

Dell™ Systems

Rack Installation Guide



Notes, Notices, and Cautions



NOTE: A NOTE indicates important information that helps you make better use of your computer.



NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Information in this document is subject to change without notice.

© 2002 Dell Computer Corporation. All rights reserved.

Reproduction in any manner whatsoever without the written permission of Dell Computer Corporation is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, *VersaRails*, and *RapidRails* are trademarks of Dell Computer Corporation.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Computer Corporation disclaims any proprietary interest in trademarks and trade names other than its own.

May 2002 P/N 1T505 Rev. A01

Contents

- Safety Instructions1-1**
- Installation Instructions1-2**
 - Rack Requirements for VersaRails 1-3
- Four-Post Rack Installation1-3**
 - Before You Begin 1-3
 - Important Safety Information 1-3
 - Rack Stabilizer Feet 1-4
 - Installation Tasks 1-4
 - Recommended Tools and Supplies 1-4
 - RapidRails Rack Kit Contents 1-5
 - VersaRails Rack Kit Contents 1-5
- Removing the Rack Doors1-6**
- Marking the Rack1-6**
- Installing the RapidRails Slide Assemblies1-8**
- Installing the VersaRails Slide Assemblies1-9**
- Installing the System in the Rack
(RapidRails or VersaRails)1-11**
- Installing the Cable-Management Arm1-12**
- Routing Cables1-14**
- Replacing the Rack Doors1-15**
- Two-Post Rack Installation1-16**
 - Two-Post Rack Installation Tasks 1-16
 - Recommended Tools and Supplies 1-16
 - Rack Kit Contents 1-17

Marking the Rack	1-17
Universal-Hole Spacing Racks	1-17
Wide-Hole Spacing Racks	1-18
Installing the Slide Assemblies in the Rack	1-19
Center-Mount Installation	1-19
Flush-Mount Installation	1-21
Installing the System in the Rack	1-23
Installing the Cable-Management Arm	1-24
Routing Cables	1-24

Figures

Figure 1-1.	RapidRails Rack Kit Contents	1-5
Figure 1-2.	VersaRails Rack Kit Contents	1-6
Figure 1-3.	One Rack Unit.	1-7
Figure 1-4.	Marking the Vertical Rails	1-8
Figure 1-5.	Installing the RapidRails Slide Assemblies	1-9
Figure 1-6.	Installing the VersaRails Slide Assemblies	1-10
Figure 1-7.	Installing the System in the Rack (RapidRails or VersaRails)	1-12
Figure 1-8.	Installing the Cable-Management Arm	1-13
Figure 1-9.	Opening the Wire Covers	1-14
Figure 1-10.	Routing Cables	1-15
Figure 1-11.	Two-Post Rack Kit Components	1-17
Figure 1-12.	Two-Post, Open-Frame Relay Rack Universal-Hole Spacing	1-18
Figure 1-13.	Two-Post, Open-Frame Relay Rack Wide-Hole Spacing	1-18
Figure 1-14.	Installing the Slide Assemblies for Center-Mount Configuration	1-20
Figure 1-15.	Rotating the Front Mounting Bracket for Flush-Mount Installation	1-21
Figure 1-16.	Installing the Slide Assemblies for Flush-Mount Configuration	1-22

Safety Instructions

Use the following safety guidelines to ensure your own personal safety and to help protect your server, storage system, or appliance from potential damage. For complete safety and regulatory information, refer to your *System Information Guide*. Warranty information might be included within this document or as a separate document.


CAUTION: Precautions for Rack-Mountable Products

Observe the following precautions for rack stability and safety. Also refer to the rack installation documentation accompanying the system and the rack for specific warning and/or caution statements and procedures.

Servers, storage systems, and appliances are considered to be components in a rack. Thus, "component" refers to any server, storage system, or appliance, as well as to various peripherals or supporting hardware.

CAUTION: Installing system components in a rack without the front and side stabilizers installed could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install the stabilizers before installing components in the rack.

After installing system/components in a rack, never pull more than one component out of the rack on its slide assemblies at one time. The weight of more than one extended component could cause the rack to tip over and injure someone.

 **NOTE:** Your system is safety-certified as a free-standing unit and as a component for use in a rack cabinet using the customer rack kit when both the rack cabinet and rack kit were designed for your system. The installation of your system and rack kit in any other rack cabinet has not been approved by any safety agencies. It is your responsibility to have the final combination of system and rack kit in a cabinet evaluated for suitability by a certified safety agency. The manufacturer disclaims all warranties and liability in connection with such combinations.

- System rack kits are intended to be installed in an approved rack by trained service technicians. If you install the kit in any other rack, be sure that the rack meets the specifications.

CAUTION: Do not move large racks by yourself. Due to the height and weight of the rack, it is recommended that a minimum of two people perform this task.

- Before working on the rack, make sure that the stabilizers are secured to the rack, extend to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.

- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a component from the rack.
- Use caution when pressing the component rail release latches and sliding a component into or out of a rack; the slide rails can pinch your fingers.
- After a component is inserted into the rack, carefully extend the rail into a locking position, and then slide the component into the rack.
- Do not overload the power supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.
- Do not step on or stand on any system/component when servicing other systems/components in a rack.

Installation Instructions

This installation guide provides instructions for trained service technicians installing one or more systems in an open-frame relay rack or in a rack cabinet. The RapidRails™ rack kit can be installed in all the system manufacturer's rack cabinets without tools, and the VersaRails™ rack kit can be installed in most industry-standard rack cabinets. The procedures for installing both RapidRails and VersaRails rack kits are similar. One rack kit is required for each system to be installed in the rack cabinet.

This guide includes procedures for the following rack kits:


- RapidRails kit in a four-post rack cabinet
- VersaRails kit in a four-post rack cabinet
- Two-post kit (installed in either center-mount or flush-mount configuration)

Before attempting this installation, you should read through this entire document carefully.




CAUTION: Do not install rack kit components designed for another system. Use only the rack kit for your system. Using the rack kit for another system may result in damage to the system and personal injury to yourself and to others.

Rack Requirements for VersaRails

 **NOTICE:** The VersaRails rack kit is intended to be installed by trained service technicians in a rack that meets the specifications of American National Standards Institute (ANSI)/Electronic Industries Association (EIA) standard ANSI/EIA-310-D-92, International Electrotechnical Commission (IEC) 297, and Deutsche Industrie Norm (DIN) 41494. One rack kit is required for each system that is installed in a rack.

Four-Post Rack Installation


Before attempting this installation, you should read through this entire procedure carefully.

 **CAUTION:** Do not install rack kit components designed for another system. Use only the rack kit for your system. Using the rack kit for another system may result in damage to the system and personal injury to yourself and to others.

