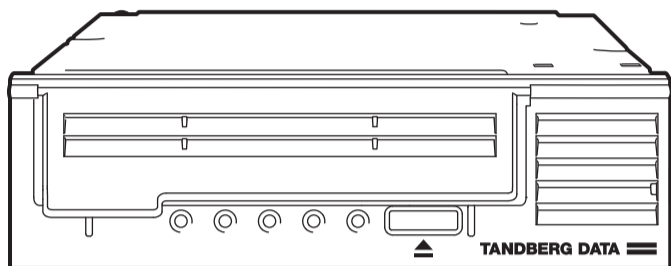


Tandberg Data LTO-3, LTO-4 & LTO-5
HH SAS Internal Tape Drives

QUICK START



This quick start guide describes how to connect and install an internal Tandberg Data LTO-3, LTO-4 or LTO-5 SAS tape drive within a server.

WARNING: To avoid personal injury or damage to the server or tape drive, disconnect your server from the mains power supply before installing the tape drive. To avoid damage to server or tape drive observe all recommended anti-static and power-grounding precautions, as specified in your server and tape drive manuals.

1 Refer to www.tandbergdata.com

Before you install your tape drive, always refer to www.tandbergdata.com to find out:

- Is the SAS connection on your server supported, or do you need to purchase an additional SAS HBA.
- What SAS cables (not supplied) are required to complete the installation.

2 Install and connect to host HBA

The following instructions are valid **ONLY** for servers with an HBA that supports internal SAS ports. You must purchase a supported HBA and cable, if you do not already have a SAS card installed. See www.tandbergdata.com for recommended products. You need a spare PCI slot for the new HBA.

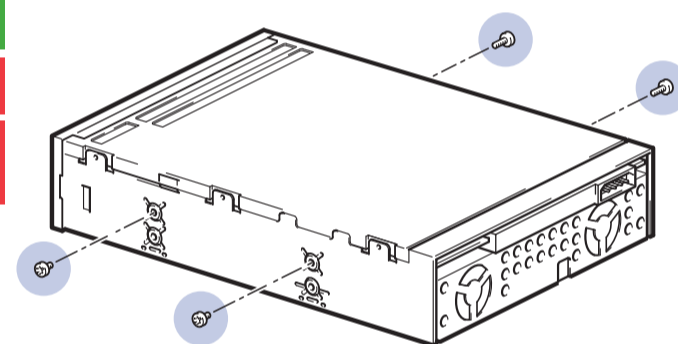
1. If necessary install the new HBA

Follow the instructions supplied with the HBA to install the new SAS HBA and any required drivers.

2. Attach the mounting hardware (some servers only)

Screw packs are labeled for each server type; always use the specific screws for your server. **Follow the instructions in the screw pack. You may damage your tape drive if you use screws that are too long, because the Tandberg LTO half-height tape drive allows only 3mm of the engagement of the screw into the drive.**

Use screws supplied with new tape drive	YES
Do not use screws attached to server	NO
Do not use screws attached to device you are replacing	NO



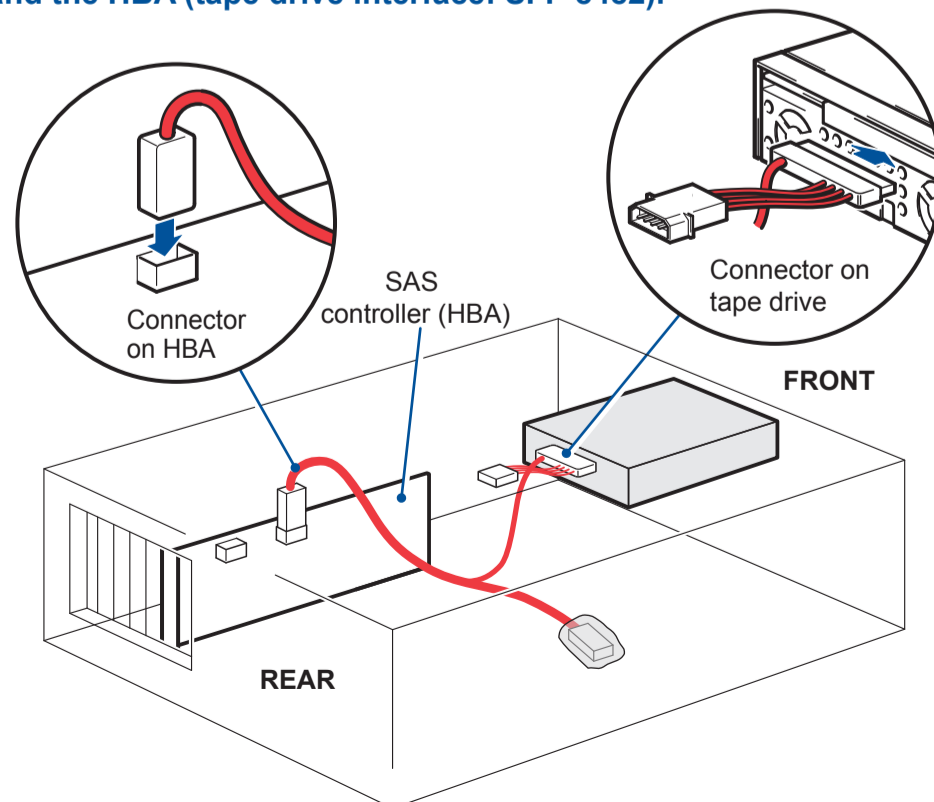
NOTE: The illustration shows one method of mounting hardware; it does not apply to all servers. Please refer also to the "User Guide" and your server documentation.

