DELL®

Dell® PowerEdge® 6300 Systems

RACK
INSTALLATION GUIDE

Warnings, Cautions, and Notes

Throughout this document, there may be blocks of text printed in bold type or in italic type. These blocks are warnings, cautions, and notes, and they are used as follows:

WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem.

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

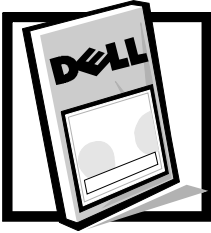*NOTE: A NOTE indicates important information that helps you make better use of your computer system.*

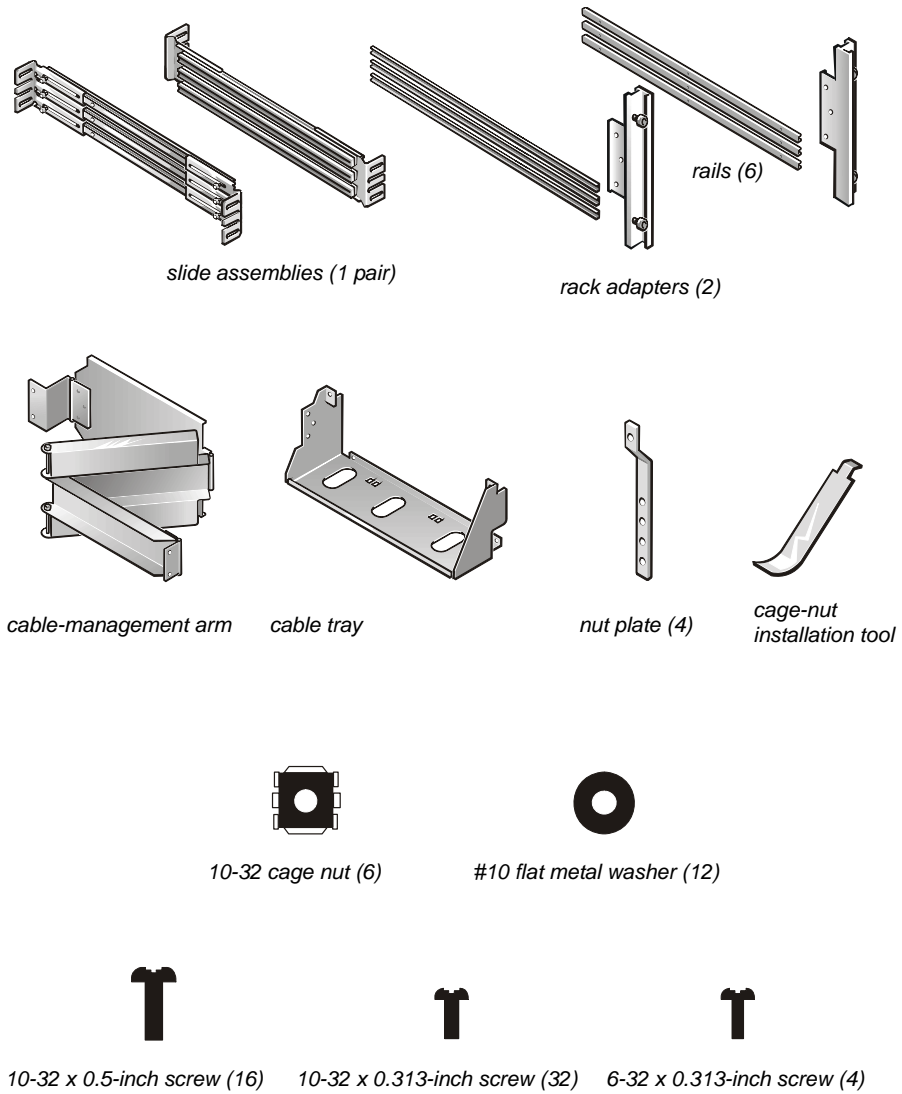# Dell® PowerEdge® 6300 Systems Rack Installation Guide

This installation guide provides instructions for trained service technicians installing one or more Dell PowerEdge 6300 computers in a Dell rack. One rack kit is required for each PowerEdge computer to be installed in the rack. The rack kit includes the following items (see Figure 1):

- One pair of slide assemblies with mounting brackets
- Six rails
- Two rack adapters
- One cable-management arm
- One cable tray
- Four curved nut plates
- One cage-nut installation tool
- Sixteen 10-32 x 0.5-inch pan-head Phillips-head screws
- Twenty-six 10-32 x 0.313-inch pan-head Phillips-head screws
- Four 6-32 x 0.313-inch pan-head Phillips-head screws
- Twelve #10 flat metal washers
- Six 10-32 cage nuts

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

If you have purchased a Dell rack along with your PowerEdge 6300 computer, the slide assemblies are preinstalled in the rack.

slide assemblies (1 pair)

rails (6)

rack adapters (2)

cable-management arm

cable tray

nut plate (4)

cage-nut
installation tool

10-32 cage nut (6)

#10 flat metal washer (12)

10-32 x 0.5-inch screw (16)　　　10-32 x 0.313-inch screw (32)　　　6-32 x 0.313-inch screw (4)

NOTE: The quantity of parts may vary for rack kits that were preinstalled by Dell.

