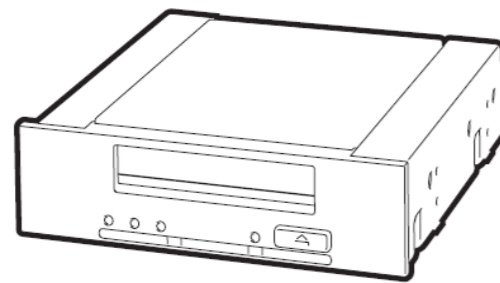# Quantum. DAT 160 SAS

Internal Tape Drive Quick Start Guide

Start Here

Important Information About Your New Tape Drive

Installation decisions require a clear understanding of your server's current SAS configuration.

- With some servers you can connect to a spare SAS connector on the SAS controller. This is a straightforward installation, and it is recommended.
- With servers that do not have a spare internal connector, you will need to rewire the hard disk drive bays. In a few instances, you might also lose the use of one of the hard disk drive bays. Caution is advised for this installation. Do NOT use this cabling option if the hard disk drive bay is already occupied or will be required for future use.

The simplest way to connect the tape drive to your SAS server is to purchase and install one of the supported HBAs. You might also need to purchase an additional cable.

For the most up-to-date information about supported SAS HBAs, refer to www.quantum.com/support.

For detailed operating instructions, see the User's Guide on the Product Documentation CD.

| Warning: | To avoid personal injury or damage to the server or tape drive, disconnect your server from the main power source before installing the tape drive.

To avoid damage to the server or tape drive, observe all recommended anti-static and power-grounding precautions, as specified in your server and tape drive manuals. |
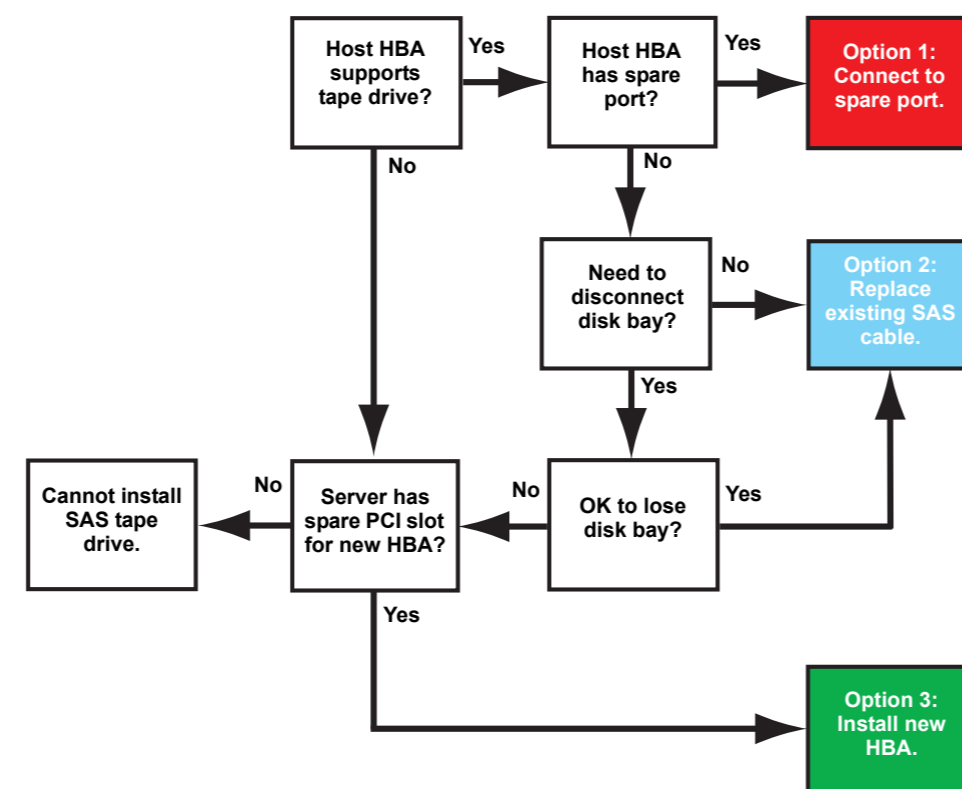
Part 1
Getting Started

Before installing your tape drive, always determine:

