



Installing the Accessories

This chapter contains the following topics:

- [Installing the Accelerator Card in the IDS-4250, page 3-2](#)
- [Appliance Accessories Package Contents, page 3-4](#)
- [Installing the IDS-4210 Accessories, page 3-6](#)
- [Installing the IDS-4235 and IDS-4250 Accessories, page 3-10](#)

IDS Accelerator Card

You can install the IDS Accelerator (XL) card in the upper PCI slot on the IDS-4250 series appliances. The XL card adds up to 1 gigabit to the 4250 appliance.



Note

You can use an MTRJ cable (part number CAB-MTRJ-SC-MM-3M=) to connect the fiber port on the XL card to the switch on the network. You can order this cable when you order the XL card.

This section contains these topics:

- [Installing the Accelerator Card in the IDS-4250, page 3-2](#)
- [Disconnecting the XL Card Fiber Ports, page 3-4](#)

Installing the Accelerator Card in the IDS-4250

You can install the accelerator (XL) card in the upper PCI slot on the IDS-4250 series appliances.

**Caution**

Be sure to read the safety warnings in the *Regulatory Compliance and Safety Information for Intrusion Detection System Appliances and Modules Version 4.0* and follow proper safety procedures when performing the following steps.

**Note**

The XL interface is not supported as a command and control interface.

**Caution**

The IDS-4250 supports either the Fiber NIC or the XL card in the upper PCI slot, but not both at one time.

To install the XL card in the IDS-4250, follow these steps:

- Step 1** Enter **reset powerdown** to power down the appliance.
- Step 2** Remove the power cord and other cables from the appliance and place the appliance in an ESD-controlled environment.
- Step 3** Put on the supplied wrist strap and/or other ESD control devices.
- Step 4** Remove the appliance cover.
 - a. Remove the single screw at the front of the chassis.
 - b. Press the chassis release button to release the left side of the appliance cover.
 - c. Use the tab at the rear of the system to lift the left side of the appliance cover.
 - d. Use the tab at the rear of the system to lift the right side of the appliance cover.
- Step 5** Remove the PCI slot cover.
 - a. Pull the slot release pin at the back of the chassis to unlock the PCI slot covers and pull the slot release toward you.
 - b. Remove the top PCI slot cover.

- Step 6** Insert the XL card into the top PCI slot of the riser card, using enough pressure so that the card pops securely into place.

**Caution**

Be sure to support the riser card while inserting the XL card, otherwise, you could cause the riser card to flex and damage the riser card or main board.

**Note**

Placement of the XL card in the bottom PCI slot is not a supported configuration.

- Step 7** Screw the metal tab of the XL card down in place.
- Step 8** Check the back of the chassis to be sure the card is flush with the PCI slot, and then return the PCI slot release to its original position to lock the PCI slot card in place.
- Step 9** Close the appliance cover.
- Close the right side of the appliance cover.
 - Close the left side of the appliance cover, and press firmly along the edge to lock in place.
 - Replace the screw at the front of the chassis.
- Step 10** Replace the power and network connections.

**Note**

The monitoring interface connector is now on the XL card.

- Step 11** Reboot the appliance.

**Caution**

Make sure the fiber ports are not connected the first time you boot the appliance after you have installed the XL card. For more information, see [Disconnecting the XL Card Fiber Ports](#), page 3-4.

- Step 12** Reconfigure the appliance.

Disconnecting the XL Card Fiber Ports

When you upgrade the IDS-4250-TX and IDS-4250-SX appliances with the XL card (part number IDS-XL-INT), the appliances may not boot up the first time if the fiber ports are connected. Disconnect the fiber ports before you boot up the appliance. After the appliance starts for the first time, the firmware version is upgraded and the problem is not seen again.

**Note**

You will not experience this problem if you order the IDS-4250-XL—with the XL card already installed—because the appliance is rebooted at the factory.

To allow the appliance to reboot after installing the XL card, follow these steps:

-
- Step 1** Power off the appliance.
 - Step 2** Remove the fiber connections from the XL card.
 - Step 3** Boot up the appliance.
Wait until the appliance has completed bootup and you see a login prompt.
 - Step 4** Plug the fiber connections back into the XL card.
 - Step 5** During the startup of the IDS applications, the XL card is upgraded to the latest firmware.
-

Appliance Accessories Package Contents

The following items are shipped in the accessories package for the Cisco IDS-4210:

- Cisco IDS-4210 bezel.
- Power cable.
- Network patch cable.
- Computer interconnection cable.
- Rack mounting brackets.

- Documentation and software.
 - Cisco Intrusion Detection System CD
 - Cisco Documentation CD
 - *Obtaining Documentation for the Cisco Intrusion Detection System Hardware and Software Version 4.0*
 - *Quick Start Guide for the Cisco Intrusion Detection System Version 4.0*
 - *Regulatory Compliance and Safety Information for the Intrusion Detection System Appliances and Modules Version 4.0*
 - *Release Notes for the Cisco Intrusion Detection System Version 4.0*

The following items are shipped in the accessories package for the Cisco IDS-4235 and IDS-4250:

- Cisco IDS-4235 or IDS-4250 bezel.
- Power cable.
- Network patch cable.
- Computer interconnection cable.
- Documentation and software.
 - Cisco Intrusion Detection System CD
 - Cisco Documentation CD
 - *Obtaining Documentation for the Cisco Intrusion Detection System Hardware and Software Version 4.0*
 - *Quick Start Guide for the Cisco Intrusion Detection System Version 4.0*
 - *Regulatory Compliance and Safety Information for the Intrusion Detection System Appliances and Modules Version 4.0*
 - *Release Notes for the Cisco Intrusion Detection System Version 4.0*

Installing the IDS-4210 Accessories

You can install a bezel, and center or front mounting brackets for your IDS-4210 sensor:

- [Installing and Removing the Bezel, page 3-6](#)
- [Installing Center Mount Brackets, page 3-6](#)
- [Installing Front Mount Brackets, page 3-8](#)

Installing and Removing the Bezel

You can install a Cisco bezel for the IDS-4210 appliance.

To install and remove the bezel on the IDS-4210 appliance, follow these steps:

-
- Step 1** To insert the bezel on the appliance, follow these steps:
- a. Align the bottom tabs on the bezel with the slots on the appliance.
 - b. Align the side tabs on the bezel with the slots on the appliance.
 - c. Press the bezel into the appliance.
- Step 2** To remove the bezel from the appliance, press the side tabs and pull.
-