Before You Begin

Before you begin installing your system in the rack, carefully read "Safety Instructions," found earlier in this guide, as well as the safety instructions found in your system's *System Information Guide* for additional information.


 **CAUTION:** When installing multiple systems in a rack, complete all of the procedures for the current system before attempting to install the next system.

 **CAUTION:** Rack cabinets can be extremely heavy and move easily on their casters. They have no brakes. Use extreme caution while moving the rack cabinet. Retract the leveling feet when relocating the rack cabinet. Avoid long or steep inclines or ramps where loss of cabinet control may occur. Extend the leveling feet for support and to prevent the cabinet from rolling.


 **NOTE:** For instructions on installing the system itself, see "Installing the System in the Rack."


Important Safety Information

Observe the safety precautions in the following subsections when installing your system in the rack.

 **CAUTION:** You must strictly follow the procedures in this document to protect yourself as well as others who may be involved. Your system may be very large and heavy and proper preparation and planning are important to prevent injury to yourself and to others. This becomes increasingly important when systems are installed high up in the rack.

Rack Stabilizer Feet

 **CAUTION:** Installing systems in a rack without the front and side stabilizer feet installed and anchored to the floor could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install and anchor the stabilizer feet before installing components in the rack.

 **CAUTION:** After installing systems in a rack, never pull more than one system out of the rack on its slide assemblies at one time. The weight of more than one extended system could cause the rack to tip over and cause injury.

The stabilizer feet help prevent the rack from tipping over when a system or other component is pulled out of the rack with the slide assemblies fully extended. Refer to the documentation provided with the rack cabinet for instructions on installing and anchoring the stabilizer feet.

Installation Tasks

Installing a rack kit involves performing the following tasks in their numbered order:

- 1 Removing the rack doors
- 2 Marking the rack
- 3 Installing the slide assemblies in the rack
 - RapidRails installation
 - VersaRails installation
- 4 Installing the system in the rack
- 5 Installing the cable-management arm
- 6 Routing cables
- 7 Replacing the rack doors



NOTE: There are two procedures for task 3, installing the slide assemblies in the rack. One is for the RapidRails kit, and one is for the VersaRails kit.

Recommended Tools and Supplies

You may need the following tools and supplies to install the system in a four-post rack cabinet:

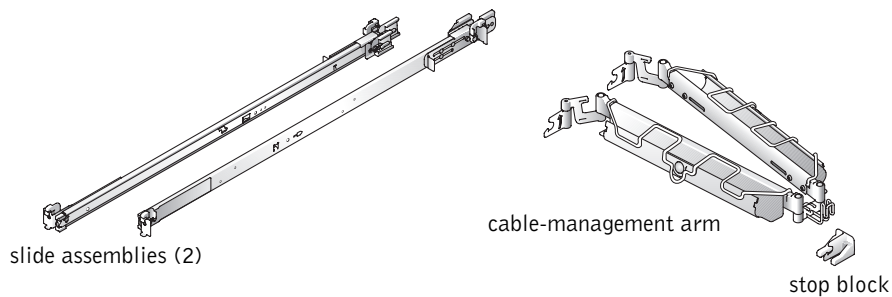
- #2 Phillips screwdriver
- Masking tape or a felt-tip pen, for use in marking the mounting holes to be used

RapidRails Rack Kit Contents

The RapidRails rack kit includes the following items (see Figure 1-1):

- One pair of RapidRails slide assemblies
- One cable-management arm
- One stop block
- Releasable tie wraps (not shown in Figure 1-1)

Figure 1-1. RapidRails Rack Kit Contents



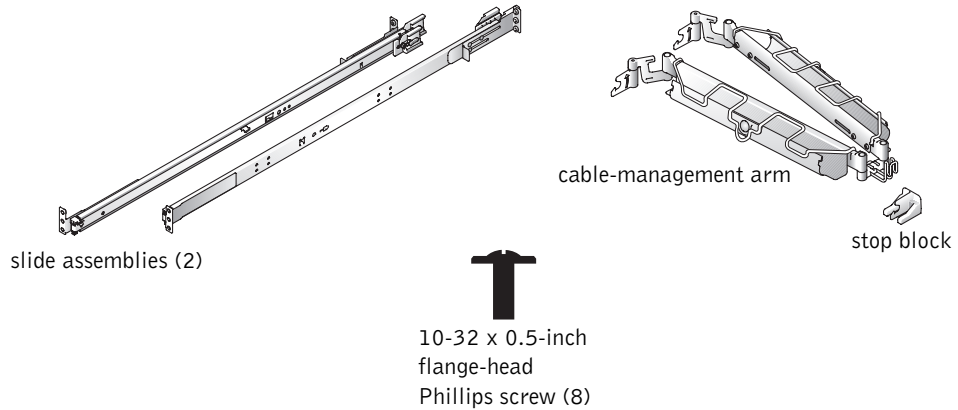
VersaRails Rack Kit Contents

The VersaRails rack kit includes the following items (see Figure 1-2):

- One pair of VersaRails slide assemblies
- One cable-management arm
- One stop block
- Eight 10-32 x 0.5-inch flange-head Phillips screws
- Releasable tie wraps (not shown in Figure 1-2)



NOTE: The nonmetric screws described in illustrations and in procedural steps are identified by size and number of threads-per-inch. For example, a #10 Phillips-head screw with 32 threads per inch is identified as a 10-32 screw.

Figure 1-2. VersaRails Rack Kit Contents

Removing the Rack Doors

See the procedures for removing doors in the documentation provided with your rack cabinet.

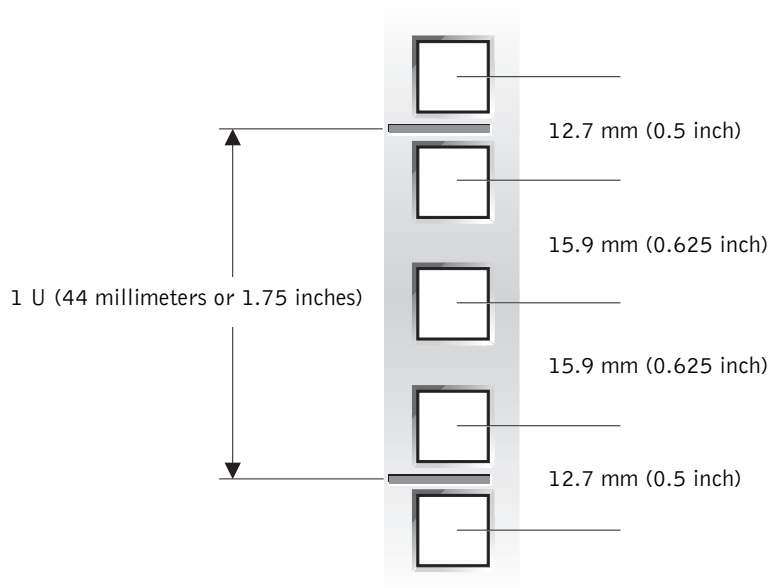
- ⚠ CAUTION:** Because of the size and weight of the rack cabinet doors, never attempt to remove or install them by yourself.
- ⚠ CAUTION:** Store the two doors where they will not injure someone if the doors accidentally fall over.