Figure 1. Rack Kit Contents

Before You Begin

Before you begin installing your PowerEdge 6300 computer in the rack, carefully read the safety precautions and tool requirements in the following subsections.

Important Safety Information

Follow these safety precautions when installing your computer in the rack.

Kit Installation Restrictions

WARNING: Dell's server systems are certified as components for use in Dell's rack cabinet using the Dell customer rack kit. The final installation of Dell servers and rack kits in any other brand of rack cabinet has not been approved by any safety agencies. It is the customer's responsibility to have the final combination of Dell servers and rack kits for use in other brands of rack cabinets evaluated for suitability by a certified safety agency.

This rack kit is intended to be installed in a Dell rack by trained service technicians. If you install the kit in any other rack, be sure that the rack meets the specifications of the Dell rack.

Rack Stabilizer Feet

WARNING: Installing PowerEdge 6300 computers in a Dell rack without the front and side stabilizer feet installed could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install the stabilizer feet *before* installing components in the rack.

WARNING: After installing computers in a rack, *never* pull more than one computer out of the rack on its slide assemblies at one time. The weight of more than one extended computer could cause the rack to tip over and injure someone.

The stabilizer feet help prevent the possibility of the rack tipping over when a Power-Edge 6300 computer or other components are pulled out of the rack so that the slide assemblies are fully extended. Refer to the *Dell PowerEdge Rack-Mountable Solutions Installation Guide* provided with the rack for instructions on installing the stabilizer feet.

Recommended Tools

To install the rack kit, you need the following tools:

- A #2 Phillips screwdriver
- A flat-blade screwdriver
- The cage-nut installation tool included in the rack kit
- A steel measuring tape

Installing the Rack Kit

NOTES: If you purchased a Dell rack along with your PowerEdge 6300 computer, the slide assemblies are preinstalled in the rack.

For instructions on installing the PowerEdge computer itself, see "Installing a Power-Edge 6300 Computer in the Rack" found later in this guide.

Use the following procedure to install the slide assemblies in the rack:

1. Remove the rack's front and back doors.

2. Install the slide assemblies in the rack.

The subsections that follow include instructions for performing these tasks.

Removing the Doors From the Rack

You must remove the doors from the rack to provide access to the interior of the rack and to prevent damage to the doors while installing the kit. Use the following procedure to remove the doors.

WARNING: To prevent personal injury due to the size and weight of the doors, never attempt to remove the doors by yourself.

1. Open the latch on the front door (see Figure 2).

    Slide the latch's button cover up as far as it will go, press the push button, rotate the handle clockwise until the latch releases, and then pull the door open.

button cover

push button

handle
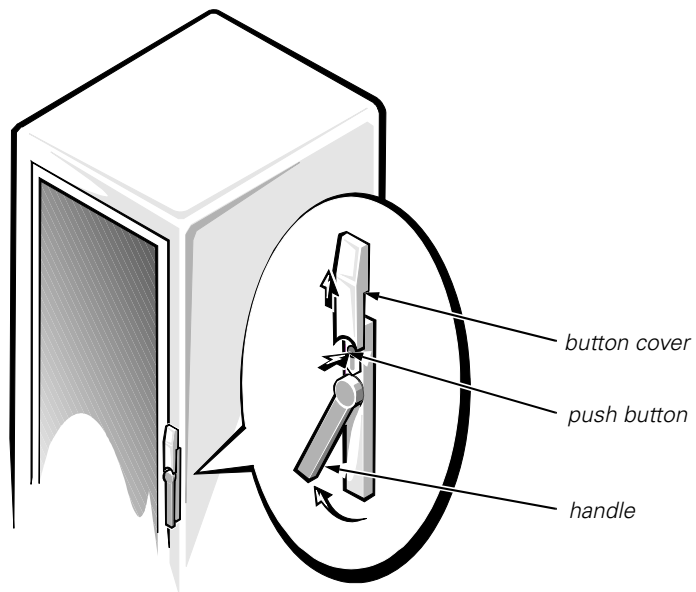
Figure 2. Opening the Latch on the Door

2. Remove the front door as shown in Figure 3:

    a. One person should grasp the top of the door to stabilize it. The other person should grasp the bottom of the door.