Installing Center Mount Brackets

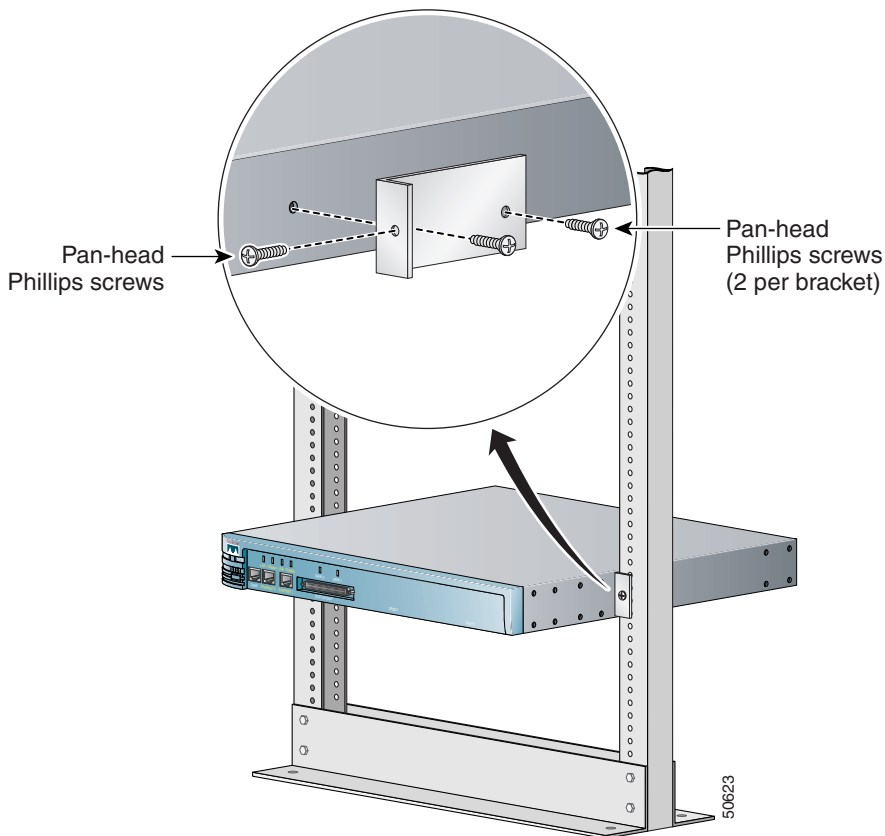
You need the following tools and supplies to install the brackets in a two-post, open-frame relay rack:

- #2 Phillips screwdriver.
- Masking tape or felt-tip pen to mark the mounting holes to be used.

To install the center mount brackets in a two-post, open-frame relay rack, follow these steps:

-
- Step 1** Determine where you want to place your appliance.
 - Step 2** Mark the upper and lower mounting positions on the two posts.
 - Step 3** Locate one of the two brackets and align it over the two threaded holes on the side of the appliance (see [Figure 3-1](#)).

Figure 3-1 *Securing the Appliance in the Rack*



- Step 4** Secure the bracket to the appliance chassis using two screws (see [Figure 3-1](#)).

- Step 5** Repeat Step 4 to install the remaining bracket on the other side of the appliance.
- Step 6** Lift the appliance into position between the two posts with the hole in the mounting bracket aligned one hole above the mark you made in the two posts (see [Figure 3-1](#)).
- Step 7** Secure the appliance to the rack using a screw through the mounting bracket to the front of the left and right posts (see [Figure 3-1](#)).
-

Installing Front Mount Brackets

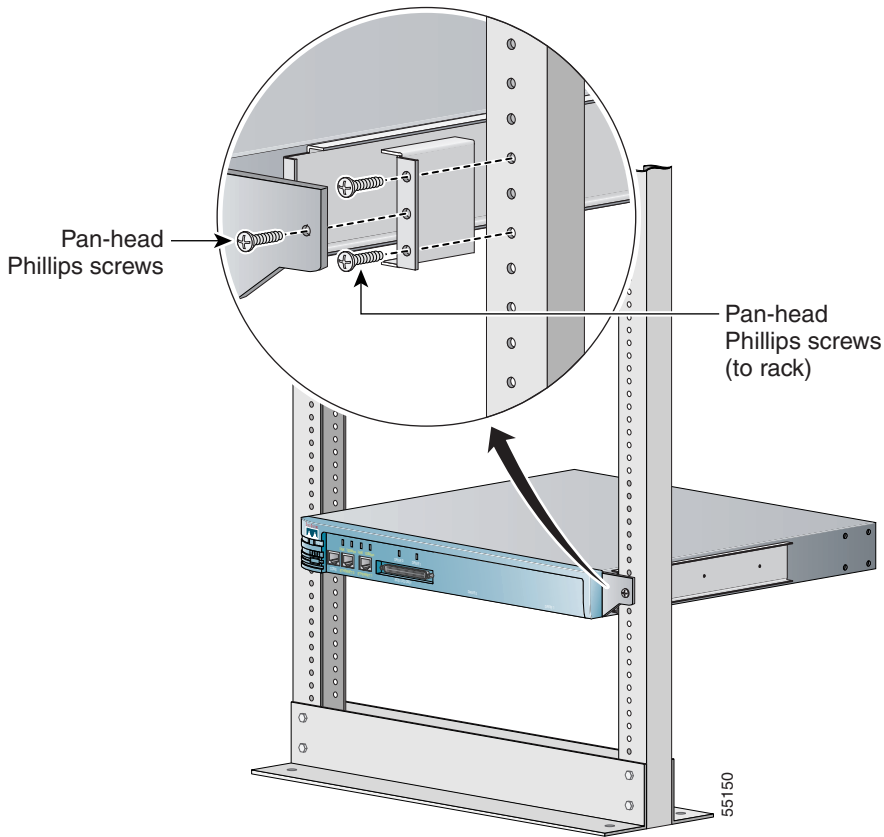
Make sure you have the following supplies (found in the front mount bracket assembly kit) and tools to install the front mount brackets in a two-post, open-frame relay rack:

- Two chassis support brackets.
- Two rack-mounting brackets.
- Six screws.
- #2 Phillips screwdriver.

**Note**

The front mount bracket assembly is not intended for use as a slide rail system. The server must be firmly attached to the rack, as shown in [Figure 3-2](#).

Figure 3-2 Front Mount Brackets

**Caution**

The chassis support brackets included in this kit are rated for 50 pounds of load per pair of brackets for general use for 10,000 cycles of opening and closing. Higher cycles or frequency will lower the load rating. The chassis support brackets are meant to support the weight of only one sensor.

To install the front mount brackets, follow these steps:

-
- Step 1** Make sure the appliance is turned off and is not plugged in to an electrical outlet.
 - Step 2** Use the screws provided to attach one chassis support bracket to each side of the appliance. Use three screws on each side.
 - Step 3** Use the screws provided with the rack to attach the rack mounting brackets to the rack.
 - Step 4** Slide the chassis support brackets on the appliance into the rack mounting brackets attached to the rack.
 - Step 5** Use the bolts provided with the rack to fasten the appliance's front flanges to the rack.



Note When you are done, the appliance should not slide on the channel bar.

Installing the IDS-4235 and IDS-4250 Accessories

The IDS-4235 and IDS-4250 appliances ship with a bezel accessory. [Table 3-1](#) lists optional accessories you can order.

Table 3-1 *Optional Accessories*

Part Number	Description
IDS-SCSI	SCSI hard-disk drive for the IDS-4250
IDS-RAIL-2	Two-post rail kits for the IDS-4235 and IDS-4250
IDS-RAIL-4	Four-post rail kits for the IDS-4235 and IDS-4250
IDS-PWR	Power supply for the IDS-4235 and IDS-4250

Table 3-1 *Optional Accessories (continued)*

Part Number	Description
IDS-4250-SX-INT	1000BaseSX monitoring interface with SC connector
CAB-MTRJ-SC-MM-3M	MTRJ cable

This section contains the following topics:

- [Installing the IDS-4235 and IDS-4250 Accessories, page 3-10](#)
- [Installing the Power Supply, page 3-12](#)
- [Installing the 1000BaseSX Monitoring Interface, page 3-14](#)
- [Replacing the SCSI Hard-Disk Drive, page 3-15](#)
- [Four-Post Rack Installation, page 3-17](#)
- [Two-Post Rack Installation, page 3-29](#)

Installing and Removing the Bezel

To install and remove the bezel on the IDS-4235 or IDS-4250, follow these steps:

-
- Step 1** To insert the bezel in the appliance, follow these steps:
- a. Align the right side tab on the bezel with the slot on the appliance mounting tab.
 - b. Press the left side of the bezel into place on the appliance.
- Step 2** To remove the bezel, press the left side tab and pull.
-

Installing the Power Supply

You can install a second, redundant power supply and power-supply cooling fan in your appliance.

