

Install and Connect

This chapter describes the installation procedure for Cisco Catalyst C8500L-8S4X Edge Platform in an equipment rack. .

These are the types of installation:

- Two-post rack, either 19 inch or 23 inch. Inner clearance (the width between the inner sides of the two posts or rails) must be at least 19 inches (48.26 cm) or 23 inches (58.42 cm). Airflow through the chassis is from front to back (I/O-side to PSU-side).
- Four-post, 19-inch equipment rack. Inner clearance (the width between the inner sidesof the two posts or rails) must be at least 19 inches (48.26 cm). Airflow through the chassis is from front to back.

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Before You Begin

Before installing and connecting a Cisco Catalyst 8500L-8S4X Edge Platform, read the safety warnings and gather the following tools and equipment. For more information about the required tools and equipment, see the Required Tools and Equipment for Installation and Maintenance section.

What You Need to Know

CLI Console Access

Use the USB or RJ-45 console port on the router to access the Cisco Internet Operating System (IOS-XE) and XE SD-WAN command line interface (CLI) on the router and perform configuration tasks. A terminal emulation program is required to establish communication between the router and a PC. See the Connect to a Console Terminal or Modem section in this document for instructions.

Note A Microsoft Windows USB driver must be installed before you establish physical connectivity between the router and the PC.

Software Licenses

To use all the features on the router, you must purchase a software package. For more information on software licenses, see Smart Licensing Using Policy for Cisco Enterprise Routing Platform.

Safety Warnings

Warning To comply with Class A emissions requirements- shielded management Ethernet, CON, and AUX cables on the router must be used.

Unpack the Device

Do not unpack the device until you are ready to install it. If the final installation site will not be ready for some time, keep the chassis in its shipping container to prevent accidental damage. When you are ready to install the chassis, proceed with unpacking it.

The chassis, accessory kit, publications, and any optional equipment you ordered may be shipped in more than one container. When you unpack the containers, check the packing list to ensure that you received all of the items on the list.

Install the Cisco Catalyst C8500L-8S4X Edge Platforms

If you need to install Field-Replaceable Units (FRUs), you can install them either before or after you install the device. Ideally, you install the modules when you have access to the I/O side of the device. Internal modules (memory cards and fan trays) should be installed before rack-mounting.

The Cisco Catalyst C8500L-8S4X Edge Platforms are designed to be rack-mounted.

Warning Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord that is in the chassis. Statement 1

Caution To prevent damage to the chassis, do not attempt to lift or tilt the chassis by holding it by the plastic panel on the front. Always hold the chassis by the sides of the metal body.

Rack-Mount the Chassis

Warning Supply Circuit

To reduce risk of electric shock and fire, take care when connecting units to the supply circuit so that wiring is not overloaded. Statement 1018

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

Warning To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 40C degrees on a continuous basis. Statement 1047

The Cisco Catalyst 8500L-8S4X Edge Platforms can be installed in a 19-inch (48.26-cm) EIA or a 23-inch (58.42-cm) Southwestern Bell Corporation (SBC) racks. The Cisco Catalyst 8500L/8530L Edge Platforms can also be mounted in a 600-mm ETSI rack. Use the standard brackets shipped with the router for mounting the chassis in a 19-inch EIA rack; you can order optional larger brackets for mounting the chassis in a 23-inch SBC rack.

You can mount the devices in the following ways:

- PS Mounting—Brackets are attached at the PS side of the chassis with the the PSUs facing forward.
- I/O Mounting—Brackets are attached at the I/O side of the chassis with the I/O side facing forward.

Attach the Rack-Mounting Brackets

Caution Do not over-torque the screws. The recommended torque is 15 to 18 inch-lbs (1.7 to 2.0 N-m).

Caution Your chassis installation must allow unrestricted airflow for chassis cooling.

Attach the mounting brackets to the chassis as shown in the below figure using the screws provided. Use a #2 Philips screwdriver.

To attach the rack-mounting brackets to the Cisco Catalyst 8500L-8S4X Edge Platform device, perform these steps:

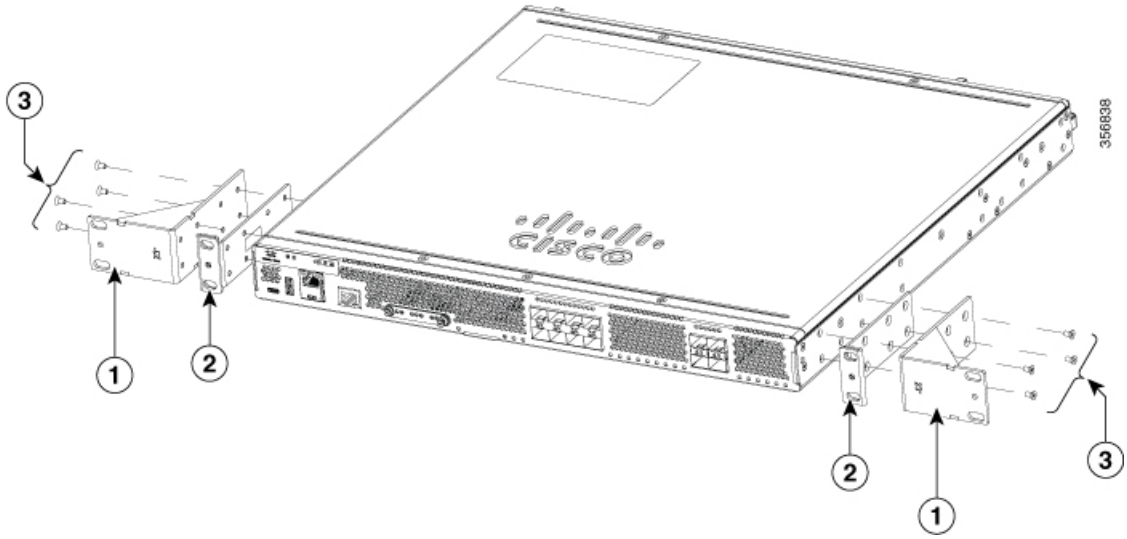
Step1. Select the depth location for the router in the equipment rack.