Marking the Rack

You must allow 1 U (44 millimeters, or 1.75 inches) of vertical space for each system you install in the rack. Rack cabinets that meet EIA-310 standards have an alternating pattern of three holes per rack unit with center-to-center hole spacing (beginning at the top hole of a 1-U space) of 15.9 mm, 15.9 mm, and 12.7 mm (0.625 inch, 0.625 inch, and 0.5 inch) for the front and rear vertical rails (see Figure 1-3). Rack cabinets may have round or square holes.

- ✏ NOTE:** The vertical rails may be marked by horizontal lines and numbers in 1-U increments. If you want, you can make a note of the number marking on the rack's vertical rail. It is not necessary to mark or place tape on the rack. If you choose this method, go to the procedure "Installing the RapidRails Slide Assemblies."

Figure 1-3. One Rack Unit

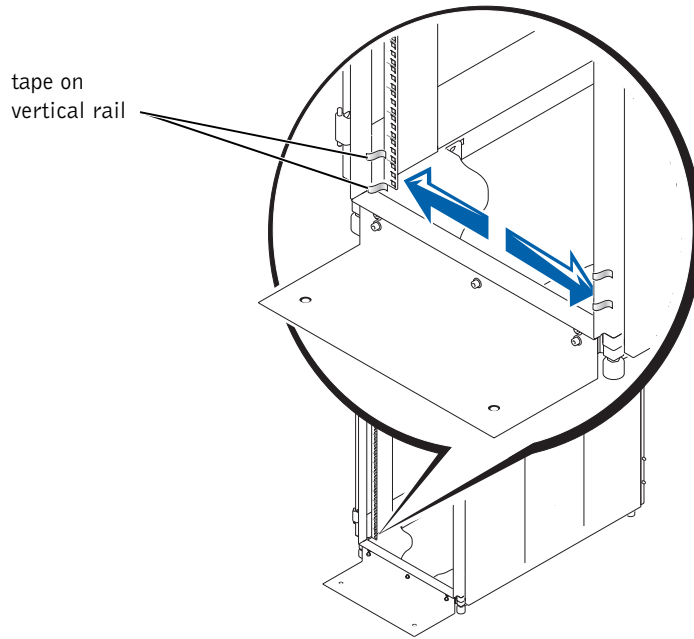


⚠ CAUTION: If you are installing more than one system, install the slide assemblies so that the first system is installed in the lowest available position in the rack.

To mark the rack, perform the following steps:

- 1 Place a mark on the rack's front vertical rails where you want to locate the bottom of the system you are installing in the rack cabinet.
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—see Figure 1-4).
- 2 Place a mark 44 millimeters (1.75 inches) above the original mark you made (or count up three holes in a rack that meets EIA-310 standards) and mark the rack's front vertical rails with a felt-tipped marker or masking tape (if you counted holes, place a mark just above the top hole). This mark or piece of tape indicates where the system's upper edge will be located on the vertical rails (see Figure 1-4).

Figure 1-4. Marking the Vertical Rails



Installing the RapidRails Slide Assemblies

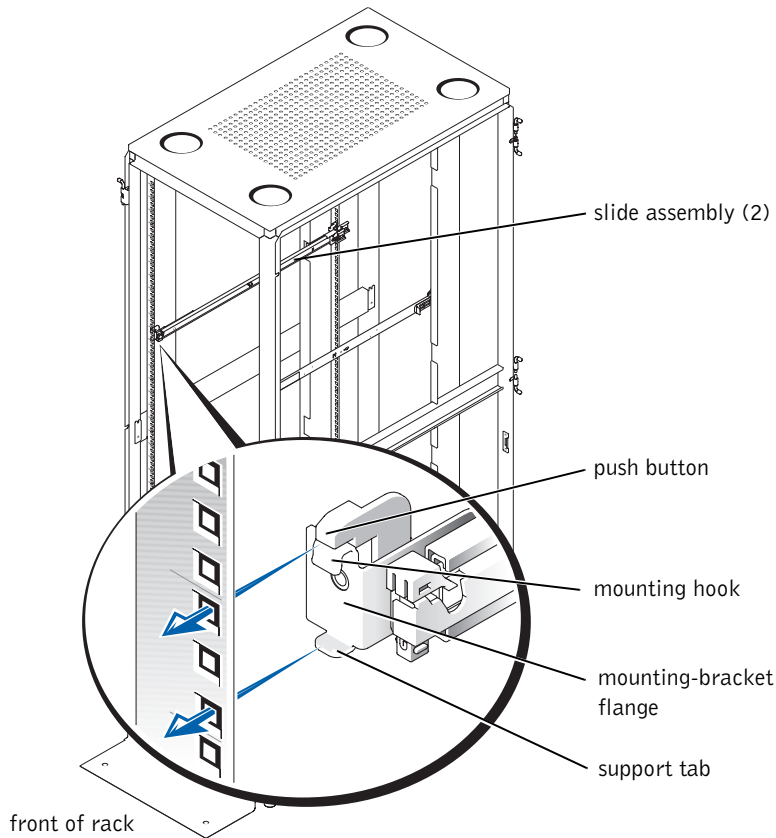
- 1 At the front of the rack cabinet, position one of the RapidRails slide assemblies so that its mounting-bracket flange fits between the marks or tape you placed on the rack (see Figure 1-5).

The mounting hook on the slide assembly's front mounting bracket flange should enter the top hole between the marks you made on the vertical rails.

- 2 Push the slide assembly forward until the mounting hook enters its respective square hole on the vertical rail, and then push down on the mounting-bracket flange until the mounting hooks seat in the square holes and the push button pops out and clicks (see Figure 1-5).
- 3 At the back of the cabinet, pull back on the mounting-bracket flange until the mounting hooks are located in their respective square holes, and then push down on the mounting-bracket flange until the mounting hooks seat in the square holes and the push button pops out and clicks.
- 4 Repeat steps 1 through 3 for the slide assembly on the other side of the rack.

- 5 Ensure that the rails are mounted at the same vertical position on each side of the rack.

