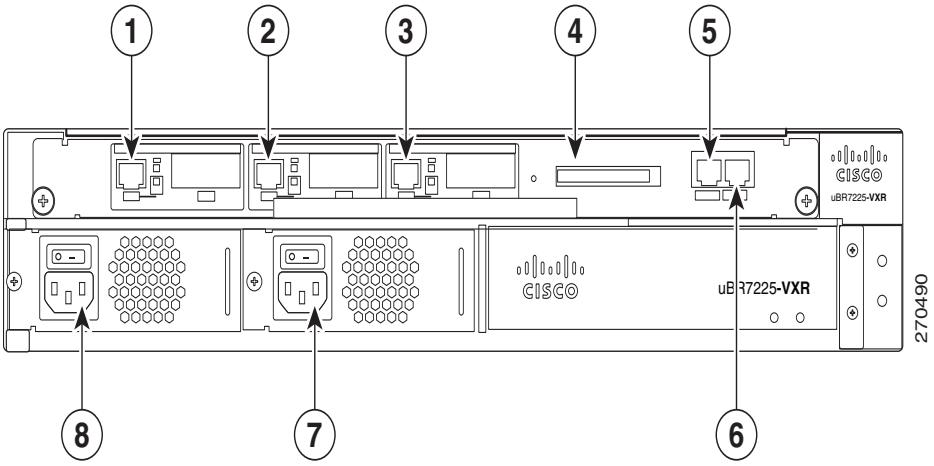
http://www.cisco.com/en/US/products/hw/cable/ps2217/tsd_products_support_configure.html

Figure 1 Front View of the Chassis



1	Cable interface card slot 1	**2**	Cable interface card slot 2

Figure 2 Rear View of the Chassis

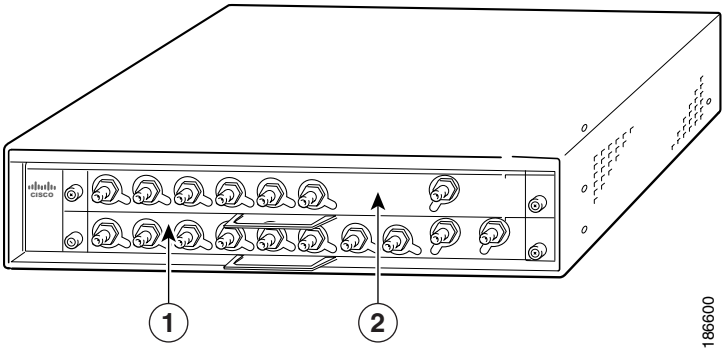


1	Gigabit Ethernet 0/1	**5**	Console port
2	Gigabit Ethernet 0/2	**6**	Auxiliary port
3	Gigabit Ethernet 0/3	**7**	AC-input power supply 2
4	Network processing engine	**8**	AC-input power supply 1

Card Slot and Logical Interface Numbering

The cable interface line card slots maintain the same slot number regardless of whether other cable interface line cards are installed or removed. However, when you move a line card to a different slot, the logical interface number changes to reflect the new slot number. (See Figure 3.)

Figure 3 Cable Interface Card Locations



1	Cable interface card location 1	**2**	Cable interface card location 2

2 Preparing for Installation

This section contains information about tools and parts, warnings, site preparation information, and information for workbench or tabletop installation and rack-mount installation.

Site Preparation

Check the following:

- Site is capable of maintaining an ambient temperature of 32 to 104 °F (0 to 40°C).
- Site power is available and adequate
- Cabling requirements (type, distance)
- Rack-mounting requirements (working space, proper airflow)

Site Environment

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Warning **This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.** Statement 1045

Temperature and Humidity Requirements

Table 1 and Table 2 list the nominal operating and non-operating environment requirements. Any measurements that approach the minimum or maximum of a range indicate a potential problem.

Table 1 Operating Environment

Specification	Minimum	Maximum
Temperature, ambient operating	32°F (0°C)	104°F (40°C)
Humidity, ambient (non-condensing) operating	10%	90%
Altitude, operating and non-operating	–197 ft (–60 m)	13,123 ft (4000 m)
Vibration, operating	—	5 to 200 Hz, 0.5 g (1 octet/min.)