To install a power supply and fan, follow these steps:

-
- Step 1** Remove the appliance cover.
- Remove the single screw at the front of the chassis.
 - Press the chassis release button to release the left side of the appliance cover.
 - Lift the left side of the appliance cover using the tab at the rear of the system.
 - Lift the right side of the appliance cover using the tab at the rear of the system.

- Step 2** Place the new power supply cooling fan in the back of the power supply bay (see [Figure 3-3](#)).



Note Ensure that the finger guard on the fan faces the back of the appliance and that the fan power cable is pointing toward the fan power connector on the system board (see [Figure 3-3](#)).

- Step 3** Route the fan power cable through the rectangular opening in the power supply bay partition, and then connect the cable to the fan power connector on the system board (see [Figure 3-3](#)).

- Step 4** To install the new power supply, align the stud on the side of the power supply with the corresponding notch in the chassis, and then lower the power supply into the chassis (see [Figure 3-3](#)).

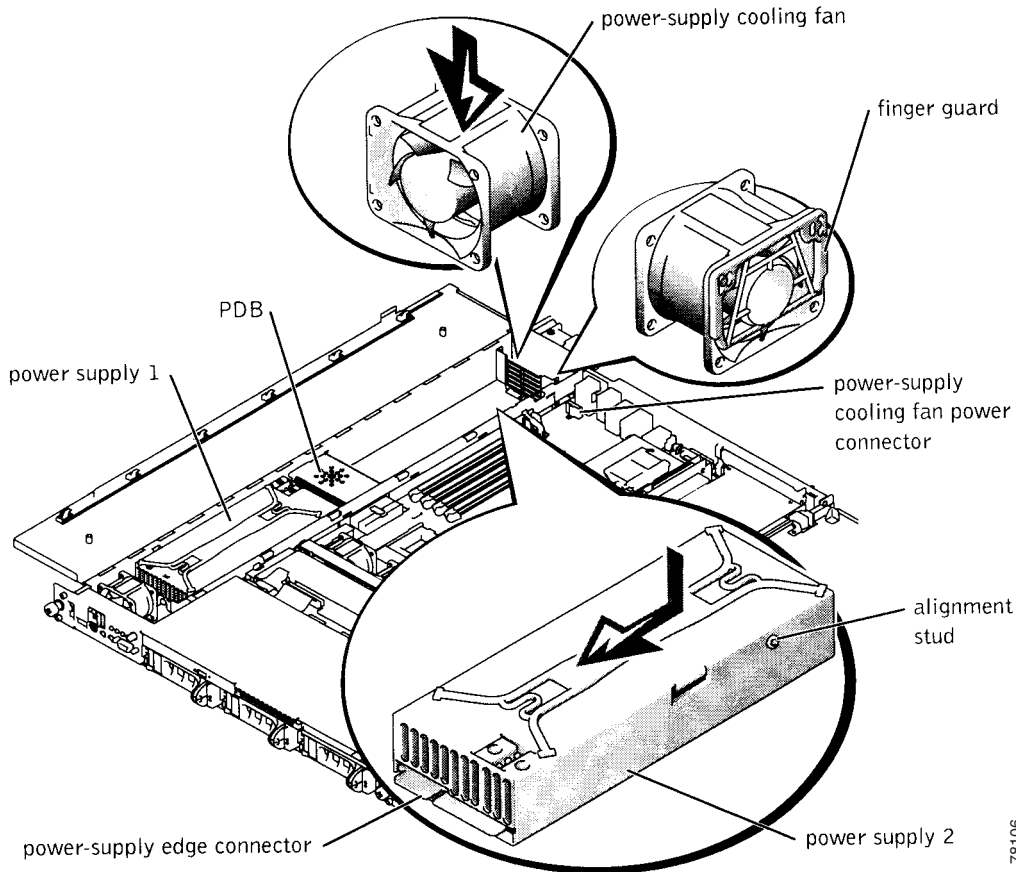


Warning

The connectors on the Power Distribution Board (PDB) contain high voltages. Do not remove the metal cover from the PDB or touch the connectors on the PDB or power supplies.

- Step 5** Slide the power supply toward the PDB until the power-supply edge connector is fully seated in the PDB connector (see [Figure 3-3](#)).

Figure 3-3 Power Supply and Power-Supply Cooling Fan



78106

- Step 6** Close the appliance cover.
- Close the right side of the appliance cover.
 - Close the left side of the appliance cover, and press firmly along the edge to lock in place.
 - Replace the screw at the front of the chassis.

- Step 7** Connect the new system power cable to the power-supply 2 cable connector (PS2) on the back panel of the appliance.
-

Installing the 1000BaseSX Monitoring Interface

You can install the 1000BaseSX Monitoring Interface (Fiber NIC) in the upper PCI slot on the IDS-4250 series appliances.

**Caution**

Be sure to read the safety warnings in the *Regulatory Compliance and Safety Information for the Intrusion Detection System Appliances and Modules Version 4.0* and follow proper safety procedures when performing the following steps.

**Note**

The 1000BaseSX Monitoring Interface is not supported as a command and control interface.

**Caution**

The IDS-4250 appliance supports either the Fiber NIC or the XL card in the upper PCI slot, but not both at one time.

To install the 1000BaseSX Monitoring Interface, follow these steps:

- Step 1** Remove the appliance cover.
- Remove the single screw at the front of the chassis.
 - Press the chassis release button to release the left side of the appliance cover.
 - Use the tab at the rear of the system to lift the left side of the appliance cover.
 - Use the tab at the rear of the system to lift the right side of the appliance cover.
- Step 2** Remove the PCI slot cover.
- Pull the slot release pin at the back of the chassis to unlock the PCI slot covers and pull the slot release toward you.
 - Remove the top PCI slot cover.

- Step 3** Insert the 1000BaseSX Monitoring Interface into the top PCI slot of the riser card, using enough pressure so that the card pops securely into place.

**Caution**

Be sure to support the riser card while inserting the 1000BaseSX Monitoring Interface, otherwise, you could cause the riser card to flex and damage the riser card or main board.

**Note**

Placement of the 1000BaseSX Monitoring Interface in the bottom PCI slot is not a supported configuration.

- Step 4** Check the back of the chassis to be sure the card is flush with the PCI slot, and then return the PCI slot release to its original position to lock the PCI slot card in place.

- Step 5** Close the appliance cover.

- a. Close the right side of the appliance cover.
- b. Close the left side of the appliance cover, and press firmly along the edge to lock in place.
- c. Replace the screw at the front of the chassis.

Replacing the SCSI Hard-Disk Drive

The IDS-4235 and IDS-4250 have a removable SCSI hard-disk drive. You can replace the hard-disk drive in case of drive failure. Or you can order a spare drive (part number IDS-SCSI=), apply your configuration, and ship the drive to a remote site. The administrator at the remote site can then install the preconfigured drive.

**Caution**

Do not install a second hard-disk drive in the 4235 and 4250 appliances. The spare hard-disk drives are meant to be replacements for the original hard-disk drives and are not meant to be used with the original hard-disk drive. If you install two hard-disk drives in the appliance, the appliance may not be able to recognize the **recover** command used to re-image the appliance.