- Is connection to your SAS server supported?
- Can you connect to the host SAS controller or do you need to purchase an additional HBA?
- If you connect to the host SAS controller, does it have a spare SAS port to which you can attach the supplied cable, or must you use the supplied cable to replace one of the existing cables? If so, will you lose the use of a hard disk drive bay, and which one will it be?
- If you connect to a new HBA, can you use the supplied cable, or must you purchase an additional cable?
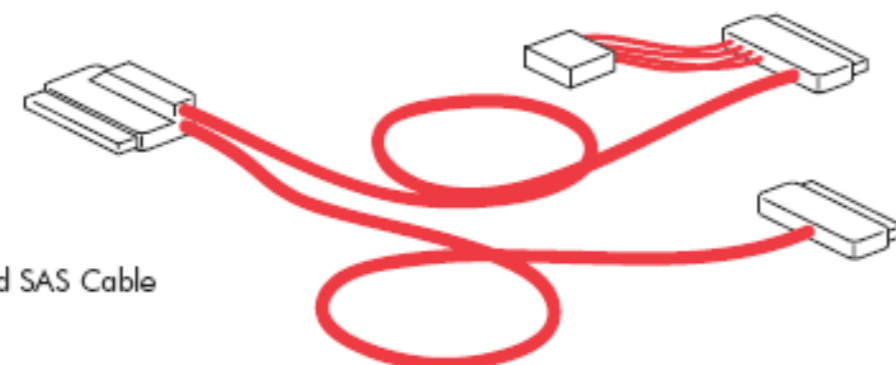
81-81845-01 A01, September 2007

Part 2
Determining Your Installation Model

This guide describes how to install an internal Quantum DAT 160 SAS tape drive on a SAS server.

| Caution: | You can damage your server configuration if you follow the wrong cabling instructions. Use the following diagram to determine which instructions in this guide are appropriate for your server. |

The supplied split cable can be used to connect to the host controller on the SAS server or to an additional SAS HBA. It has four connectors, as shown below.

Supplied SAS Cable

- If you are connecting to a spare connector on the host HBA (Option 1) or to an additional HBA (Option 3), you will use only two of the connectors. This will leave unused cabling within the server, which should be neatly coiled and secured.
- If you are connecting to the host controller by replacing an existing SAS cable (Option 2), you will use all four connectors. Depending on server model, this could affect your hard disk drive configuration.
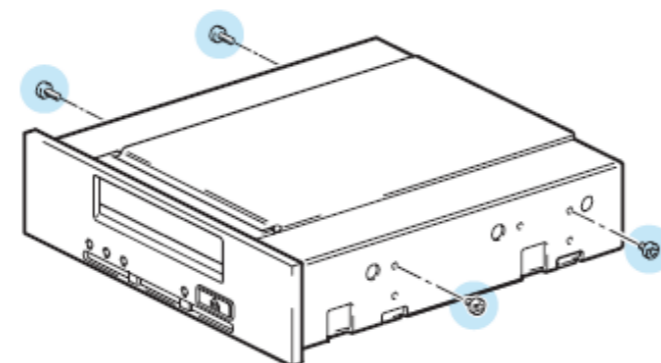
Part 3
Installing the Tape Drive/Option 1

Connect to a Spare Port on the Host Bus Adapter

The following instructions are valid **ONLY IF** the host SAS controller on your server has a spare SAS connector.