Step2. Align the rack mount bracket with the mounting holes in the side of the router.

Step3. Insert the #6-32 FHM screws. Use only the screws that are provided in the rack mount bracket kit.

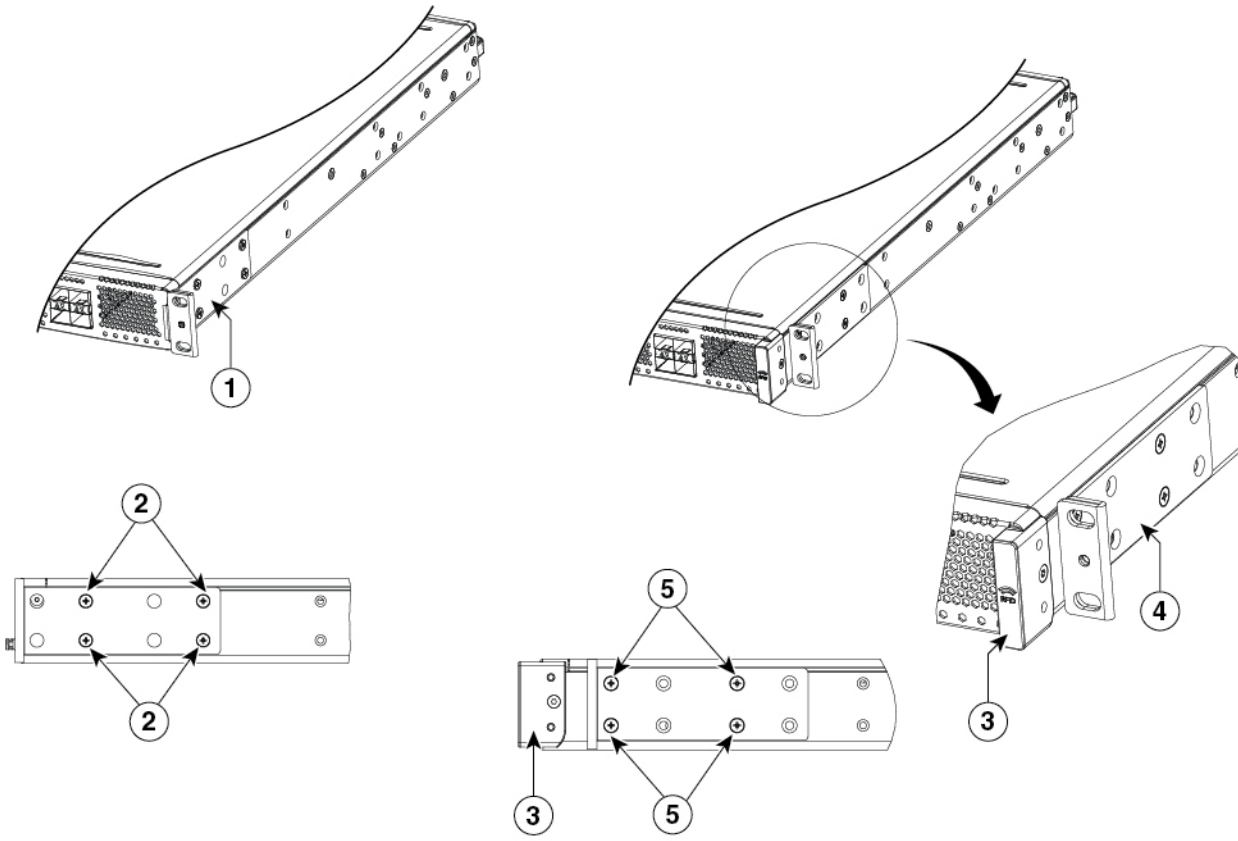
Step4. Tighten the screws to a torque value of 15 to 18 inch-lb. (1.7 to 2.0 N-m).

Figure 1: Installation of 19" or 23" brackets (I/O side shown)



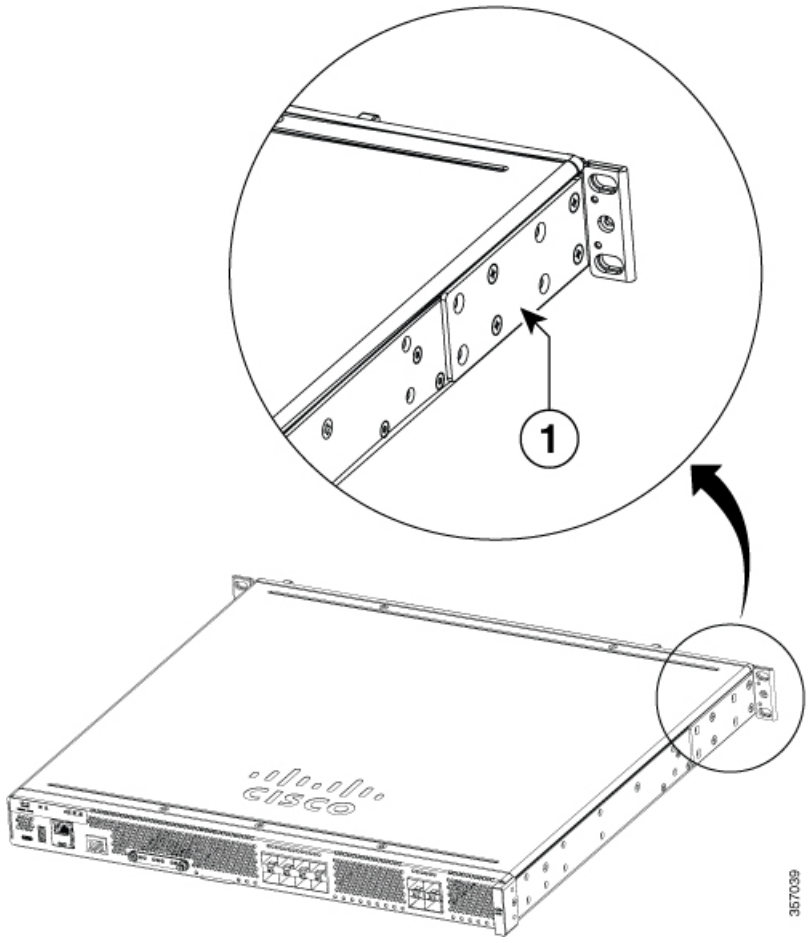
1	23-inch brackets	2	19-inch EIA brackets
3	Screws (#6-32 FHMS)		