This section contains these topics:

- [Removing the SCSI Hard-Disk Drive, page 3-16](#)
- [Installing the SCSI Hard-Disk Drive, page 3-16](#)

Removing the SCSI Hard-Disk Drive

To remove the SCSI hard-disk drive, follow these steps:

-
- Step 1** Log in to the appliance as **user root**.
- Step 2** Prepare the appliance to be powered off by typing the following at the prompt:
- ```
shutdown -y -i 0
```
- Step 3** Remove the front bezel, if attached.
- See [Installing and Removing the Bezel, page 3-11](#), for the procedure.
- Step 4** Power off the appliance by pressing the power button.
- Step 5** Open the hard-disk drive handle to release the drive.
- Step 6** Slide the hard-disk drive out until it is free of the drive bay.
- 

## Installing the SCSI Hard-Disk Drive

To install the SCSI hard-disk drive, follow these steps:

- 
- Step 1** Open the hard-disk drive handle.
- Step 2** Insert the hard-disk drive into the drive bay.
- Step 3** Close the hard-disk drive handle to lock the drive into place.
- Step 4** Power on the appliance by pressing the power button.
- Step 5** Replace the front bezel, if desired.
- See [Installing and Removing the Bezel, page 3-11](#), for the procedure.

**Note**

Replacement drives are shipped without an image. You must use the upgrade/recovery CD to image the drive.

## Four-Post Rack Installation

**Caution**

Do not install rack kit components designed for another system. Use only the rack kit for your appliance. Using the rack kit for another system may damage the appliance and cause injury to yourself and others.

This section contains these topics:

- [Recommended Tools and Supplies, page 3-17](#)
- [Rack Kit Contents, page 3-18](#)
- [Installing the Slide Assemblies, page 3-18](#)
- [Installing the Appliance in the Rack, page 3-21](#)
- [Installing the Cable-Management Arm, page 3-23](#)
- [Routing the Cables, page 3-27](#)

## Recommended Tools and Supplies

You need these tools and supplies to install the appliance in a four-post rack cabinet:

- #2 Phillips screwdriver.
- Masking tape or felt-tip pen for marking the mounting holes to be used.

## Rack Kit Contents

The four-post rack kit includes these items:

- One pair of slide assemblies.
- One cable-management arm.
- One stop block.
- One status-indicator cable assembly.
- Ten 10-32 x 0.5-inch flange-head Phillips screws.
- Releaseable tie wraps.

## Installing the Slide Assemblies

The rack is measured in universals (U). A U is equal to 44 mm or 1.75 inches.

To install the slide assemblies, follow these steps:

- 
- Step 1** Remove the rack doors according to the documentation provided with the rack cabinet.
- Step 2** Place a mark on the rack's front vertical rails where you want to locate the bottom of the appliance that you are installing in the rack cabinet.



---

**Note** The bottom of each 1-U space is at the middle of the narrowest metal area between holes (marked with a horizontal line on some rack cabinets).

---

- Step 3** Place a mark 44 mm (1.75 inches) above the original mark you made (or count up 3 holes) and mark the rack's front vertical rails to indicate where the appliance's upper edge will be located on the vertical rails.



---

**Note** Mark 1 U (44 mm or 1.75 inches) of vertical space for each appliance you install in the rack.

---

- Step 4** At the front of the rack cabinet, position one of the slide assemblies so that its mounting-bracket flange fits between the marks you made on the rack (see [Figure 3-4](#)).



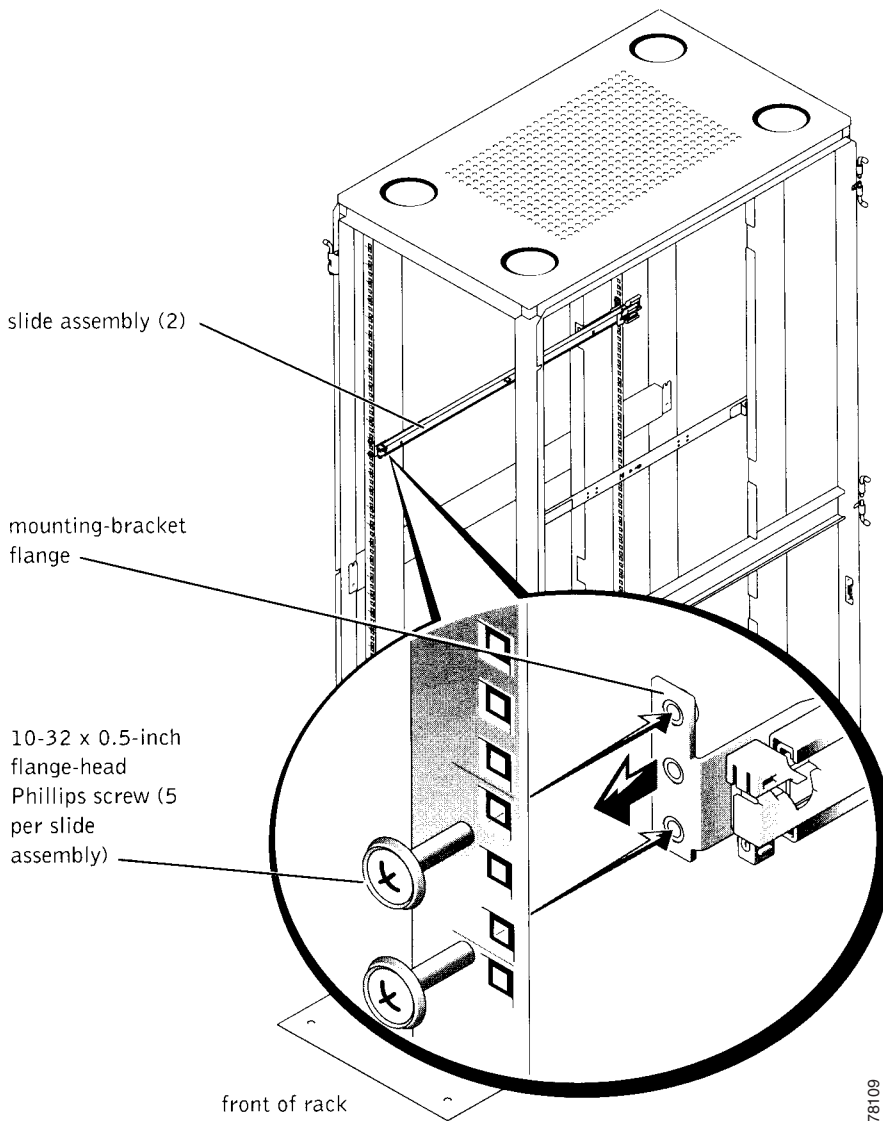
---

**Note** The three holes on the front of the mounting bracket should align with the three holes between the marks you made on the vertical rails.

---

- Step 5** Install two 10-32 x 0.5-inch flange-head Phillips screws in the mounting flange's top and bottom holes to secure the slide assembly to the front vertical rail (see [Figure 3-4](#)).

Figure 3-4 Slide Assemblies



**Step 6** At the back of the cabinet, pull back on the mounting-bracket flange until the mounting holes align with their respective holes on the back vertical rail.

- Step 7** Install three 10-32 x 0.5-inch flange-head Phillips screws in the mounting flange's holes to secure the slide assembly to the back vertical rail.
- Step 8** Repeat Steps 3 through 6 for the remaining slide assembly on the other side of the rack.
- Step 9** Ensure that the slide assemblies are mounted at the same position on the vertical rails on each side of the rack.
- 

## Installing the Appliance in the Rack

If you are installing more than one appliance, install the first appliance in the lowest available position in the rack.

**Caution**

Never pull more than one component out of the rack at a time.

---

To install the appliance in the rack, follow these steps:

---

- Step 1** Pull the two slide assemblies out of the rack until they lock in the fully extended position.

**Caution**

Because of the size and weight of the appliance, never attempt to install the appliance in the slide assemblies by yourself.

