

StorageWorks by Compaq

5U Rackmount Enclosure Reference Guide

Part Number: 242435-004

Fourth Edition (March 2002)

This guide is to be used as step-by-step instructions for installation and as a reference for operation, troubleshooting, and future upgrades of the *StorageWorks* by Compaq 5U Rackmount Enclosure.

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StorageWorks by Compaq 5U Rackmount Enclosure Reference Guide
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About this Guide

Document Conventions

The conventions included in Table 1 apply in most cases.

Table 1: Document Conventions

| Element | Convention |
|---|--|
| Key names, menu items, buttons, and dialog box titles | Bold |
| File names and application names | <i>Italics</i> |
| User input, command names, system responses (output and messages) | Monospace font COMMAND NAMES are uppercase unless they are case sensitive |
| Variables | <i>Monospace, italic font</i> |
| Website addresses | Sans serif font (http://www.compaq.com) |

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Symbols on Equipment



Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of injury from electrical shock hazards, do not open this enclosure.



Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.



Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Rack Stability



WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
 - The full weight of the rack rests on the leveling jacks.
 - In single rack installations, the stabilizing feet are attached to the rack.
 - In multiple rack installations, the racks are coupled.
 - Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.
-

Getting Help

If you still have a question after reading this guide, contact service representatives or visit our website.

Compaq Technical Support

In North America, call Compaq technical support at 1-800-OK-COMPAQ, available 24 hours a day, 7 days a week.

NOTE: For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call Compaq technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the Compaq website: <http://www.compaq.com>.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers

- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions.

Compaq Website

The Compaq website has the latest information on this product, as well as the latest drivers. Access the Compaq website at: <http://www.compaq.com/storage>. From this website, select the appropriate product or solution.

Compaq Authorized Reseller

For the name of your nearest Compaq Authorized Reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the Compaq website for locations and telephone numbers.

Introduction

The *StorageWorks*TM by Compaq 5U Rackmount Enclosure is a high-performance storage system capable of holding up to four DLT tape drives.

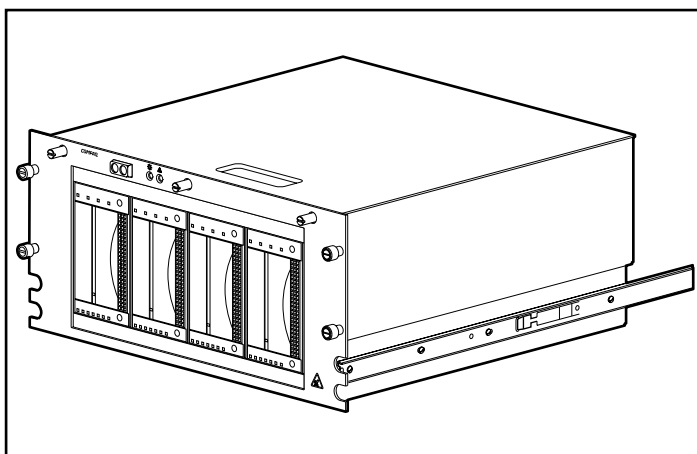


Figure 1–1: *StorageWorks* by Compaq 5U Rackmount Enclosure

Standard Features

The standard features of the 5U Rackmount enclosure are:

- Capacity to hold up to four full-height DLT tape drives
- Power and status indicators on the front panel
- Cover sensor that alerts the system if the cover is open
- Fan monitoring sensor that alerts the system if the fan fails
- Three-year parts and labor warranty
- 240-Watt power supply

Supported SCSI Controllers

For a list of currently supported controllers, visit the Compaq website at: <http://www.compaq.com/storage/siteindex.htm>.

Hardware Options

For a list of currently supported hardware options, such as tape drives and media, visit the Compaq website at: <http://www.compaq.com/storage/siteindex.htm>.

Tools Required

To install the 5U Rackmount Enclosure you will need the following tools:

- Flat-blade screwdriver
- Three Phillips screwdrivers - #1, #2, and #3
- Torx T-15 screwdriver
- Torx T-10 screwdriver
- Needle-nose pliers (used to set SCSI ID jumpers)

Identifying Front Panel Components

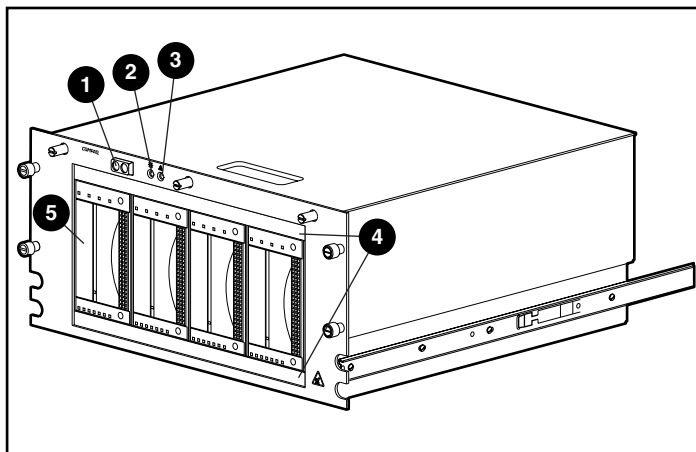


Figure 1–2: 5U Rackmount Enclosure front panel components

Table 1–1: 5U Rackmount Enclosure Front Panel Components

| Item | Description | Item | Description |
|------|--------------------------------|------|-------------|
| ① | Power switch | ④ | Trim Strips |
| ② | Service Required Indicator LED | ⑤ | Tape Drive |
| ③ | Power Indicator LED | | |

Identifying Internal Components

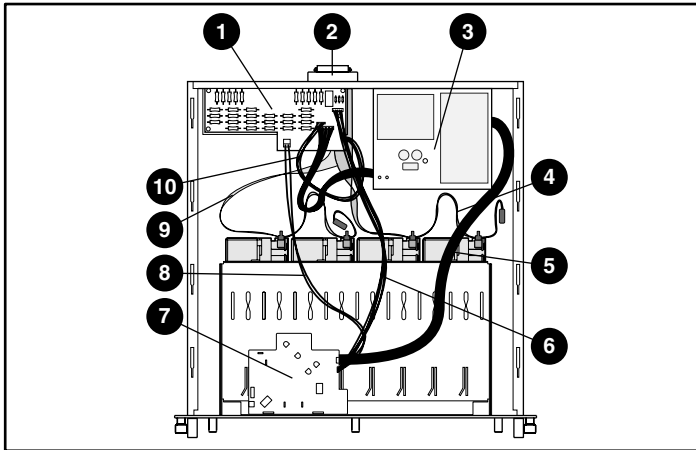


Figure 1–3: 5U Rackmount Enclosure internal components

Table 1–2: 5U Rackmount Enclosure Internal Components

| Item | Description | Item | Description |
|------|---------------------------|------|-----------------------|
| ① | Load board | ⑥ | LED cable |
| ② | SCSI connector panel | ⑦ | Power switch assembly |
| ③ | Power supply | ⑧ | Hood switch label |
| ④ | Internal SCSI cable B | ⑨ | Internal SCSI cable A |
| ⑤ | Power supply switch cable | ⑩ | Fan cable |

Storage Device Installation

This chapter describes the requirements, advantages and disadvantages of the different cable configurations of the *StorageWorks* by Compaq 5U Rackmount Enclosure. The SCSI IDs and cabling options are also discussed for the DLT tape drives. Topics covered in this chapter include:

- Cable Configurations
 - Standard Configuration (two DLT Tape Drives per SCSI cable)
 - High Performance Configuration (one DLT Tape Drive per SCSI bus/cable)
- SCSI IDs
 - Factory settings
 - Setting the SCSI ID
- Installing a DLT Tape Drive
- Removing a DLT Tape Drive
- Internal SCSI cable configuration
 - Adding an Internal Wide SCSI Cable

Cable Configurations

The 5U Rackmount Enclosure is shipped from the factory with a standard configuration of two DLT tape drives per SCSI cable. It can also be configured for higher performance with one DLT tape drive per SCSI bus/cable.

