



Dell® Racks I-U Tray and Keyboard

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.

Information in this document is subject to change without notice.

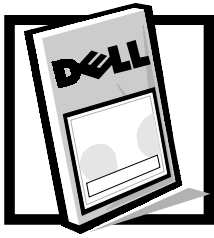
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1-U Tray and Keyboard Installation Guide

This installation guide provides instructions for installing a 1-U tray and a keyboard with a trackball in a Dell® rack. One keyboard kit is required for each 1-U tray to be installed in the rack. The keyboard kit includes the following items (see Figure 1):

- One 1-U tray
- One pair of slide assemblies with mounting brackets
- Four nut plates
- Ten 10-32 x 0.5-inch pan-head Phillips-head screws
- Ten #10 flat metal washers



NOTE: The 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 pan-head Phillips-head screw with 32 threads per inch is identified as a 10-32 screw.

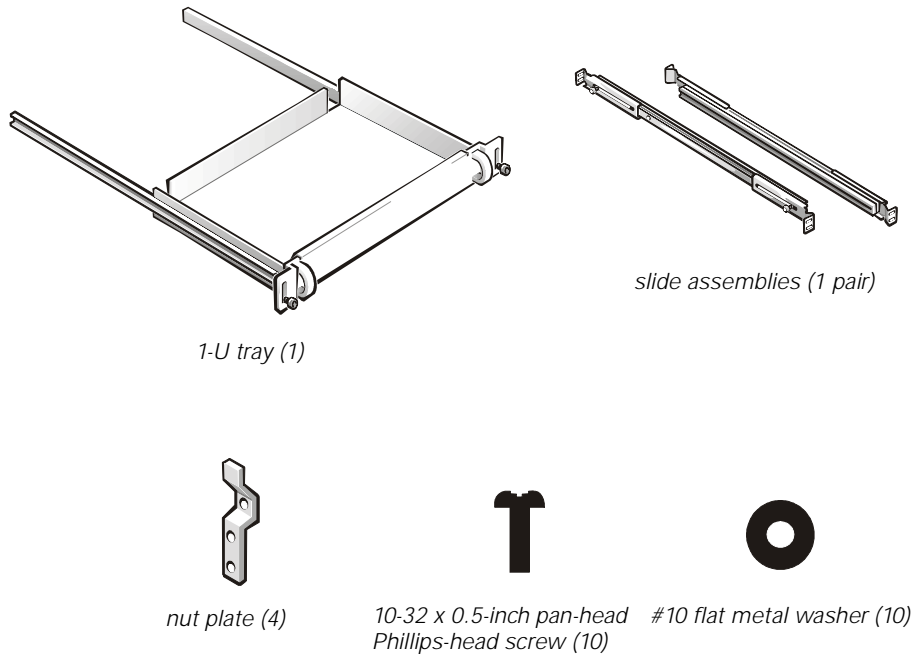


Figure 1. Keyboard Kit Contents

Before You Begin

Before you begin to install your 1-U tray in the rack, carefully read the safety information and tool requirement in the following subsections.

Important Safety Information

This keyboard 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.



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

Recommended Tool

To install the keyboard kit, you should have a #2 Phillips-head screwdriver.

Installing the Keyboard Kit



NOTE: If you purchased a Dell rack along with your 1-U tray, the keyboard kit is preinstalled in the rack.

Use the following procedure to install the keyboard kit in the rack:

1. Remove the rack's front and back doors.
2. Install the slide assemblies in the rack.
3. Install the 1-U tray and keyboard.

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 push 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.

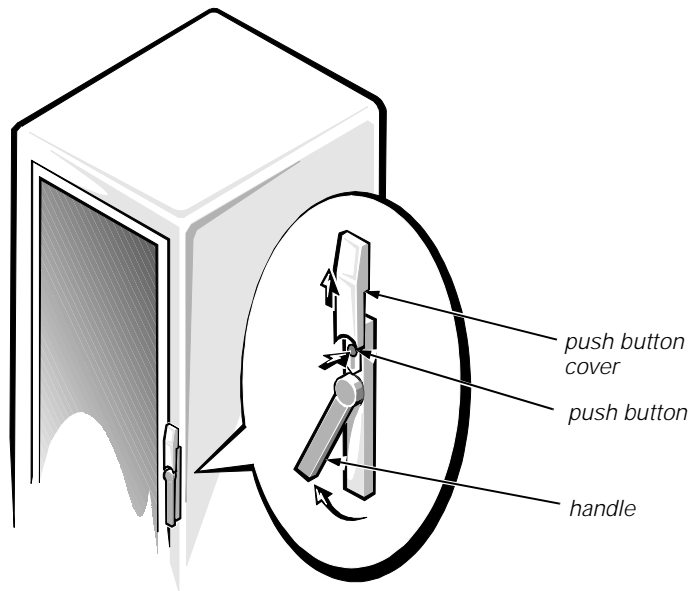


Figure 2. Opening the Latch on the Door

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 hinge 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 hinge release lever on the top hinge and then pull the door away from the rack.