    b. The person holding the bottom of the door should press the release lever on the bottom hinge and then pull the bottom of the door away from the rack a few inches.

    c. The person holding the top of the door should press the release lever on the top hinge and then pull the door away from the rack.

hinge
release
lever
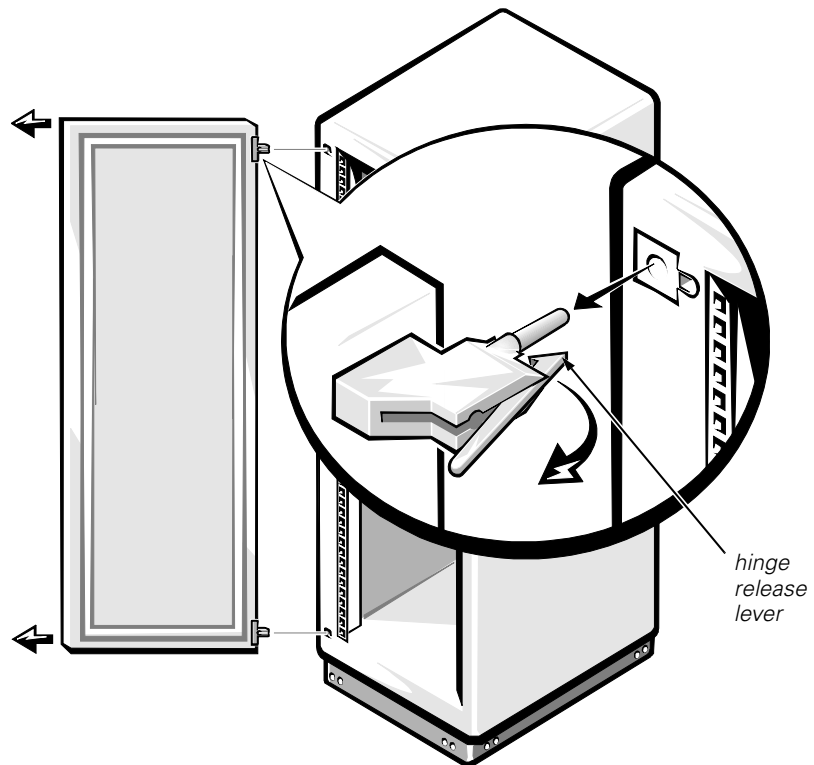
Figure 3. Removing the Rack Doors

3. Repeat steps 1 and 2 to remove the back door from the rack.

Store the two doors where they will not injure someone if they accidently fall over.
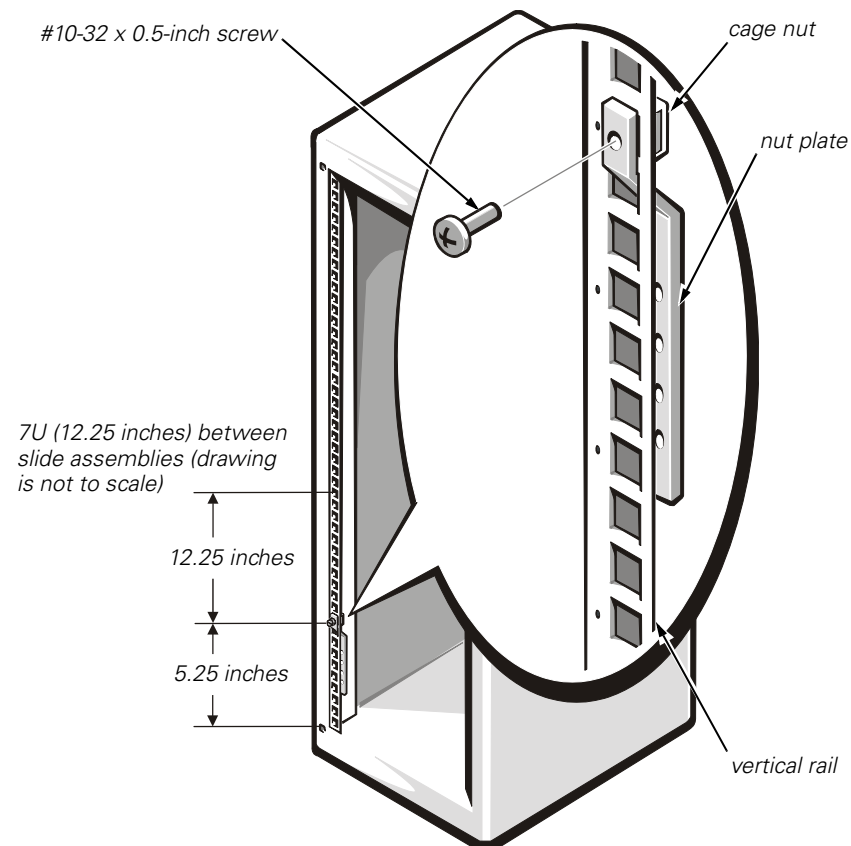
Installing the Slide Assemblies in the Rack