Figure 2: Rack Mount Bracket Positions (I/O Side)



1	19-inch brackets; I/O-side flush (no RFID)	2	Screw locations for I/O-side flush (no RFID)
3	RFID	4	19-inch brackets; I/O-side recessed (with RFID)
5	Screw locations for I/O-side recessed (with RFID)		

Figure 3: Install Brackets for PS Mounting



1	19-inch brackets

Mount the Chassis in a Rack

After you attach the rack-mount brackets to the chassis, use screws to install the chassis in the rack.

Tip For both the 19-inch EIA brackets and the 23-inch brackets, start the lower pair of screws first, and rest the brackets on the lower screws while you insert the upper pair of screws.

Tip The screw slots in the brackets are spaced to line up with every *second* pair of screw holes in the rack. When the correct screw holes are used, the small threaded holes in the brackets line up with unused screw holes in the rack. If the small holes do not line up with the rack holes, you must raise or lower the brackets to the next rack hole.

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:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- 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

Figures below shows a typical rack mounting of a chassis in a rack.

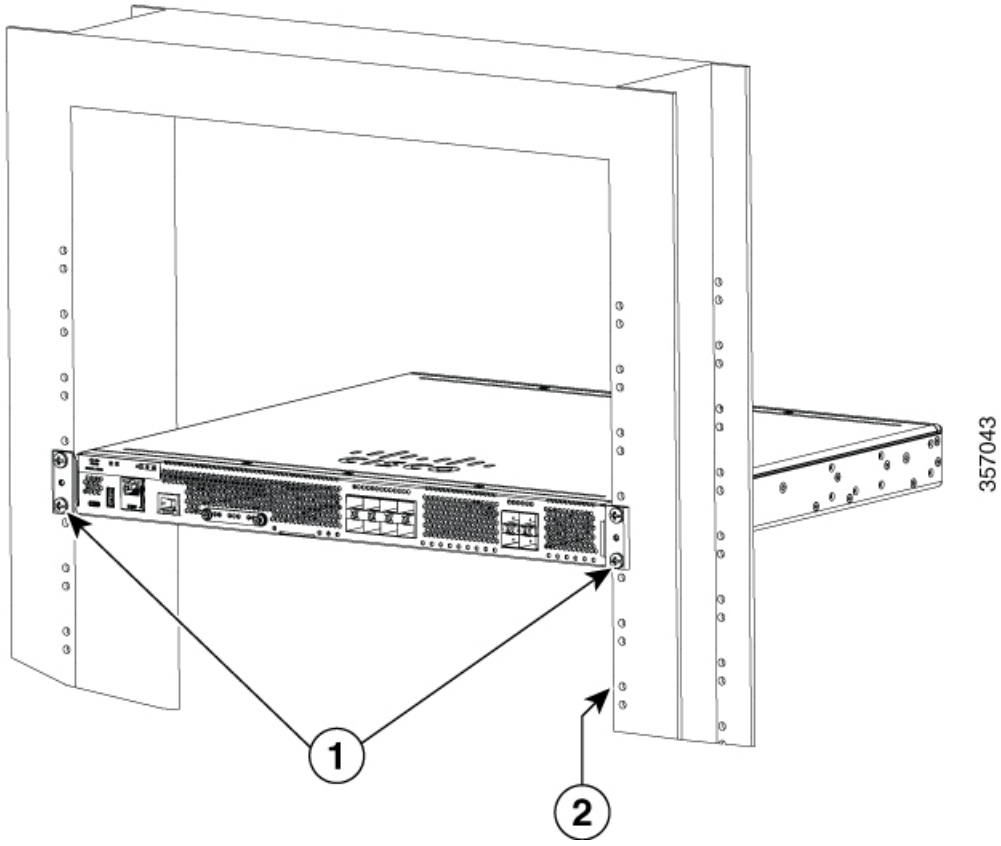
Step1. Locate the desired position in the equipment rack.

Step2. Align the holes in the rack mount brackets with the mounting holes in the equipment frame.

Step3. Secure the device using mounting screws appropriate for your equipment frame. The rack mount brackets have been designed for #12 screws.