Table 2 Non-operating Environment

Specification	Minimum	Maximum
Temperature, ambient non-operating and storage	–4°F (–20°C)	149°F (65°C)
Humidity, ambient (non-condensing) non-operating and storage	5%	95%
Altitude, operating and non-operating	–197 ft (–60 m)	13,123 ft (4000 m)
Vibration, non-operating	—	5 to 200 Hz, 1 g (1 octet/min.) 200 to 500 Hz, 2 g (1 octet/min.)

Verifying Contents After Unpacking

Power cables, manuals, and other additional items are packaged in separate boxes. After you have unpacked the system, verify that you have received all the required components and documentation.

Step 1 Using the packing list as a guide, verify that you have received everything that is listed, including the following:

- **a.** System hardware documentation and software documentation (if ordered).
- **b.** Optional equipment that you ordered, such as transceivers (GBICs), flash cards, cables, or special connectors.

Step 2 Check that all equipment you ordered is installed in the chassis.

Step 3 Ensure that the system configuration matches the packing list.

Installation Tools and Equipment

The tools and equipment listed below are recommended as the minimum necessary to install the Cisco uBR7225VXR router. Other equipment may include test equipment to check electronic and optical signal levels, power levels, and communications links.

- Rack-mounting kit (includes brackets and screws)
- Number 2 Phillips screwdriver
- 3/16-inch flat-blade screwdriver
- AC-input cable—18 AWG cable with a 3-lead IEC-320 receptacle on the power supply end, and a country-dependent plug on the other end
- Antistatic mat or antistatic foam and electrostatic discharge (ESD) grounding strap or the disposable ESD strap
- Wire stripper and crimping tool
- The accessory kit comes with ground lugs and M5 screws with captive, locking washers
- Wire—6-AWG (16 mm), provided by the customer

3 Installation Guidelines

This section contains information about power and cabling guidelines, workbench or tabletop installation, and rack-mount installation guidelines.

Power Guidelines

Follow these precautions and recommendations when planning power connections to the Cisco uBR7225VXR router:

- Check the power at your site before installation and periodically after installation to ensure that you are receiving clean power. Install a power conditioner if necessary.
- Provide proper grounding. A grounding lug mount is provided on the rear of the chassis.
- Make sure that the frame ground is tied to a single building ground.
- Use a 6-AWG, copper ground conductor (minimum requirement) when attaching the chassis ground to a headend or other interior ground system.

Cabling Guidelines

When planning the location of a new system, keep in mind signal type, signal speed, and transmission medium, as well as distance limitations for signaling, EMI, and connector compatibility. Use this information as a guideline in planning your network connections before installing the Cisco uBR7225VXR router.

Ethernet and Fast Ethernet Connections

The maximum distances for Ethernet and Fast Ethernet network segments and connections depend on the type of transmission cable being used. See Table 3 for the maximum transmission distances between stations.

Table 3 Ethernet and Fast Ethernet Maximum Transmission Distances

Transceiver Speed	Cable Type	Transmission Mode	Maximum Distance Between Stations
10 Mbps	Category 3	Full duplex and half duplex	328 ft (100 m)
10 Mbps	Multimode fiber (MMF)	Full duplex and half duplex	1.2 mi (2 km)
100 Mbps	Category 5 Category 5e	Full duplex and half duplex	328 ft (100 m)

Table 3 Ethernet and Fast Ethernet Maximum Transmission Distances

Transceiver Speed	Cable Type	Transmission Mode	Maximum Distance Between Stations
100 Mbps	Category 6	Full duplex and half duplex	328 ft (100 m)
100 Mbps	MMF	Half duplex Full duplex	1312 ft (400 m) 1.2 mi (2 km)
100 Mbps	Single mode fiber (SMF)	Half duplex Full duplex	1312 ft (400 m) 6.2 mi (10 km)
1000 Mbps	MMF and SMF	Half duplex Full duplex	1804 ft (550 m) 6.2 mi (10 km)

For details about cabling specifications, refer to the *Network Processing Engine and Network Services Engine Installation and Configuration* guide at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_installation_guides_list.html

Note A shielded CAT5e cable must be used to meet EMI Class A certification.

