

1U Rackmount Enclosure Installation Guide

The 1U Rackmount enclosure is provided with either one or two of the following supported tape drives already installed:

- LTO-3 (Model B) Half-Height, SCSI model TC-L33CX-EY-B
- LTO-3 (Model B) Half-Height, SAS model TC-L33CN-EY-B
- LTO-4 (Model B) Half-Height, SCSI model TC-L43CX-EY-B
- LTO-4 (Model B) Half-Height, SAS model TC-L43CN-EY-B
- LTO-5 Half-Height, SAS model TC-L53CN-AR
- LTO-6 Half-Height, SAS model TC-L62AN-BR
- LTO-7 Half-Height, SAS model TC-L72AN-BR

You can upgrade a single-drive enclosure to the two-drive configuration by installing a second tape drive using any supported model of the same type interface.

This guide references the instructions for installing the 1U Rackmount enclosure in an equipment rack, and provides the procedures for:

- Connecting the drive interface and power cables
- Installing a second tape drive into the 1U Rackmount enclosure

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Power Requirements

Power requirements for the 1U Rackmount enclosure are as follows:

- 100 to 240 Volts AC, 2 to 4 Amps
- 47 to 63 Hz

Connecting the Drive Interface and Power Cables

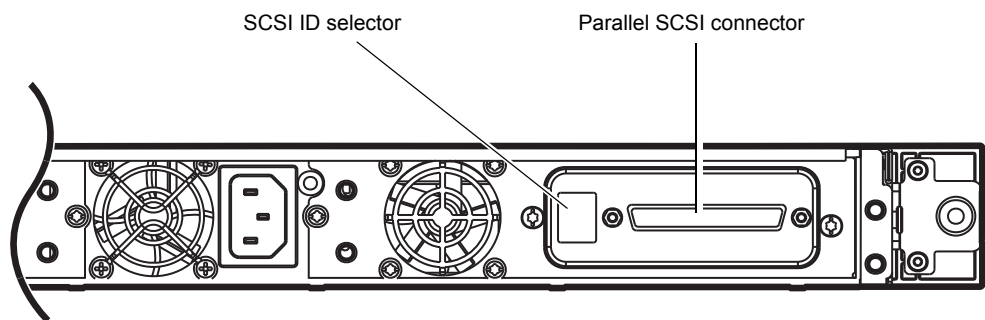
- 1 Shut down and turn off the host server system.
- 2 Turn off all attached accessory devices, such as printers and other SCSI devices.
- 3 On the back panel of a SCSI 1U Rackmount enclosure (see [Figure 1](#)):

Note: If this is a SAS 1U rackmount enclosure, continue with [Step 4](#).

- a Connect one end of the supplied external parallel SCSI cable to parallel SCSI connector on the same side of the enclosure as the installed tape drive.
- b Connect the other end of the supplied external parallel SCSI cable to the parallel SCSI connector on the host server.
- c As required, use the parallel SCSI ID selector switch to set the SCSI ID of the installed tape drive (see [Figure 1](#)).

Note: Any time you change the parallel SCSI ID, you must turn the tape drive power off and then back on by pressing the power button on the front panel of the 1U Rackmount enclosure.

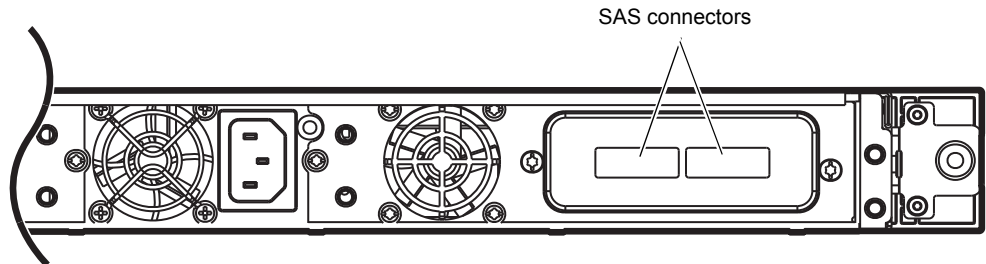
Figure 1 Parallel SCSI Interface Connectors



- 4 On the back panel of a serial-attached SCSI (SAS) 1U Rackmount enclosure (see [Figure 2](#)):
- a Connect one end of the supplied external SAS interface cable to one of the external SAS interface connectors at the rear of the enclosure (see [Figure 2](#)). The left-most SAS connector is for a drive installed on the left of the enclosure, and the right-most SAS connector is for a drive installed on the right.

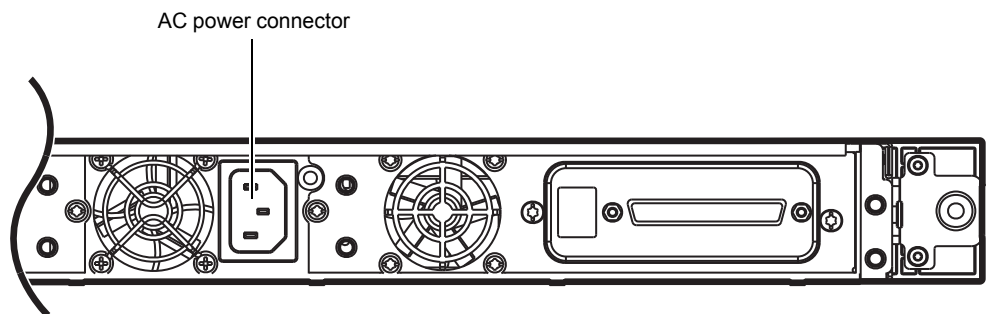
- b Connect the other end of the external SAS interface cable to the SAS connector on the host server.

Figure 2 SAS Interface Connectors



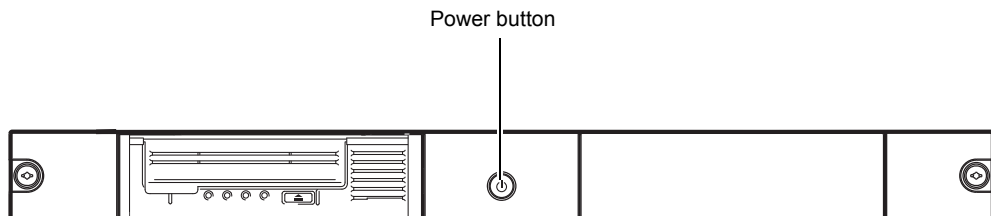
- 5 Connect the supplied AC power cable to the AC power connector on the back panel of the 1U Rackmount enclosure (see [Figure 3](#)).

Figure 3 AC Power Connector



- 6 Connect the other end of the AC power cable to the rack/facility AC power receptacle.
- 7 Press the drive power pushbutton switch on the front panel of the 1U Rackmount enclosure, illuminating the power LED. (see [Figure 4](#)).

Figure 4 Power Button



- 8 Turn on all attached accessory devices, such as printers and other SCSI devices that you turned off at step 2 of this procedure.
- 9 Turn on and restart the host server.



Installing a Second Tape Drive or Replacing a Tape Drive

Follow these instructions to install a second tape drive or to replace a tape drive after it has been removed.

Caution: Before installing a second tape drive, you must turn off the 1U Rackmount enclosure and disconnect it from its AC power source.

Preinstallation Requirements

Before installing a second tape drive in the 1U Rackmount enclosure, make sure you have the following required tools and parts:

Tools	3/16 in. (5 mm) flat-blade screwdriver T-15 Torx driver
Parts	<ul style="list-style-type: none">• A supported model tape drive• Parallel SCSI cable and terminator or SAS cable depending on the tape drive type

Installation Procedure

The installation procedure is divided into the following major sections:

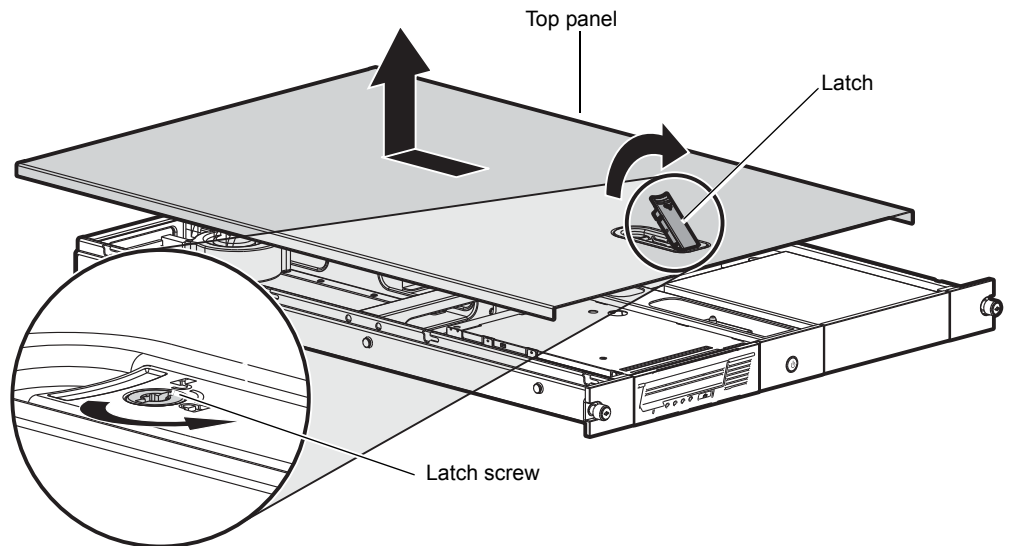
- [Removing the Top Panel](#)
 - [Adding a Second Tape Drive](#)
 - [Replacing a Tape Drive:](#)
- [Connecting the Tape Drive Cables](#)
- [Re-installing the Top Panel](#)

Removing the Top Panel

To remove the top panel:

- 1 Press the drive power pushbutton switch on the front panel of the 1U Rackmount enclosure to turn off the drive power.
- 2 Disconnect the AC power cable from the AC power connector on the back panel of the 1U Rackmount enclosure.
- 3 Remove the 1U Rackmount enclosure from the equipment rack and place it on a clean, stable, flat surface.
- 4 Remove the top access panel (see [Figure 5](#)):
 - a Loosen the latch screw
 - b Lift the latch and slide the top panel toward the back of the 1U rackmount enclosure.
 - c Remove the top access panel from the 1U rackmount enclosure.