---

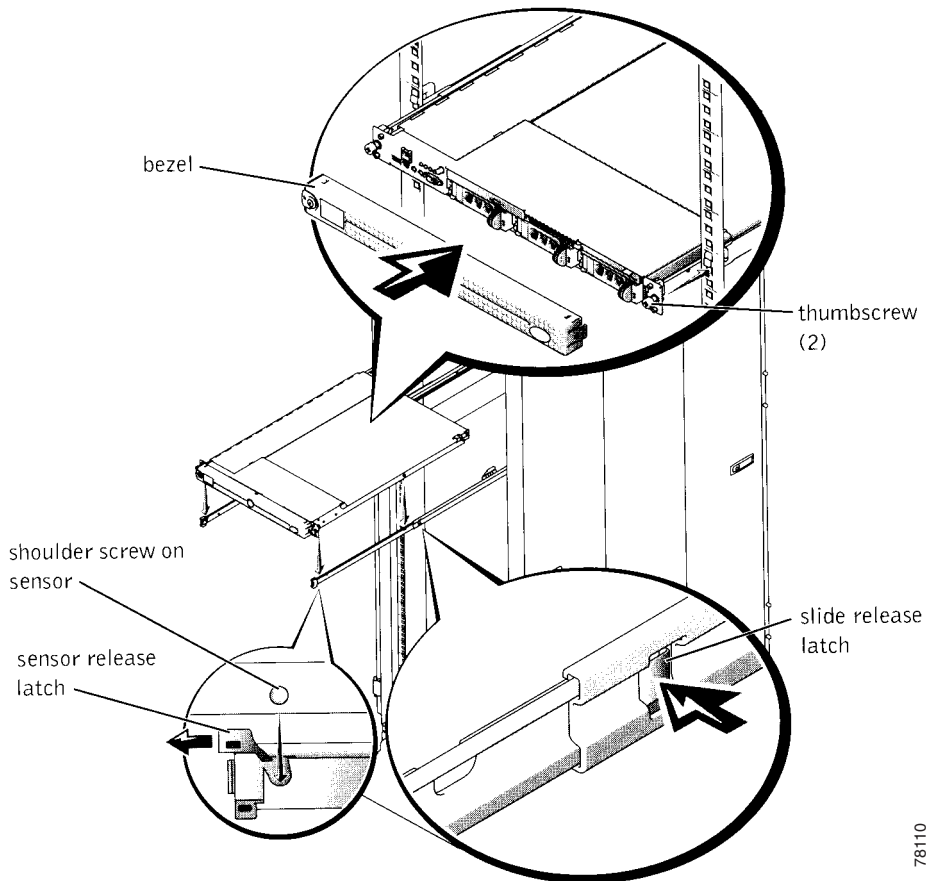
- Step 2** Remove the appliance front bezel by pressing the left side tab and pulling.
- Step 3** Lift the appliance into position in front of the extended slides.
- Step 4** Place one hand on the front-bottom of the appliance and the other hand on the back-bottom of the appliance.
- Step 5** Tilt the back of the appliance down while aligning the back shoulder screws on the sides of the appliance with the back slots on the slide assemblies.
- Step 6** Engage the back shoulder screws into their slots.
- Step 7** Lower the front of the appliance and engage the front shoulder screws in the front slot behind the appliance release latch (see [Figure 3-5](#)).

The appliance release latch moves forward and then snaps back as the shoulder screw passes into the front slot.

**Note**

Use the appliance release latch when you want to remove the appliance from the slide assemblies.

**Figure 3-5** *Installing the Appliance in the Rack*



- Step 8** Press the slide release latch at the side of each slide to slide the appliance completely into the rack (see [Figure 3-5](#)).
- Step 9** Push in and turn the captive thumbscrews on each side of the front chassis panel to secure the appliance to the rack.
- 

## Installing the Cable-Management Arm

You can install the cable-management arm on the right or left of the rack cabinet. This procedure describes installing the cable-management arm in the right side of the rack cabinet, as viewed from the back.

**Tip**

If you are installing several appliances in the rack, consider installing the cable management arms on alternating sides of the rack for ease in cable routing.

---

To install the cable-management arm, follow these steps:

- Step 1** Facing the back of the rack cabinet, locate the latch on the end of the right slide assembly that you secured to the back vertical rail.
- Step 2** Push the tab on the back end of the cable-management arm into the latch on the end of the slide assembly (see [Figure 3-6](#)).



**Note** The latch clicks when locked.

---

- Step 3** Push the tab on the remaining free end (the front) into a mating latch on the inner segment of the slide assembly (see [Figure 3-6](#)).



**Note** The latch clicks when locked.

---

- Step 4** Install a stop block on the latch on the end of the opposite slide assembly (see [Figure 3-6](#)).

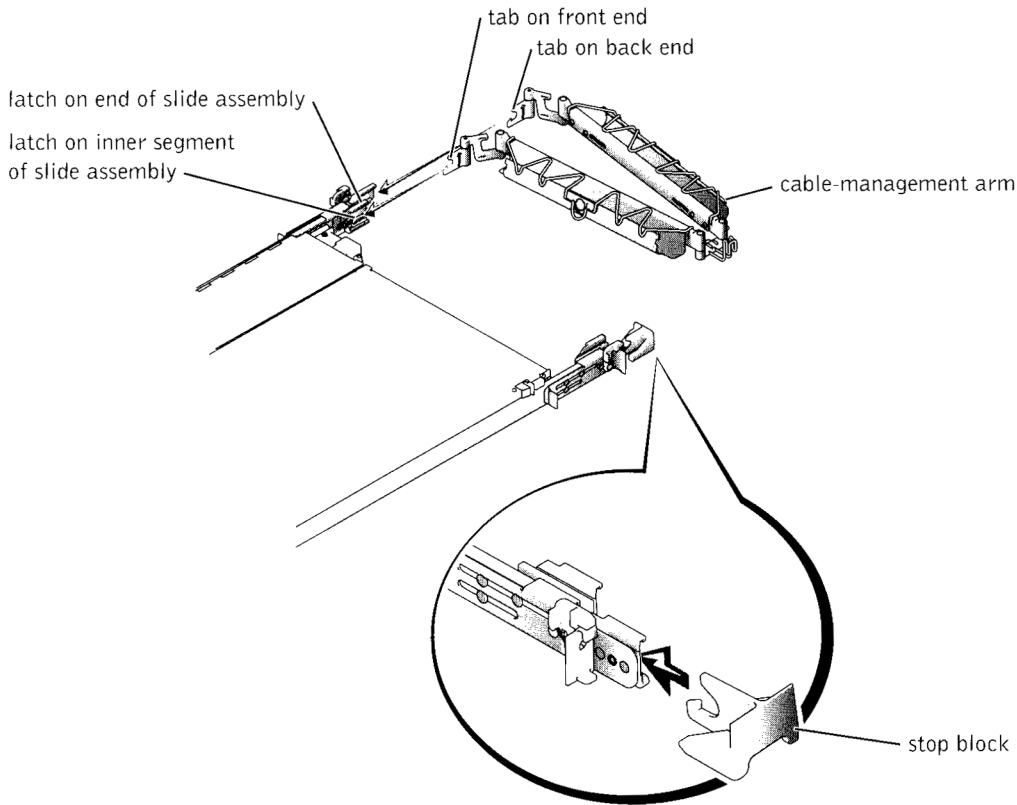
**Note**

The stop block prevents the backward travel of the cable-management arm and supports the weight of the arm with its load of installed cables.

**Note**

The two-post rack kit has two stop blocks: one for right-side mounting, and one for left-side mounting. You can only install the proper stop block.