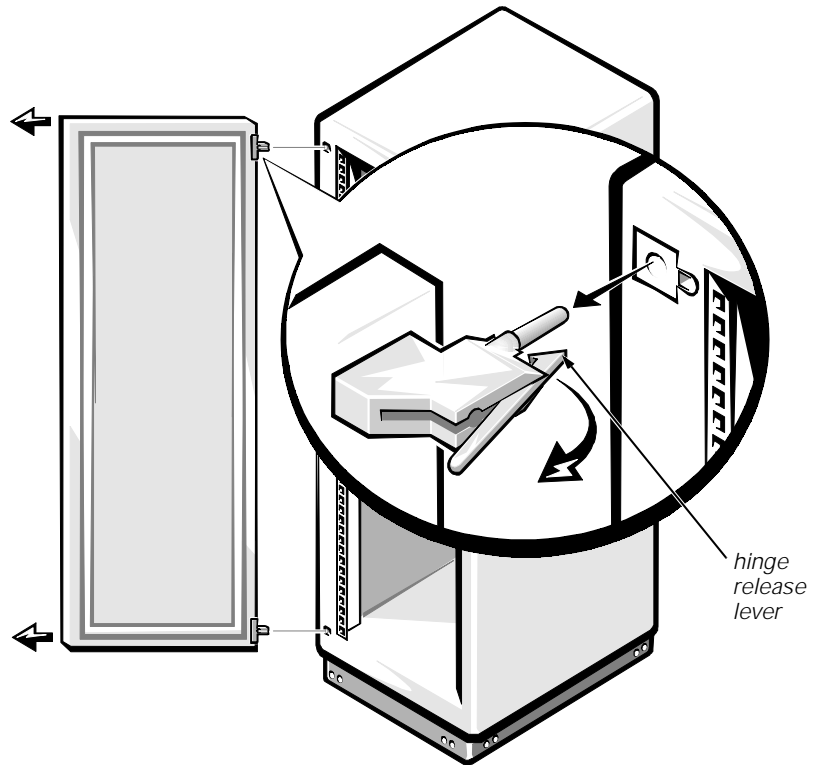


Figure 3. Removing the Rack Doors

3. Perform steps 1 and 2 to remove the back door from the rack.
Store the two doors where they will not injure someone if they accidentally 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.

In the Dell rack, the rails are marked by small indentations in 1-U (1.75-inch) increments. Determine where to install the slide assemblies in the rack and mark the locations of the vertical rail indentation on the rack's vertical rails with a felt-tipped marker or masking tape.