Standard Configuration

The standard cable configuration is also the default configuration from the factory. This configuration requires two DLT tape drives per SCSI cable and requires minimum SCSI control.

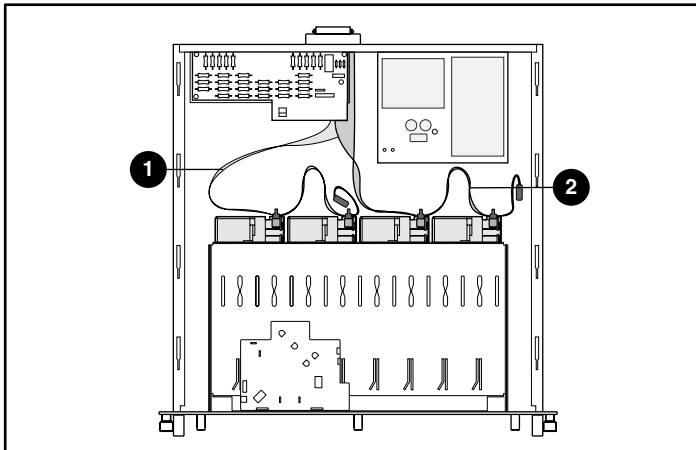


Figure 2-1: Standard cable configuration

High-Performance Configuration

The high-performance cable configuration is an optimum performance configuration, with the advantage of an increased data transfer rate and increased flexibility to include additional hosts such as servers or controllers.

This configuration requires one DLT tape drive per SCSI cable plus an additional cable kit and two SCSI ports.

IMPORTANT: When configuring a single drive per cable, use the connector closest to the terminator to yield best results.

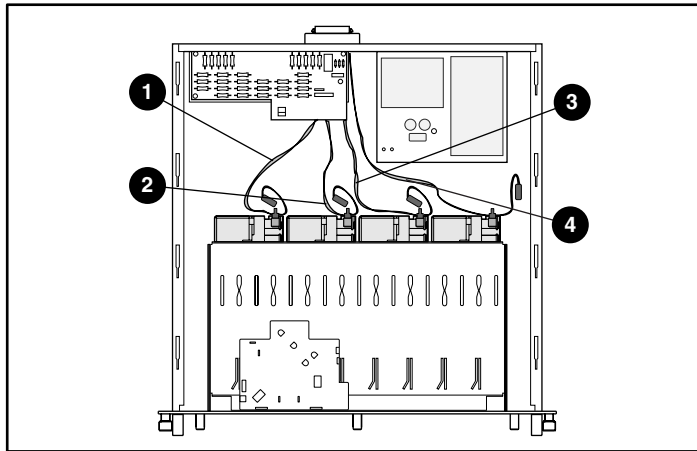


Figure 2-2: High performance cable configuration

SCSI IDs

Factory Settings

The SCSI IDs and internal cabling for the standard configuration were set at the factory using the dual cable configuration described in Table 2-1. Use the single cable configuration for higher performance. If the default settings are used, go to Chapter 3, “Rack Installation.”

Table 2–1: Configuration Settings

| | Drive Bay | Drive | SCSI ID |
|---|-------------|---------|---------|
| ❶ | Drive Bay 1 | Drive 1 | 0 |
| ❷ | Drive Bay 2 | Drive 2 | 1 |
| ❸ | Drive Bay 3 | Drive 3 | 2 |
| ❹ | Drive Bay 4 | Drive 4 | 3 |

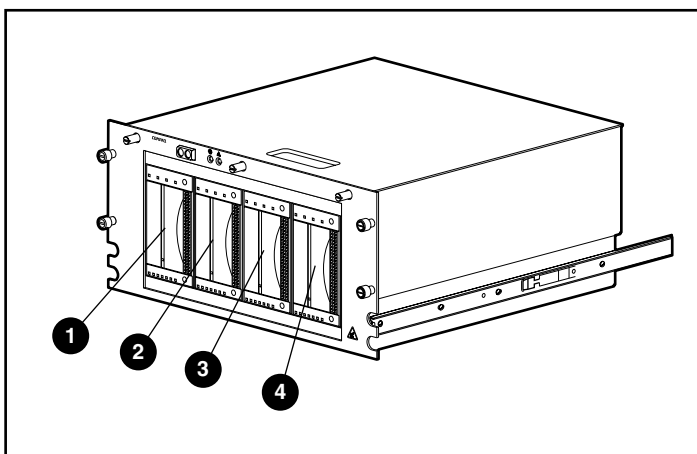


Figure 2–3: 5U Rackmount Enclosure drive bay assignment

Setting the SCSI ID

Be sure the SCSI ID complies with the following:

- Each SCSI device on the same SCSI bus must have a unique SCSI ID.
- If the DLT tape drive SCSI IDs need to be reassigned, do not duplicate SCSI IDs.
- Do not use SCSI ID 7 because it is reserved for the controller.

To set or change the SCSI ID of a DLT tape drive:

1. Remove the tape drive from the chassis. Follow the instructions under “Removing a DLT Tape Drive” on page 2-9.
2. Locate the SCSI ID jumpers as shown in Figure 2-4. Use a pair of needle-nose pliers to set the jumpers to the desired SCSI ID.

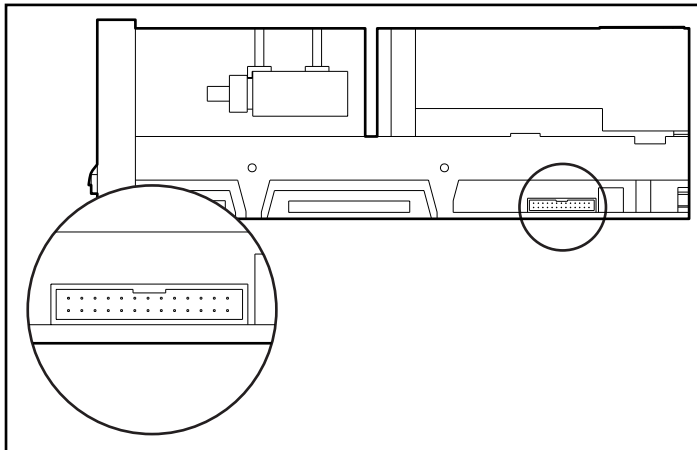


Figure 2-4: Locating the SCSI ID jumpers

IMPORTANT: The Remote ID Present jumper must be installed when using jumpers to set the SCSI ID.