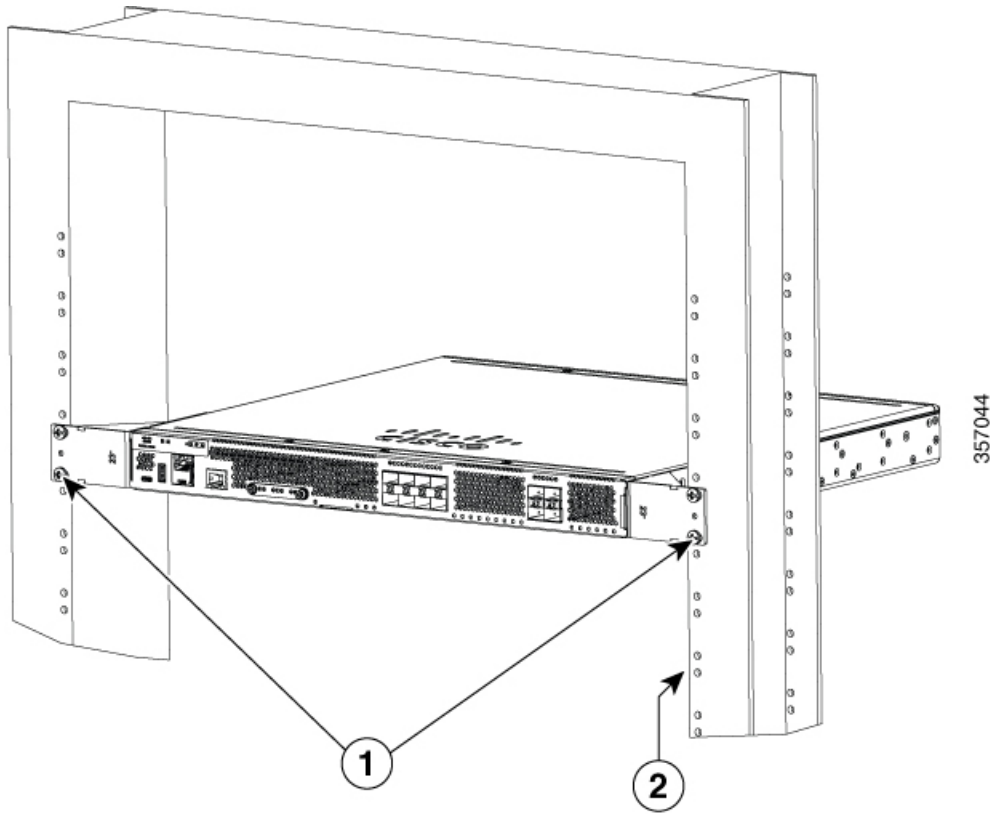
Step4. Tighten the screws to the appropriate torque value for your equipment.

Figure 4: I/O Flush Mount in 19-inch Rack without RFID



1	Rack Mounting screws	2	Rack

Figure 5: I/O Flush Mount in 23-inch Rack without RFID

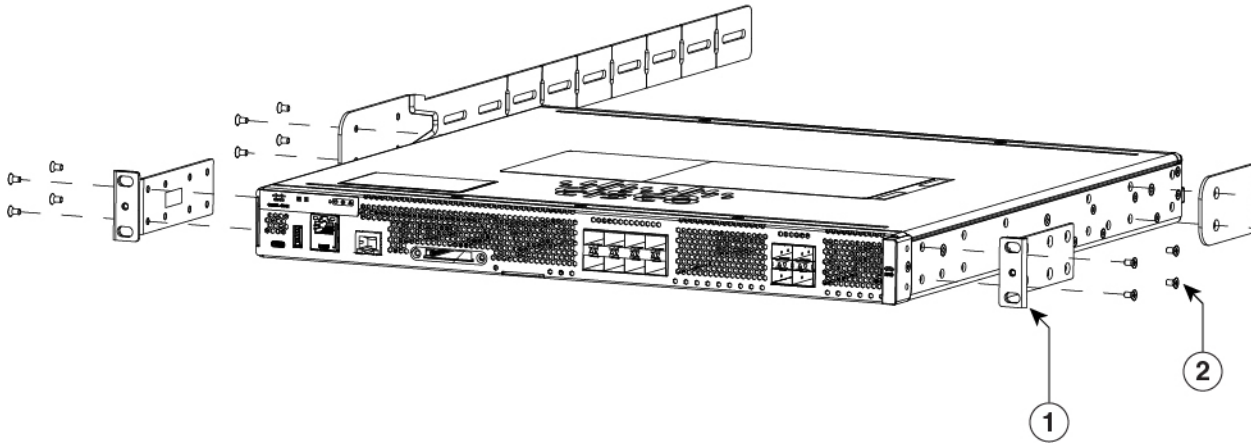


1	Rack Mounting screws	2	Rack

Four-Post Rack Mounting

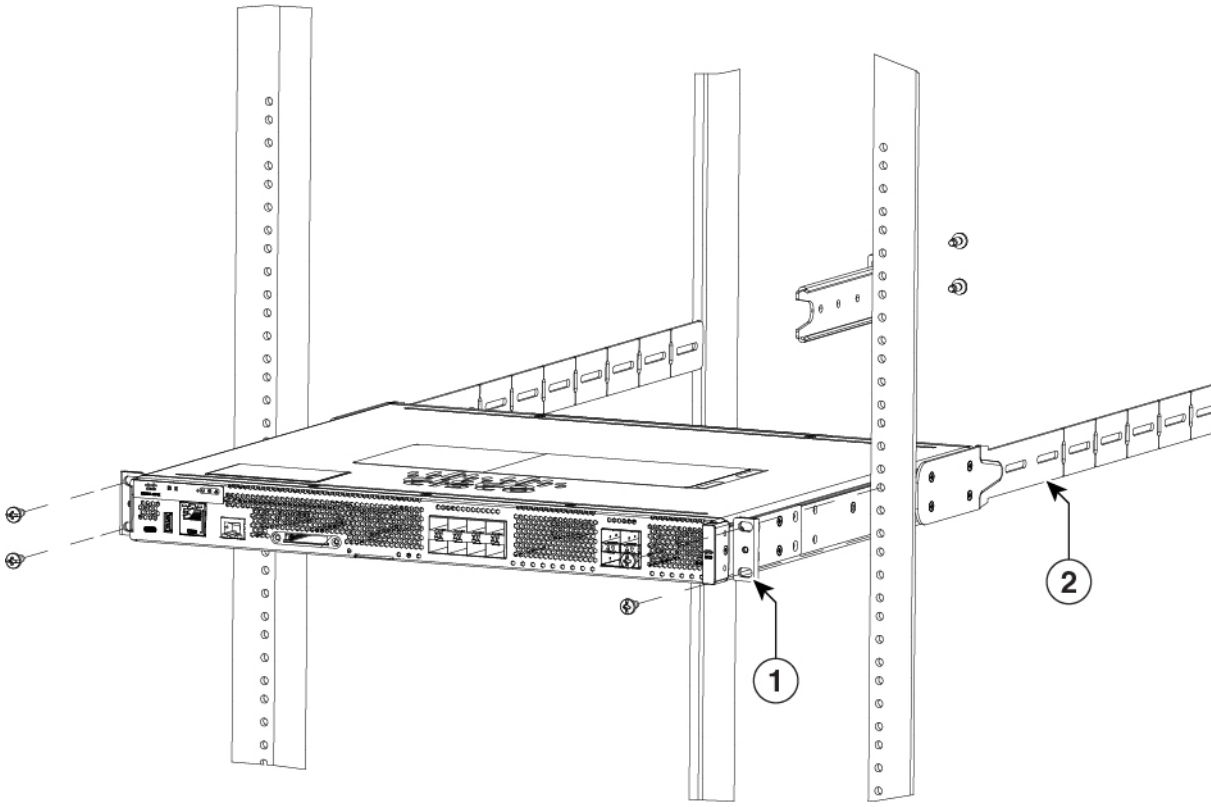
The four-post rack mounting is only supported on 19-inch equipment racks. The four-post mounting kit includes two standard 19-inch rack mount brackets and two rear support brackets. This kit does not include screws to secure the brackets to the frame.

