



Scalar i40 and Scalar i80: Tape Drive Replacement

Quantum recommends that you remove and install tape drives with the library power on. It is faster and keeps all non-affected drives and partitions active. To do this, carefully follow the instructions below, to prevent data loss or damage to the Scalar[®] i40 or Scalar i80 library.

The tape drive always resides in a drive sled, and together they are effectively one unit. If you order a new or replacement tape drive, it will already be installed in a sled.

Caution: Do not remove the tape drive from the drive sled.

Note: For multiple tape drive installs in which you are changing control paths, install and verify the tape drives one at a time, rather than all at once.

To replace a tape drive in the library, refer to the following sections:

- [Taking ESD Precautions](#) on page 2
- [Preparing Partitions and Control Paths](#) on page 2
- [Removing a Tape Drive from the Library](#) on page 4
- [Installing a Tape Drive](#) on page 5
- [Replacing a Tape Drive with a Filler Plate](#) on page 7



Taking ESD Precautions

To avoid damaging static-sensitive parts while performing this procedure, observe the following precautions:

- Use an antistatic wrist strap. If you do not have one, touch the outside of the library on the sheet metal before touching any components, to discharge static from your body.
- Keep static-sensitive parts in their original shipping containers until ready for installation. Look for the ESD sticker to identify static-sensitive parts.



- Avoid touching connectors and other components.

Note: Dry climates and cold-weather heating environments have lower relative humidity and are more likely to produce static electricity.

Preparing Partitions and Control Paths

Depending on the types of tape drives you are removing and installing, you may need to reconfigure library partitions or change the control path before you remove and replace the tape drive.

There are four different types of installation, described in the table below. Follow the instructions in the table before proceeding to the remove/install procedures.

Type of Installation	Instructions
Replacing a tape drive that is not assigned to a partition	No special instructions.

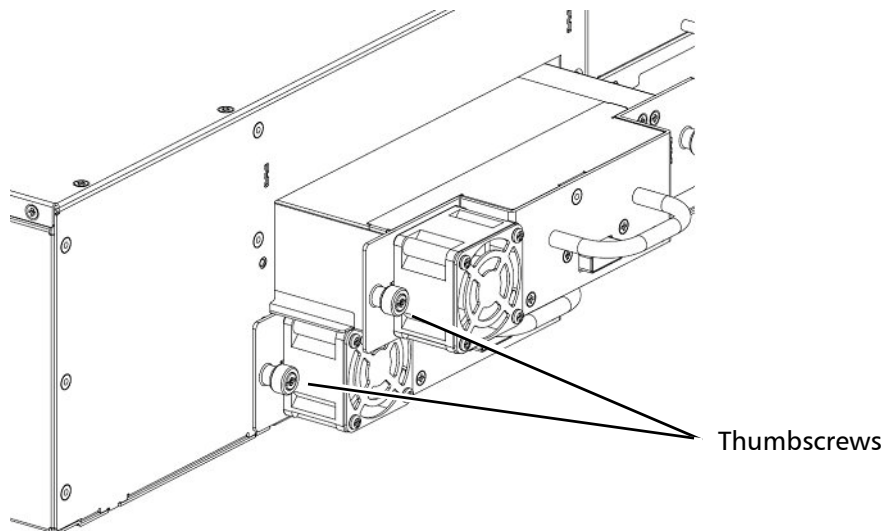
Type of Installation	Instructions
<p>Replacing a tape drive that is assigned to a partition with a tape drive that has the same:</p> <ul style="list-style-type: none"> • Interface type (Fibre Channel or SAS), <i>and</i> • Form factor (half-height or full-height), <i>and</i> • Vendor 	<p>Install the replacement tape drive in the same slot as the removed tape drive.</p> <p>There are no special instructions unless the tape drive you are replacing is the control path in a partition with multiple tape drives, and you want the partition to remain online during the replacement procedure.</p> <p>In this case, select another tape drive as the control path. From the Web client, use the Setup > Control Path menu path.</p>
<p>Replacing a tape drive that is assigned to a partition with a tape drive that has a different:</p> <ul style="list-style-type: none"> • interface type (Fibre Channel or SAS), <i>or</i> • form factor (half-height or full-height), <i>or</i> • vendor 	<ul style="list-style-type: none"> • <i>If the partition contains only one tape drive, delete the partition before removing the tape drive, and then re-create the partition after you install the replacement tape drive.</i> • <i>If the partition contains multiple tape drives, and the tape drive you want to replace is not the control path, delete the tape drive from the partition.*</i> • <i>If the partition contains multiple tape drives, and the tape drive you want to replace is the control path, select another tape drive as the control path.** Then delete the tape drive you want to replace from the partition.*</i> <p>*To delete tape drives from partitions, select Setup > Partitions from the Web client.</p> <p>**To modify the control path, select Setup > Control Path from the Web client.</p>

Removing a Tape Drive from the Library

Caution: Do not remove a tape drive that is currently performing an operation.

- 1 Save the library configuration.
 - a From the Web client, select **Tools > Save/Restore Configuration**.
 - b Select **Save System Configuration** and **Apply**.
- 2 Make sure the tape drive you want to remove is empty of media. From the Operator panel, select **Actions > Tape Drive** and select **Unload**.
- 3 Take the tape drive you want to remove offline.
 - a From the Operator panel, select **Actions > Tape Drive**, and select **Change Mode**.
 - b Select the tape drive and press **Modify**.
 - c Press the **Down** button to select **Offline**, then press **Apply**.
- 4 Disconnect the cable from the back of the tape drive.
- 5 Unscrew the captive thumbscrews securing the drive sled to the back of the library. Half-height tape drives have two thumbscrews (see [Figure 1](#)). Full-height tape drives have four thumbscrews.