Figure 1-5. Installing the RapidRails Slide Assemblies



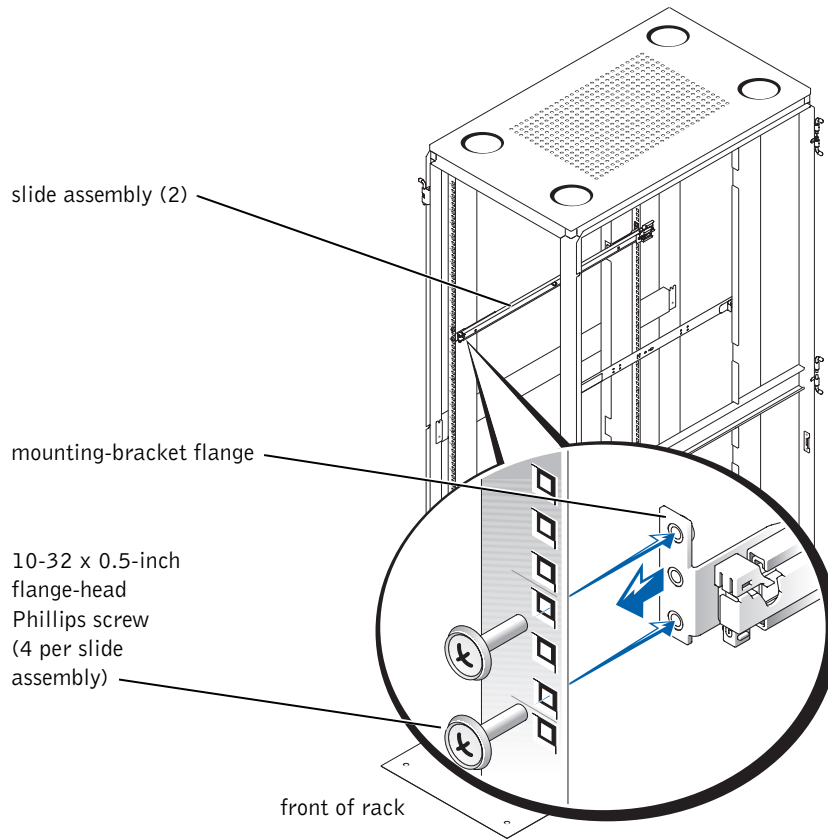
Installing the VersaRails Slide Assemblies

- 1 At the front of the rack cabinet, position one of the VersaRails slide assemblies so that its mounting-bracket flange fits between the marks or tape (or numbered location) on the rack (see Figure 1-6).

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 (or the three holes in the numbered location you selected).


- 2 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 1-6)

Figure 1-6. Installing the VersaRails Slide Assemblies




- 3 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.
- 4 Install two 10-32 x 0.5-inch flange-head Phillips screws in the back mounting flange's top and bottom holes to secure the slide assembly to the back vertical rail.
- 5 Repeat steps 1 through 4 for the remaining slide assembly on the other side of the rack.
- 6 Ensure that the slide assemblies are mounted in the same position on each side of the rack.

Installing the System in the Rack (RapidRails or VersaRails)

 **CAUTION:** If you are installing more than one system, install the first system in the lowest available position in the rack.

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

- 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 system, never attempt to install the system in the slide assemblies by yourself.

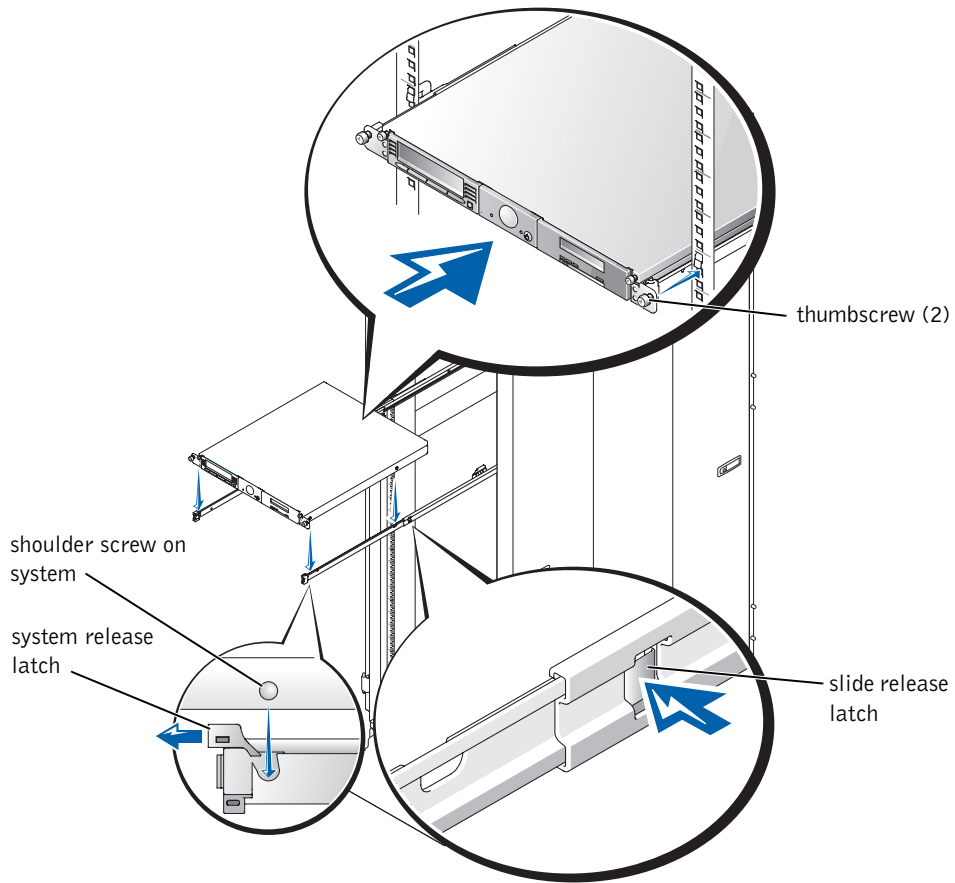
- 2 Lift the system into position in front of the extended slides.
- 3 Place one hand on the front-bottom of the system and the other hand on the back-bottom of the system.
- 4 Tilt the back of the system down while aligning the back shoulder screws on the sides of the system with the back slots on the slide assemblies.
- 5 Engage the back shoulder screws into their slots.
- 6 Lower the front of the system and engage the front shoulder screws in the front slot behind the system release latch (see Figure 1-7).

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

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

- 7 Press the slide release latch at the side of each slide to slide the system completely into the rack (see Figure 1-7).
- 8 Push in and turn the captive thumbscrews on each side of the front-chassis panel to secure the system to the rack.