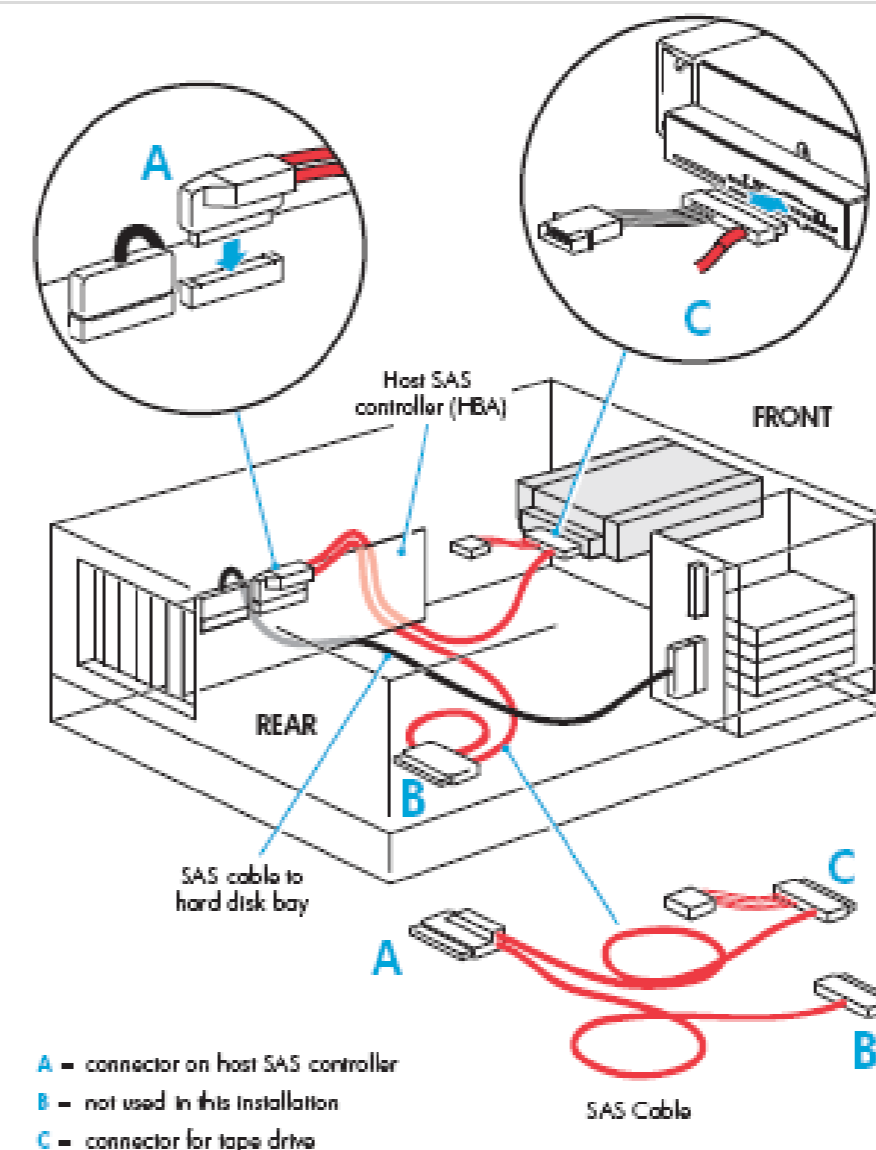**1. Attach the mounting hardware.**

If required, use the appropriate mounting hardware supplied with your server or with the tape drive. Refer to your server documentation.
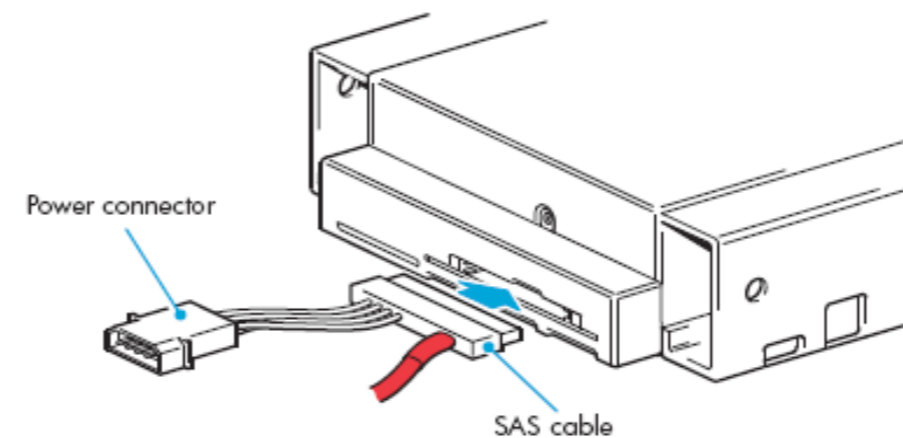

2. Install the tape drive.

| Tech Tip: | If cable access for the tape drive bay is awkward, it might be easier to access power and other connections if the tape drive is installed in the top bay. You might need to move other devices to lower bays to achieve this. |

3. Connect the SAS cable supplied with the tape drive to the spare SAS port on the host SAS controller.

A = connector on host SAS controller
B = not used in this installation
C = connector for tape drive

4. Connect the SAS cable and power connector to the tape drive.

- SAS connector to the tape drive.
- Power connector to the server's power supply.

5. Power up the server.

Replace server covers and power up the server.

Watch the boot screen carefully, and verify that the new SAS tape drive is listed in the boot sequence.

If there are any errors or unexpected messages, go back and check the SAS cabling carefully.

6. Install the driver.

If you have not already installed the driver, do it now.

- For Windows, the driver is available at www.quantum.com/support.
- For Linux, refer to www.quantum.com/support for configuration information.

7. Upgrade your backup application software.

Always upgrade your backup application software to make sure it works correctly with the tape drive. We do **NOT** recommend native backup applications, such as Windows Backup, because they do not support the full features of the tape drive and could cause performance problems.