3. Repeat steps 1 and 2 for all DLT tape drives requiring a SCSI ID change.

Installing a DLT Tape Drive

To install a DLT tape drive:

1. Unscrew the three thumbscrews on the top of the front panel **1** and remove the top cover **2**.
2. Remove the upper and lower trim strips from the front panel **3**.

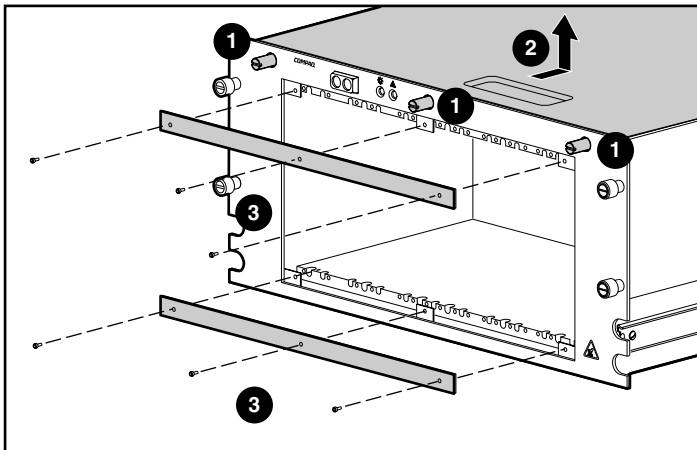


Figure 2-5: Removing the top cover and trim from front panel

3. Slide the tape drive all the way into the chassis and secure it with the two retaining screws.

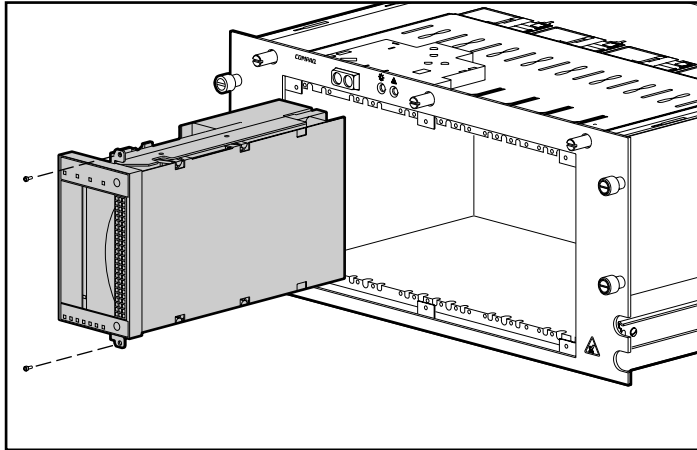


Figure 2-6: Securing the tape drive with two retaining screws

4. Repeat Step 3 for all tape drives to be installed.

5. Reinstall the upper and lower trim strips on the front panel.
6. Connect the power cable to the tape drive. See Figure 2-7.

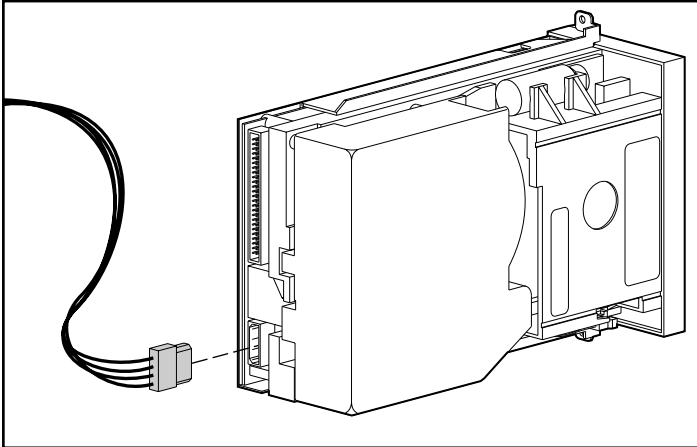


Figure 2-7: Connecting the power cable to the DLT drive

IMPORTANT: The power supply has one power cable that has four power connectors. Use only one of the power connectors on that power cable. The other connectors are reserved for future products.

7. Connect the internal wide-SCSI signal cable to the tape drive. See Figure 2-8.

IMPORTANT: For best signal quality, always use the connector closest to the terminator on the SCSI cable first.

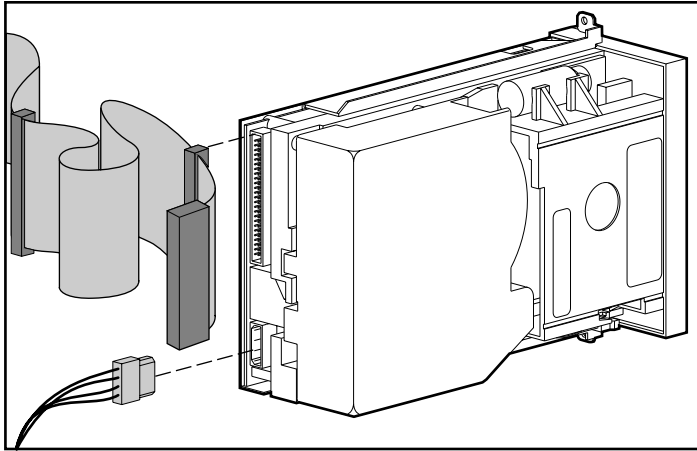


Figure 2–8: Cabling the internal wide-SCSI cable to the tape drive

NOTE: An Ultra-Wide Adapter is required when connecting the internal wide-SCSI cable to the tape drive.

Removing a DLT Tape Drive

To remove a DLT Tape Drive:

1. Unscrew the three thumbscrews on the top of the front panel and remove the top cover.
2. Unplug the SCSI signal cable and power connectors from the rear of the drive.
3. Remove the upper and lower trim strips on the chassis.
4. Remove the two retaining screws.
5. Pull the drive out of the chassis by grasping the sides of the drive and pulling straight out.

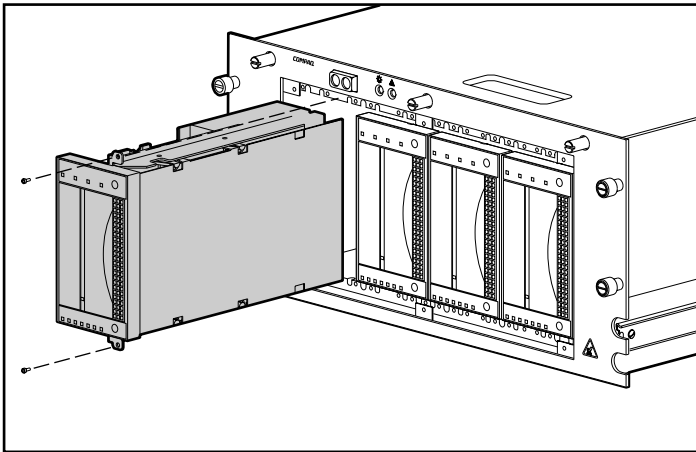


Figure 2–9: Removing the two retaining screws and the DLT tape drive



CAUTION: Do not use the tape ejector handle to pull the drive out of the chassis. This handle is not intended for this purpose and could be damaged.