Use the following procedure to install the slide assemblies in the rack:

1. Determine where you want to install the slide assemblies.

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

If you intend to install more than one PowerEdge 6300 computer in the rack, you must install the slide assemblies so that 7U (12.25 inches) of vertical space is between the top of one slide assembly and the top of the next (see Figure 4). In the Dell rack, the rails of the rack are marked by small indentations in 1U (1.75 inch) increments. To install the computer in the rack's lowest position, locate the cage nuts 3U (5.25 inches) from the bottom of each vertical rail. Mark the locations of the cage nuts on the rack's vertical rails with a felt-tipped marker or masking tape.

**Figure 4. Determining Where to Install the Slide Assemblies**

2. Install the cage nuts and nut plates.

   Install the curved nut plates on the vertical rails where you want the ends of the slide assemblies to be located (see Figure 5). Each curved nut plate is held in place by one 10-32 x 0.5-inch Phillips-head screw and one 10-32 cage nut.

   The following substeps explain how to install the cage nuts and the nut plates:

   a. Insert the lower lip of the cage nut over the bottom of the opening in the back of a rail as shown in step 1 in Figure 5. Then insert the small end of the cage-nut installation tool through the opening in the rail (from the front), and hook the tool over the top lip of the cage nut.

   b. Push in on the cage nut while rotating the tool up and pulling it back toward you until the top lip of the cage nut snaps into position (see step 1 in Figure 5).

   c. Repeat substeps a and b to install the remaining cage nuts.

   d. To install one of the curved nut plates, insert it through the hole below the cage nut (from the back of the rail) as shown in step 2 in Figure 5. Then secure the nut plate in place with a 10-32 x 0.5-inch Phillips-head screw (see step 3 in Figure 5).

   e. Repeat substeps a through d to install the remaining nut plates.