Part 3
Installing the Tape Drive/Option 2

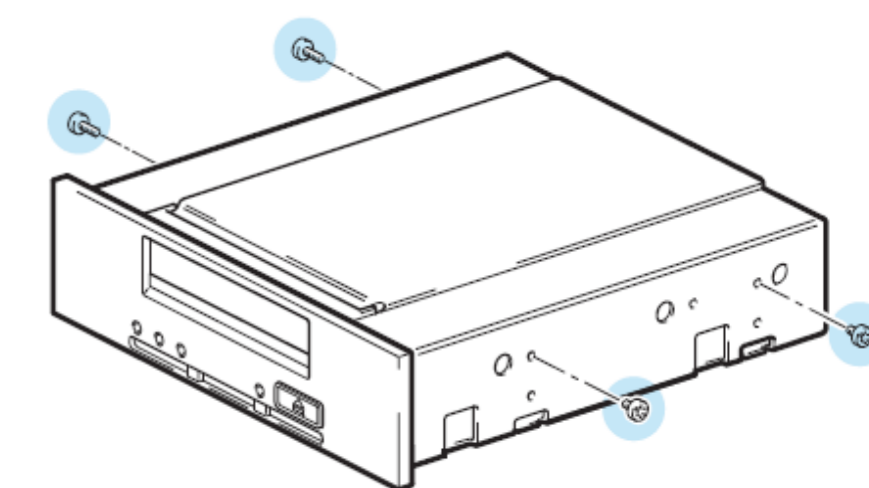## Replace the Existing Cable and Connect to a Port on the Host Bus Adapter

The following instructions apply **ONLY IF** the host SAS controller on your server does not have a spare SAS connector and www.quantum.com/support advises that connection is supported.

| Caution: | Be aware that this option might also disconnect one of your hard disk drive bays. You should always determine whether this is the case with your server, and which hard disk drive bay is disconnected. Caution is advised for this installation. Do not use this cabling option if the hard disk drive bay is already occupied or will be required for future use. |

You might need to remove components, such as fan banks, while you work with the cable. Cable routing varies from one server to another. Always refer to your server documentation to identify the location and orientation of SAS connectors and for specific advice on cable routing.

1. Attach the mounting hardware.

If required, use the appropriate mounting hardware supplied with your server or with the tape drive. Refer to your server documentation.
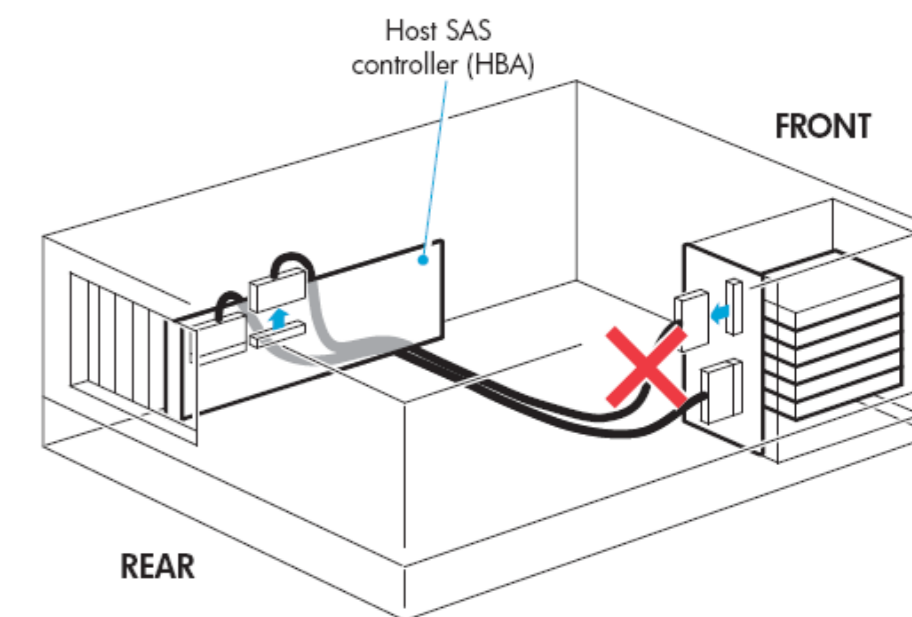