For details about Ethernet 10BaseT and 100BaseTX cables, refer to the *Ethernet 100BaseTX and 10BaseT Cables: Guidelines and Specifications* document at the following URL:

http://www.cisco.com/en/US/products/hw/routers/ps133/products_tech_note09186a00801f5d9e.shtml

Coaxial Cable Connections

Keep in mind the following information when you are setting up and cabling your system:

- The length of the cable determines the amount of signal loss.
- Headend-grade cable (quad-shield 59-series minimum) is recommended.
- Do not bend the coaxial cable tighter than the cable manufacturer's specified minimum bend radius.
- Do not tighten cable connections (F connectors) more than 10 to 15 in-lbs.
- To prevent connection problems, always use the same size coaxial cable. For example, going from a 6-series cable to a 59-series cable may cause reliability issues (intermittent contact) in the headend environment.

Workbench and Tabletop Installation Guidelines

When installing the router on a workbench or tabletop, check the following:

- There is at least 3 inches (7.72 cm) of clearance at the inlet and exhaust vents (the right and left sides of the router).
- There is approximately 23.25 inches (59.06 cm) of clearance at the front, and 19 inches (48.3 cm) at the back of the router for installing and replacing field-replaceable units (FRUs), or accessing network cables or equipment.
- There is adequate ventilation (it is being installed in an enclosed cabinet where ventilation is adequate).
- Blank panels are installed in any slot that does not have a component.
- The cable-management bracket and four M3 x 8-mm Phillips panhead screws are set aside (if required).

Warning **Do not stack the chassis on any other equipment. If the chassis falls, it can cause severe bodily injury and equipment damage.** Statement 48

Rack-Mount Installation Guidelines

- Allow sufficient clearance around the rack for maintenance.You need 36 in. (91.44 cm) of clearance to remove and replace system components.
- Always place the heavier equipment in the lower half of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting the chassis.
- Make sure that open or relay racks are bolted to the floor.
- When mounting the chassis in four-post or relay racks, use all the screws and brackets that are provided.