Figure 5 Top Access Panel



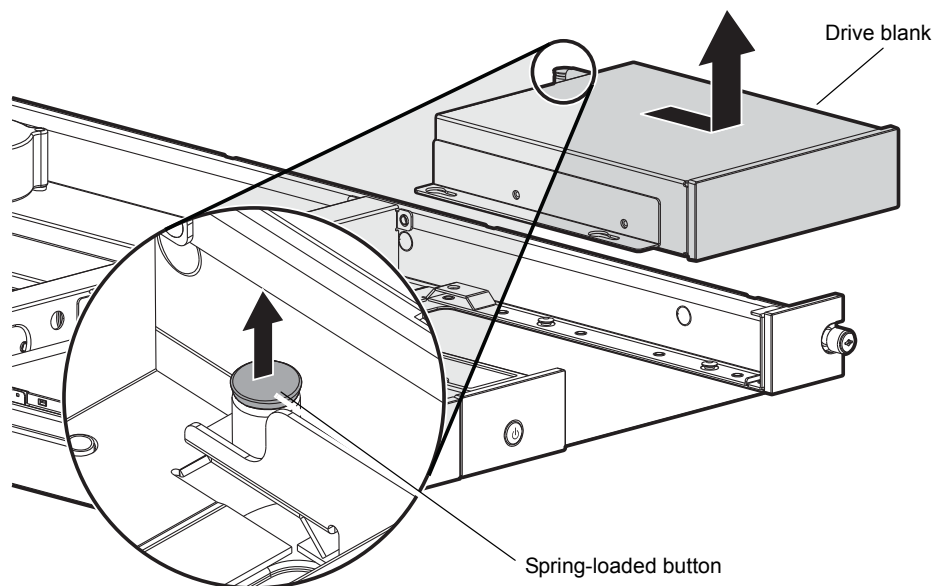
Adding a Second Tape Drive

Note: If you are replacing a tape drive, refer to [Replacing a Tape Drive](#) on page 7.

To add a second tape drive:

- 1 Remove the drive blank (see [Figure 6](#)):
 - a Pull the spring-loaded button on the right mounting rail up.
 - b Slide the drive blank forward and lift up out of the 1U rackmount enclosure.

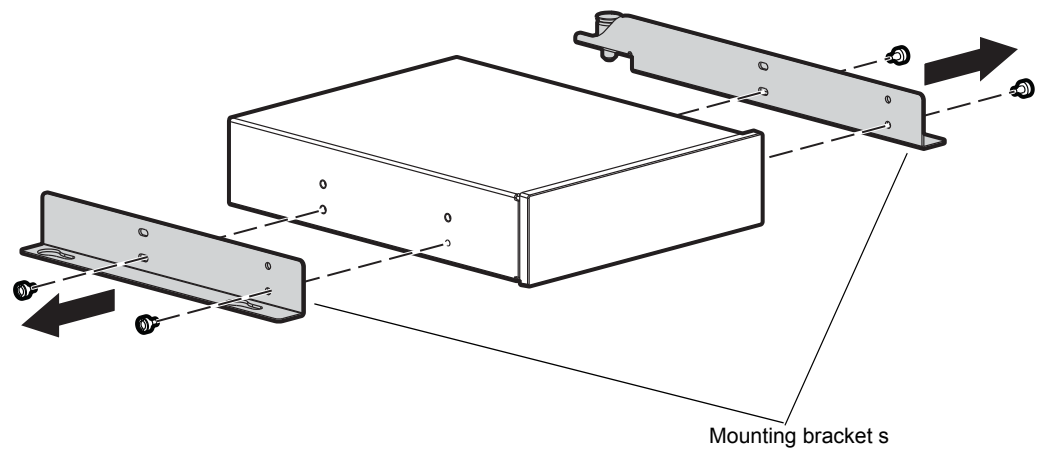
Figure 6 Removing the Drive Blank





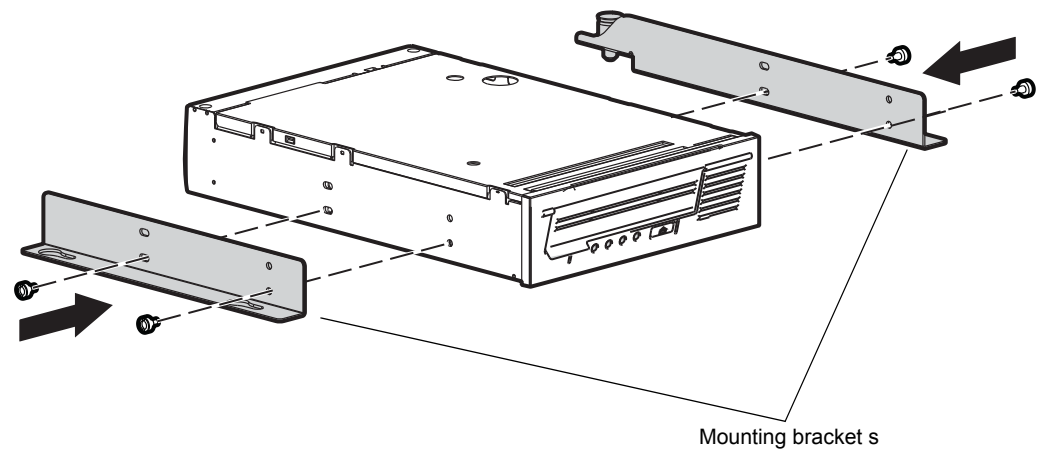
- 2 Remove the screws securing the mounting brackets to the tape drive blank (see [Figure 7](#)).

Figure 7 Removing the Mounting Brackets



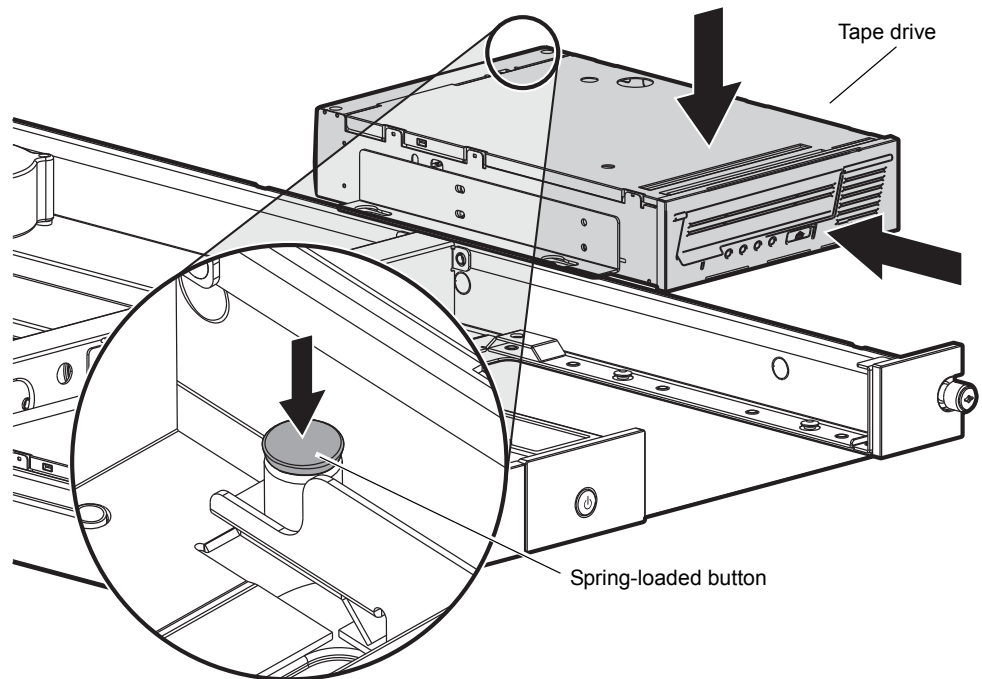
- 3 Secure the mounting brackets with two screws on each side of the tape drive (see [Figure 8](#)).