1. Assemble the two standard 19-inch rack mounting brackets in the desired location. For more details, see Rack-Mount the Chassis, on page 3.
2. Assemble the rear mount chassis brackets on the opposite ends of the router.



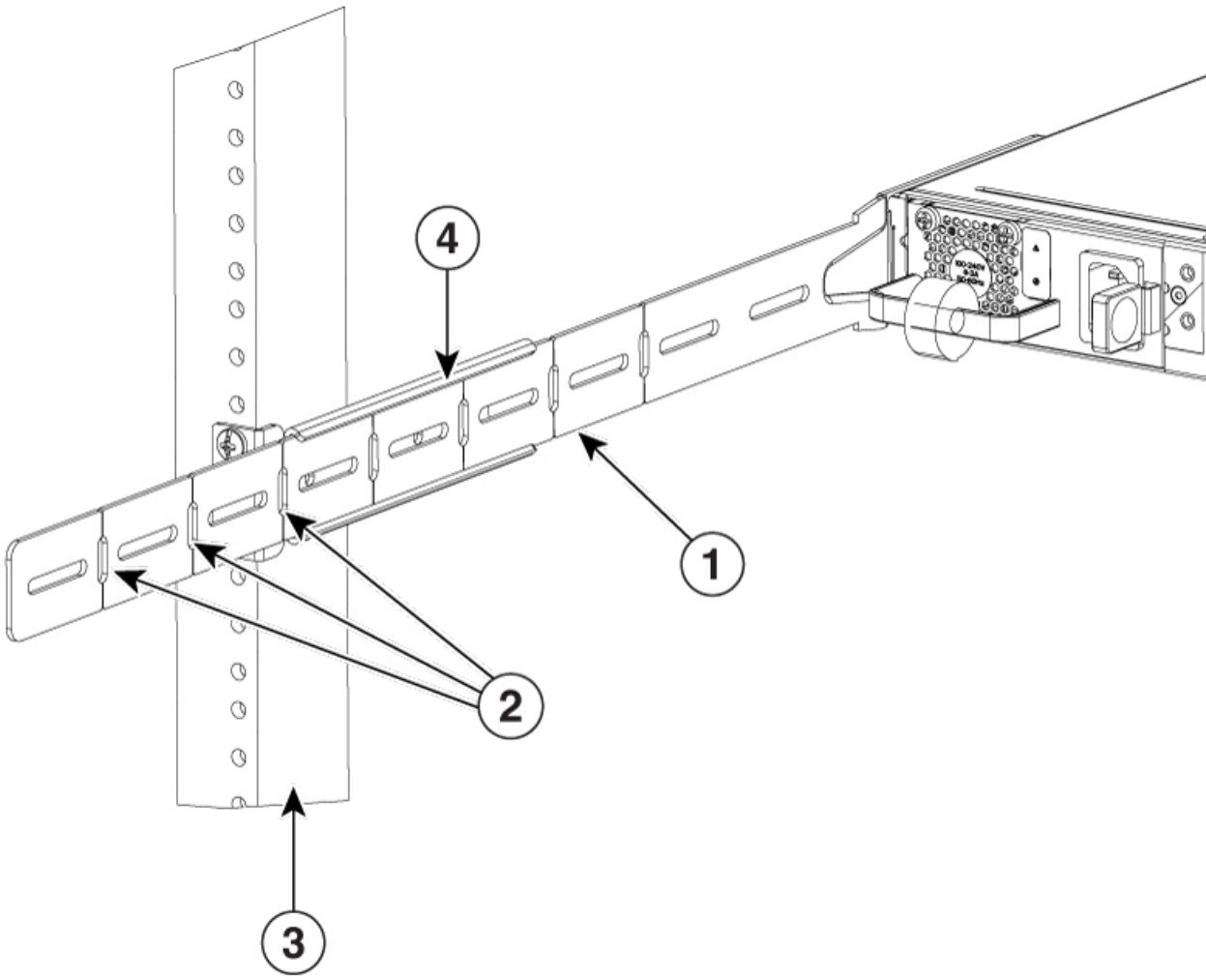
1	19-inch mounting brackets	2	Screws (16 in total)
3	Rear mount chassis bracket		

3. Secure the router in the rack with the 19-inch rack mounting brackets.
4. Slide the four-post mount rack brackets on to the rear mount brackets until they make contact with the rear frame. Finger tighten the screws securing the four-post mount rack brackets to the rear frame to verify the correct mounting location.