2. Install the tape drive.

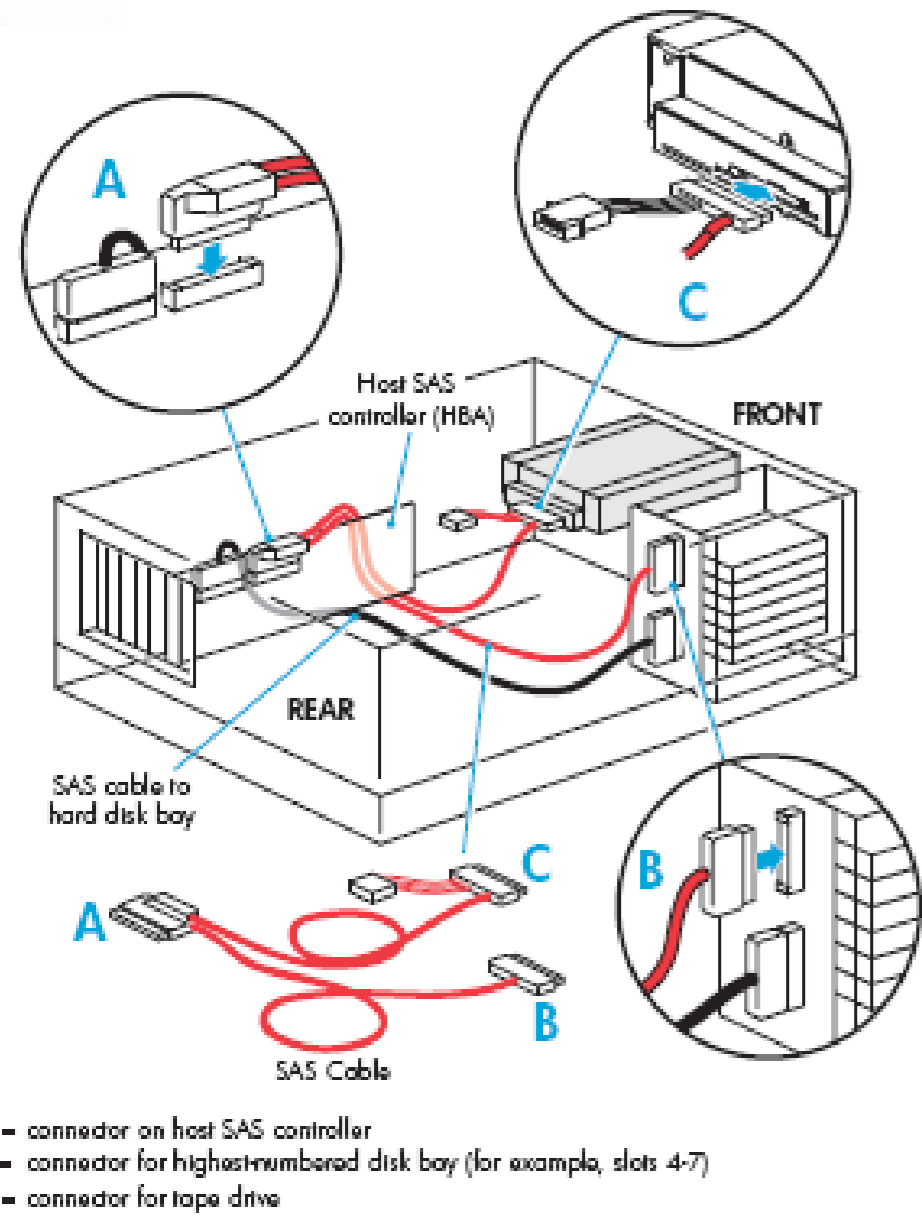| Tech Tip: | If cable access for the tape drive bay is awkward, it might be easier to access power and other connections if the tape drive is installed in the top bay. You might need to move other devices to lower bays to achieve this. |

3. Locate the existing SAS cable and determine whether a hard disk drive bay will be lost.

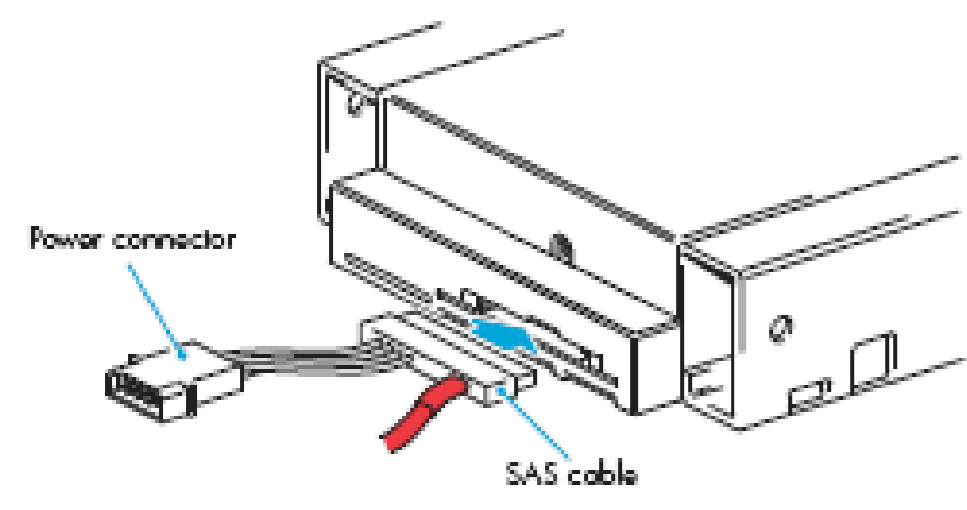| Important: | If the hard disk drive bay is in use, **STOP**. Even if other hard disk drive bays are empty, the installation will not work. (Do not move a hard disk to create an empty bay because you could damage your server configuration.) You must purchase and install a new HBA. |