Internal SCSI Cable Configurations

The 5U Rackmount Enclosure ships with two internal LVD/single-ended wide SCSI cables attached to the SCSI connector panel. Up to two additional SCSI cables can be installed in the 5U Rackmount Enclosure.

Adding an Internal Wide SCSI Cable

The 5U Rackmount Enclosure comes with two internal cables installed. To install additional cables:

1. Remove the top cover from the unit. (See “Installing a DLT Tape Drive.”)
2. Take out the two screws **1** located on the outside of the unit.
3. Remove the blank panel **2** from the inside of the unit.

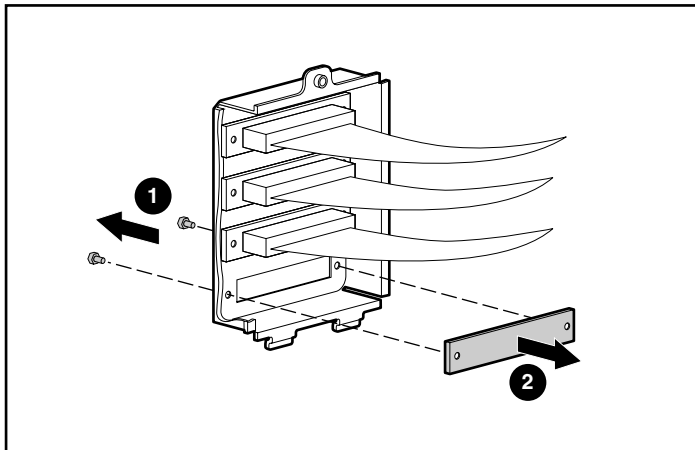


Figure 2–10: Removing the external screws and the internal blank panel

4. Remove the screw locks from the external cable.



CAUTION: The screw locks may be damaged if they are overtightened with the nut driver. The screw threads have been treated with a thread-locking compound, so only moderate tightening is necessary.

5. Attach the internal wide-SCSI cable to the connector panel using the two screw locks that were removed in step 4.

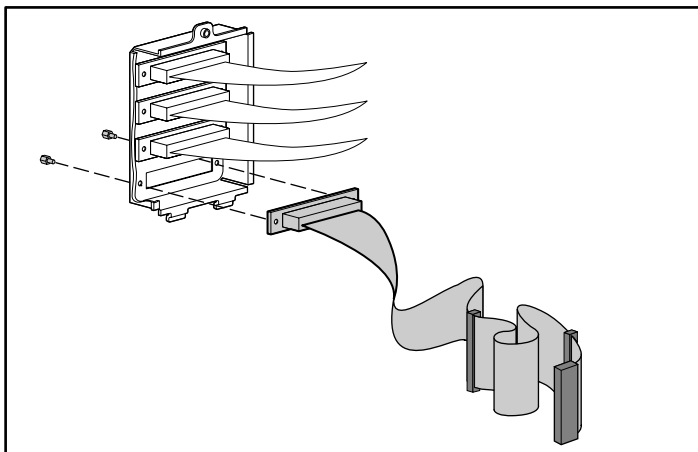


Figure 2–11: Attaching the internal wide-SCSI cable to the connector panel

Rack Installation

This chapter discusses the following topics:

- Rack mounting kit
- Attaching the bracket rail to the mounting bracket
- Attaching the mounting bracket slide assembly to the rack
- Attaching the cable management arm bracket
- Inserting the 5U Rackmount Enclosure into the rack
- Attaching the cable management arm
- Cabling the 5U Rackmount Enclosure

Rack Mounting Kit

The Rack Mounting Kit that ships with the 5U Rackmount Enclosure contains:

- A template to mark the rack for proper alignment of rack mounting brackets
- A cable management arm and cable management arm bracket
- A pair of mounting brackets
- A pair of 22-inch slide rail assemblies, each composed of a bracket rail and a component rail. The bracket rails attach to the rack mounting brackets (see Figure 3-1), and the component rails attach to the chassis (see Figure 3-2).
- Four 6-32 x 3/8 slotted Torx tapite screws
- Twenty 8-32 x 3/8 Phillips screws
- Two 10-32 x 5/8 washer face slotted hex head screws
- Ten M6 x 1.0-12L Phillips screws
- Four cage nuts to insert into the vertical side rails as part of the slide rail assembly

- One bar nut used to attach the cable management arm to the vertical side rail
- A cage nut fitting tool used to pry the cage nuts into position

NOTE: If you are using an Alpha “round hole” rack, you will need to obtain an optional installation kit. See the Quick Specs on the Compaq website at <http://www.compaq.com/storage/siteindex.htm> for part number and other option information.

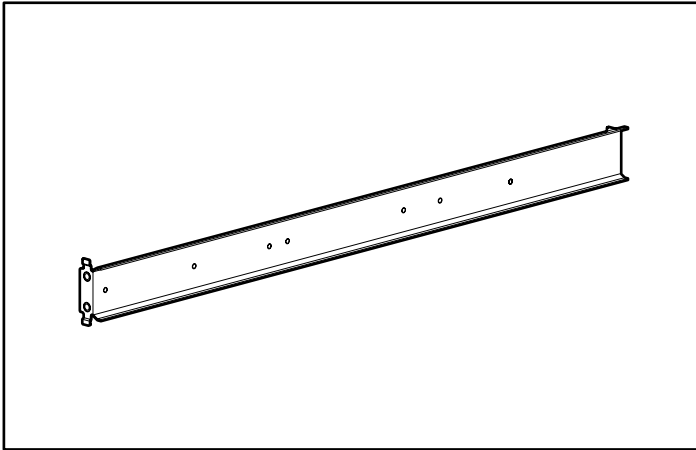


Figure 3–1: Rail mounting bracket

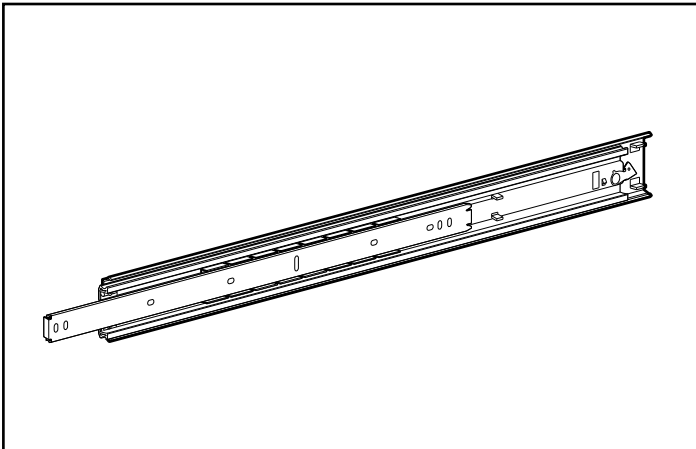


Figure 3–2: Slide rail assembly (outer bracket rail and inner component rail)

IMPORTANT: To make the installation of the mounting brackets easier, attach the bracket rails to the mounting brackets before attaching the mounting brackets to the rack. This way, the joined mounting bracket and bracket rail can be fastened to the rack as one assembly.