Figure 8 Installing the Mounting Brackets



- 4 Install the drive (see [Figure 9](#)):
 - a Position the mounting bracket keyhold slots over the mounting posts.
 - b Slide the drive toward the back of the enclosure.
 - c The spring-loaded button will automatically snap into place.

Figure 9 Installing the Tape Drive



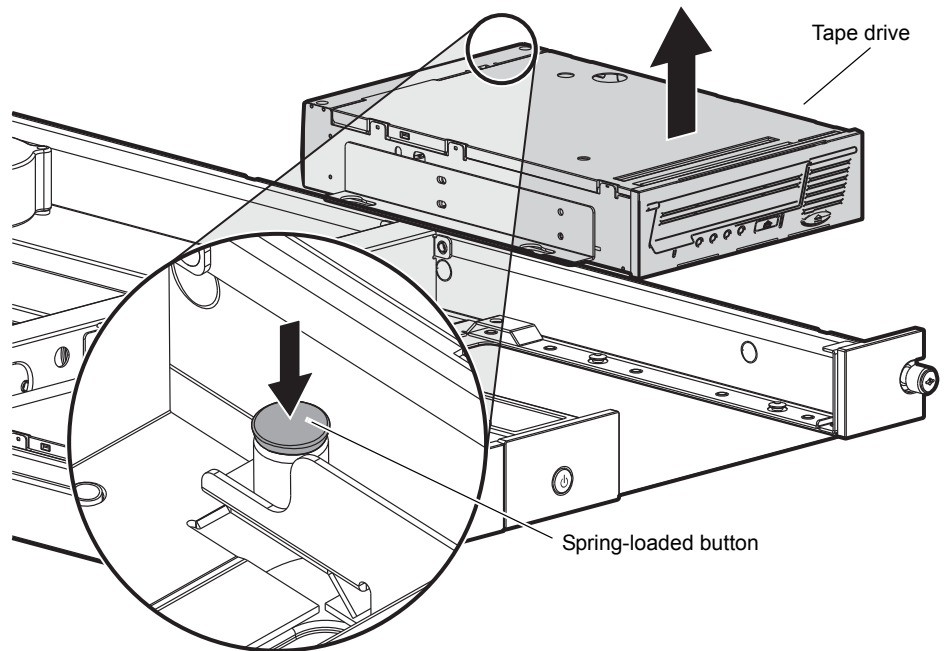
Continue with [Connecting the Tape Drive Cables](#) on page 10.

Replacing a Tape Drive:

To replace a tape drive:

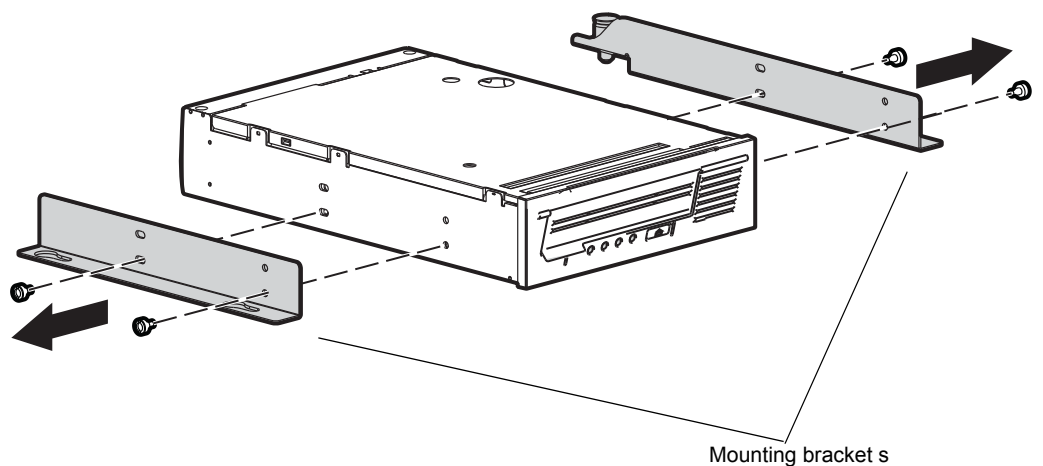
- 1 Remove the tape drive (see [Figure 10](#)):
 - a Disconnect all cables from the tape drive.
 - b Pull the spring-loaded button on the right mounting rail up.
 - c Slide tape drive forward and lift up out of the 1U rackmount enclosure.

Figure 10 Removing the Tape Drive



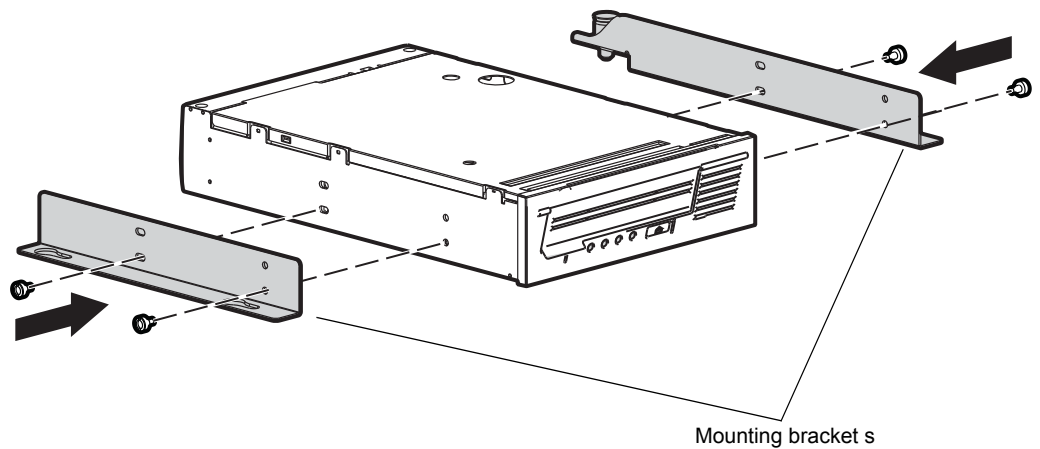
- 2 Remove the screws securing the mounting brackets to the tape drive (see [Figure 11](#)).

Figure 11 Removing the Mounting Brackets from the Tape Drive



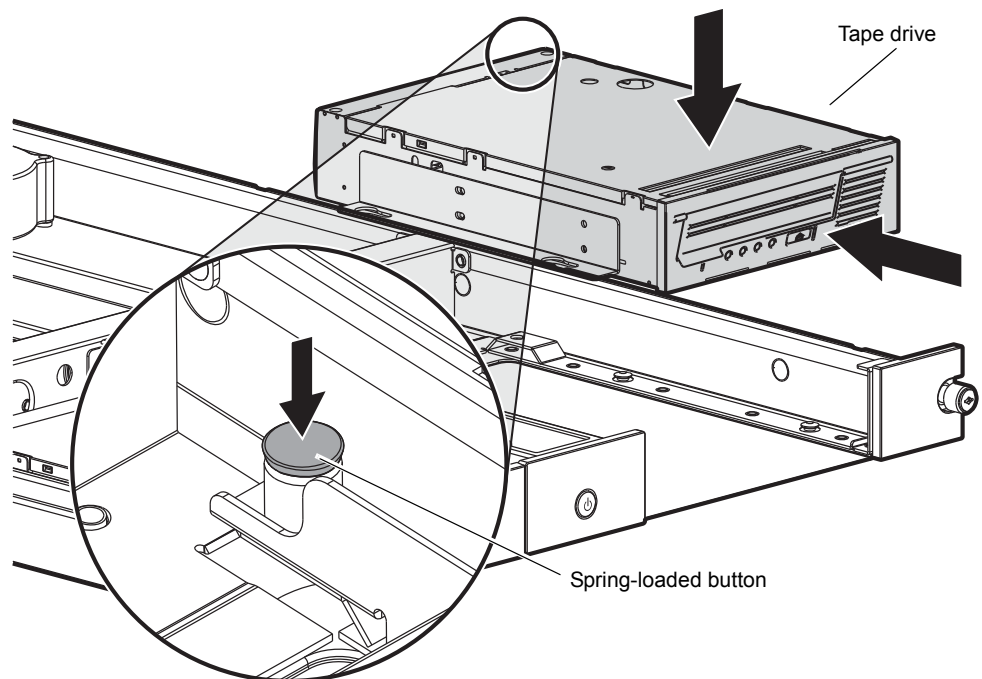
- 3 Secure the mounting brackets with two screws on each side of the new tape drive (see [Figure 8](#)).

Figure 12 Installing the Mounting Brackets



- 4 Install the new tape drive (see [Figure 9](#)):
 - a Position the mounting bracket keyhole slots over the mounting posts.
 - b Slide the drive toward the back of the enclosure.
 - c The spring-loaded button will automatically snap into place.