Figure 1-7. Installing the System in the Rack (RapidRails or VersaRails)



Installing the Cable-Management Arm

NOTICE: The cable management arm can be installed on the right- or left-side 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. If you are installing several systems in the rack, consider installing the cable-management arms on alternating sides of the rack for ease in cable routing.

- 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.

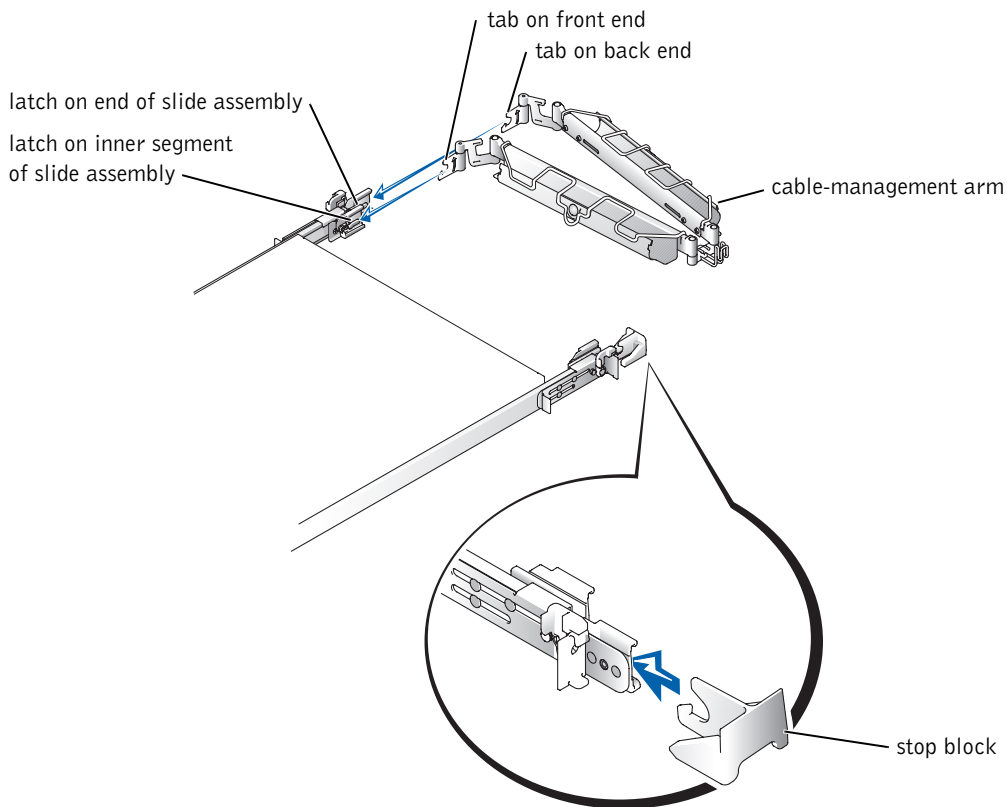
- 2 Push the tab on the back end of the cable-management arm into the latch on the end of the slide assembly (see Figure 1-8).

The latch clicks when locked.

- 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 1-8).

The latch clicks when locked.

Figure 1-8. Installing the Cable-Management Arm



- 4 Install a stop block on the end of the opposite slide assembly (see Figure 1-8).

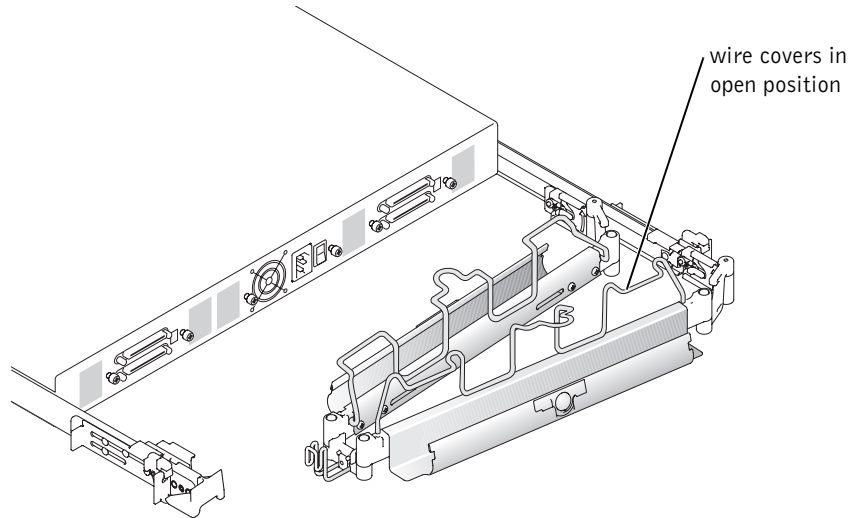
The stop block prevents the backward travel of the cable-management arm and supports the weight of the arm with its load of installed cables.

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.

- 5 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 of the forward part of the arm, and lifting the wire over the top of a similar round button on the back part of the arm (see Figure 1-9).

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

Figure 1-9. Opening the Wire Covers



- 6 Connect the power cord to its receptacles on the back panel.

Routing Cables

- 1 Attach the I/O cable connectors to their respective connectors on the system back panel.

For details on cable connections, see the documentation provided with the system.

- 2 Route the power and I/O cables through the cable-management arm, using four loosely secured releasable tie-wraps (two in the middle and on each end of the cable-management arm). Do not fully tighten the tie-wraps at this time (see Figure 1-10).

Allow some cable slack in the cable-management arm to prevent damage to the cables.

- 3 Secure the cables to the cable-management arm:
 - a After connecting the cables to the system, unscrew the thumbscrews that secure the front of the system to the front vertical rail.

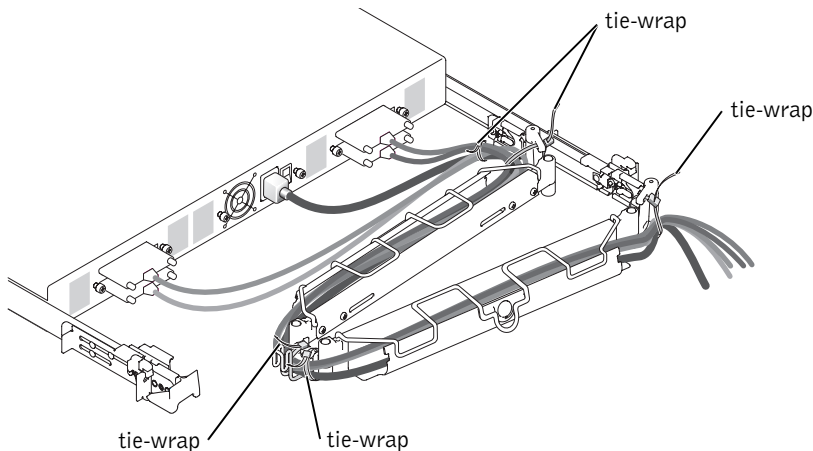
- b Slide the system forward to the fully extended position.
- c Route the cables in the cable-management arm, make any adjustments to the cable slack at the hinge positions, and secure the cables to the arm with the releasable tie-wraps and the wire covers over the cable-management arm.