3. Install the tape drive

Install the tape drive, as described in the "User Guide".

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

4. Connect the SAS cable (not supplied) between the tape drive and the HBA (tape drive interface: SFF-8482).



Printed on at least 50% total recycled fiber with at least 10% post-consumer paper

© 2010 Tandberg Data

Printed in the EU

www.tandbergdata.com

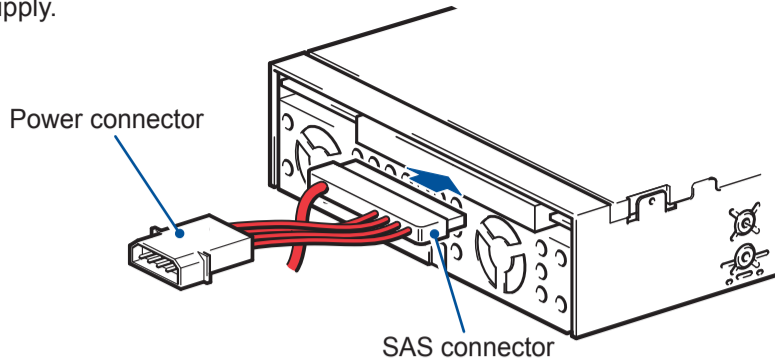
Part No. 433868-01



5. Connect the SAS and power cables to the tape drive.

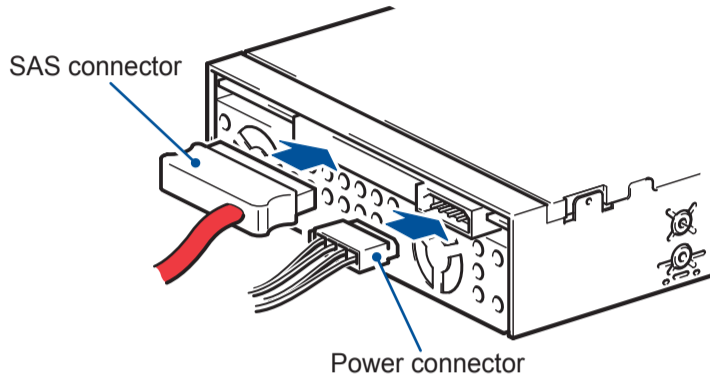
LTO-5 tape drives

Connect the power connector on the SAS data cable to the server's internal power supply.



LTO-3 and LTO-4 tape drives

Connect a spare power cable from the server's internal power supply to the power connector on the back of the tape drive.



6. Power up the server

Power up the server. Watch the boot screen carefully after installation. Check to see that the new SAS tape drive is listed in the boot sequence. If there are any error or unexpected messages go back and check the SAS cabling carefully.

7. Install drivers

For Windows systems, download the latest drivers from www.tandbergdata.com. For other operating systems, patch to the latest version of the operating system, following the instructions in the patch documentation.

8. Upgrade backup software

Always **upgrade** your software application to ensure 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 may cause performance problems.

NOTE: Some backup applications require you to use their own drivers. Refer to the documentation of your software application to ensure you are using the recommended driver.

3 Hardware encryption and your Tandberg Data LTO-5 and LTO-4 tape drive

Your Tandberg Data LTO-5 and LTO-4 tape drive provides the ability to hardware encrypt your data, applying the strongest level of AES industry-standard encryption and protecting the data from unauthorized access and use. Encryption is supported only on Tandberg Data LTO-5 3 TB and LTO-4 1.6 TB media; media encrypted on a Tandberg Data LTO-5 and LTO-4 drive can only be read on a compatible Ultrium tape drive that supports hardware encryption.