Figure 13 Installing the Tape Drive



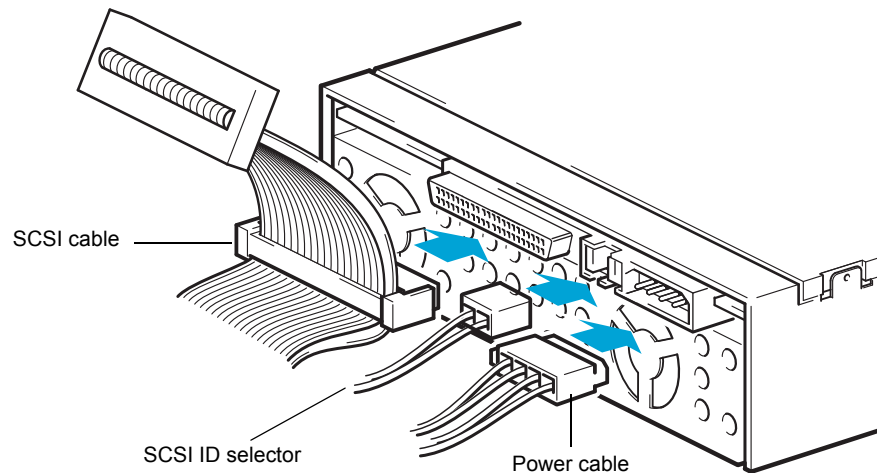


Connecting the Tape Drive Cables

To connect the tape drive cables:

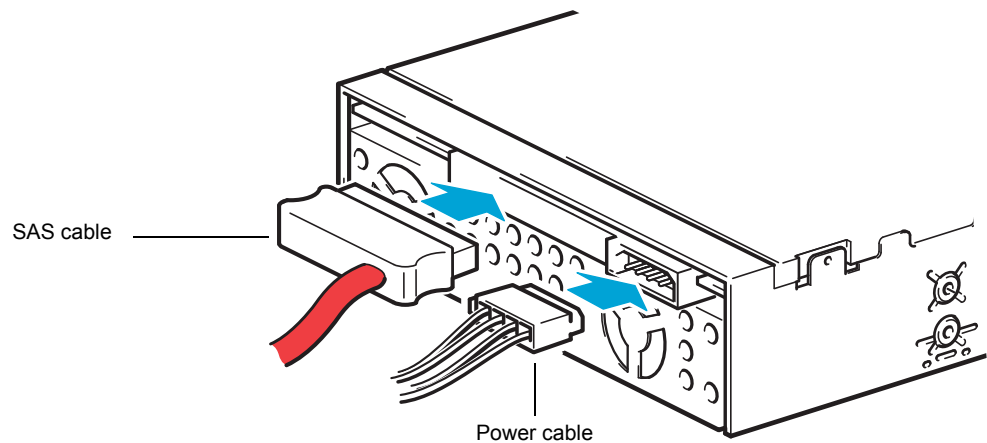
- 1 For a SCSI tape drive, connect the following cables to the back of the tape drive (see [Figure 14](#)).
 - a SCSI cable
 - b Power cable
 - c SCSI ID selector switch

Figure 14 Connecting the SCSI and Power Cables



- 2 For an LTO-3 (Model B) and LTO-4 (Model B) SAS tape drive, connect the following cables to the back of the tape drive (see [Figure 16](#)).
 - a SAS cable
 - b Power cable

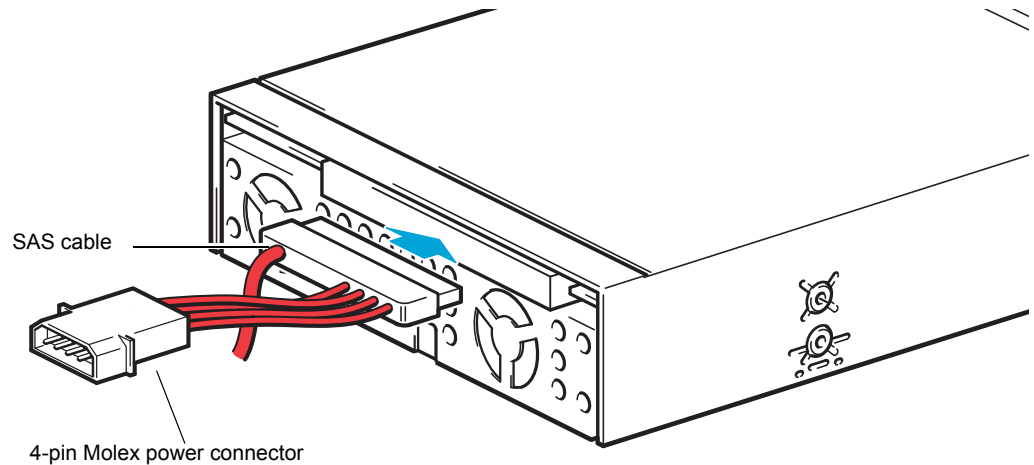
Figure 15 Connecting the SAS and Power Cables (LTO-3 and LTO-4 Only)



- 3 For an LTO-5, LTO-6 and LTO-7 SAS tape drive, connect the following cables to the back of the tape drive (see [Figure 16](#)).
 - a SAS cable

Note: Ensure that a 4-pin Molex power connector is plugged into the power inputs of the SAS cable as shown in [Figure 16](#).

Figure 16 Connecting the SAS and Power Cables (LTO-5, LTO-6 and LTO-7 Only)



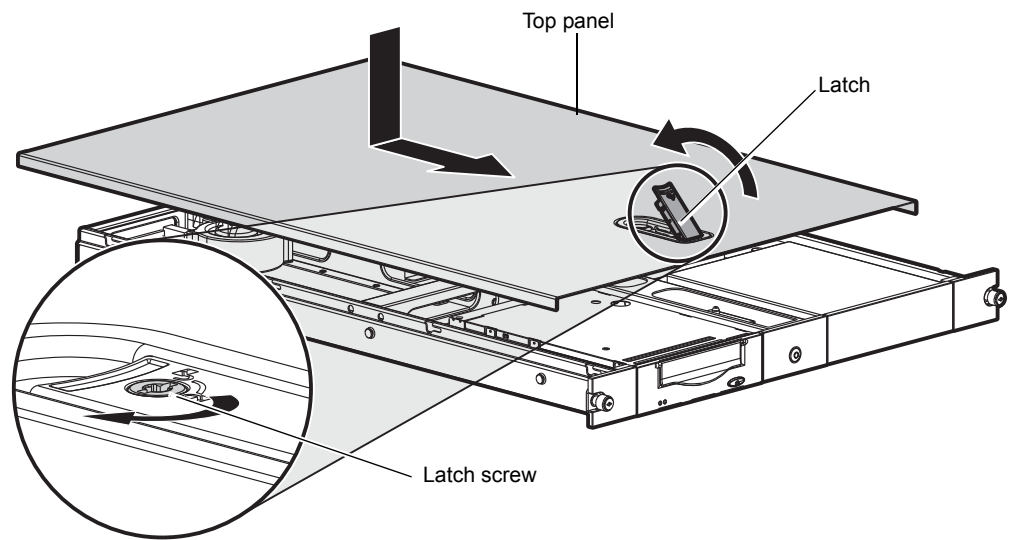
Re-installing the Top Panel

To re-install the top panel (see [Figure 17](#)):

- 1 Install the top access panel on the 1U rackmount enclosure and slide toward the front of the rackmount enclosure.
- 2 Secure the latch by pushing it down into the top access panel.
- 3 Tighten the latch screw to secure the top access panel to the 1U rackmount enclosure.