**Figure 3-6 Cable-Management Arm**



78111

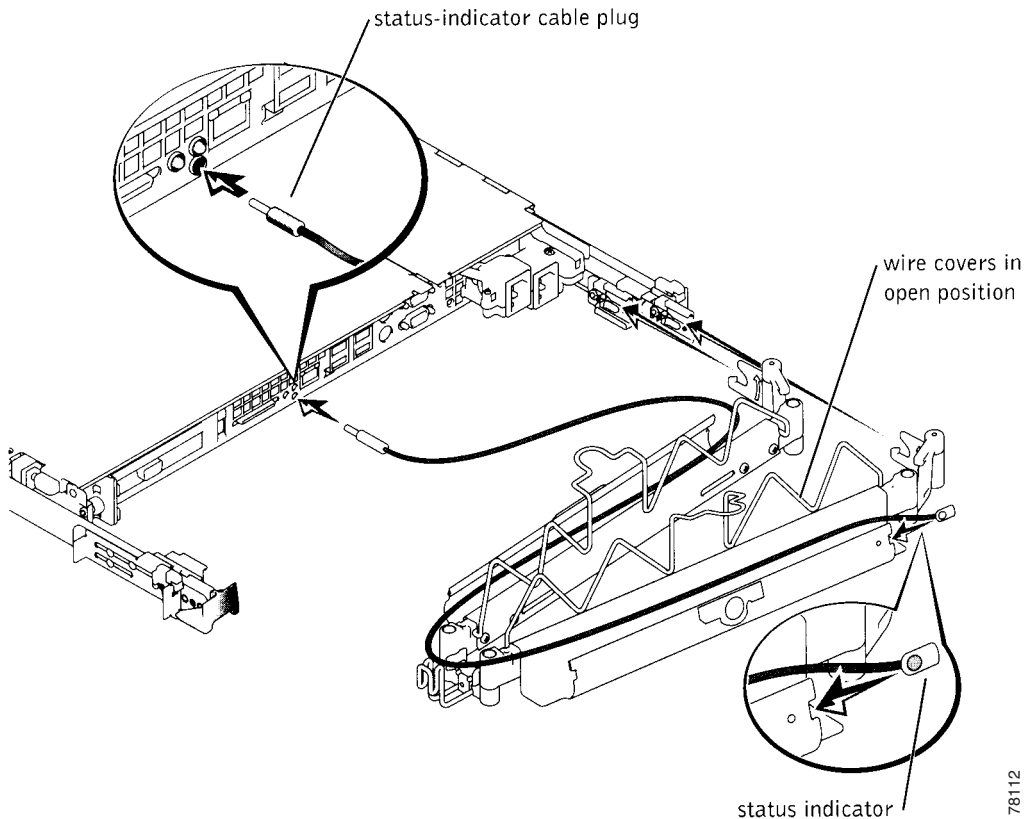
**Step 5** Install the status-indicator cable plug into its connector (see [Figure 3-7](#)).

- Step 6** Open the wire covers on the cable-management arm by lifting the center of the wire over the top of the embossed round button on the front part of the arm, and lifting the wire over the top of a similar round button on the back part of the arm.

The wire cover swings open to enable cables to be routed within the arm.

- Step 7** Route the status-indicator end of the cable assembly through the cable-management arm, and install the indicator in its slot at the back end of the cable-management arm (see [Figure 3-7](#)).

**Figure 3-7** Installing the Cable-Management Arm



**Step 8** Connect the power cords to their receptacles on the back panel.

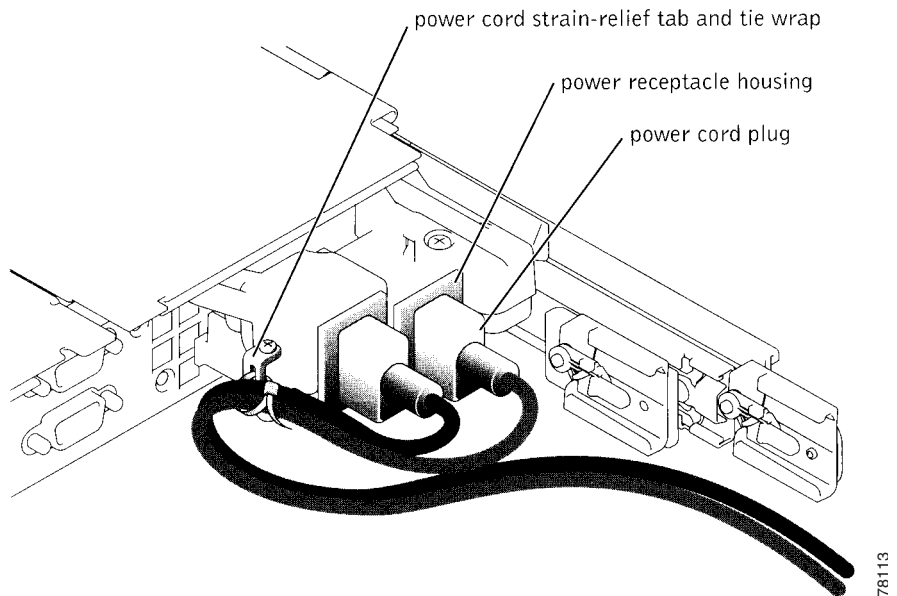


**Note** Although the strain-relief can accommodate power cords with a bend radius of up to 10 millimeters (0.75 inch), use only the power cords provided with the appliance.

**Step 9** Install a tie-wrap through the slot on the strain-relief tab (see [Figure 3-8](#)).

**Step 10** Bend the power cords back beside the power receptacle housing and form a tight loop. Install the strain-relief tie-wrap loosely around the looped power cord (see [Figure 3-8](#)).

**Figure 3-8 Power Cord Strain Relief**



78113

## Routing the Cables

To route the cables, follow these steps:

- 
- Step 1** Attach the I/O cable connectors to their respective connectors on the appliance back panel.
- For details on the cable connections, see [Routing the Cables, page 3-27](#).
- Step 2** Route the power and I/O cables through the cable-management arm, using four loosely secured releaseable tie-wraps (two in the middle and on each end of the cable-management arm).

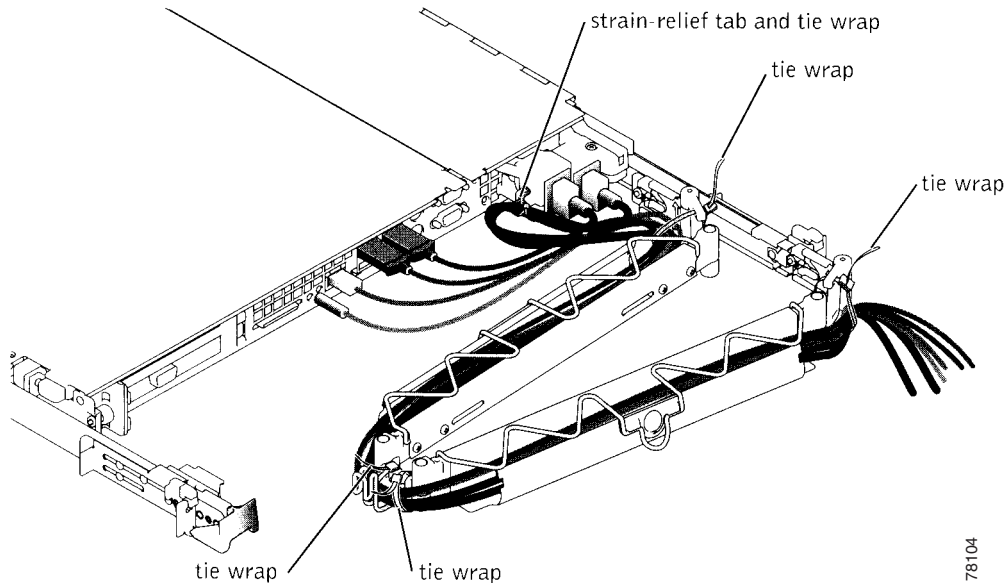


---

**Note** Do not fully tighten the tie-wraps at this time (see [Figure 3-9](#)). Allow some cable slack in the cable-management arm to prevent damage to the cables.