cage-nut installation tool

10-32 x 0.5-inch screw
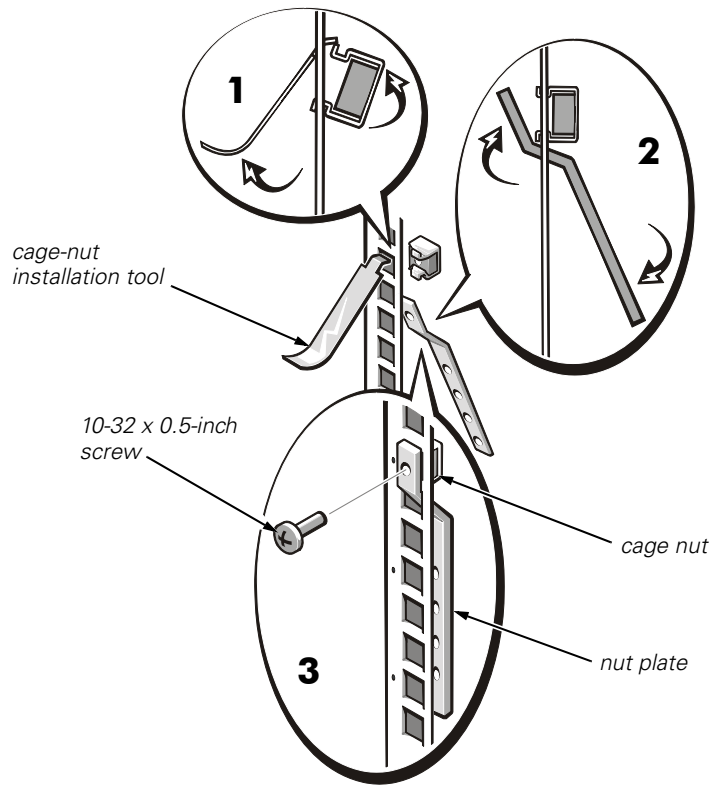
cage nut

nut plate

Figure 5. Installing a Cage Nut and Nut Plate
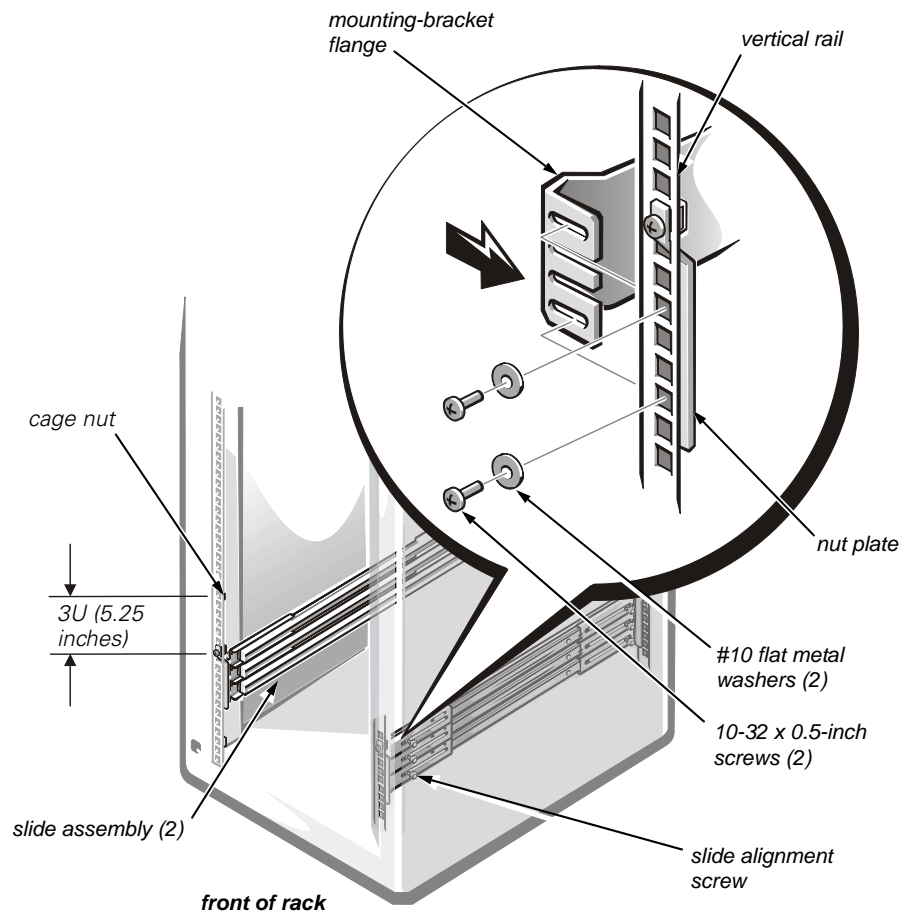
3. Using a Phillips screwdriver, slightly loosen the slide alignment screw that holds the front slide-assembly mounting bracket to the exterior slide (see Figure 6).

*NOTE: Do **not** adjust the back slide-assembly mounting brackets. Doing so will prevent the computer from aligning properly with the rack. Make adjustments only to the front slide-assembly mounting brackets.*

mounting-bracket flange

vertical rail

cage nut

nut plate

3U (5.25 inches)

#10 flat metal washers (2)

10-32 x 0.5-inch screws (2)

slide assembly (2)

slide alignment screw

front of rack

Figure 6. Installing the Slide Assemblies

4. Install the slide assemblies in the rack.

NOTES: When installing the slide assemblies, be sure that the green plastic stops at the ends of the channels are at the back of the rack and that the green push buttons (on the interior slide) are near the front of the rack (see Figure 9).

If the slide assembly is completely extended and locked in position, press the spring located on the inside of the interior slide (near the end with the green plastic stop) to release the slide so that it can be returned to the retracted position.

a. Insert the slide's mounting-bracket flange between the nut plate and the rack's vertical rail as shown in Figure 6.

b. Position the mounting bracket at the back of the slide assembly so that its four slots are aligned with the four holes in the nut plate (see Figure 6). Secure the mounting bracket with two 10-32 x 0.5-inch Phillips-head screws and two #10 flat metal washers located at the top and bottom of the four holes. Do *not* completely tighten the two mounting screws until you install the computer and verify that the width between the slide assemblies is correct.

c. Position the mounting bracket at the front of the slide assembly so that its four holes are aligned with the four holes in the nut plate. Secure the mounting bracket with two 10-32 x 0.5-inch Phillips-head screws and two #10 flat metal washers located in the top and bottom of the four holes.

d. If necessary, adjust the slide assembly's length until the mounting-bracket flange fits snugly against the back of the rails on both ends.

e. Tighten the slide alignment screw you loosened in step 3.

5. Repeat steps 2 through 4 to install the second slide assembly.

6. Install two 10-32 cage nuts in each front vertical rail for the rack-adapter thumb-screws (see Figure 6).

Locate the cage nuts 3U (5.25 inches) above the cage nuts you installed in step 2.

Installing a PowerEdge 6300 System in the Rack

The subsections that follow include instructions for installing a PowerEdge 6300 system in the rack.