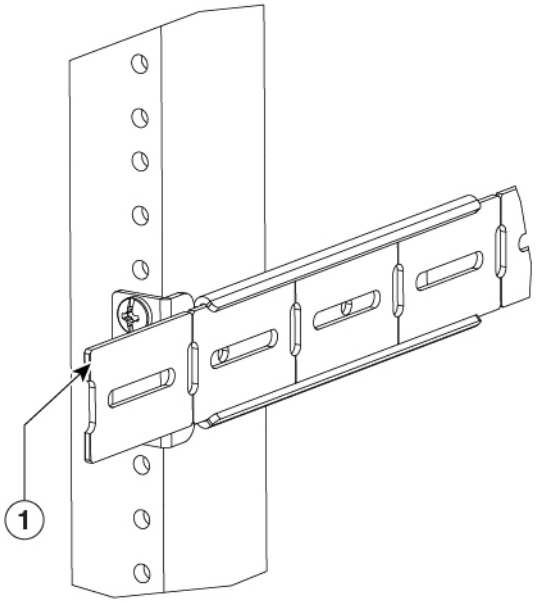


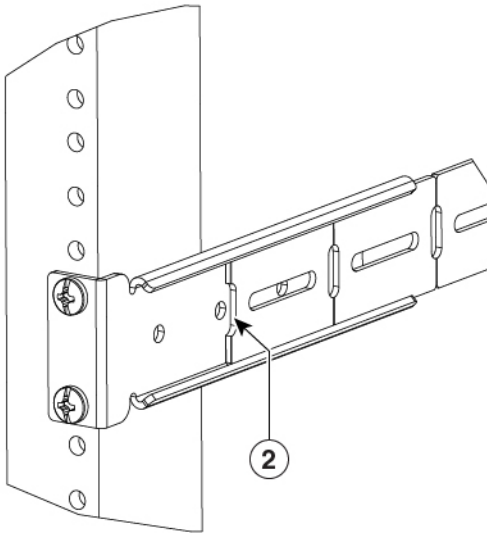
1	19-inch mounting brackets	2	Rear mount chassis bracket
3	Four-post mount rack bracket	4	Screws (8 in number, not included in the kit)
5	Rear frame		

5. The rear mount chassis bracket may extend beyond the rear frame. The bracket can be shortened by breaking off a length of the bracket at one of the vertical score lines. It is recommended that the bracket be shortened so that it does not protrude beyond the back rails and become a safety hazard. To shorten the bracket, mark the appropriate score line, remove the 4-point mount rack bracket, break the bracket at the designated score line, then re-assemble the four-post mount rack bracket.



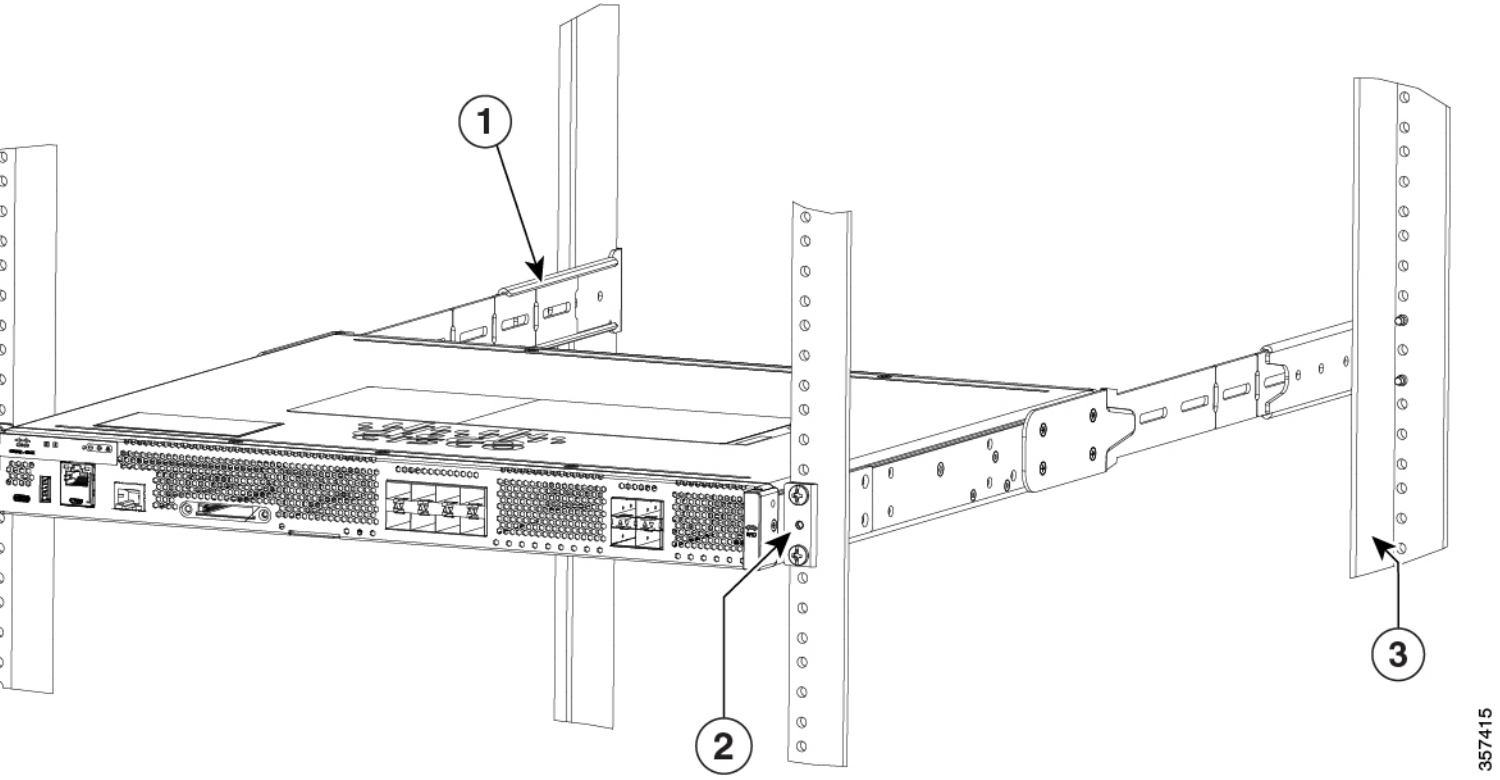
1	Rear mount chassis bracket in c-channel of four-post mount rack bracket	2	Vertical score lines
3	Rear frame		