---

Figure 3-9 Routing Cables



- Step 3** Secure the cables to the cable-management arm:
- a. After connecting the cables to the appliance, unscrew the thumbscrews that secure the front of the appliance to the front vertical rail.
  - b. Slide the appliance forward to the fully extended position.
  - c. Route the cables along the cable-management arm, making any adjustments to the cable slack at the hinge positions, and secure the cables to the cable-management arm with the releaseable tie-wraps and the wire covers over the cable-management arm.



**Note** As you pull the appliance out to its farthest extension, the slide assemblies lock in the extended position. To push the appliance back into the rack, press the slide release latch on the side of the slide, and then slide the appliance completely into the rack.

- Step 4** Slide the appliance in and out of the rack to verify that the cables are routed correctly and do not bind, stretch, or pinch with the movement of the cable-management arm.
- Step 5** Make any necessary adjustments to ensure that the cable slack is neither too tight nor too loose, yet keeps the cables in place as the appliance is moved in and out of the rack.
- Step 6** Replace the rack doors.



---

**Note** Refer to the procedures for replacing the rack doors in the documentation provided with your rack cabinet.

---

**Caution**

---

Because of the size and weight of the rack cabinet doors, never attempt to remove or install them by yourself.

---

---

## Two-Post Rack Installation

You can install the two-post kit in a center-mount or flush-mount configuration. The two-post kit incorporates slide assemblies that enable the appliance to be pulled out of the rack for servicing.

You must properly secure the two-post, open frame relay rack to the floor, the ceiling or upper wall, and where applicable, to adjacent racks, using floor and wall fasteners and bracing specified or approved by the rack manufacturer.

**Caution**

---

Do not attempt to install the appliance into a two-post, open-frame relay rack that has not been securely anchored in place. Damage to the appliance and injury to yourself and to others may result.

---

This section contains these topics:

- [Recommended Tools and Supplies, page 3-30](#)
- [Rack Kit Contents, page 3-30](#)
- [Marking the Rack, page 3-30](#)
- [Installing the Slide Assemblies in the Rack, page 3-31](#)

## Recommended Tools and Supplies

You need the following tools and supplies to install the appliance in a two-post, open-frame relay rack:

- #2 Phillips screwdriver.
- 11/32-inch wrench or nut driver (if changing bracket to flush-mount configuration).
- Masking tape or felt-tip pen to mark the mounting holes.

## Rack Kit Contents

The two-post rack kit includes:

- One pair of slide assemblies (two-post).
- One cable-management arm.
- One status-indicator cable assembly.
- Two stop blocks.
- Eight 12-24 x 0.5-inch pan-head Phillips screws.
- Releaseable tie wraps.

## Marking the Rack

You must allow 1 U (4.4 cm or 1.75 inch) of vertical space for each appliance you install in the two-post rack.

To mark the rack, follow these steps:

- 
- Step 1** Place a mark on the rack's front vertical rails where you want to locate the bottom of the appliance that you are installing in the two-post rack.



---

**Note** The bottom of each 1-U space is at the middle of the narrowest metal area between holes.

---

- Step 2** Place a mark 44 mm (1.75 inches) above the original mark you made.



---

**Note** Each 1 U (44 mm, or 1.75 inch) of vertical space on a rack with universal-hole spacing has three holes with center-to-center spacing between the holes (beginning at the top of a 1-U space) of 15.9 mm, 15.9mm, and 12.7 mm (0.625 inch, 0.625 inch, and 0.5 inches).

---

## Installing the Slide Assemblies in the Rack

You can install the slide assemblies in a two-post, open-frame relay rack having either universal-hole spacing or wide-hole spacing. You can install the 1-U slide assemblies in either a flush-mount or center-mount configuration.

This section contains these topics:

- [Center-Mount Installation, page 3-31](#)
- [Flush-Mount Installation, page 3-34](#)

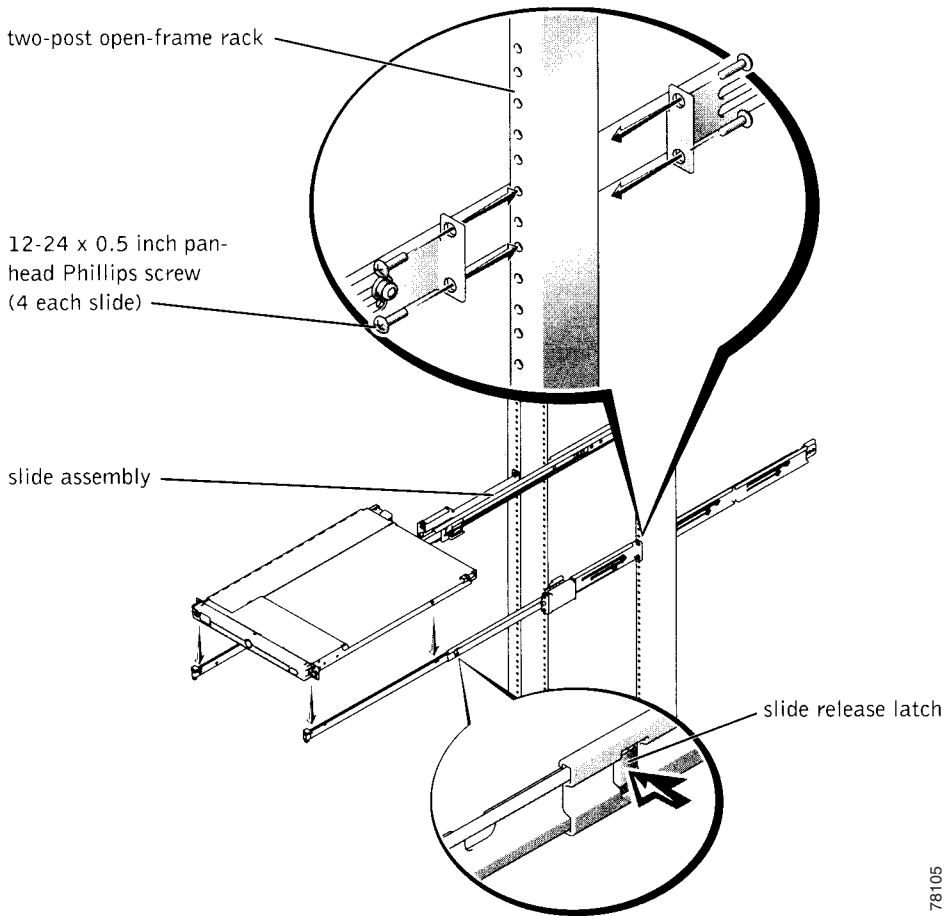
## Center-Mount Installation

The two-post rack kit is shipped with brackets configured for center-mount installation.

To install the center-mount brackets, follow these steps:

- 
- Step 1** Locate the right slide assembly and push the back bracket toward the back of the slide assembly (see [Figure 3-10](#)).
  - Step 2** Position the right slide assembly in the two-post rack at the location you marked, push the back bracket forward against the vertical two-post rack, and secure the front and rear center-mounting brackets to the rack with two 12-24 x 0.5-inch pan-head Phillips screws ([Figure 3-10](#)).
  - Step 3** Repeat Steps 1 and 2 to install the left side assembly in the rack.