Installing the Rails and Rack Adapters

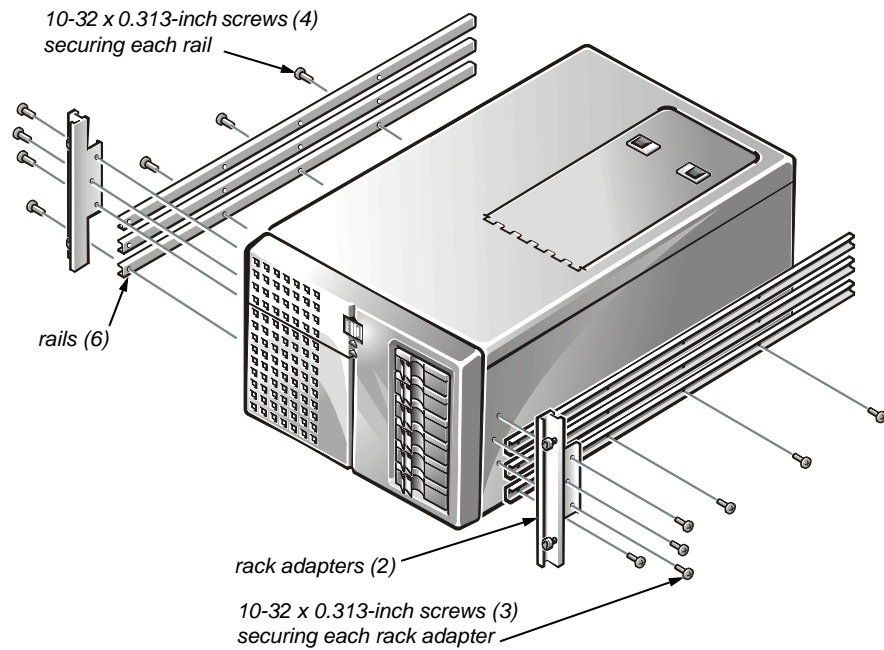Use the following procedure to install the rails and rack adapters on the computer:

WARNING: The computer weighs approximately 50 kg (110 lb) when fully loaded. To prevent personal injury, do not attempt to move the computer by yourself.

1. Remove the feet from the computer.

a. Lay the computer on its left side (see Figure 7) on a piece of foam or cardboard (to prevent damage to the computer).

b. Using a small flat-blade screwdriver, unscrew the screw securing each foot.

c. From outside of the chassis, pull each foot from the chassis.

2. Remove the rubber plugs from the screw holes on the computer's side panel.

3. Install three rails on one side of the computer (see Figure 7).

Remove the filler plugs from the rail holes on the computer chassis. Orient each rail so that the three holes on the end of the rail are near the front of the computer. Attach each rail with four 10-32 x 0.313-inch Phillips-head screws.

10-32 x 0.313-inch screws (4) securing each rail

rails (6)

rack adapters (2)

10-32 x 0.313-inch screws (3) securing each rack adapter

Figure 7. Installing the Rack Adapters and Rails

4. Install the rack adapter on the computer (see Figure 7).

Secure the adapter to the computer with three 10-32 x 0.313-inch Phillips-head screws.

5. Repeat steps 2 through 4 to install the rails and rack adapters on the opposite side of the computer.

Installing the Cable Tray

Use the following procedure to install the cable tray on the PowerEdge 6300 computer:

1. Install the cable tray on the back of the PowerEdge 6300 system (see Figure 8).

    Use four 6-32 x 0.313-inch Phillips-head screws to secure the tray to the computer chassis.

back of computer

cable tray

6-32 x 0.313-inch screws (4)
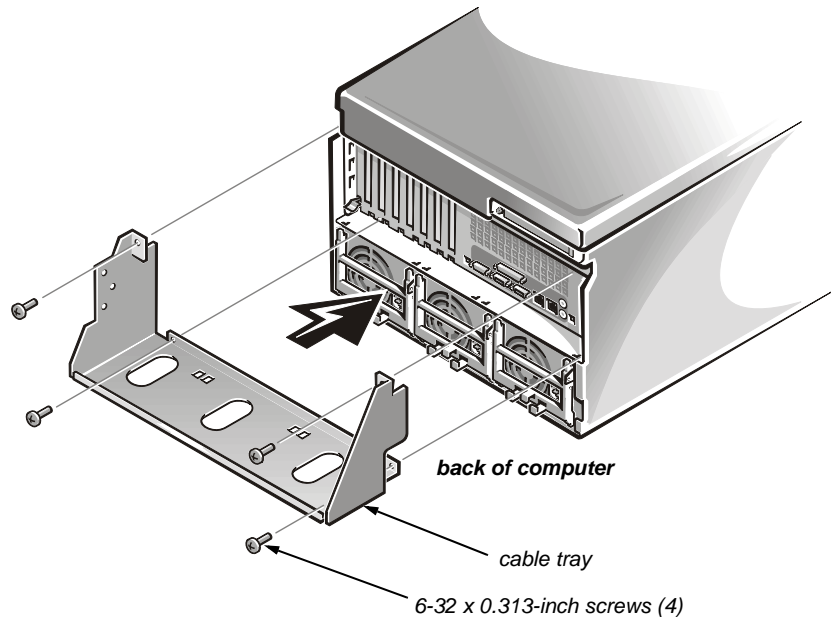
Figure 8. Installing the Cable Tray

Installing the Computer

Use the following procedure to install the computer in the rack.