NOTE: As you pull the system out to its furthest extension, the slide assemblies lock in the extended position. To push the system back into the rack, press the slide release latch on the side of the slide, and then slide the system completely into the rack.

- 4 Slide the system 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.
- 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 system is moved in and out of the rack.
- 6 Install a fifth releasable tie wrap to the cable bundle just before the cables enter the cable-management arm.

Figure 1-10. Routing Cables



Replacing the Rack Doors

See the procedures for replacing 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.

This completes the rack installation of your system in a four-post rack cabinet.

Two-Post Rack Installation

The two-post rack kit is used to install a system in a two-post, open-frame relay rack, such as those found in telecommunications equipment facilities. Both 3-inch and 6-inch wide two-post racks with universal hole spacing or wide hole spacing are accommodated. You can install this kit in a center-mount or a flush-mount configuration. The two-post kit incorporates slide assemblies which enable the system to be pulled out of the rack for servicing.

You must properly secure the two-post 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 or by industry standards. See the two-post rack manufacturer's documentation for warnings before attempting this installation.



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

See "Safety Instructions" at the front of this document for additional safety information regarding rack installation.

Two-Post Rack Installation Tasks

Installing a two-post rack kit includes performing the following tasks in order:

- 1 Marking the rack
- 2 Installing the slide assemblies in the rack
 - Center-mount installation
 - Flush-mount installation
- 3 Installing the system in the rack
- 4 Installing the cable-management arm
- 5 Routing cables

Recommended Tools and Supplies

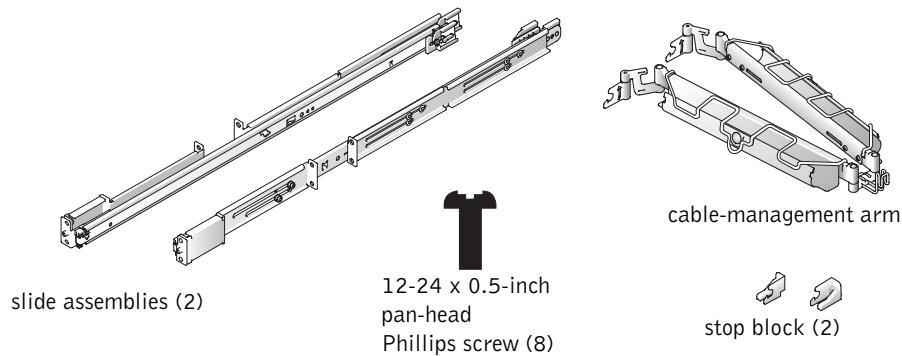
- #2 Phillips screwdriver
- 11/32-inch wrench or nut driver (if changing bracket to flush-mount configuration)
- Masking tape or felt-tip pen to mark the mounting holes

Rack Kit Contents

The two-post rack kit includes (see Figure 1-11):

- One pair of slide assemblies (two-post)
- One cable-management arm
- Two stop blocks
- Eight 12-24 x 0.5-inch pan-head Phillips screws
- Releasable tie wraps (not shown in Figure 1-11)

Figure 1-11. Two-Post Rack Kit Components

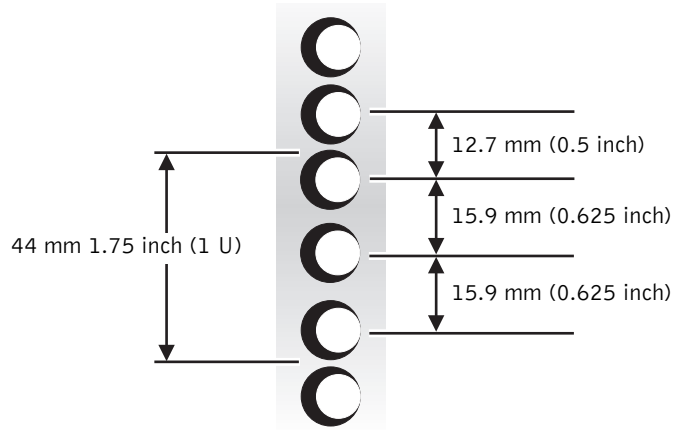


Marking the Rack

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

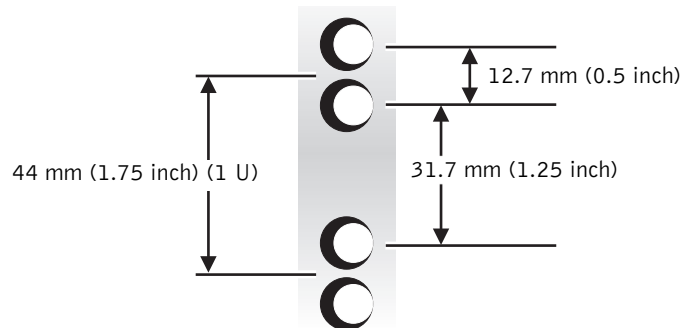
Universal-Hole Spacing Racks

Racks with universal-hole spacing have an alternating pattern of three holes per U with center-to-center hole spacing (beginning at the top hole of a 1-U space) of 15.9 mm, 15.9 mm, and 12.7 mm (0.625 inch, 0.625 inch, and 0.5 inch) for the front and back vertical column of holes (see Figure 1-12).

Figure 1-12. Two-Post, Open-Frame Relay Rack Universal-Hole Spacing

Wide-Hole Spacing Racks


Racks with wide-hole spacing have an alternating pattern of two holes per U with center-to-center hole spacing (beginning at the top hole of a 1-U space) of 31.7 mm and 12.7 mm (1.25 inch and 0.5 inch) for the front and back vertical column of holes (see Figure 1-13).

Figure 1-13. Two-Post, Open-Frame Relay Rack Wide-Hole Spacing

To mark the rack, perform the following steps:

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

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

 **NOTE:** If your rack has wide-hole spacing, go to step 3.

- 2 Place a mark 44 millimeters (1.75 inches) above the original mark you made (or count up three holes in a rack with universal-hole spacing) (see Figure 1-12).

Each 1 U (44 millimeters, or 1.75 inch) of vertical space on a rack with universal-hole spacing has three holes with center-to-center spacing between holes (beginning at the top of a 1-U space) of 0.625, 0.625, and 0.5 inches (see Figure 1-12).