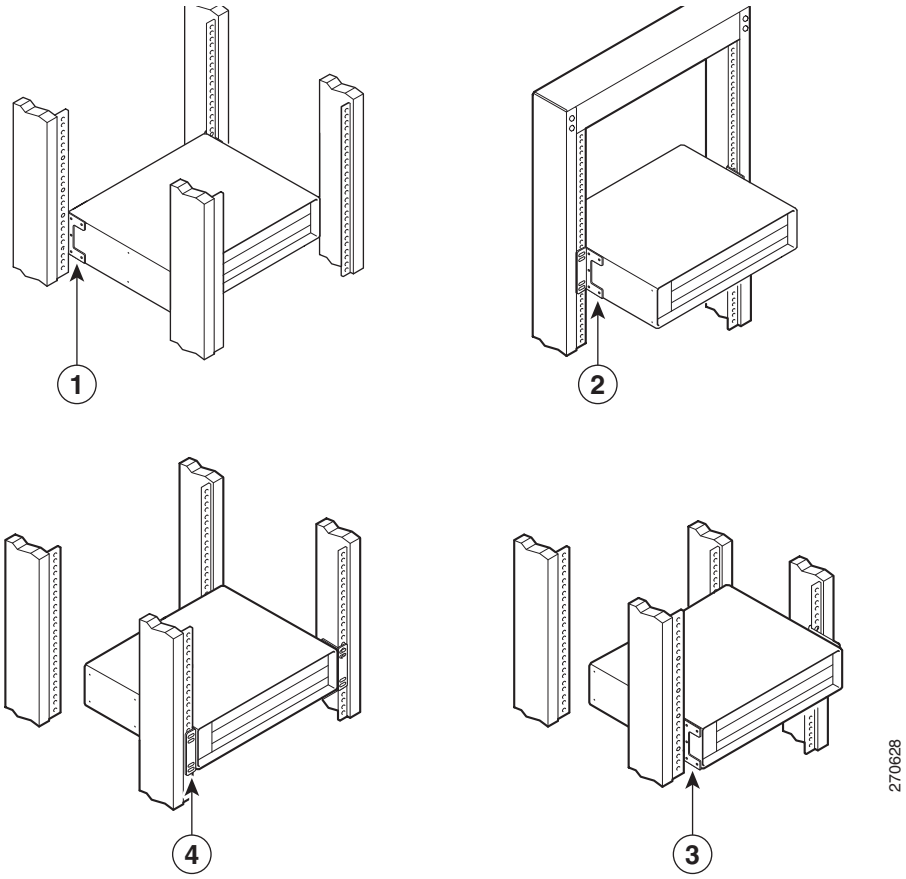
4 Installing the Chassis

The Cisco uBR7225VXR routers may be installed on a tabletop or rack-mounted. A rack-mount kit ships from the factory with each router. The rack-mount kit includes the hardware used to mount the router in a standard 19-inch equipment rack or Telco-type rack.

Attaching the Rack-Mount Brackets

Before installing the chassis in the rack, you must install rack-mount brackets on each side of the front, middle, or rear of the chassis. (See Figure 4.) You can use the cable-management bracket if you are rack-mounting the chassis from the front. If you are rack-mounting the chassis at the rear or middle of the chassis, both rack-mount brackets and the cable-management bracket must be installed on the chassis before the chassis is installed in the rack.

Figure 4 Rack-Mount Bracket Options



1	Installed in 4-post rack—rear installation	**3**	Installed in 4-post rack—protruding front installation
2	Installed in a Telco-type rack—middle rack-mount installation	**4**	Installed in 4-post rack—front installation

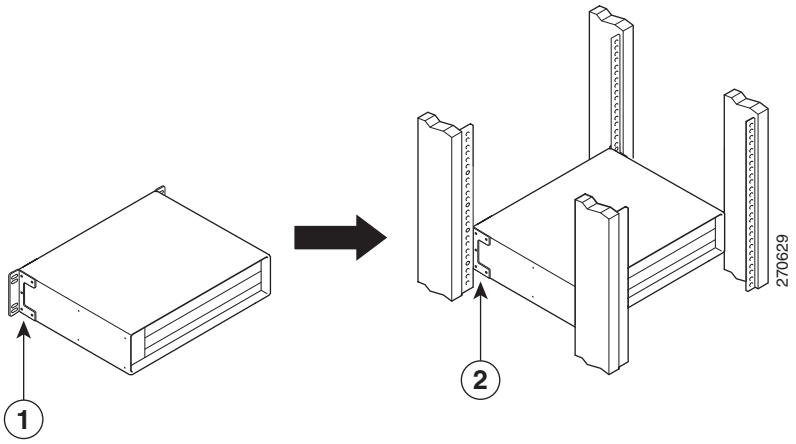
Attach the Rack-Mount Brackets to the Rear of the Chassis

To install the rack-mount brackets on the chassis for a rear rack-mount configuration, complete the following steps:

Step 1 Locate the threaded holes in the rear sides of the chassis.

Step 2 Align the first rack-mount bracket to the threaded holes in one side of the chassis as shown in Figure 5.

Figure 5 Installing the Rack-Mount Brackets on the Rear of the Chassis



1	Rack-mount bracket	**2**	Rack-mount bracket on the rear of the chassis

Note The Cisco uBR7225VXR chassis has only five holes in the rack-mount brackets. You must use four holes for the front rack-mount and middle rack-mount, and five holes for the rear mount.

Step 3 Thread the five M4 x 6-mm Phillips flathead screws through the rack-mount bracket and into the side of the chassis. Use a number 2 Phillips screwdriver to tighten the screws.

Step 4 Repeat Step 1 through Step 3 for the other rack-mount bracket.

Attach the Rack-Mount Brackets to the Front of the Chassis

To install the rack-mount brackets on the chassis for a front rack-mount configuration, complete the following steps.

Step 1 Locate the threaded holes in the front sides of the chassis.

Note The Cisco uBR7225VXR chassis has only five holes in the rack-mount brackets. You must use four holes for the front rack-mount and middle rack-mount, and five holes for the rear mount.

Step 2 Align the first rack-mount bracket to the threaded holes in one side of the chassis.

Step 3 Thread the four M4 x 6-mm Phillips flathead screws through the bracket and into the side of the chassis. Use a number 2 Phillips screwdriver to tighten the screws.