Locate the cable that connects the hard disk drive bay to the SAS controller (HBA) and remove it completely. (The existing cable will be replaced by the supplied cable.)

4. Connect the new SAS cable supplied with the tape drive to the HBA, the tape drive, and the hard disk drive bay.

A = connector on host SAS controller
B = connector for highest-numbered disk bay (for example, slots 4-7)
C = connector for tape drive

5. Connect the server power cable to the tape drive power connector.

6. If required, attach a bay-disconnected note to the empty hard disk drive bay.

If this option disconnects one of your hard disk drive bays, you will not be able to use the disk bay after installation. If you install a hard disk in this bay, the disk will not work. This does not mean there is a fault with either the hard disk or the server.

As a future reminder, attach a note indicating that the bay has been disconnected to the the blanking plate of the hard disk drive bay.

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7. Power up the server.

Replace server covers and power up the server.

Watch the boot screen carefully, and verify that the new SAS tape drive is listed in the boot sequence.

If there are any errors or unexpected messages, go back and check the SAS cabling carefully.

8. Install the driver.

If you have not already installed the driver, do it now.

• For Windows, the driver is available at www.quantum.com/support.
• For Linux, refer to www.quantum.com/support for configuration information.

9. Upgrade your backup application software.

Always upgrade your backup application software to make sure it works correctly with the tape drive. We do **NOT** recommend native backup applications, such as Windows Backup, because they do not support the full features of the tape drive and could cause performance problems.

Part 3
Installing the Tape Drive/Option 3

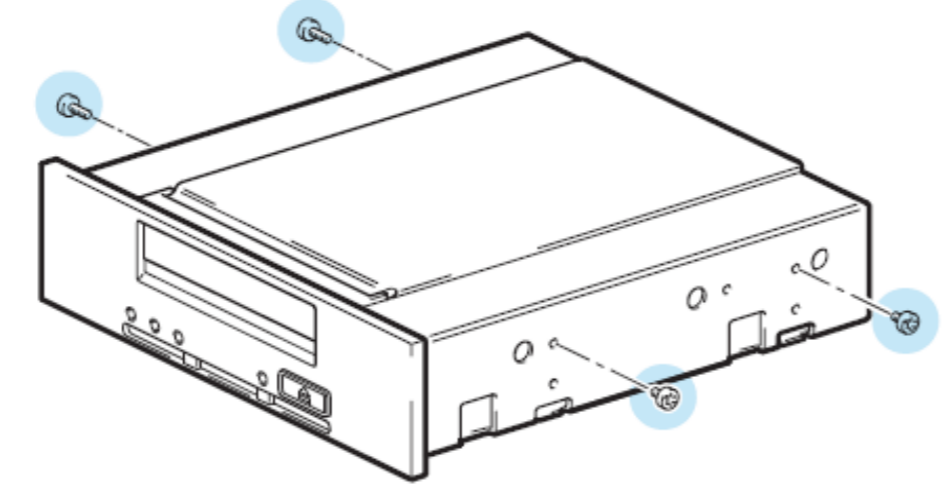### Install and Connect to a New Host Bus Adapter

The following instructions are valid **IF** you cannot connect to the host SAS controller on your server and need to purchase an additional SAS HBA. This will be the case for some servers. You might also choose this option if connection to your server would disconnect one of your hard disk drive bays.