1	Rear mount chassis bracket protruding beyond the rear post	2	Rear mount chassis bracket recesssed within the rear post (intruding)

6. Once everything is adjusted, tighten all the rack-mount screws starting at the front 19-inch mounting brackets, then securing the rear four-post



1	Rear mount chassis bracket in C-channel of four-post mount bracket shortened to be recesssed within the four-post mount rack bracket	2	19-inch mounting brackets
3	Rear frame		

Ground the Chassis

After the device is installed, you must connect the chassis to a reliable earth ground.

Chassis Grounding

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

Warning 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, you could shock yourself. Statement 94

You must connect the chassis to a reliable earth ground; the ground wire must be installed in accordance with local electrical safety standards.

- For grounding, use size 6 AWG (13 mm 2) copper wire and the ground lug provided in the accessory kit.

To install the ground connection for your router, perform the following steps:

Procedure

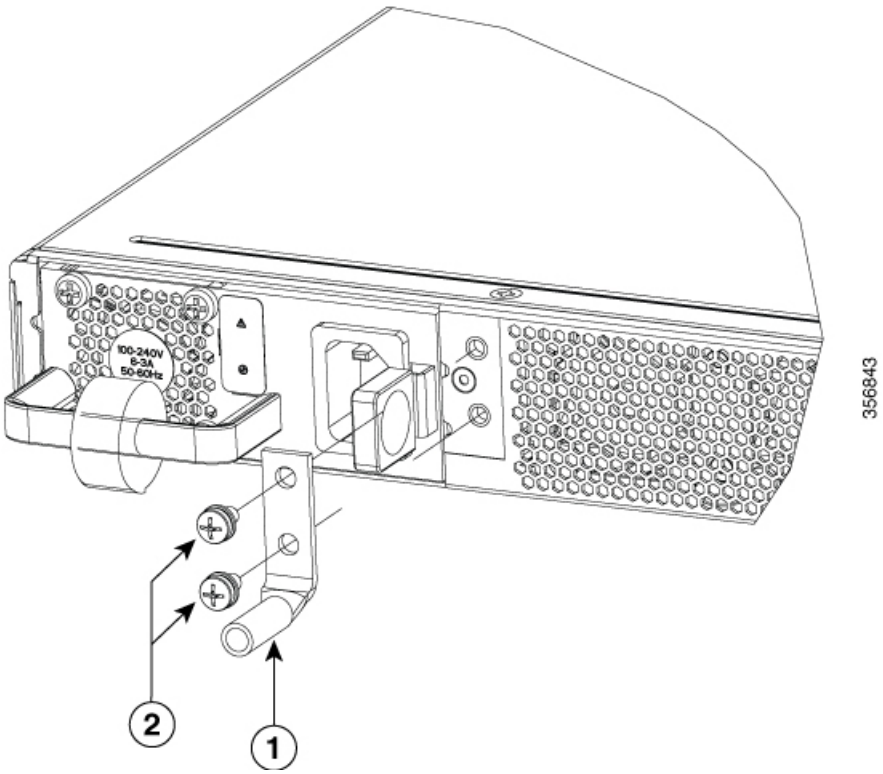
Step 1 Strip one end of the ground wire to the length required for the ground lug or terminal.

- For the ground lug—approximately 0.75 inch (20 mm)
- For user-provided ring terminal—as required

Step 2 Crimp the ground wire to the ground lug or ring terminal, using a crimp tool of the appropriate size.

Step 3 Attach the ground lug or ring terminal to the chassis as shown in Chassis Grounding section. For a ground lug, use the two screws with captive locking washers provided. For a ring terminal, use one of the screws provided. Tighten the screws to a torque of 8 to 10 in-lb (0.9 to 1.1 N-m).

Figure 6: Chassis Ground Connection on the C8500-L 8S4X



Step 4 Connect the other end of the ground wire to a known reliable earth ground point at your site.

1	Ground lug

2	M4X0.7mm Screws

Safety Considerations Before Connecting Power to the Device

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

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

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

Note The installation must comply with all required electrical codes applicable at the installation site.

Warning When installing the product, please use the provided or designated connection cables/power cables/AC adaptors. Using any other cables/adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL-certified cables (that have the “UL” shown on the code) for any other electrical devices than products designated by CISCO. The use of cables that are certified by Electrical Appliance and Material Safety Law (that have “PSE” shown on the code) is not limited to CISCO-designated products. Statement 371.

If your device uses AC power, connect it to a 15 A, 120 VAC (10 A, 240 VAC) circuit with overcurrent protection.

Note The input voltage tolerance limits for AC power are 100 and 240 VAC.

Note This product requires surge protection to be provided as part of the building installation. To comply with the Telcordia GR-1089 NEBS standard for electromagnetic compatibility and safety, an external surge protective device (SPD) is required at the AC power service equipment.

Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than 20A. Statement 1005

Connect to a Console Terminal or Modem

The Cisco Catalyst 8500L-8S4X Edge Platforms have asynchronous serial ports. These ports provide administrative access to the router either locally (with a console terminal or a PC).To configure the router through the Cisco IOS CLI, you must establish a connection between the router console port and either a terminal or a PC.