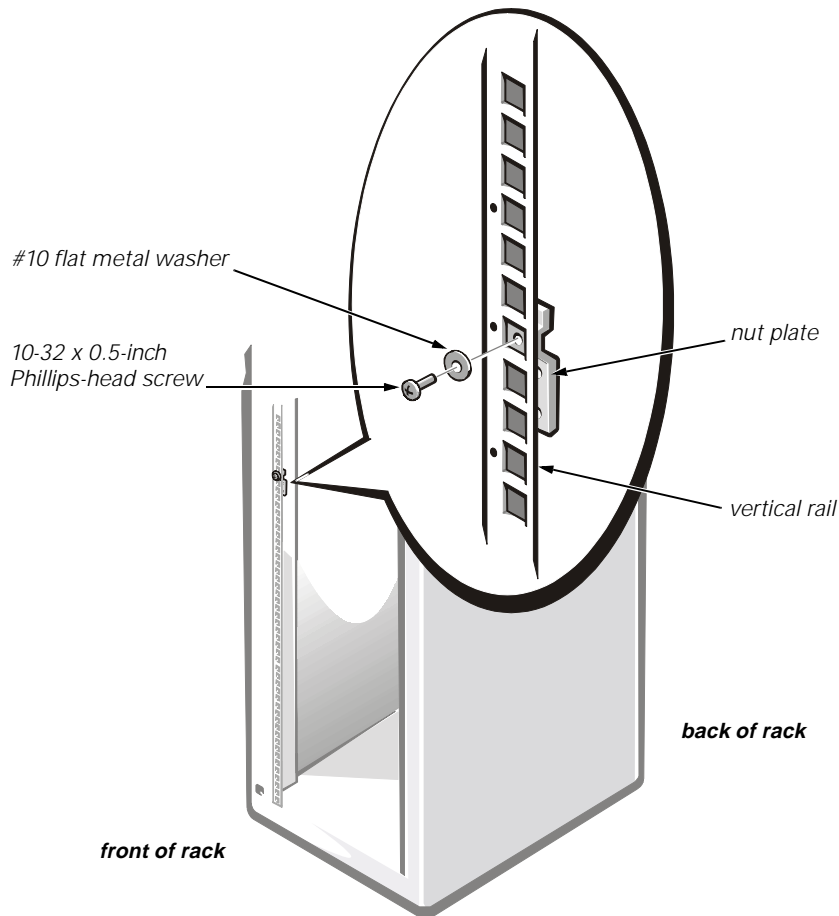


Figure 4. Determining Where to Install the Slide Assemblies

2. Install the nut plates to the front and back sides of the rack.
 - a. Install the nut plates on the vertical rails where you want the ends of the slide assemblies to be located (see Figure 4). Each nut plate is held in place by one 10-32 x 0.5 inch Phillips-head screw and one #10 flat metal washer.

- b. Insert a nut plate into the left front, the right front, the left rear, and the right rear holes on the sides of the rails. Then secure each nut plate with a 10-32 x 0.5-inch Phillips-head screw and one #10 flat metal washer.
3. Using a Phillips-head screwdriver, slightly loosen the slide alignment screw that holds each front slide-mounting brackets to the exterior slide (see Figure 5). You will tighten the screw later in this procedure.



*NOTE: Do **not** adjust the back slide-mounting brackets. Doing so will prevent the 1-U tray from aligning properly with the rack. Make adjustments only to the front slide-mounting brackets.*

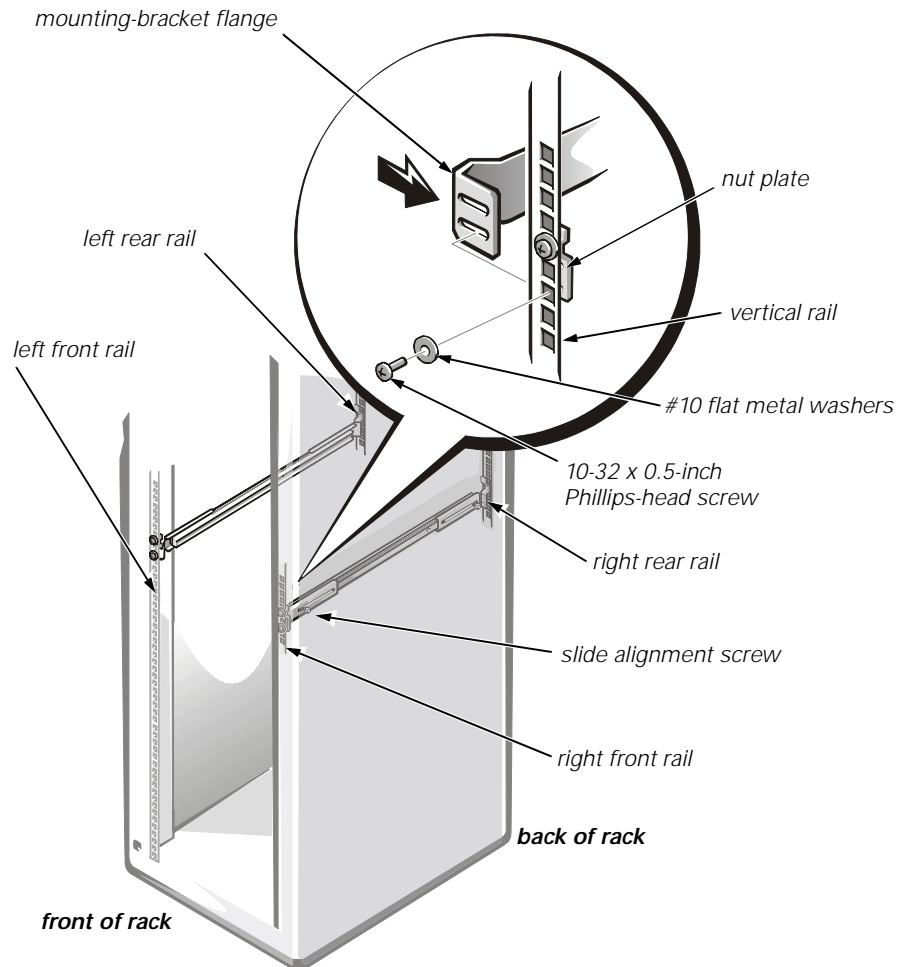


Figure 5. Installing the Slide Assemblies



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 6).

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 button) 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 at the front and back of the rack as shown in Figure 5.
 - b. Position the mounting bracket at the front of the slide assembly so that its two slots are aligned with the two lowest holes in the nut plate (see Figure 5). Secure the mounting bracket with one 10-32 x 0.5-inch Phillips-head screw and one #10 flat metal washer. Do *not* completely tighten the one mounting screw until you install the 1-U tray and verify that the width between the slide assemblies is correct.
 - c. Position the mounting bracket at the back of the slide assembly so that its two slots are aligned with the two lowest holes in the nut plate. Secure the mounting bracket using two 10-32 x 0.5-inch Phillips-head screws and two #10 flat metal washers.
 - 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 3 and 4 to install the second slide assembly.