Figure 17 Re-installing the Top Access Panel



SCSI Cable Configurations

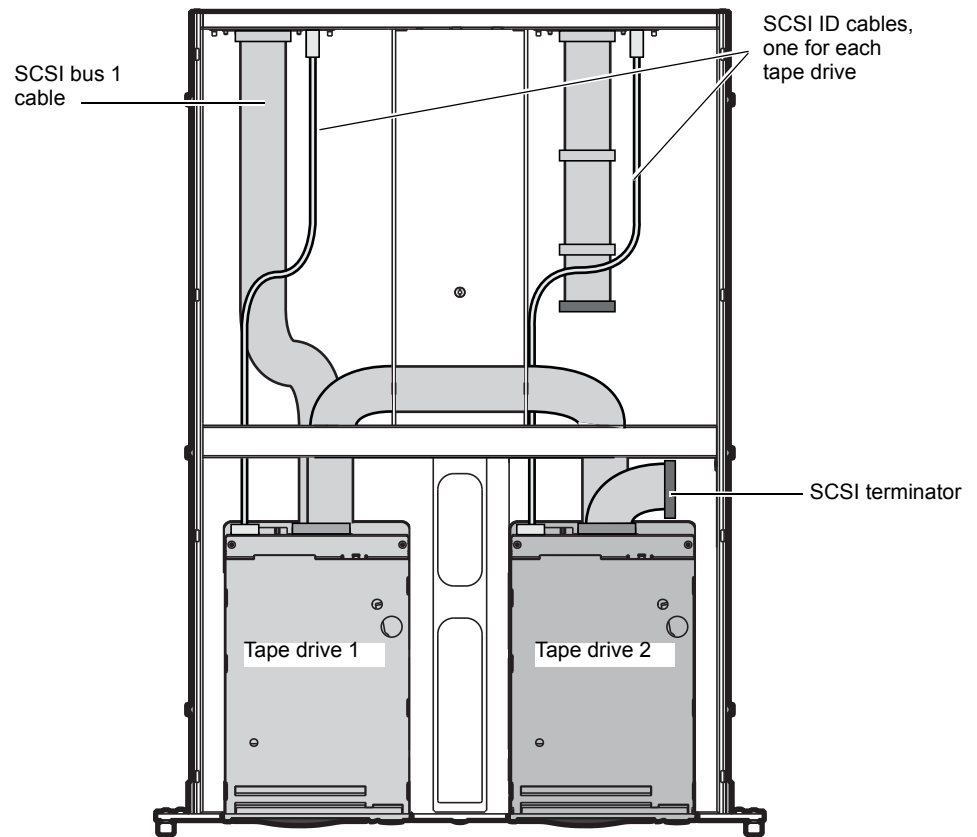
The 1U rackmount enclosure supports the operation of two tape drives on either one or two SCSI buses. Two internal 2-port SCSI cables are installed in the enclosure and ready for tape drive connections depending on your configuration.

- [Connecting Two Drives per SCSI Bus](#)
- [Connecting One Drive per SCSI Bus](#)

Connecting Two Drives per SCSI Bus

Use the configuration shown in [Figure 18](#) when connecting both tape drives to the same SCSI bus.

Figure 18 Connecting Two Drives on One SCSI Bus



Note: When adding a second tape drive for configurations using a single SCSI bus, unplug the SCSI cable from tape drive 1, pass the end of the cable through the internal rackmount enclosure openings, and connect the end port to tape drive 2. Then plug the middle port into tape drive 1. The SCSI terminator is at the end of the cable and should be behind tape drive 2.

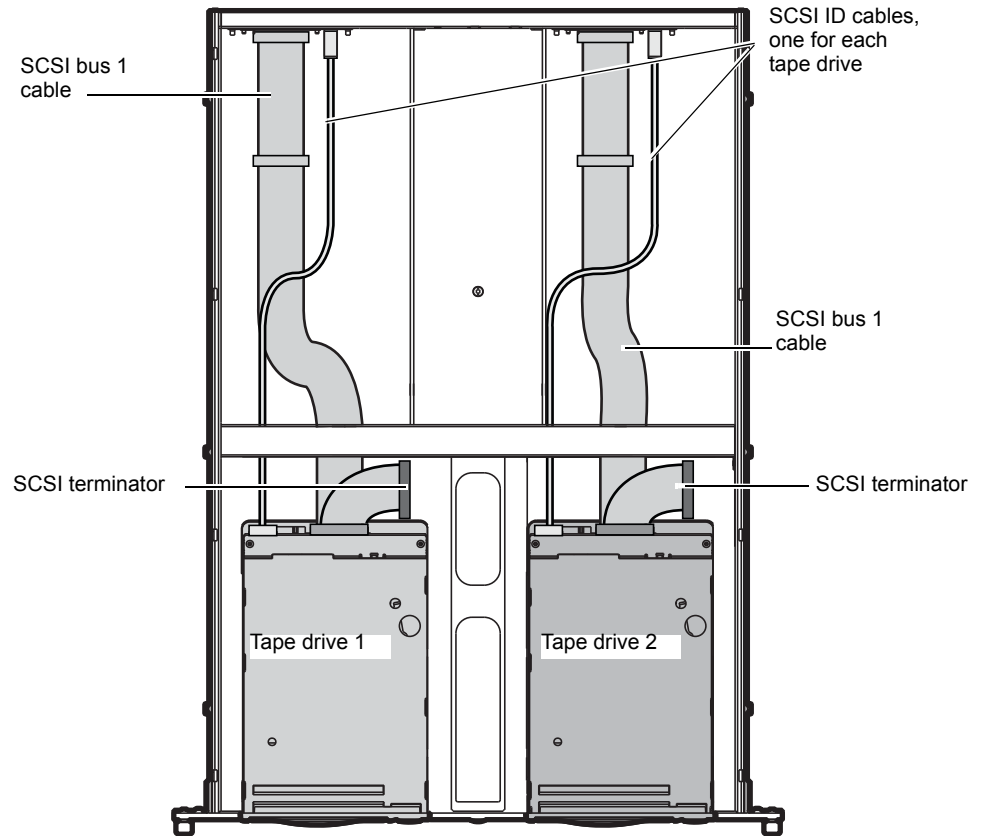
Note: Each SCSI device on the same SCSI bus must have a unique SCSI ID. Be sure that the SCSI ID is different for each tape drive and that neither is set to SCSI ID 7.

Connecting One Drive per SCSI Bus

Use the configuration shown in [Figure 19](#) when connecting each tape drive to a separate SCSI bus.



Figure 19 Connecting One Drive on One SCSI Bus



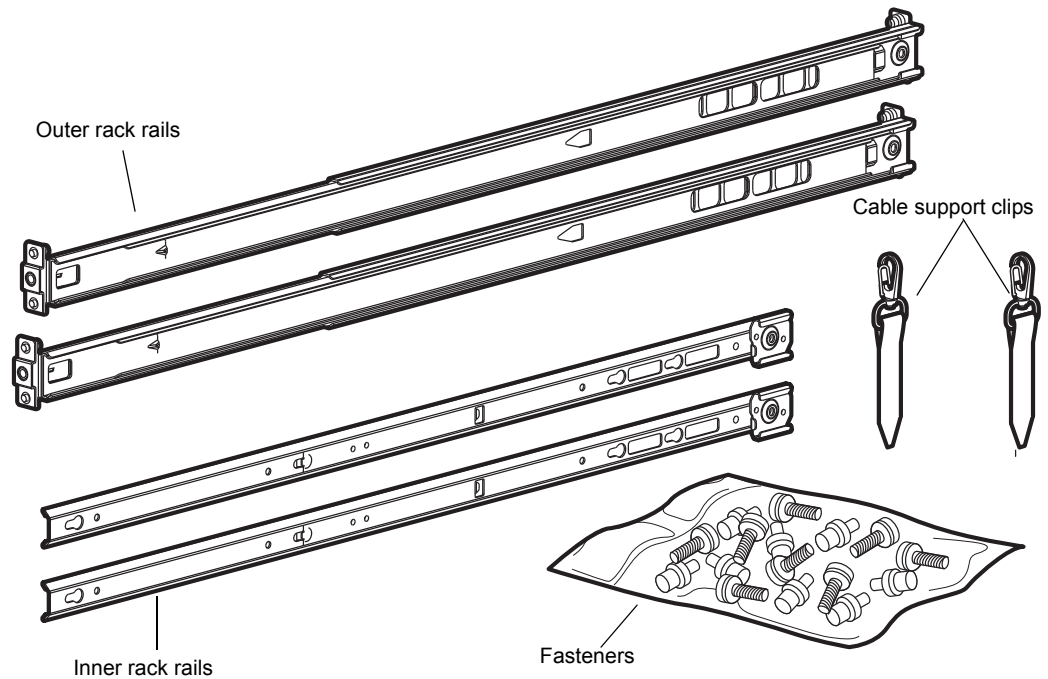
Note: To prevent possible data errors, when there is only one drive on a SCSI bus, the tape drive should be connected to the SCSI connector closest to the terminator.

Caution: To avoid damaging the equipment due to electrostatic discharge, be sure to practice ESD procedures when handling the tape drive.

Installing the 1U Rackmount Enclosure in a Rack

The rack rails supplied with the 1U rackmount enclosure can be used to install the unit in racks that have round, square, or threaded holes in the vertical mounting bars. The rails are identical and may be mounted on either the left or the right side.

Figure 20 Rail Mounting Kit Components



Tools Required

If you are installing the tape enclosure in a rack with unmarked holes in the vertical mounting bars the following items will make the rack installation easier:

- Pencil
- Tape measure

If you are installing the tape enclosure in a rack with threaded holes in the vertical mounting bars you will need the following tool:

- 3/16 in. (5mm) flat-blade screwdriver

Installation Procedure

When installing the enclosure in a rack:

- Start at the bottom of the rack, or at the top of a previously mounted component, and work upward.



- If possible, install the heaviest components at the bottom and lighter ones toward the top of the rack.
- Make sure that the rack-mounting rails are level from front to back.

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

1. The rack leveling jacks are extended to the floor.
2. The full weight of the rack rests on the leveling jacks.
3. The stabilizing feet are attached to the rack if it is a single rack installation.
4. The racks are coupled in multiple rack installations.
5. Only one component is extended at a time.

A rack may become unstable if more than one component is extended for any reason.

Before you begin

If you are installing the 1U rackmount enclosure in a rack with unmarked holes in the vertical mounting bars, identify and mark the correct mounting holes in the rack before you begin rail installation.