NOTE: If your rack has universal-hole spacing, you have completed the procedure for marking the rack.

- 3 Place a mark 44 millimeters (1.75 inches) above the original mark you made (or count up to the next hole in the rack with wide-hole spacing (see Figure 1-13).

Each 1 U (44 millimeters, or 1.75-inch) of vertical space on a rack with wide-hole spacing has two holes with center-to-center spacing between holes (beginning at the top of a 1-U space) of 31.7 mm (1.25 inches) (see Figure 1-13).

Installing the Slide Assemblies in the Rack

You can install the slide assemblies in a two-post, open-frame rack having either universal-hole spacing (see Figure 1-12) or wide-hole spacing (see Figure 1-13). You can install the 1-U slide assemblies in either a flush-mount or center-mount configuration.



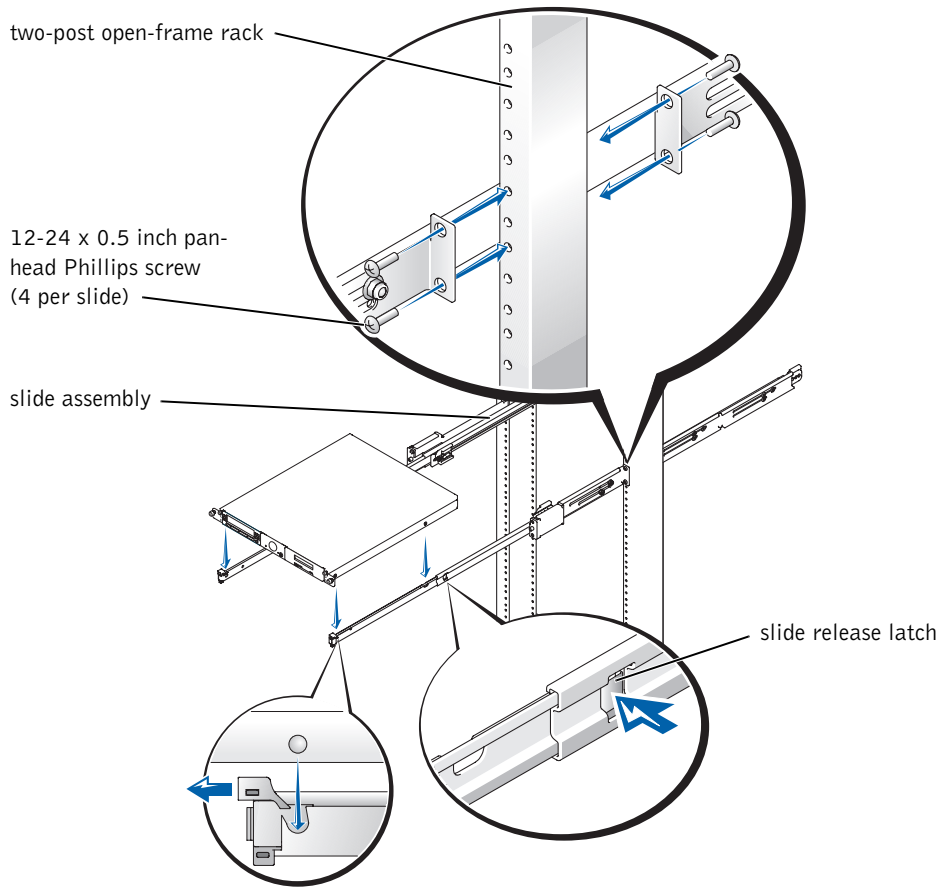
CAUTION: Do not install another system using this rack kit. Use only the rack kit intended for your system. Using the rack kit for another system may result in damage to the system and personal injury to yourself and to others.

Center-Mount Installation

The two-post rack kit is shipped with the brackets configured for center-mount installation. To complete the installation, perform the following steps:

- 1 Locate the right slide assembly and push the back bracket towards the back of the slide assembly (see Figure 1-14).
- 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 (see Figure 1-14).
- 3 Repeat steps 1 and 2 to install the left slide assembly in the rack.

Figure 1-14. Installing the Slide Assemblies for Center-Mount Configuration



Flush-Mount Installation

The two-post rack kit is shipped with the brackets configured for center-mount installation. To prepare the slide assemblies for flush-mount installation in the two-post rack, perform the following steps:

- 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 1-15).

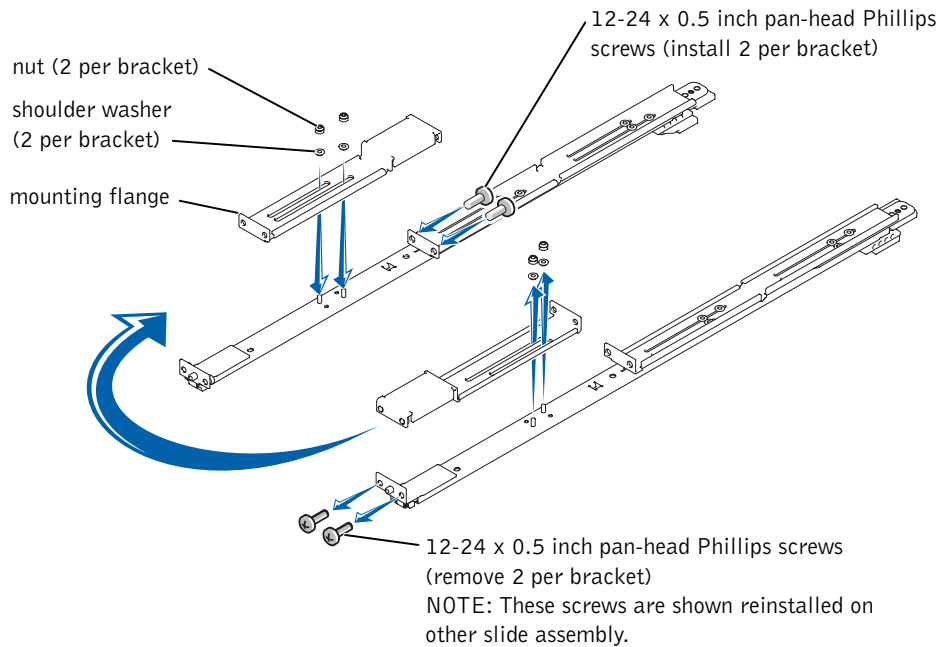


NOTE: To prepare the slides for flush-mount installation, remove the front mounting bracket, rotate it 180 degrees, and reinstall it on the opposite slide assembly.

- 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 1-15).
- 3 Remove the front bracket from both slide assemblies.
- 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 1-15).
- 5 Secure each front center mount bracket (by its nuts and shoulder washers) finger tight on their opposite slide assemblies using the two shoulder washers and two nuts you removed in step 2 (see Figure 1-15).
- 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 1-15).