Use the following cables and adapters to establish a local or remote connection.

Figure 7: Ports

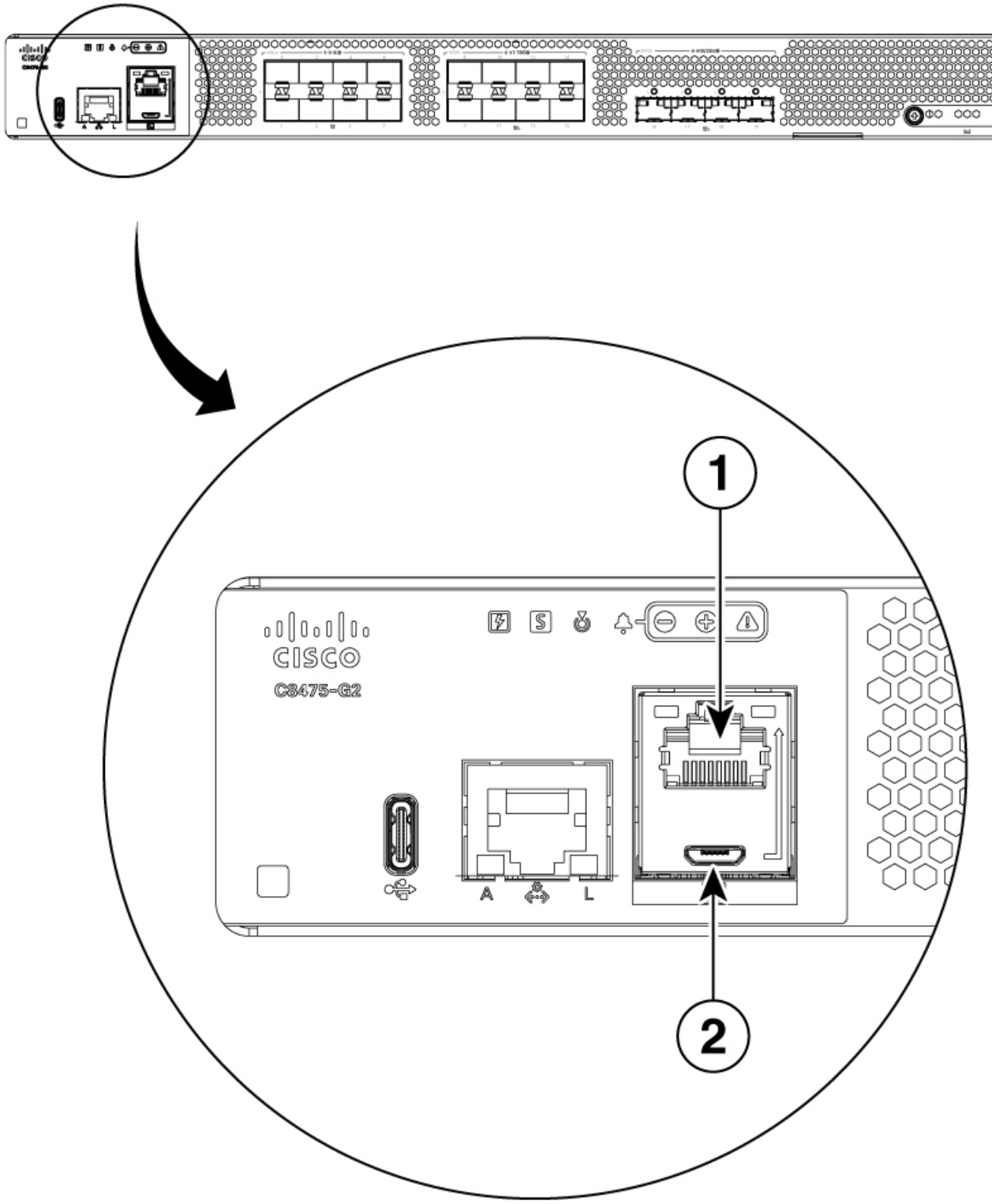


Table 1: Local and Remote Connections

Port Type	Cable
1. Serial (RJ-45)	EIA RJ-45
2. Serial (USB)	USB 5-pin micro USB Type-B to USB Type-A

Connect to the Console Port with Mac OS X

This procedure describes how to connect a Mac OS X system USB port to the console using the built in OS X Terminal utility.

Procedure

Step 1 Use the Finder to go to Applications > Utilities > Terminal.

Step 2 Connect the OS X USB port to the router.

Step 3 Enter the following commands to find the OS X USB port number

Example:

```
macbook:user$ cd /dev
macbook:user$ ls -ltr /dev/*usb*
crw-rw-rw-  1 root    wheel       9,  66 Apr  1 16:46 tty.usbmodem1a21 DT-macbook:dev user$
```

Step 4 Connect to the USB port with the following command followed by the router USB port speed

Example:

```
macbook:user$ screen /dev/tty.usbmodem1a21 9600
```

To disconnect the OS X USB console from the Terminal window

Enter Ctrl-a followed by Ctrl-\

Connect to the Console Port with Linux

This procedure shows how to connect a Linux system USB port to the console using the built in Linux Terminal utility.

Procedure

Step 1 Open the Linux Terminal window.

Step 2 Connect the Linux USB port to the router.

Step 3 Enter the following commands to find the Linux USB port number

Example:

```
root@usb-suse# cd /dev
root@usb-suse /dev# ls -ltr *ACM*
crw-r--r--    1 root     root     188,   0 Jan 14 18:02 ttyACM0
root@usb-suse /dev#
```

Step 4 Connect to the USB port with the following command followed by the router USB port speed

Example:

```
root@usb-suse /dev# screen /dev/ttyACM0 9600
```

To disconnect the Linux USB console from the Terminal window

Enter Ctrl-a followed by : then quit