Step 4 Repeat Step 1 through Step 3 for the other rack-mount bracket.

Note Ensure you fasten the cable-management bracket before installing the chassis in the rack.

Attach the Rack-Mount Brackets to the Middle of the Chassis

To install the rack-mount brackets on the chassis for a middle rack-mount configuration, complete the following steps:

Step 1 Locate the threaded holes in the middle sides of the chassis.

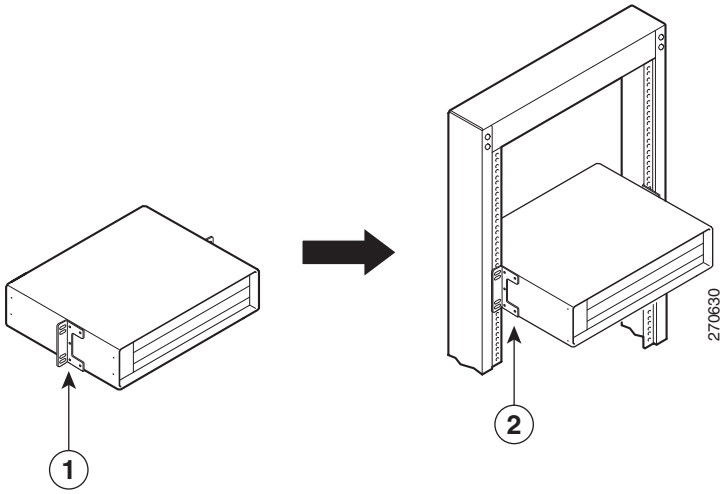
Step 2 Align the first rack-mount bracket to the threaded holes in one side of the chassis as shown in Figure 6. Use the available set of holes (only one set is available) to align the bracket to the threaded holes in the sides of the chassis.

Note The Cisco uBR7225VXR chassis has only five holes in the rack-mount brackets. You must use four holes for the front rack-mount and middle rack-mount, and five holes for the rear mount.

Step 3 Thread the four M4 x 6-mm Phillips flathead screws through the rack-mount bracket and into the side of the chassis. Use a number 2 Phillips screwdriver to tighten the screws.

Step 4 Repeat Step 1 through Step 3 for the other rack-mount bracket.

Figure 6 Installing the Rack-Mount Brackets in the Middle of the Chassis



1	Rack-mount bracket	**2**	Rack-mount bracket in the middle of the chassis

Installing the Cable-Management Bracket

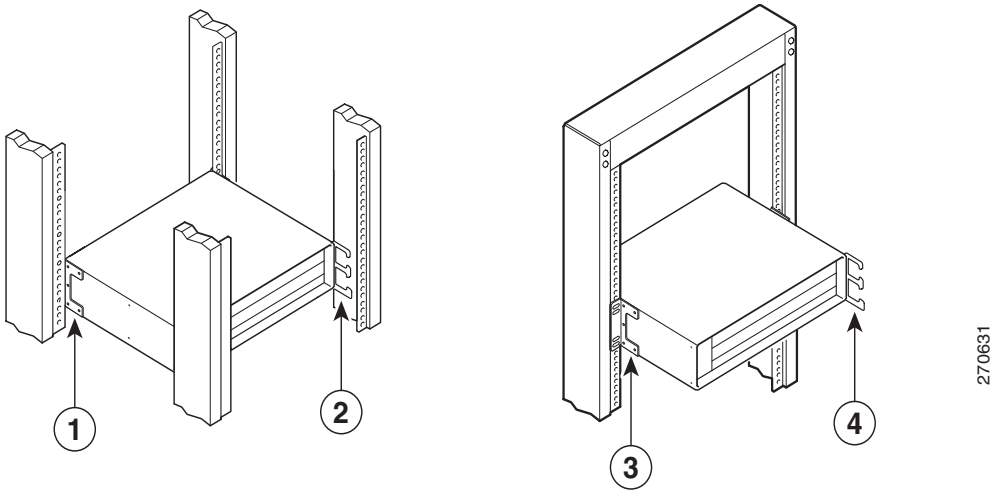
Before installing the chassis in the rack, both rack-mount brackets and the cable-management bracket must be installed.