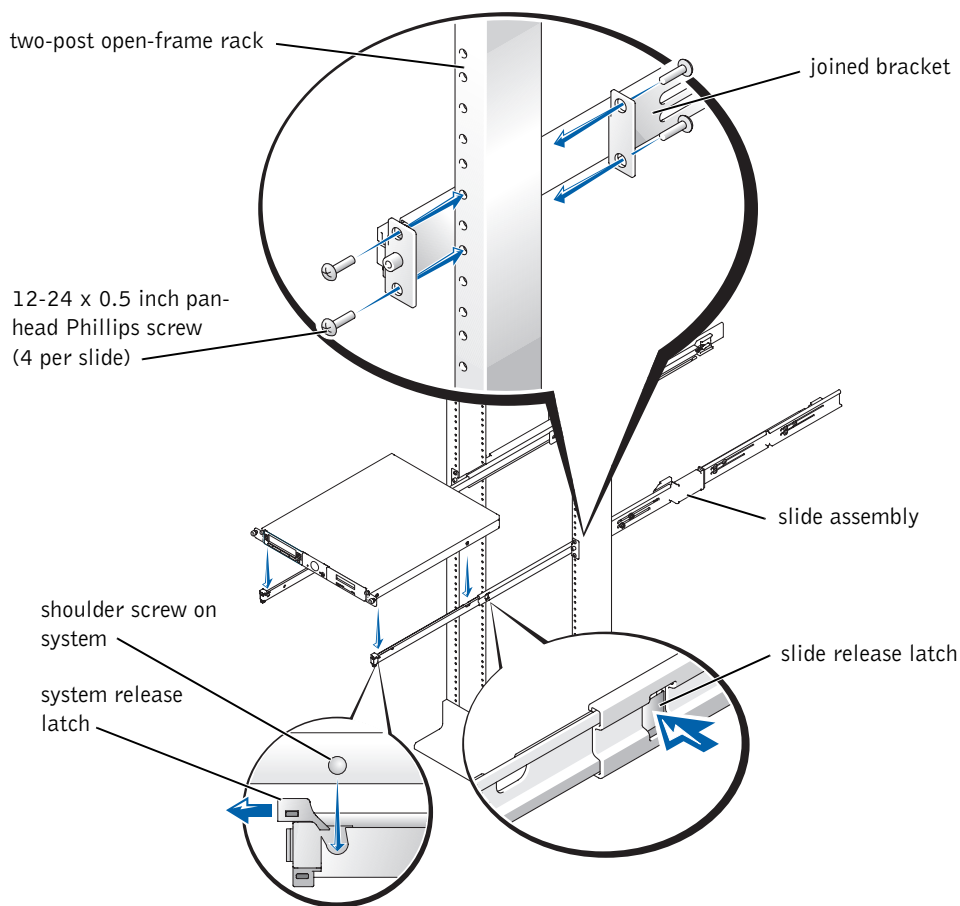
The joined bracket becomes the new extended rear bracket.

Figure 1-15. Rotating the Front Mounting Bracket for Flush-Mount Installation



- 7** Repeat steps 4 through 6 to configure the other slide assembly.
- 8** Holding the left slide assembly 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 1-16).
- 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 1-16).
- 10** Repeat steps 8 and 9 to install the right slide assembly in the rack.
- 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 1-16. Installing the Slide Assemblies for Flush-Mount Configuration



Installing the System in the Rack

CAUTION: Due to the size and weight of the system, never attempt to install the system by yourself.

NOTE: The procedure for installing a system into a rack is identical for flush-mounted and center-mounted support trays.

- 1 Pull the slides out to their fully extended position.



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

- 2 Remove the system front bezel:
 - a Unlock the keylock.
 - b Press the right- and left-end tabs.
 - c Pull the bezel away from the system.
- 3 Lift the system into position (see Figure 1-16).
- 4 Place one hand on the front-bottom of the system and the other hand on the back-bottom of the system.
- 5 Tilt the back of the system down while aligning the back shoulder screws on the sides of the system with the back slots on the slide assemblies.
- 6 Engage the back shoulder screws into their slots.
- 7 Lower the front of the system and engage the front shoulder screws in the front slot behind the system release latch (see Figure 1-16).

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

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

- 8 Press the slide release latch at the side of each slide to slide the system completely into the rack (see Figure 1-16).
- 9 Push in and turn the captive thumbscrews on each side of the front chassis panel to secure the system to the rack.

Installing the Cable-Management Arm

See "Installing the Cable-Management Arm" in "Four-Post Rack Installation."

Routing Cables

See "Routing Cables" in "Four-Post Rack Installation."

You have completed the installation of the rack kit in a two-post rack.

Index

C

- cable-management arm
 - installing, 1-12, 1-24
 - routing cables, 1-15, 1-24
- cables
 - routing, 1-15, 1-24
- center-mount
 - configuration, 1-19
- contents listed
 - RapidRails kit, 1-5
 - VersaRails kit, 1-5

D

- doors
 - removing, 1-6
 - replacing, 1-15

F

- flush-mount configuration, 1-21
- four-post kit
 - installing cable-management arm, 1-12
 - installing system, 1-10
 - marking rack, 1-6
 - RapidRails kit contents, 1-5
 - routing cables, 1-14
 - tools and supplies, 1-4
 - VersaRails kit contents, 1-5

I

- installing
 - cable-management arm, 1-12, 1-24
 - RapidRails slide assemblies, 1-8
 - two-post slide assemblies, 1-19
 - center mount, 1-19
 - flush mount, 1-21
 - VersaRails slide assemblies, 1-9
- installing system
 - four-post rack, 1-10
 - two-post rack, 1-23

K

- kit contents
 - RapidRails, 1-5
 - VersaRails, 1-6

M

- marking rack
 - four-post kit, 1-6
 - two-post kit, 1-17
 - universal-hole spacing, 1-17
 - wide-hole spacing, 1-18

R

- rack mount precautions, 1-3
- rack requirements for VersaRails, 1-3
- rack stabilizer feet, 1-4
- rack unit, 1-7
- RapidRails kit contents, 1-5
- routing cables, 1-14, 1-24

S

- safety instructions, 1-1

T

- tools and supplies
 - four-post kit, 1-4
 - two-post kit, 1-16
- two-post kit
 - installing cable-management arm, 1-24
 - installing slide assemblies, 1-19
 - installing system, 1-23
 - marking rack, 1-17
 - tools and supplies, 1-16

V

VersaRails

- kit contents, 1-5, 1-6

VersaRails kit contents

- list of, 1-5

vertical rails

- marking, 1-6

- one rack unit, 1-7