Attaching the Bracket Rail to the Mounting Bracket

1. Unpack the hardware mounting kit. Lay the two-piece slide rail assembly (bracket rail and component rail) and fasteners on a flat surface along with the mounting brackets and fasteners that came with the rack. The hardware mounting kit contains two slide rail assemblies.
2. Extend the component rail from the bracket rail until the component rail release latch clicks. Holding down the latch, slip the component rail out of each bracket rail, as shown in Figure 3-3.

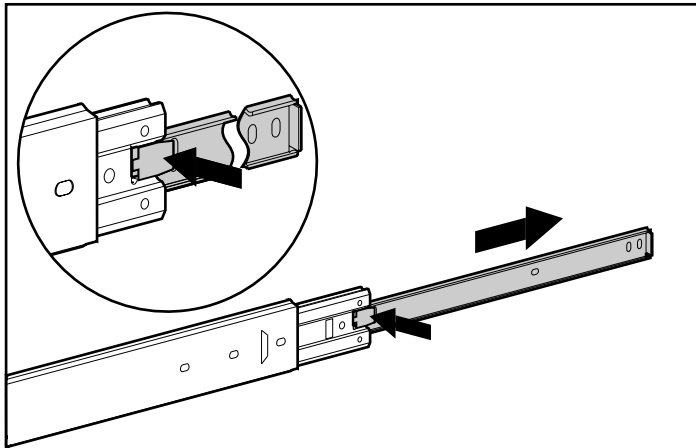


Figure 3-3: Removing the component rail from the bracket rail

3. Put the component rails to one side. You will attach them to the chassis later in the section “Attaching Component Rails.”

Figure 3-4 shows the separated bracket rail with its inner sliding piece and the one-piece, flat component rail.

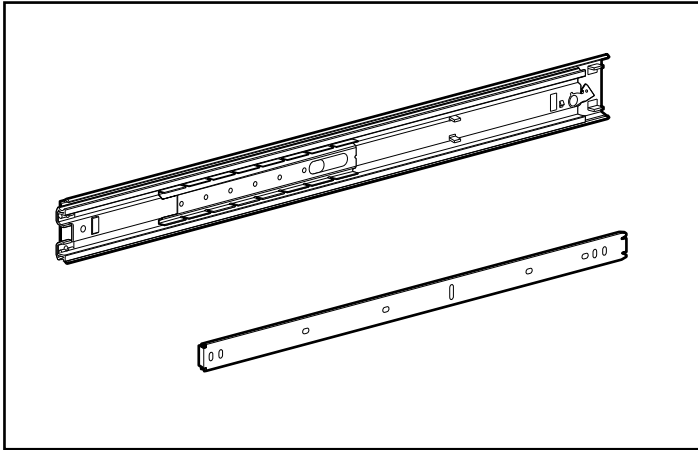


Figure 3-4: Separated bracket rail (top) and component rail (bottom)

The bracket rail consists of a fixed outer rail that screws to the rack mounting bracket and an inner slide on a steel ball bearing movement. This inner slide does not detach.

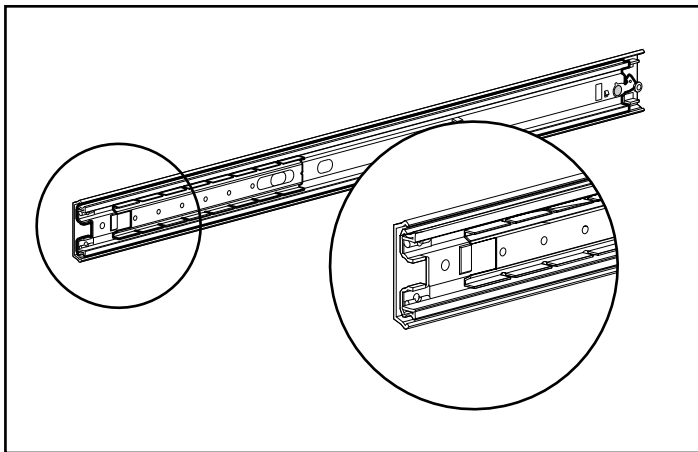


Figure 3-5: Bracket rail with inner slide (front of rail highlighted)

4. Lay the bracket rail inside the mounting bracket with the front of each piece oriented in the same direction. Align the front screw holes in the mounting bracket and the bracket rail. To identify the front of the mounting bracket and the bracket rail:
 - a. The front of the mounting bracket has alignment tabs on its flange. See Figure 3-6.
 - b. The front of the bracket rail allows the inner slide to move forward on ball bearings.
5. Extend the inner slide from the front of the bracket rail. With this piece extended, you should see three screw holes aligned in the mounting bracket and the bracket rail. These are the two exposed holes near the back end of the bracket rail and the front hole accessible through a slot in the inner slide.
6. Fasten the bracket rail to the mounting bracket with three 8-32 x 3/8 Phillips screws. (Do not use nuts or washers with the screws.) See ❶ in Figure 3-6.
7. Adjust the inner slide to access the other two screw holes (one at a time) through the slotted opening in the inner slide. Use two more 8-32 x 3/8 Phillips screws to fasten the bracket rail to the mounting bracket. See ❷ in Figure 3-6. Push the rail all the way in to access the fifth hole (not shown) and use an 8-32 x 3/8 Phillips screw to complete this step.

NOTE: The Figure 3-6 shows how to insert the screws into the appropriate holes of the mounting bracket. The screws will line up with the 24-inch markings stamped along one edge of the mounting bracket. These marks identify the mounting holes for the 24 inch slides used in Compaq racks. Twenty-two inch markings are stamped along the other edge.

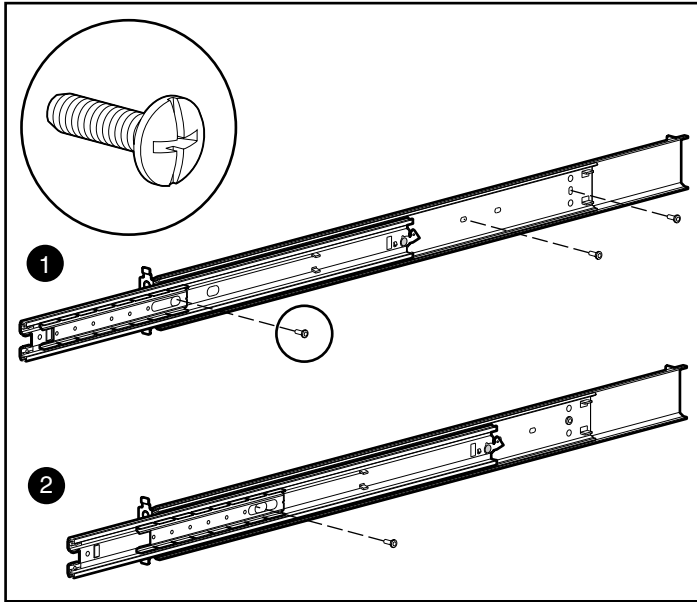


Figure 3-6: Attaching the bracket rail to the mounting bracket

When all five screws are fastened the mounting bracket and bracket rail form a mounting bracket slide assembly that you will attach to the rack.

8. Repeat steps 4 through 7 with the other set of bracket rails and mounting brackets.
You now have a pair of mounting bracket slide assemblies.