To install the cable-management bracket, complete the following steps:

Step 1 Align the cable-management bracket with the two right front threaded holes in the chassis as shown in Figure 7.

Step 2 Thread the two M3 x 8-mm Phillips panhead screws through the bracket and into the chassis. Use a number 2 Phillips screwdriver to tighten the screws.

Figure 7 Location of Cable-Management Bracket



1	Rack-mount bracket	**3**	Rack-mount bracket
2	Location of cable-management bracket—rear mount	**4**	Location of cable-management bracket—middle mount

Installing the Chassis on a Workbench or Tabletop

Complete the following steps to install the Cisco uBR7225VXR router on a workbench or tabletop:

Step 1 Remove any debris and dust from the workbench or tabletop, and the surrounding area.

Step 2 On the chassis, ensure that all captive screws on the network processing engine, the line cards, and each power supply are tightened.

Step 3 Add the five rubber feet supplied with the accessory kit to the base of the chassis. Five indented circles are provided on the base of the chassis to indicate the location to which the rubber feet can be added.

Step 4 Place the Cisco uBR7225VXR router on the the workbench or tabletop. Ensure that there is appropriate amount of space around the router.

Installing the Chassis in the Rack

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Caution Because the brackets support the weight of the entire chassis, be sure to use all of the required slotted screws to fasten the two rack-mount brackets to the rack posts.

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

Warning **To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit.** Statement 1032

To install the chassis in the rack, complete the following steps:

Step 1 On the chassis, ensure that the captive installation screws on all the router components are tightened.

Step 2 Make sure that your path to the rack is unobstructed. If the rack is on wheels, ensure that the brakes are engaged or that the rack is otherwise stabilized.

Caution Two people should perform Step 3 through Step 7, because a fully loaded chassis weighs ~48 pounds.

Step 3 Position the chassis so that the front end is closest to you; then lift the chassis and move it to the rack.

Step 4 Slide the chassis into the rack, pushing it back until the brackets installed on the chassis meet the mounting strips or posts on both sides of the rack.

Caution The rack-mount bracket must be placed behind the rack post or mounting strip in the rear rack-mount configuration. (See Figure 5 on page 9.)

Step 5 While keeping the brackets flush against the posts or mounting strips, position the router so that the holes in the brackets are aligned with those in the mounting strips.

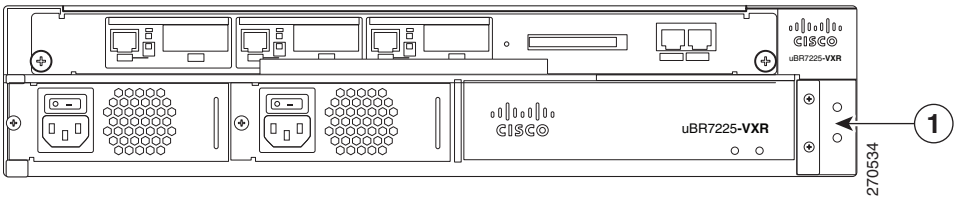
Step 6 Insert the appropriate screws for your rack type (two to a side) through the brackets and into the mounting strip (use the top and bottom bracket holes).

Step 7 Using a 3/16-inch flat-blade screwdriver, tighten all the screws.

Connecting the Chassis to Ground

Before connecting power and turning on the router, you must provide an adequate ground connection for your system. Two M5 ground receptacles provide a chassis ground connection for electrostatic discharge (ESD) and for your safety. A grounding lug mount is provided on the rear of the chassis. The mounting nuts are in the lower right corner of the rear of the chassis. (See Figure 8.)

Figure 8 Ground Lug Location



1	Ground lug location

The building installation should provide a means for connection to the protective earth, and the equipment must be connected to that means.

Before installing the equipment, you must check whether the socket-outlet from which the equipment is to be powered provides a connection to the building protective earth. If not, arrange for the installation of a protective grounding conductor from the protective grounding terminal on the equipment to the protective earth wire in the building.

Warning **High leakage current—earth connection essential before connecting to system power supply**. Statement 342

Warning **Use copper connectors only.** Statement 1025

Warning **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

Caution The Cisco uBR7225VXR router installation must comply with all applicable codes and is approved for use with copper conductors only. The ground bond fastening hardware should be of compatible material and preclude loosening, deterioration, and electrochemical corrosion of hardware and joined material. Attachment of the chassis ground to a headend, hub, or other interior ground system should be made with a 6-AWG, copper ground conductor at a minimum.