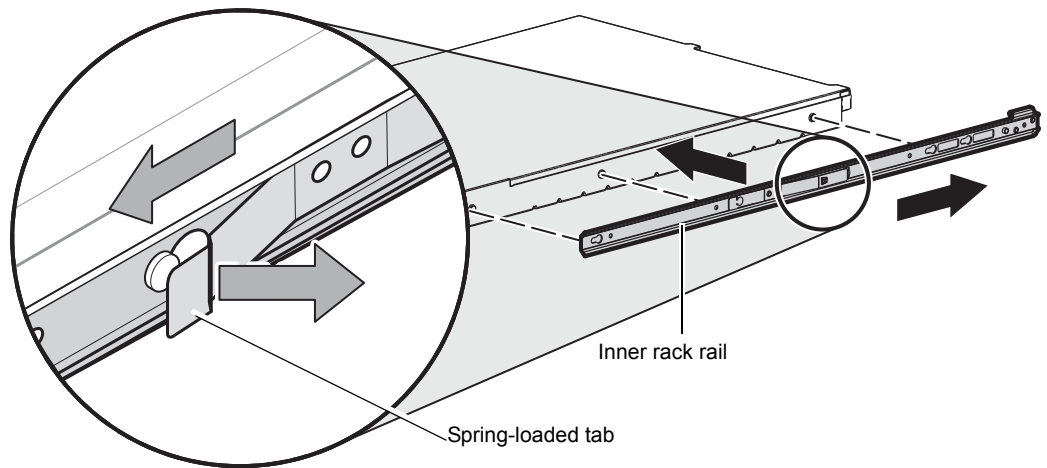
Caution: It is important to install rack components level. To ensure that the 1U rackmount enclosure is installed correctly it may be necessary to measure the height of the correct mounting holes in the front and rear vertical mounting bars.

Installing the Rackmount Enclosure Mounting Rails

Inner rack rails are the inner portion of the rack rail system that attached to the tape enclosure.

- 1 Align the slotted holes on the left and right component rails with the three pins on the sides of the rack mount enclosure.
- 2 Slide the component rails toward the rear of the enclosure until they lock into place.

Figure 21 Attaching the Inner Rack Rails



Note: To remove the component rail, pull out the spring-loaded tab on the side of the rail and slide it forward.

Installing the Rack Rails

Installation procedures differ depending on the rack type. The rails are shipped ready for installation in racks with round or square holes. If the rails are to be installed in racks with 10-32 threaded holes, the mounting pins must first be removed. Refer to the following sections for installation instructions for your rack type:

- [Installing in a Rack with Round or Square Holes](#)
- [Installing in a Rack with 10-32 in. Threaded Holes](#)

Installing in a Rack with Round or Square Holes

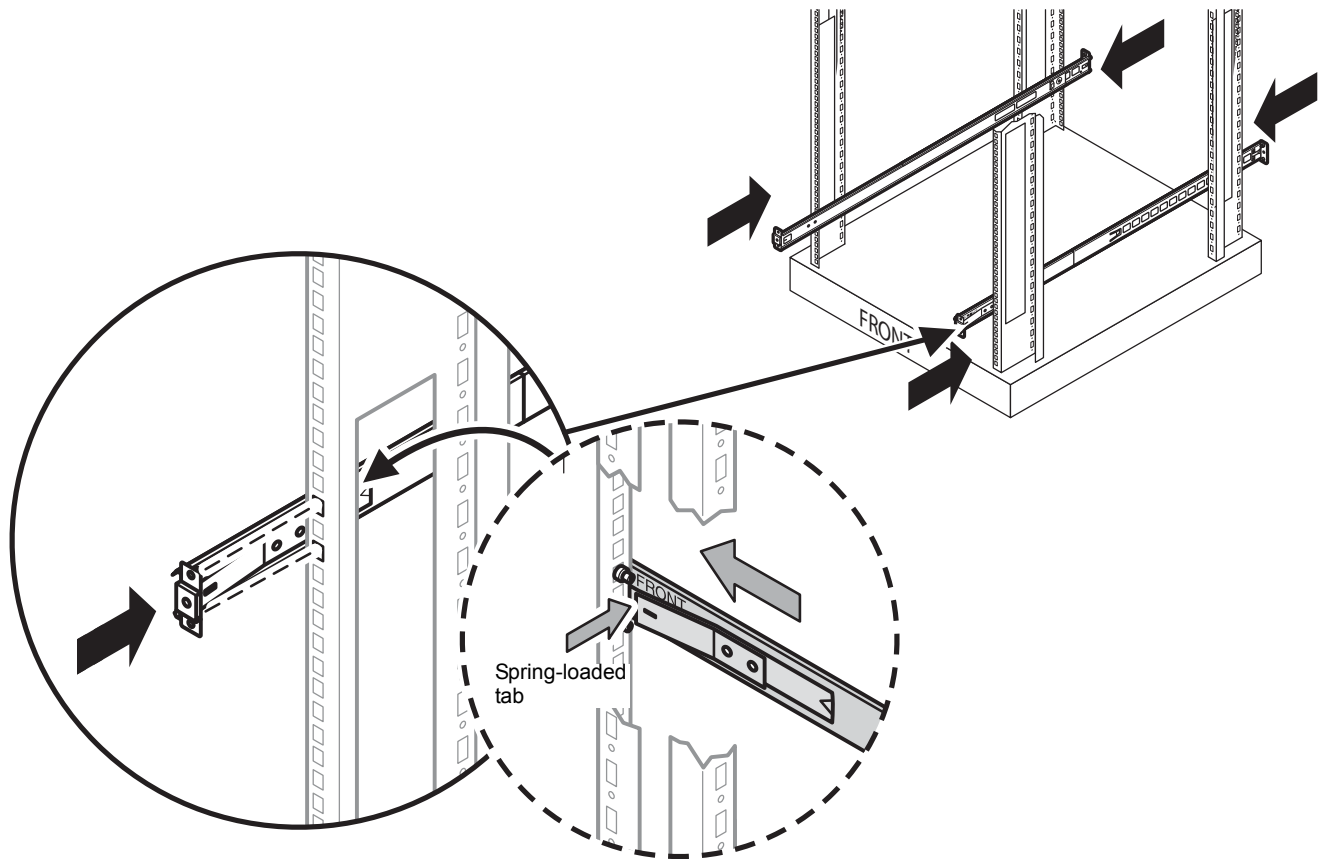
To install the 1U rack enclosure in a rack with round or square holes:

Note: The ends of the rack rails are marked FRONT and REAR for proper orientation.

- 1 Insert the pins in the front mounting plate of the outer rack rails into the previously marked holes in the front vertical mounting bars of the rack (see [Figure 22](#)). The rack rails will lock securely into place.



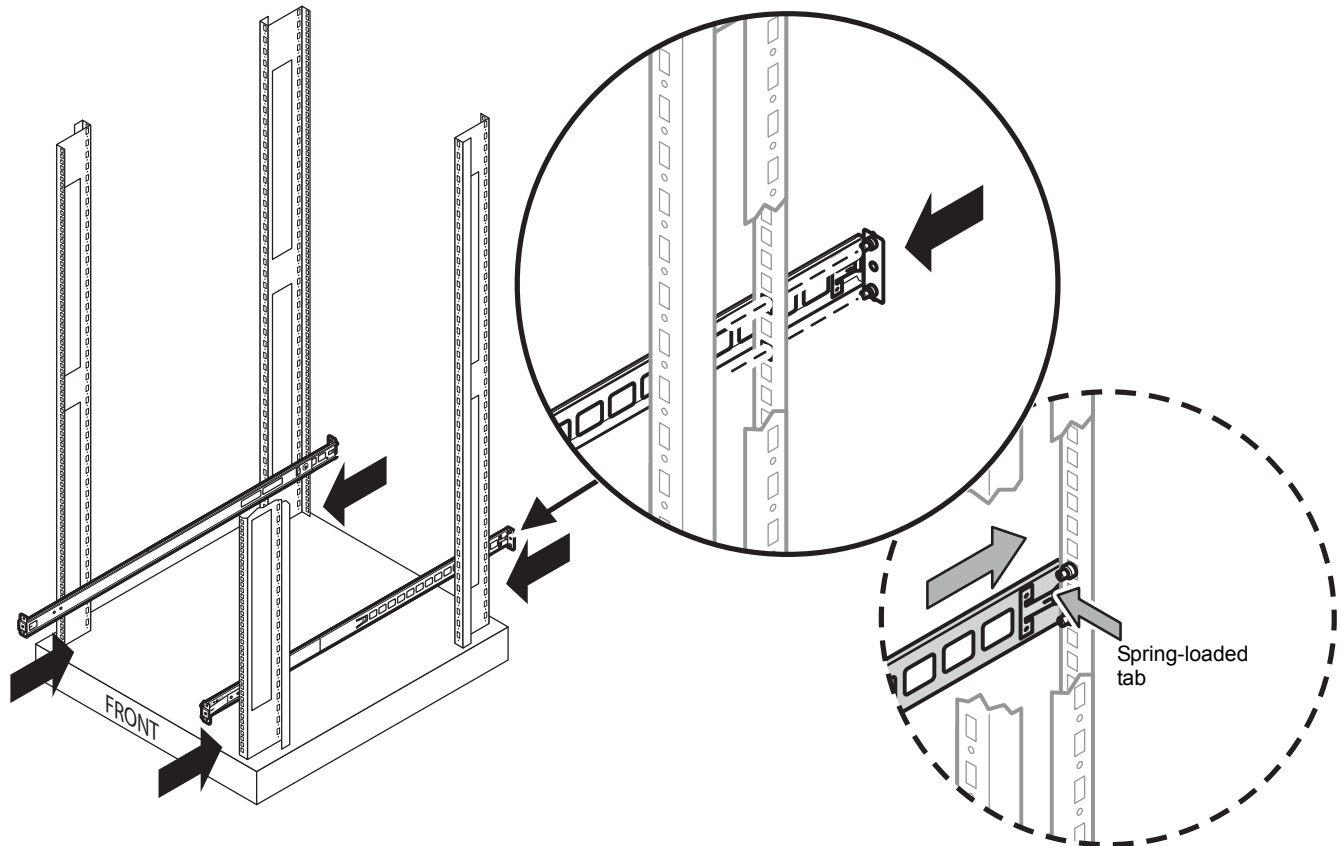
Figure 22 Installing the Rack Rails in the Front of the Rack