Attaching the Mounting Bracket Slide Assembly to the Rack



WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
 - The full weight of the rack rests on the leveling jacks.
 - The stabilizing feet are attached to the rack if it is a single rack installation.
 - The racks are coupled in multiple rack installations.
 - Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.
-

Measuring with the Template

Use the template shipped with the 5U Rackmount Enclosure to mark the location of the mounting hardware on the mounting rails of the rack.

Push back the tabs in the top of the template and place them in the correct holes in the mounting rails. Match up the hole pattern indicated on the sides of the template with the hole pattern in the mounting rails.

Make sure you begin measuring in the correct place. If a rack component is already installed immediately below the planned position of the 5U Rackmount Enclosure, place the template against the front mounting rails and rest it on top of the previously installed component.

Use a pencil to mark the attachment points for the mounting bracket slide assemblies, the faceplate thumbscrew cage nuts, and the top of the chassis.

IMPORTANT: Determine the location of the 5U Rackmount Enclosure in the rack before you start installing the mounting bracket slide assemblies. Always mount the heaviest item on the bottom of the rack and work from the bottom to the top.

1. Starting at the bottom of the rack (or at the top of the previously mounted component), measure and use a pencil to mark on the outside of the rack the screw hole locations for the 5U Rackmount Enclosure mounting brackets. Do this on both the front and the back of the rack.

IMPORTANT: The template is two-sided (front and back) and printed with notches that show you where screws will be inserted for the mounting brackets and the thumbscrews that will secure the face plate to the front of the rack.

Align the template carefully with the holes on the rack to determine the exact placement of the screws.

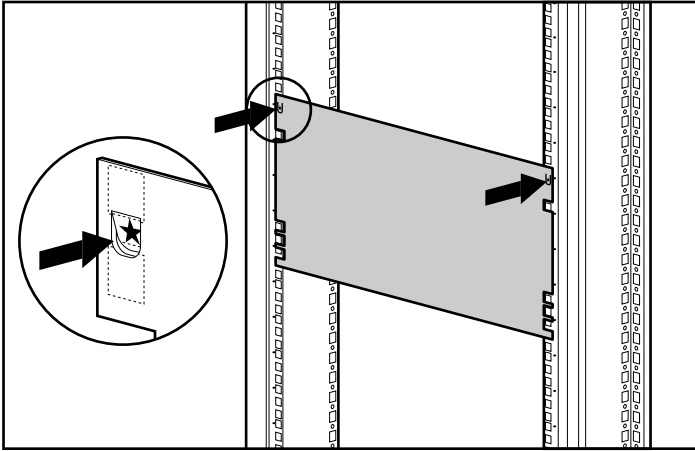


Figure 3-7: Measuring with the template

2. When you mark the positioning of the mounting bracket screws, also mark the positioning in the front of the rack for the cage nuts. The cage nuts will hold the thumbscrews through the 5U Rackmount Enclosure face plate.
3. After marking the front of the rack, flip the template over and mark the rear vertical side rails of the rack. These are accessible through the rear door of the rack.

NOTE: On the back of the rack, also mark the top of the template. This will help you align the template for the next component.

Inserting Cage Nuts into the Vertical Side Rail

After marking the positions for the fasteners on both the front and back of the rack, use the fitting tool to insert cage nuts on the inside of the vertical side rails at the appropriate locations.

1. Position the cage nut on the inside of the vertical side rail as shown in Figure 3-8.

NOTE: Cage nuts are not used for the front attachment of the mounting bracket.

2. Hook one of the lips of the cage nut through the square vertical side rail perforation.
3. Insert the tip of the fitting tool through the other side of the perforation and hook the opposite lip of the cage nut.

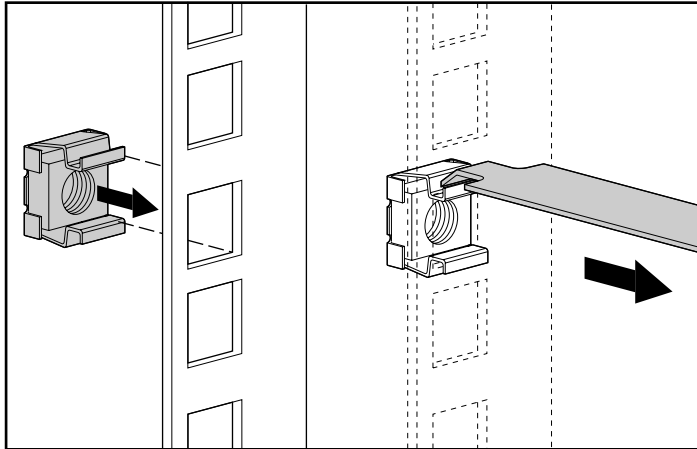


Figure 3–8: Inserting cage nuts

4. Using the fitting tool as a lever, pry the cage nut into position.
5. Repeat steps 1 through 4 for each cage nut.

Attaching the Bracket

1. Attach the mounting bracket assembly to the front of the rack first, using a #3 Phillips screwdriver and two M6 x 1.0-12L Phillips screws (do not use washers). The tabs on the front of the mounting bracket help to align it with the front of the rack frame.

NOTE: Cage nuts are not used for the front attachment of the mounting bracket.

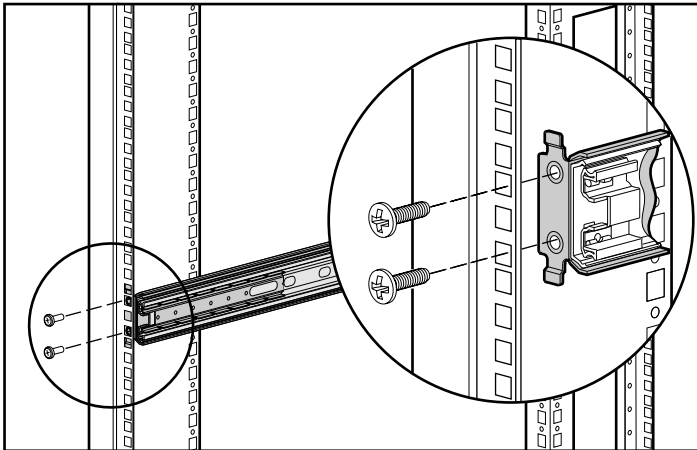


Figure 3–9: Attaching the mounting bracket assembly to the front of the rack

2. Carefully align the mounting bracket assembly with the rear vertical side rail rack frame.

- Secure the back end of the mounting bracket to the back corner brace of the rack with two M6 x 1.0-16L Phillips screws through the cage nuts.

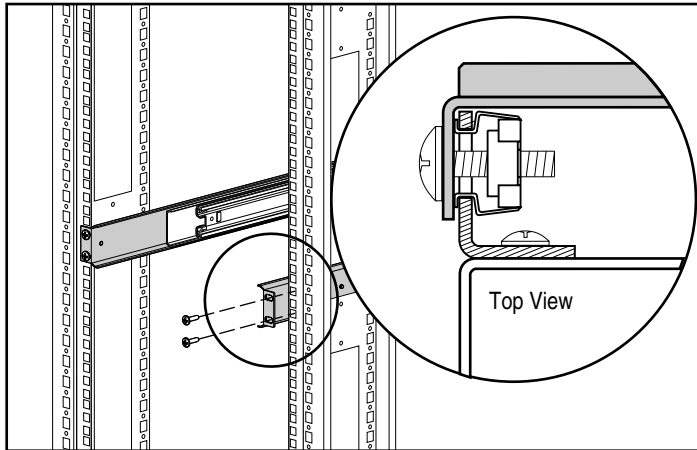


Figure 3–10: Cage nuts and back of mounting bracket assembly installed (rear view)

- Repeat steps 1 through 3 for the second bracket.