To connect the Cisco uBR7225VXR router chassis to ground, complete the following steps:

Step 1 Ensure that there is no power going to the router.

Step 2 Use the wire stripper to strip approximately 0.75 in (2 cm) of shielding from one end of the 6-AWG wire.

Step 3 Insert the stripped end of the wire into the wire receptacle on the grounding lug.

Step 4 Use the crimping tool to carefully crimp the wire receptacle around the wire.

Step 5 Attach the grounding lug to the router using two M5 screws.

Step 6 Connect the other end of the grounding wire to an appropriate grounding point.

5 Connecting the Chassis to Power

The Cisco uBR7225VXR router is equipped with the 300-Watt AC-input power supply, and the AC-input power supply has an electrical current rating of 4A.

Note The DC-input power supply is not supported on the Cisco uBR7225VXR router.

Warning **This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.** Statement 1028

Warning **Read the installation instructions before connecting the system to the power source.** Statement 1004

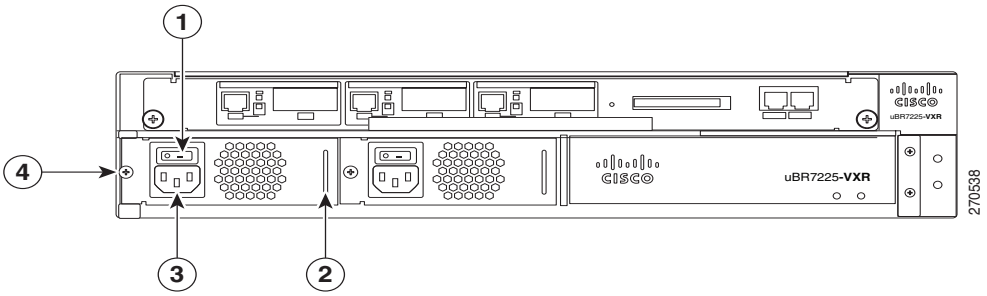
Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43

AC Power Supplies

To connect AC-input power to the Cisco uBR7225VXR router, complete the following steps:

Step 1 At the rear of the router, ensure that the power switch on the power supply is in the OFF position. (See Figure 9.)

Figure 9 Connecting AC-Input Power



1	Power switch	**3**	AC-input receptacle
2	Handle	**4**	Captive installation screw

Step 2 Plug the power cable into the AC connector of the power supply.

Note For additional AC power cable strain relief, secure the cable to the power supply handle by inserting a nylon cable tie through the hole in the handle and around the cable.

Step 3 Plug the AC power supply cable into the AC power source. Repeat Step 1 through Step 3 for the second power supply, if required.

Step 4 Turn on the power switch on the router.

6 Cabling

This section contains information about connecting interface card cables, auxiliary, and console ports.

Connecting Interface Card Cables

The instructions for connecting the cables for each cable interface line card installed in the Cisco uBR7225 router are contained in the cable interface card installation document. Refer to the *Cisco uBR7200 Series Cable Interface Line Card Hardware Installation Guide* at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_installation_guides_list.html

Console and Auxiliary Port Connection Equipment

The console port is a DCE DB-25 receptacle for connecting a data terminal, which you use to configure the interfaces and bring up the Cisco uBR7255VXR router. The auxiliary port is a DTE DB-25 plug for connecting a modem or the other DCE device (such as a channel service unit/data service unit) to the router.

Note Both the console and auxiliary ports are asynchronous serial ports; any devices connected to these ports must be capable of asynchronous transmission.

Before connecting a terminal to the console port, configure the terminal to match the router console port as follows:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit (9600 8N1)

For details about cabling, refer to the *Cisco uBR 7200 Series Universal Broadband Router Hardware Installation Guide* at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_installation_guides_list.html

7 Powering on the Cisco uBR7225VXR Router

After installing your Cisco uBR7225VXR universal broadband router and connecting cables, check the following conditions before powering on the router:

- Every component is securely inserted in the right slot and the captive installation screws are tightened.
- All network interface line cables are connected to the Ethernet ports on the NPE.
- Hybrid fiber-coaxial (HFC) network cable is connected to the cable interface cards.
- A compact flash card is installed in a compact flash slot in the front panel of the NPE. Use only authorized, Cisco provided compact flash cards.
- Each AC-input power cable is connected.
- The console terminal is connected.