Note: To remove the rails for repositioning, push the spring-loaded tab on the outside of the rack rail and slide it forward.

- 2 Extend the rack rails past the rear vertical mounting bar and insert the pins in the mounting bracket into the previously marked holes in the rack.(see [Figure 23](#)). The rack rails will lock securely into place when the end of the rails are pushed forward.

Figure 23 Installing the Rack Rails in the Back of the Rack



Note: To remove the rail for repositioning, push the spring-loaded tab on the outside of the rack rail and slide rearward.

The rail installation is complete. Continue with [Completing the Installation](#) on page 22.

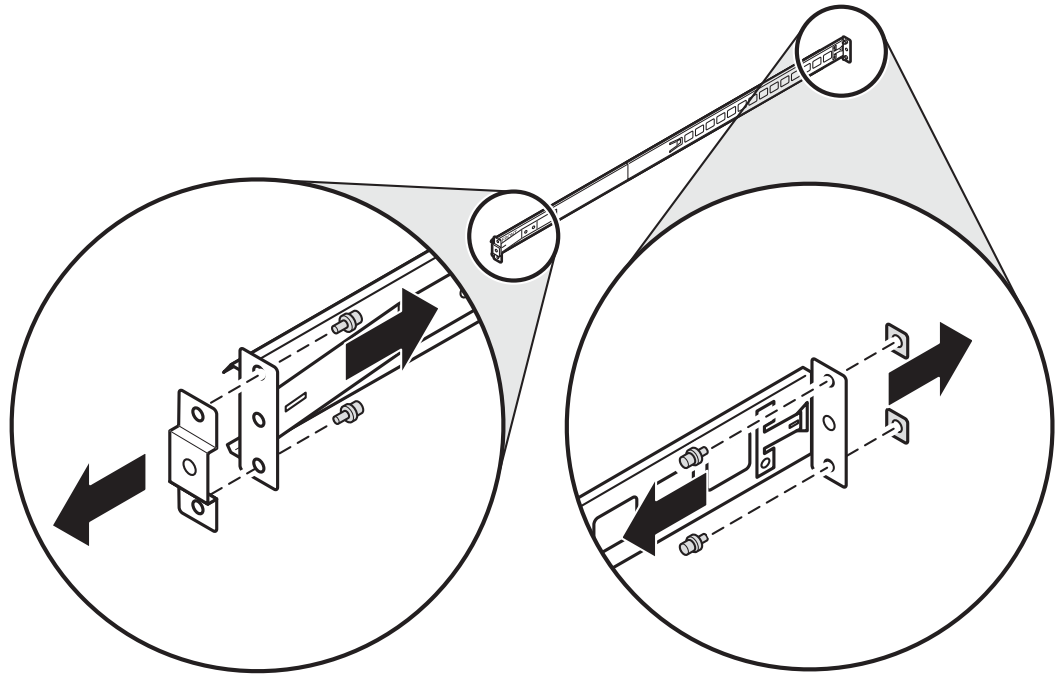
Installing in a Rack with 10-32 in. Threaded Holes

For installation in racks with 10-32 threaded holes in the vertical mounting bars, the pins supplied on the rails must be removed. The rails will be attached with user-supplied 10-32 x.375 screws.

- 1 Remove the pins and threaded plates from both ends of each rack rail (see [Figure 24](#)). These pieces will not be used.



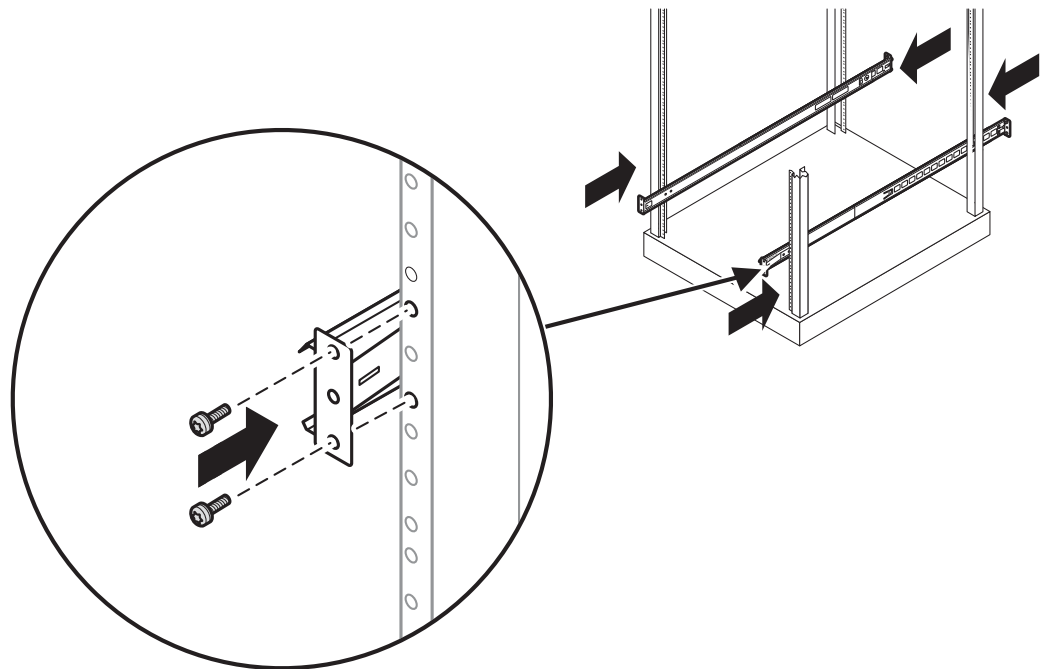
Figure 24 Removing the Pins from the Rack Rails



Note: The ends of the rack rails are marked FRONT and REAR for proper orientation.

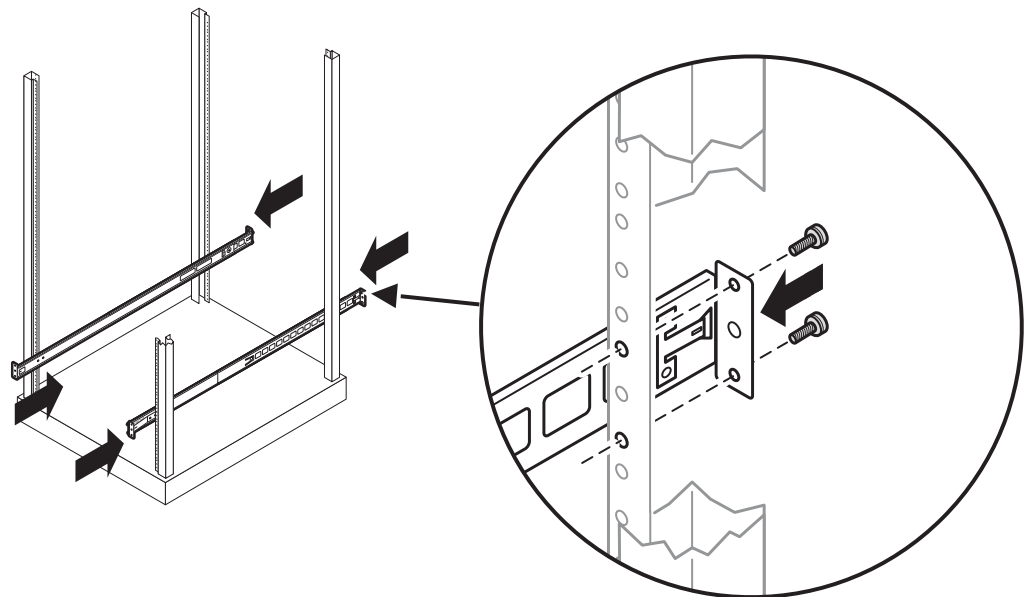
- 2 Attach the front mounting plate of each outer rail to the rack using four 10-32 screws in the previously marked holes in the front vertical mounting bars of the rack (see [Figure 25](#)).