Attaching Component Rails

1. Place the tab on a component rail at the front of the 5U Rackmount Enclosure chassis. The holes in the component rail will line up only one way with the chassis.
2. Attach the flat side of a component rail to each side of the chassis with five 8-32 x 3/8 Phillips screws. (Do not use washers with the screws.)

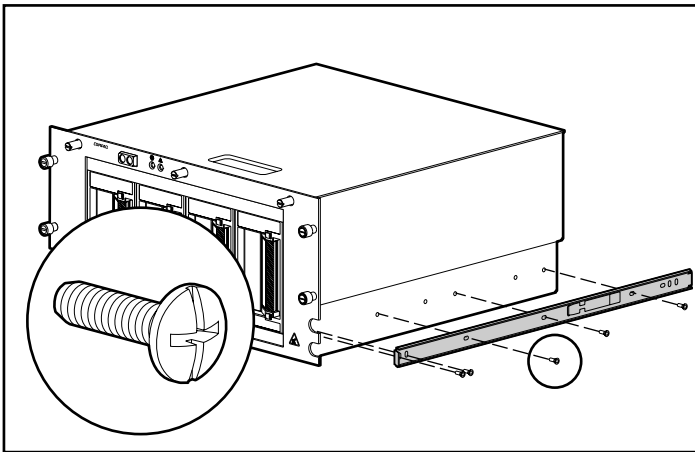


Figure 3–11: Attaching a component rail to the enclosure

Attaching the Cable Management Arm Bracket

The cable management arm bracket fastens to the chassis and provides an attachment point for the cable management arm from the chassis to the rear frame of the rack.

Attach the cable management arm bracket to the back of the chassis with four 6-32 x 3/8 slotted Torx taptite screws, using a Torx or straight-slot screwdriver.

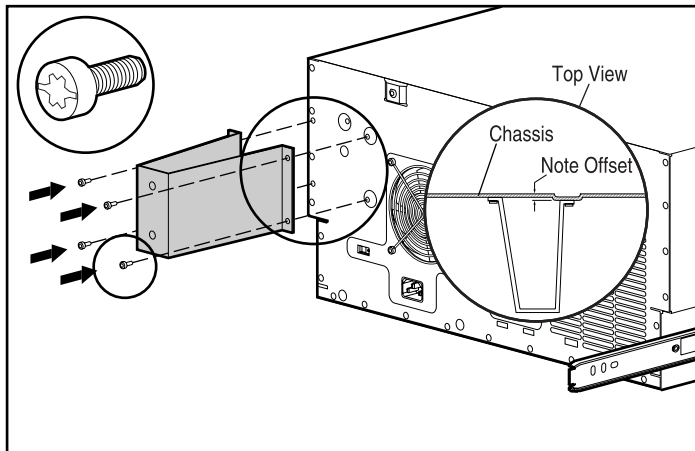


Figure 3–12: Attaching a cable management arm bracket

IMPORTANT: Be sure to mount the bracket as shown in Figure 3-12.

Inserting the 5U Rackmount Enclosure into the Rack

1. Pull the sliding bracket rails forward from the mounting brackets until they lock into place.
2. Carefully align the component rails with the rack bracket rails.



CAUTION: Be sure to keep the component parallel to the floor when sliding the component rails into the bracket rails. Tilting the component up or down could result in damage to the rails.

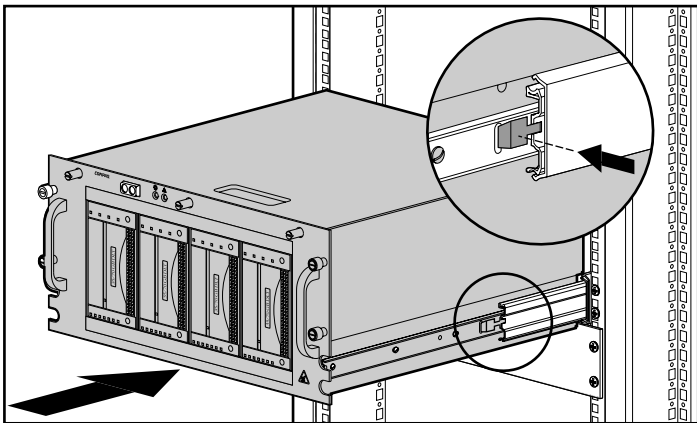


Figure 3–13: Inserting the enclosure into the rack

3. Depress the component rail release latch on either side of the chassis and slide the chassis into the rack until it stops halfway into the rack. The component rail release latch is located on the outside of the rail. See Figure 3-13.



WARNING: To avoid the risk of personal injury, care should be taken when pressing the component rail release latches and sliding the component into the rack. The slide rails could pinch your fingertips.

NOTE: The first time you slide the component into the rack, you may have to apply some pressure. After the first time, the ball bearings in the slide will move easily.

4. Secure the faceplate to the front of the rack by tightening the thumbscrews into the cage nuts.

Attaching the Cable Management Arm

NOTE: For easier handling, slide the 5U Rackmount Enclosure into the rack first, then attach the cable management arm to the cable management arm bracket. If you attach the arm before loading the rack, the arm may swing around and interfere with the loading process.

The cable management arm attaches to the cable management arm bracket and to the rear frame of the rack. All cables to and from the chassis are held in place with ties to this arm. As you slide the 5U Rackmount Enclosure in and out of the rack, the cable management arm collapses and extends, keeping the cables well-organized and untangled.

1. After you have installed the 5U Rackmount Enclosure into the rack, attach one end of the cable management arm to the cable management arm bracket using a #3 Phillips screwdriver and two M6 x 1.0-12L Phillips screws. Align the arm to the bracket as shown in Figure 3-14.

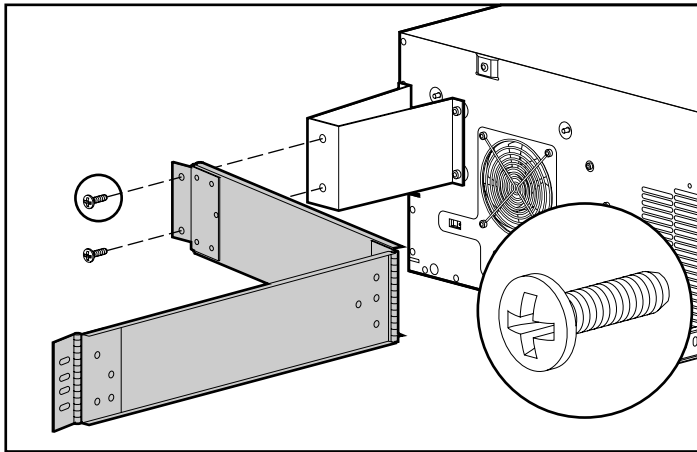


Figure 3–14: Cable management arm attached to cable management arm bracket

2. Align the other end of the cable management arm on the outside of the vertical side rail. Align the bar nut on the inside of the rack.