1. Install the new HBA.

Follow the instructions supplied with the HBA to install the new SAS HBA.
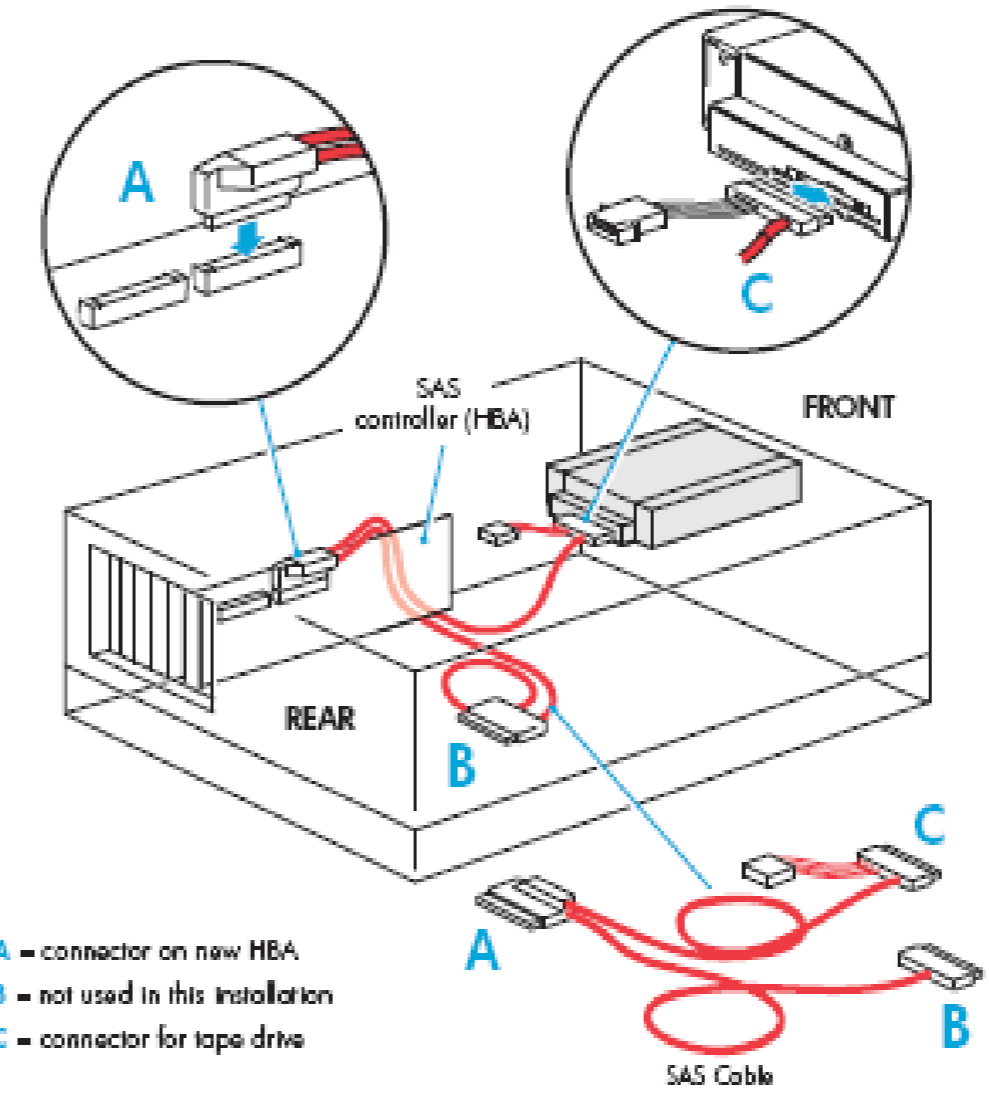
2. Attach the mounting hardware.

If required, use the appropriate mounting hardware supplied with your server or with the tape drive. Refer to your server documentation.

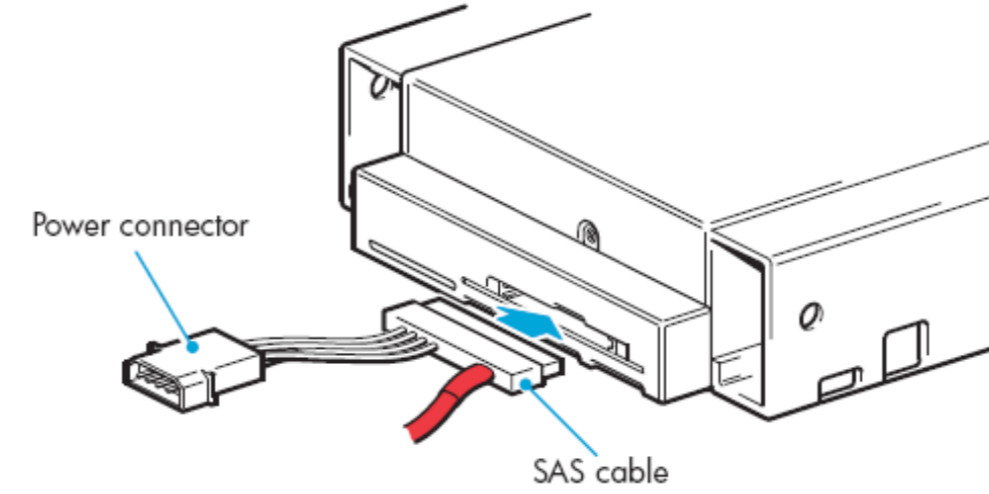**3. Install the tape drive.**

> **Tech Tip:** If cable access for the tape drive bay is awkward, it might be easier to access power and other connections if the tape drive is installed in the top bay. You might need to move other devices to lower bays to achieve this.