Figure 25 Installing the Rack Rails in Front of the Rack



- 3 Extend the rack rails past the rear vertical mounting bars and attach the back mounting plate of each outer rail to the rack using four 10-32 screws in the previously marked holes (see [Figure 26](#)).

Figure 26 Installing the Rack Rails in the Back of the Rack



The rail installation is complete. Continue with [Completing the Installation](#)

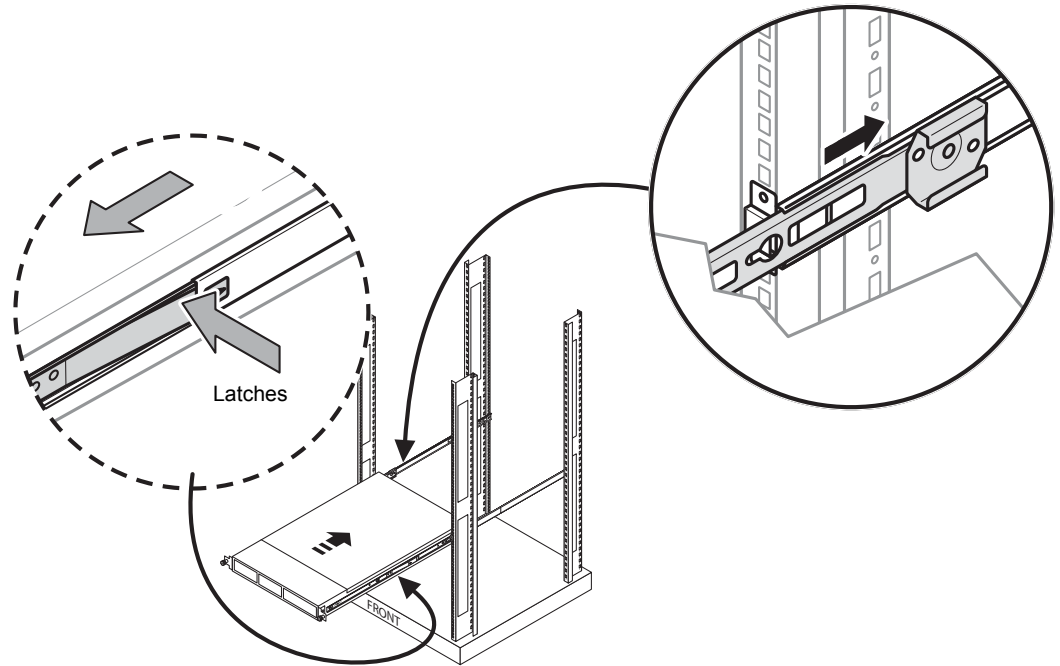


Completing the Installation

To complete the rackmount enclosure installation:

- 1 Extend the stabilizing feet if provided on your rack.
- 2 Extend the left and right rack rails from the front of the rack.
- 3 Align the rear of the component rails on the tape enclosure with the front ends of the rack rails, then slide the unit fully into the rack (see [Figure 27](#)).

Figure 27 Sliding the 1U Rack Enclosure into the Rack

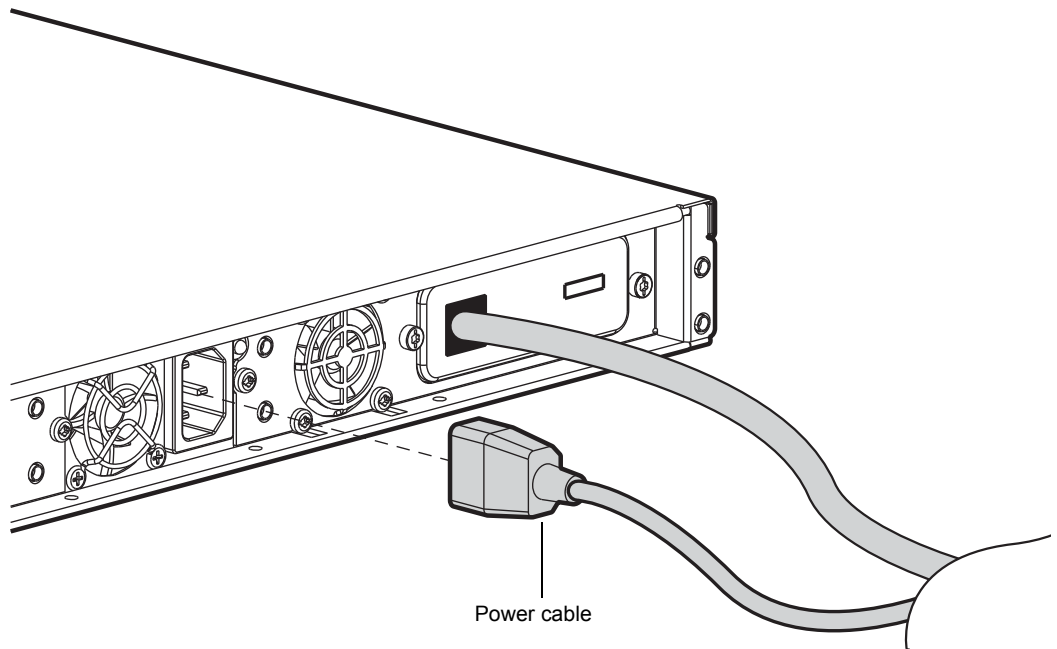


Caution: Be sure to keep the enclosure parallel to the floor when sliding the component rails into the rack rails. Tilting the enclosure up or down could damage the rails.

Note: To remove the enclosure from the rack, disconnect the cables from the back of the unit. Press the latches on each side and pull the enclosure from the rack (see [Figure 27](#)).

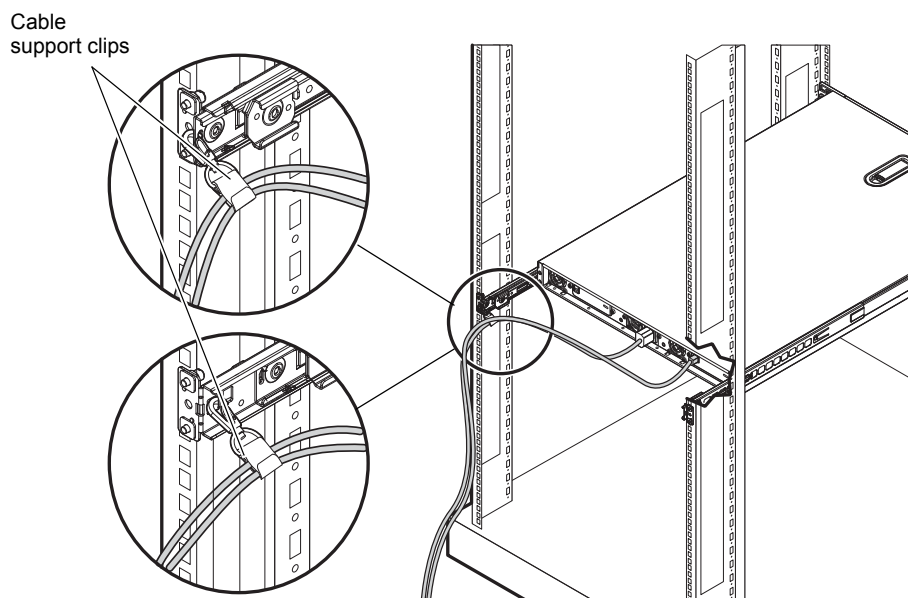
- 4 Tighten the front panel thumbscrews.
- 5 If used, retract the stabilizing feet of the rack.
- 6 Plug the AC power cord into the power cord connector, then into a grounded outlet (see [Figure 28](#)).

Figure 28 Connecting the Power Cable



- 7 On the back panel of the serial-attached SCSI (SAS) 1U Rackmount enclosure:
 - a Connect one end of the supplied external SAS interface cable to the external SAS interface connector on the same side of the enclosure as the installed tape drive (see [Figure 2](#)).
 - b Connect the other end of the external SAS interface cable to the SAS connector on the host server.
- 8 Install the cable support clip(s) at the back of the rack rails on one or both sides of the enclosure (see [Figure 29](#)).

Figure 29 Installing the Cable Support Clips





- 9 Turn on the power to the 1U rackmount enclosure by pressing the power button located on the front panel.

The 1U rackmount enclosure is complete.

Class A Device Declarations

WARNING: 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 instruction's manual, might cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case users are required to correct the interference at their expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.



For assistance, contact the Quantum Customer Support Center:
USA: 800-284-5101 (toll free) or 949-725-2100
EMEA: 00800-4-782-6886 (toll free) or +49 6131 3241 1164
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About Quantum

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