3. Attach the arm to the rack with two 10-32 x 5/8 washer face slotted hex head screws as shown Figure 3-15.

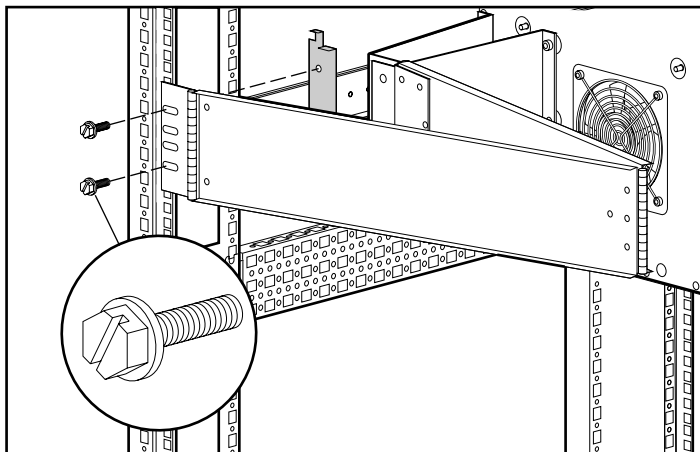


Figure 3-15: Attaching the cable management arm to the vertical side rail

Cabling the 5U Rackmount Enclosure

1. Plug an external SCSI cable from the SCSI controller to the SCSI connector on the back of the chassis.
2. Repeat step 1 for each controller in your system.

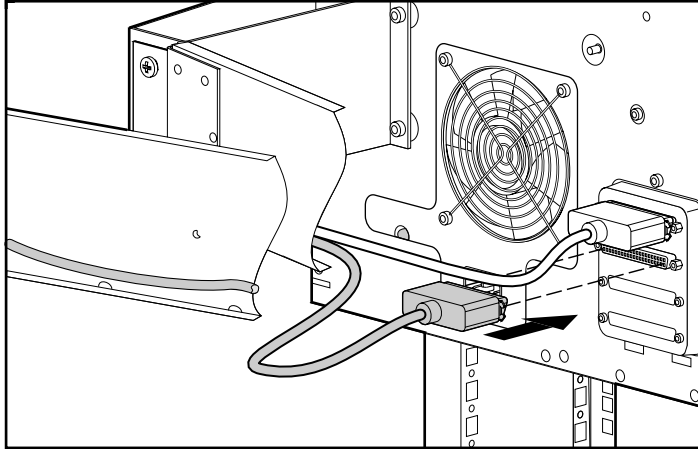


Figure 3–16: Attaching the external SCSI cable

3. Plug the AC power cord into the power cord connector.

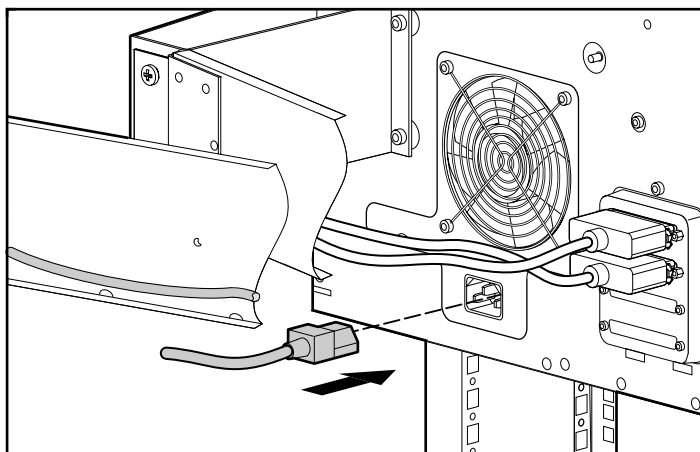


Figure 3–17: Attaching the AC power cord

4. With the cable arm extended, bundle all the cables and tie them to the cable management arm with cable ties.

5. Extend the bundled cables down the cable channel of the rack, which is on the same side as the cable management arm attachment. See Figure 3-18.

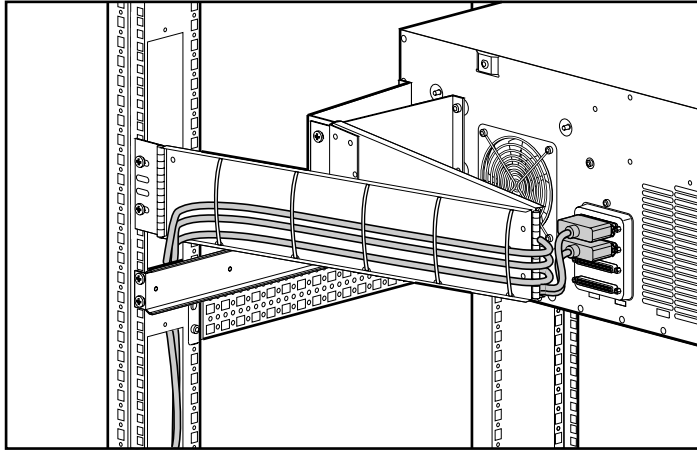


Figure 3–18: Cables in the cable channel

6. Connect the external SCSI cables to the designated SCSI controller.

Maintenance

Routine Care

To maintain the condition and performance of the 5U Rackmount Enclosure:

- Keep liquids away from the unit.
- Occasionally clean the air vents on the front and back of the unit. Lint and other foreign matter can block the vents and limit the airflow.



CAUTION: Operating the 5U Rackmount Enclosure with the cover removed could result in overheating.

Troubleshooting

Table 4–1: Troubleshooting

| Problem | Possible Cause |
|--|--|
| Power indicator does not turn on (green) | <ul style="list-style-type: none">• The LED cable from the power switch assembly is not connected to the load board (J1) or is faulty.• The power cable from the power supply to the load board (E2) is not connected or is faulty. |
| Service Required Indicator is on (amber) | <ul style="list-style-type: none">• The top cover is not fully closed and seated.• The LED cable from the power switch assembly is not connected to the load board (E1) or is faulty.• The fan cable is not connected to the load board (E3) or is not functioning properly.• The interlock mechanism within the power switch assembly is faulty. |

If all of the above conditions have been investigated and the problem persists, contact a Compaq authorized service provider for assistance.

Regulatory Compliance Notices

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, your product has been assigned a unique Compaq series number. The series number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this series number. The series number should not be confused with the marketing name or model number of the product.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. After the Class of the device is determined, refer to the corresponding statement in the following sections.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for help

Declaration of Conformity for Products Marked with the FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact us by mail or telephone:

- Compaq Computer Corporation
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000
- 1-800-652-6672 (1-800-OK COMPAQ)
(For continuous quality improvement, calls may be recorded or monitored.)

For questions regarding this FCC declaration, contact us by mail or telephone:

- Compaq Computer Corporation
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
- (1) 281-514-3333

To identify this product, refer to the part, series, or model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Mouse Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (the equivalent international standards are in parenthesis):

- EN55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN60950 (IEC950) - Product Safety

Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Electrostatic Discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Make sure you are always properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm (± 10 percent) resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have a Compaq authorized reseller install the part.

NOTE: For more information on static electricity, or assistance with product installation, contact your Compaq authorized reseller.

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