Hardware encryption can be used with or without compression and without speed or capacity penalties.

IMPORTANT: Hardware encryption is a powerful feature, but should be used with care. If you need to import your media onto another machine or to recover after disaster you will be required to enter an encryption key.

- Hardware encryption is turned off by default and is switched on by settings in your backup application, where you also generate and supply the encryption key.
- Your backup application must support hardware encryption for it to work. The software supplied with the tape drive provides this support. See www.tandbergdata.com for an up-to-date list of backup software.
- You should keep a record or backup of your encryption keys and store them in a secure place separate from the computer running the backup software.
- If you are unable to supply the key when requested to do so, neither you nor Tandberg Data Support will be able to access the encrypted data.

4 Choosing and looking after media

Your high-performance tape drive works best with high-performance Tandberg Data LTO media. For optimum performance always use a data cartridge that matches the specification of your tape drive (see table).

Table: Tandberg Data LTO data cartridge compatibility

	Tandberg Data LTO-5 HH	Tandberg Data LTO-4 HH	Tandberg Data LTO-3 HH
LTO-5 3 TB*	Read/Write (Recommended)	No	No
LTO-5 3 TB* WORM	Write Once Read Many (Recommended)	No	No
LTO-4 1.6 TB*	Read/Write	Read/Write (Recommended)	No
LTO-4 1.6 TB* WORM	Write Once Read Many	Write Once Read Many (Recommended)	No
LTO-3 800 GB*	Read only	Read/Write	Read/Write (Recommended)
LTO-3 800 GB* WORM	Read only	Write Once Read Many	Write Once Read Many (Recommended)
LTO-2 400 GB*	No	Read only	Read/Write
LTO-1 200 GB*	No	No	Read only

* Capacity assumes 2:1 compression.

The recommended cleaning cartridge is the Tandberg Data LTO universal cleaning cartridge. This cartridge is designed to work with any Ultrium drive and may be used for up to 50 cleans.

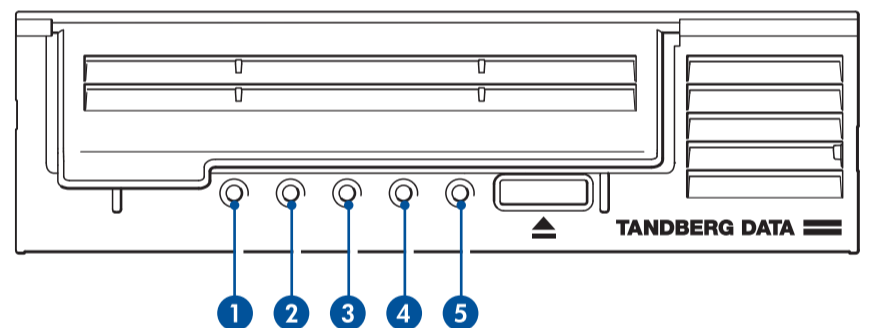
It pays to look after your media

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 acclimatization 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 (260 full volume backup or restore operations).

For detailed information on media care and best practice and to order online, refer to www.tandbergdata.com.

5 Understanding the LEDs



LTO-5 drives only

1 Encryption – blue/amber

- On (blue or amber): at power on
- Off: drive is idle with no encryption key
- Off with Ready LED flashing: drive is reading/writing unencrypted data or unloading cartridge
- On (blue): drive is idle with encryption key
- On (blue) with Ready LED flashing: drive is reading/writing encrypted data
- Blue and Amber flashing alternately: encryption or decryption error

NOTE: The Encryption LED only appears on the LTO-5 tape drive.

LTO-5, LTO-4 and LTO-3 drives

2 Clean – amber

- On: cleaning cartridge in use
- Off: the drive does not require cleaning
- Flashing: the drive needs cleaning

3 Tape – amber

- Off: no fault has been detected
- Flashing: the cartridge currently in the drive is faulty (damaged or unsupported). Discard the cartridge.

4 Drive – amber

- Off: no fault has been detected
- Flashing: the drive mechanism has detected a hardware error

5 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

6 Other sources of information

There is a more detailed "User Guide" on www.tandbergdata.com.

If you need technical support or have any problem with your LTO-3 HH, LTO-4 HH or LTO-5 HH tape storage solution, phone, fax and addresses can be found under www.tandbergdata.com **SUPPORT**.