Figure 3-10 Slide Assemblies for Center-Mount Configuration



78105

## Flush-Mount Installation

To install the flush-mount brackets, follow these steps:

- 
- Step 1** Locate the two slide assemblies and place them, side by side, on a smooth work surface, with the front ends of the slide assemblies toward you. Position both slide assemblies so that the center brackets are facing upwards (see [Figure 3-11](#)).



---

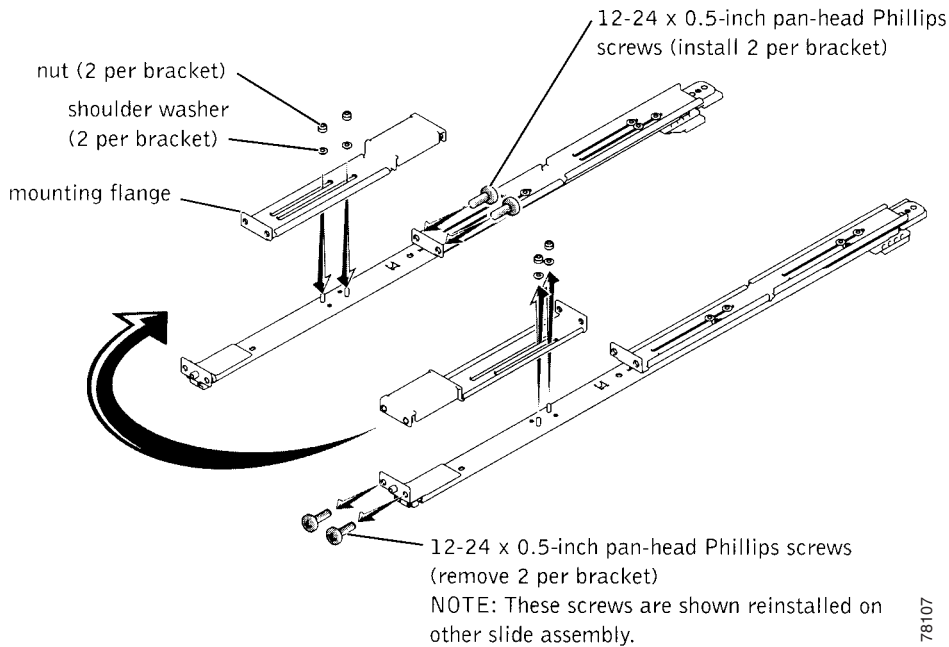
**Note** To prepare the slides for flush-mount installation, remove the front mounting bracket, rotate it 180 degrees, and reinstall it on the opposite slide assembly.

---

- Step 2** Using a #2 Phillips screwdriver and an 11/32-inch wrench or nut driver, remove two 12-24 x 0.5-inch pan-head Phillips screws, two nuts, and two shoulder washers from each front center bracket (see [Figure 3-11](#)).
- Step 3** Remove the front bracket from both slide assemblies.
- Step 4** Place the bracket from one slide assembly onto the threaded studs on the opposite slide assembly, with the bracket turned 180 degrees so that the mounting flange faces forward (see [Figure 3-11](#)).
- Step 5** Secure each front center mount bracket (by its nuts and shoulder washers) and tighten them by hand on their opposite slide assemblies using the two shoulder washers and two nuts you removed in Step 2 (see [Figure 3-11](#)).
- Step 6** Join the front brackets you just installed to the bracket on the slide assembly with the two 12-24 x 0.5-inch pan-head Phillips screws you removed in Step 2 (see [Figure 3-11](#)).

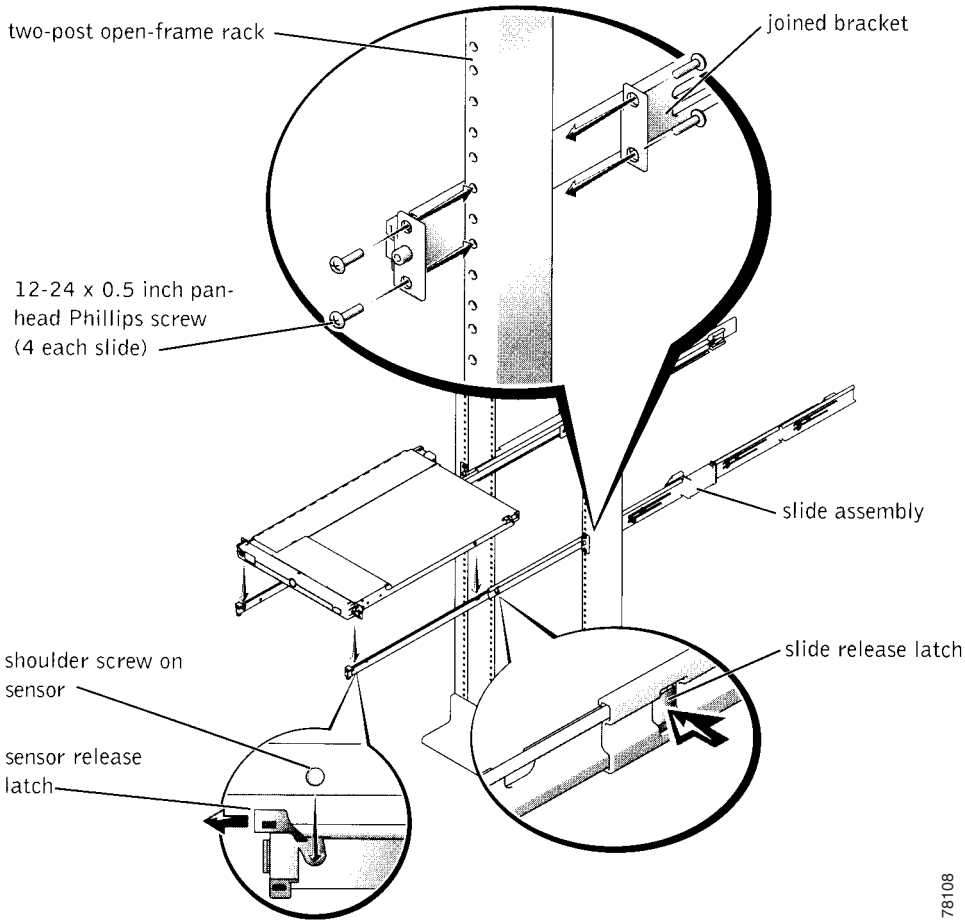
The joined bracket becomes the new extended rear bracket.

**Figure 3-11 Rotating the Front-Mounting Bracket for Flush-Mount Installation**



- Step 7** Repeat Steps 4 through 6 to configure the other slide assembly.
- Step 8** Holding the left slide assembly into position in the two-post rack at the location you marked, adjust the extended rear bracket tightly against the back of the vertical two-post rack and secure it to the two-post rail with two 12-24 x 0.5-inch pan-head Phillips screws (see [Figure 3-12](#)).
- Step 9** Secure the front bracket on the slide assembly to the two-post rail with two 12-24 x 0.5-inch pan-head Phillips screws (see [Figure 3-12](#)).
- Step 10** Perform Steps 8 and 9 to install the right slide assembly in the rack.
- Step 11** Use an 11/32-inch wrench or nut driver to fully tighten the nuts on the mounting brackets on both slide assemblies that you tightened with your fingers.

Figure 3-12 Installing the Slide Assemblies for Flush-Mount Configuration



78108