WARNING: If you are installing more than one computer, install the first computer in the lowest position in the rack. *Never* pull more than one computer out of the rack at a time.

1. Pull the two interior slides out of the rack until they lock in the extended position.

WARNING: Due to the size and weight of the computer, never attempt to install the computer in the slide assemblies by yourself.

2. Lift the computer into position, and insert the computer's rails into the channels of the interior slides (see Figure 10).

    The slotted holes in the slide-assembly mounting brackets allow for adjustment if the width between the slide assemblies is not correct. Adjust the width so that the computer slides easily into place.

NOTE: As you push the computer into the interior slides, the slide assemblies lock in the extended position. Press the green push button near the end of each interior slide to release the locks (see Figure 9), and then slide the computer completely into the rack.

interior slide

green push button
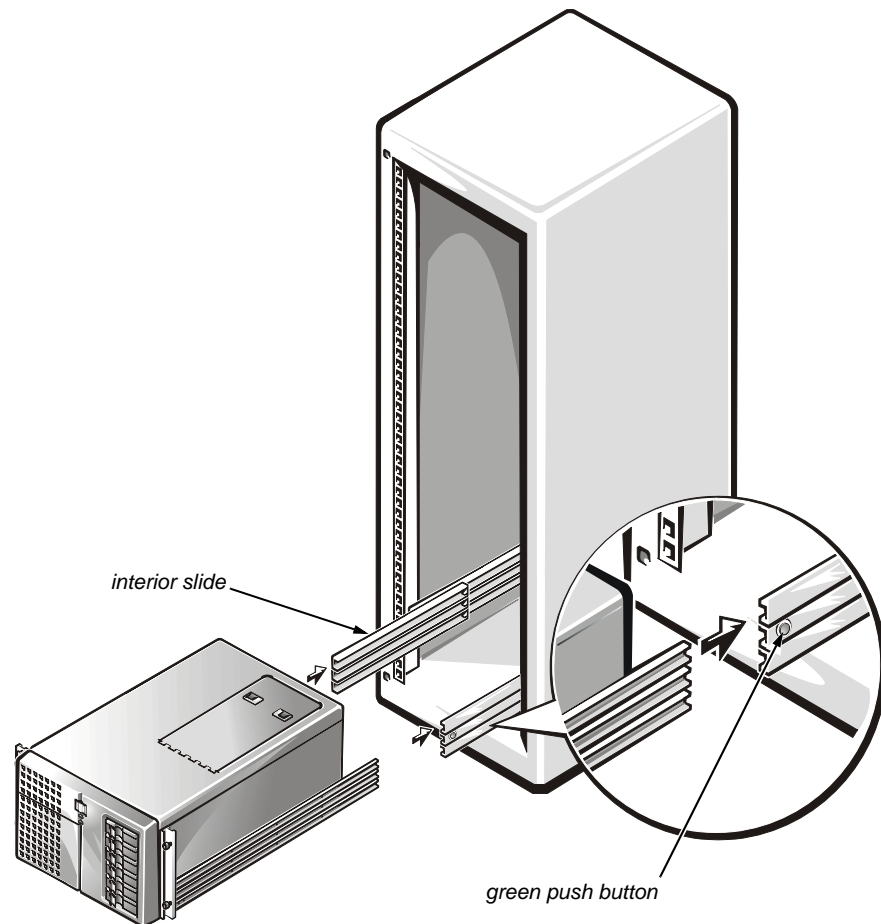
Figure 9. Installing the Computer in the Rack

3. Tighten all of the slide-assembly mounting screws securely.

After you tighten all of the mounting-bracket screws, slide the computer in and out a few times to ensure that none of the adjustments changed as you tightened the screws.