Caution If a cable interface line card or the network processing engine is not properly seated or not fully locked into place, the Cisco uBR7225VXR router might enter a continuous restart loop.

To power on the Cisco uBR7225VXR router, complete the following steps:

Step 1 Place the power switch on the power supply in the ON (|) position. Repeat this step if a second power supply is installed. Two green LEDs on each power supply turn on indicating normal power supply functionality.

Step 2 Listen for the fans; you should immediately hear them operating. In a very noisy environment, also look for air movement around the chassis to verify that the fans are operating. If the Cisco uBR7225VXR router was recently switched off, it might take up to 90 seconds for the power supply to restart and the fans to start operating.

Step 3 Observe the initialization process. When the system boot is complete (a few seconds), the NPE begins to initialize the cable interface line cards.

Note By default, Cisco uBR-MC16U or Cisco uBR-MC28U cable interface line cards have no output until the downstream signal frequency is set and the no **cab down rf-shut** command is applied.

8 Troubleshooting the Installation

For information on how to troubleshoot the hardware installation, refer to the *Cisco uBR 7200 Series Universal Broadband Router Hardware Installation Guide* at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_installation_guides_list.html

For cable-specific commands for the Cisco uBR7225VXR universal broadband router, refer to the *Cisco IOS CMTS Cable Command Reference* at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_command_reference_list.html

Identify Startup Problems

Startup problems are commonly caused by source power problems or a board (network processing engine or cable interface line card) that is not properly connected to the midplane. With the exception of the fan tray and network processing engine, LEDs indicate all system states in the startup sequence. By checking the state of the LEDs, you can determine when and where the system failed in the startup sequence.

1. First check that you are properly plugged into the power source. Then verify that the line cards are properly installed.
2. The system cannot operate unless the network processing engine is installed properly. Check that the NPE is properly installed in the chassis.
3. Always verify that the fans are operating.

   ```
   Queued messages:
   %ENVM-1-SHUTDOWN: Environmental Monitor initiated shutdown
   ```

   If the above message is displayed, it indicates that the system has detected an overtemperature condition or power out-of-tolerance condition inside the chassis. The shutdown message could also indicate a faulty component or temperature sensor. Before the system shuts down, use the **show environment** or **show environment table** command to display the internal chassis environment.

Other Troubleshooting Information Websites

These websites are provided to help you find the most current troubleshooting information:

- Search the Cisco TAC assistance website, at the following URL:
  http://www.cisco.com/en/US/support/index.html
- Search cable products field notices at the following URL:
  http://www.cisco.com/public/support/tac/fn_index.html

9 Related Documentation

- *Cisco uBR7225VXR Universal Broadband Router Hardware Installation Guide*, at the following URL:
  http://www.cisco.com/en/US/products/ps8474/prod_installation_guides_list.html
- *Cisco uBR7200 Series Universal Broadband Router Software Configuration Guide,* at the following URL:
  http://www.cisco.com/en/US/products/hw/cable/ps2217/products_installation_and_configuration_guides_list.html
- *Cisco IOS CMTS Cable Command Reference,* at the following URL:
  http://www.cisco.com/en/US/products/hw/cable/ps2217/prod_command_reference_list.html
- *Regulatory Compliance and Safety Information for the Cisco uBR7200 Series Universal Broadband Router,* at the following URL:
  http://www.cisco.com/en/US/products/ps8474/prod_installation_guides_list.html
- *Network Processing Engine and Network Services Engine Installation and Configuration* guide, at the following URL:
  http://www.cisco.com/en/US/products/ps8474/prod_installation_guides_list.html
- *Cisco uBR7200-NPE-G1 Read Me First*, at the following URL:
  http://www.cisco.com/en/US/products/ps8474/prod_installation_guides_list.html

10 Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the What's New in Cisco Product Documentation as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at http://www.cisco.com/go/offices.

OL-18628-01