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4. Connect the SAS cable supplied with the tape drive to the new HBA and the tape drive.

A = connector on new HBA
B = not used in this installation
C = connector for tape drive

> **Note:** This will leave unused cabling within the server because the 'B' connector is not required in this configuration. Neatly coil and secure the unused cabling so that it does not interfere with other components inside the server.

5. Connect the server power cable to the tape drive power connector.

6. Power up the server.

Replace server covers and power up the server.

Watch the boot screen carefully, and verify that the new SAS tape drive is listed in the boot sequence.

If there are any errors or unexpected messages, go back and check the SAS cabling carefully.
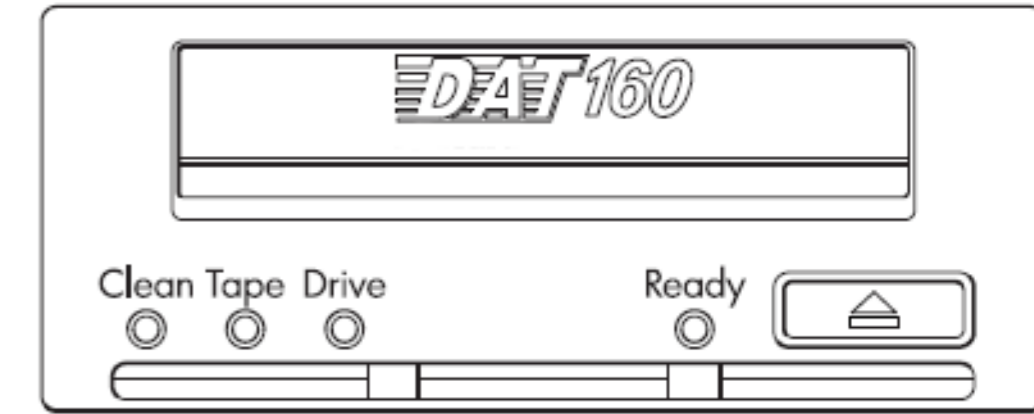
7. Install the driver.

If you have not already installed the driver, do it now.

• For Windows, the driver is available at www.quantum.com/support.
• For Linux, refer to www.quantum.com/support for configuration information.

8. Upgrade your backup application software.

Always upgrade your backup application software to make sure it works correctly with the tape drive. We do **NOT** recommend native backup applications, such as Windows Backup, because they do not support the full features of the tape drive and could cause performance problems.

Part 4
Understanding the Front Panel LEDs

Clean – amber	• On: cleaning cartridge in use. • Off: the drive does not require cleaning. • Flashing: the drive needs cleaning.
Tape – amber	• Off: no fault has been detected. • Flashing: the cartridge currently in the drive is faulty (damaged or unsupported). Discard the cartridge.
Drive – amber	• Off: no fault has been detected. • Flashing: the drive mechanism has detected a hardware error.
Ready – green	• On: the drive is ready for use. • Off: the drive power is off or there was a failure during self-test. • Flashing: the drive is busy.

Part 5
Selecting and Handling Media

For optimum performance and storage capacity, always use DAT 160 cartridges with your tape drive, and normally use only one cartridge per day.

> **Note:** Quantum DAT 160 data and cleaning cartridges can only be used with DAT 160 tape drives; they are wider than earlier formats and will not fit into earlier model tape drives.

Table 1   Ultrium Data Cartridge Compatibility

	DDS/DAT cleaning cartridge II	DDS-2	DDS-3	DDS-4	DAT 72	DAT 160
DAT 160	cleaning cartridge	not supported	not supported	read/write	read/write	160 GB* read/write

* Capacity assumes 2:1 compression.

It pays to look after your media. Many tape drive and backup failures are caused by damaged or badly handled tape media.

• Keep media in the case provided.
• Follow the temperature, humidity and acclimitization guidelines on the media packaging.
• Avoid dropping it or rough handling, as this is likely to damage the cartridge.
• Inspect it regularly for damage.
• Do not exceed normal cartridge life (100 full volume backup or restore operations).

Part 6
Getting Additional Information

• See www.quantum.com/support for product documentation, updates and compatibility information, and up-to-date product information.
• If necessary, technical help can be obtained from Quantum Global Services. Contact details are available at www.quantum.com.