4. Slide the computer completely into the rack, and tighten the four thumbscrews to hold the computer in position.

5. Install the cables.

   Connect the cables to the computer. For details, see the *Installation and Trouble-shooting Guide* and *User's Guide* that came with the computer.
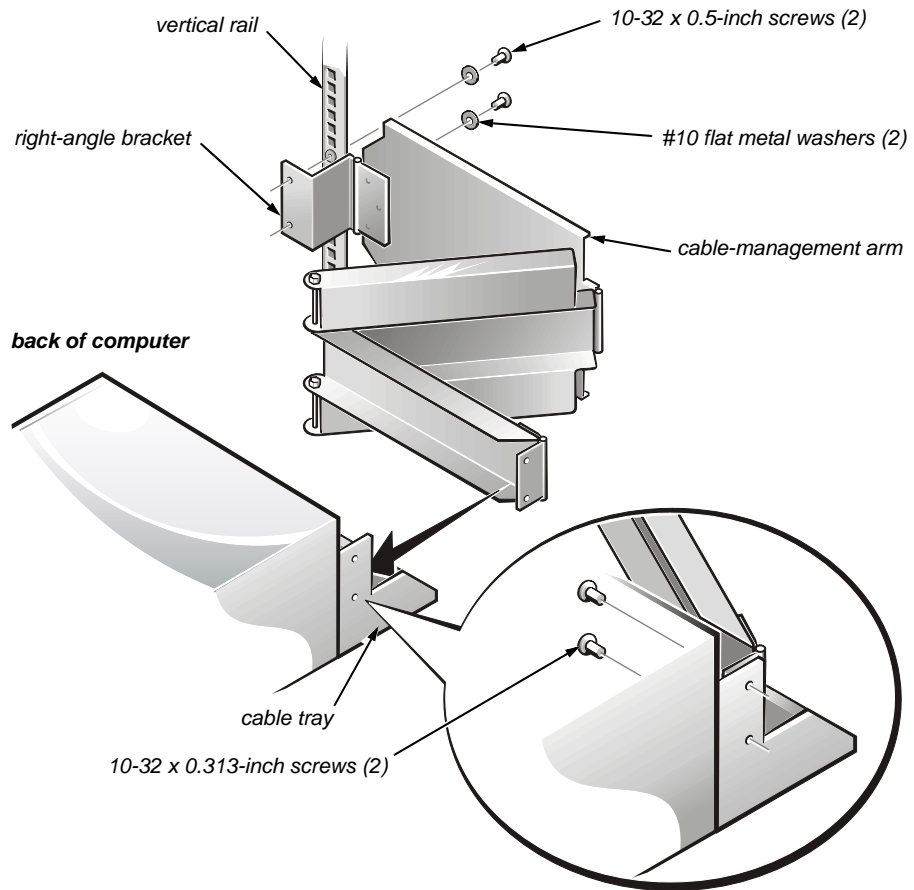
Installing the Cable-Management Arm

Use the following procedure to install the cable-management arm on the Power-Edge 6300 computer:

1. Attach the right-angle bracket of the cable-management arm to the vertical rail (see Figure 9).

   Use the cable tray that you installed on the computer chassis to determine the proper placement of the cable-management arm. Use two 10-32 x 0.5-inch Phillips-head screws and two #10 flat washers to attach the cable management arm to the vertical rail.

Figure 10 showing the cable-management arm installation with labels:
vertical rail
right-angle bracket
back of computer
10-32 x 0.5-inch screws (2)
#10 flat metal washers (2)
cable-management arm
cable tray
10-32 x 0.313-inch screws (2)

Figure 10. Installing the Cable-Management Arm

2.   Attach the other end of the cable-management arm to the cable tray.

   Align the hinge on the arm with the two holes on the vertical edge of the cable tray and secure with two 10-32 x 0.313-inch Phillips head screws.

3.   Secure the cables.

   Route the cables along the cable-management arm, and secure the cables to the cable-management arm with the Velcro strips attached to the cable-management arm.

4.   Slide the computer in and out of the rack to verify that the cables are routed correctly.

   Make sure that the cables are not pinched in the cable-management arm joints.

NOTES: You will feel resistance as the rails thread themselves into the ball-bearing cages in the slide assemblies—this resistance is normal. Continue to push the computer inward until it slides completely into the rack and is fully seated. (You may have to pull the computer partially out and push it back into the rack to fully thread the ball-bearing cages.) When the computer is fully inserted in the rack, the back of the four captive thumbscrews should mate with the cage nuts on the rack's front vertical rails.

As you pull the computer out to its furthest extension, the slide assemblies will lock in the extended position. To push the computer back into the rack, press the green buttons near the front of both interior slides (see Figure 9) and simultaneously push in on the computer.

Replacing the Rack Doors

WARNING: To prevent personal injury due to the size and weight of the doors, never attempt to replace the doors by yourself.

Replace the rack's front and back doors as follows:

1. Lift the front door into position, and align the hinges with the holes in the rack as shown in Figure 3.

2. Slide the hinges into the holes in the rack until the hinge release levers lock the hinges into position.

3. Close the door latch by rotating the handle counterclockwise until it stops, push in the handle until it locks in position, and then slide the cover down over the push button (see Figure 2).

4. Repeat substeps 1 through 3 to install the back door.