Figure 1 Disk Drive Thumbscrews



- 6 Using the handle, pull the drive sled out of the library. It should slide out smoothly and easily.

Wait at least 10 seconds before installing a replacement tape drive to allow the library to recognize that the tape drive has been removed.
- 7 Install a replacement tape drive following the instructions (see [Installing a Tape Drive](#) on page 5). If any empty slots remain, install a filler plate in the

empty slot (see [Replacing a Tape Drive with a Filler Plate](#) on page 7).

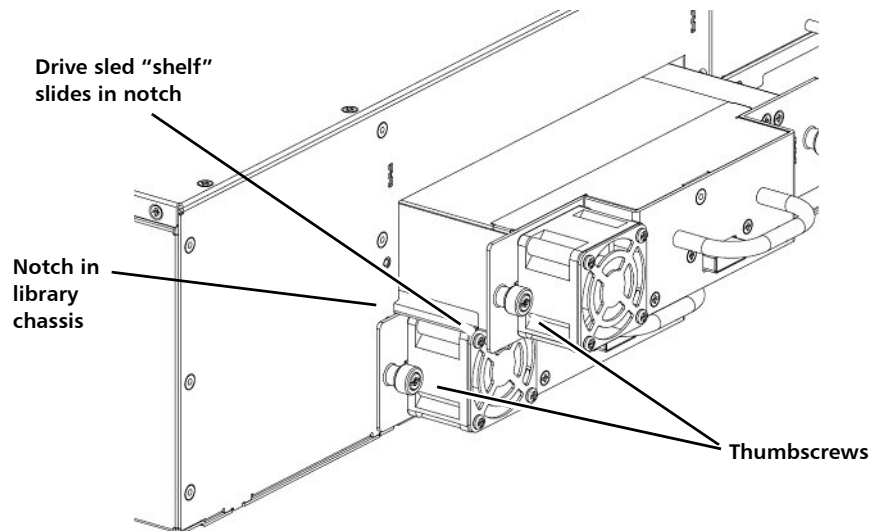
- 8 If you are returning the tape drive to Quantum, wrap it in the antistatic bag in which the replacement tape drive is wrapped, then finish packing it in the same packaging materials from the replacement tape drive. Ship the tape drive to Quantum using the RMA materials included in the packaging.

Installing a Tape Drive

- 1 Insert the tape drive into the empty drive slot.

The “shelf” on the bottom of the drive sled fits into the notch in the library chassis and slides on the plastic guide rails (see [Figure 2](#)). The tape drive must be level to slide in smoothly. When the tape drive is correctly inserted, you will feel a slight “click” as the tape drive sled connector connects into its mating connector in the library chassis.

Figure 2 Installing a Tape Drive



- 2 Tighten the tape drive's captive thumbscrews finger tight to secure the tape drive to the library chassis.

The tape drive LED illuminates red for up to 30 seconds. Then the tape drive fan starts and the LED turns amber, indicating that the tape drive is offline.

- 3 Connect the tape drive cable from the tape drive to the host.

If the firmware on the newly installed tape drive is different from the standard configured on the library, the library will automatically autolevel the new tape drive's firmware upon installation. (See the *Scalar i40 and Scalar i80 User's Guide* for details about tape drive firmware autoleveling).

Autoleveling takes about 7 minutes. A message appears on the Operator panel, indicating that autoleveling is taking place.

If autoleveling is not required, the tape drive takes about 2 minutes to reach a ready state.

- 4 If needed, add the new tape drive to an existing partition or create a new partition for it.
 - a From the Web client, select **Setup > Partitions**.
 - b Complete the necessary screens.
- 5 Bring the tape drive online, if it is not online already.
 - a From the Operator panel, select **Actions > Tape Drive** and select **Change Mode**.
 - b Select the tape drive you want to bring online and press **Modify**.
 - c Use the **Up** button to change the mode to **Online**, then press **Apply**.The tape drive LED turns green.
- 6 Verify the installation by reviewing the Library Configuration report:
 - a From the Web client **Reports > Library Configuration**.
 - b Make sure that the new drive is online, in the correct partition, and has the control path status that you want. You may need to refresh your Internet browser.
- 7 Verify that the host computer and backup applications can see the new tape drive configuration correctly.
- 8 If any empty slots remain, install a filler plate in the empty slot (see [Replacing a Tape Drive with a Filler Plate](#) on page 7).

Caution: Filler plates are required to maintain proper library cooling. Do not run the library with uncovered slots.

- 9 Run the tape drive diagnostic test on the newly installed tape drive to be sure it is functioning correctly:
 - a Install a scratch tape in the top I/E station slot.
 - b If manual cartridge assignment is enabled, assign the scratch tape to the System partition.
 - c From the Operator panel, select **Tools > Diagnostics**.
 - d Continue through the next few screens to run the tape drive test on the replaced tape drive.

If a problem is found during testing, you receive a diagnostic ticket. See the *Scalar i40 and Scalar i80 User's Guide* for more information about the tape drive test.

Replacing a Tape Drive with a Filler Plate

The filler plate is half-height in size. If you remove a full-height tape drive, you must install two filler plates to cover the opening.

- 1 The tape drive filler plate has no “top” or “bottom” orientation – it can go in either way (see [Figure 3](#) on page 7).
- 2 Slide the filler plate into the slot, and tighten the thumbscrews.

Figure 3 Tape Drive Filler Plate