Installing the 1-U Tray and Keyboard

Use the following procedure to install the 1-U tray in the rack.

1. Pull the two interior slides out of the rack until they lock in the extended position.
2. Lift the 1-U tray into position and insert the rails into the channels of the interior slides (see Figure 6).

The slotted holes in the slide-mounting brackets allow for adjustment if the width between the slide assemblies is not correct. Adjust the width so that the 1-U tray slides easily into place.



NOTE: As you push the 1-U tray 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 6), and then slide the 1-U tray completely into the rack.

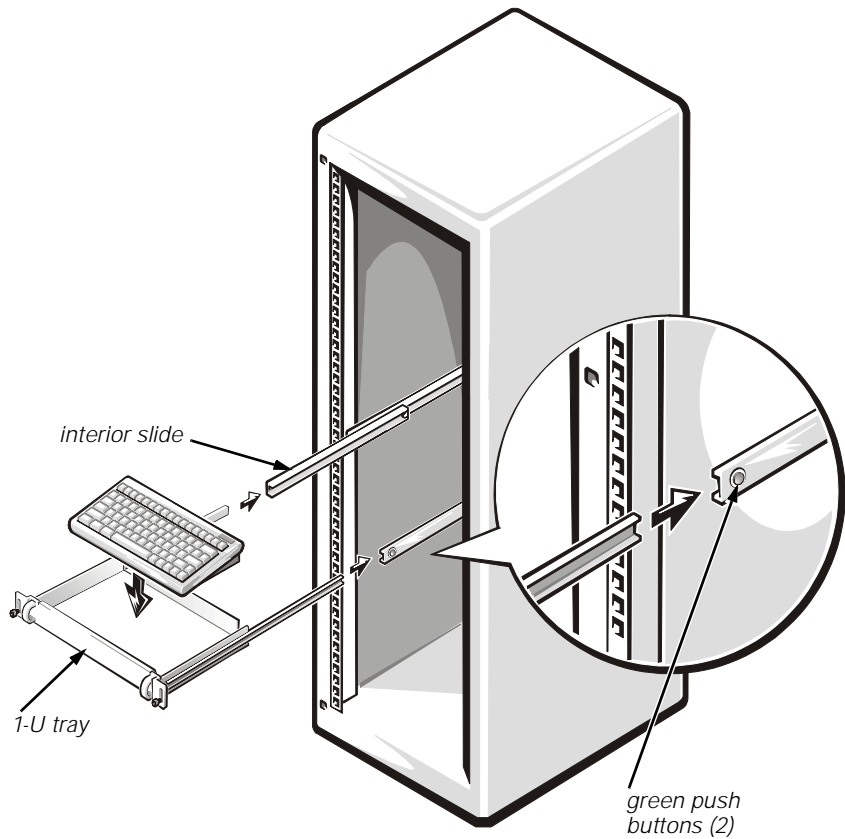


Figure 6. Installing the 1-U Tray and Keyboard in the Rack

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

After you tighten all of the mounting-bracket screws, slide the 1-U tray in and out a few times to ensure that none of the adjustments changed as you tightened the screws.

4. Slide the 1-U tray completely into the rack and tighten the two thumbscrews to hold the tray in position.
5. Place the keyboard on the tray and connect the keyboard and mouse/trackball cables to the connectors on the computer or the Keyboard/Video/Mouse (KVM) switch.
6. Secure the cables.

After connecting the cables to the computer, route the cables along the slide and secure the cables to the slide with the cable ties.

7. Slide the 1-U tray in and out of the rack to verify that the cables are routed correctly.

Make sure that the cables are not pinched.



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 1-U tray inward until it slides completely into the rack and is fully seated. (You may have to pull the 1-U tray partially out and push it back into the rack to fully thread the ball-bearing cages.) When fully engaged, the back of the two captive thumbscrews should mate with the nut plates on the rack's front vertical rails.

As you pull the 1-U tray out to its farthest extension, the slide assemblies will lock in the extended position. To push the 1-U tray back into the rack, press the green buttons near the front of both interior slides (see Figure 6) and simultaneously push in on the 1-U tray.

8. Replace the rack's front and back doors as follows.



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

- a. Lift the front door into position, and align the hinges with the holes in the rack as shown in Figure 3.
- b. Slide the hinges into the holes in the rack until the hinge release levers lock the hinges into position.
- c. Close the door latch by rotating the handle counterclockwise until it stops, push the handle in until it locks in position, and then slide the push button cover down over the push button (see Figure 2).
- d. Repeat substeps a through c to install the back door.



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