

# LTO Half-Height SCSI External Tape Drive

## Quick Start Guide

### Overview

This document describes how to unpack and install an Overland LTO Half-Height SCSI External Tape Drive to an external host bus adapter (HBA) port using a purchased cable.

**WARNING:** To reduce the risk of electric shock or damage to equipment, always remove any power cords while working with the unit.

**AVERTISSEMENT:** pour réduire le risque de choc électrique ou endommagement de l'équipement, retirez toujours les cordons électriques en travaillant avec l'appareil.

**CAUTION:** While working with the unit, observe standard Electrostatic Discharge (ESD) precautions to prevent damage to micro-circuitry or static-sensitive devices.

**NOTE:** Cables are not supplied in the External Tape Drive product kits. These cables must be purchased separately.

### Register First

Before starting, it is **essential** that you activate your Overland warranty. Technical and warranty support are **not available** until this is done:

1. Go to the **Overland Storage** web site (<http://www.overlandstorage.com/>).
2. Select **Service & Support > My Products**.
3. At the [Site Login](#), enter your **e-mail address** and **password**, and click **GO**.

**NOTE:** If you are not yet a member, click "New member?" and follow the instructions given. It's free and easy!

E-mail:

Password:

Remember Me

**GO >**

[Forgot your password?](#) [New member?](#)

4. Click the **Register New Product** button.
5. Fill in the information and click **Submit**.

**IMPORTANT:** Within three business days, you will receive an e-mail from Overland with your warranty certificate. Follow the instructions included to complete the process.

### Introduction

Before you install your tape drive, make sure that:

- You are connecting to an Ultra320 SCSI HBA for an LTO-4/LTO-3 drive or an Ultra160 SCSI HBA (or higher) for an LTO-2 drive using a supported cable.
- You are using the correct driver.

### Preparing The Host

#### SCSI Cable and Termination

Use a 68-pin, wide, supported SCSI cable (1) to connect to the drive. The tape drive provides active termination (it does not require a terminator) if it is the only device on the SCSI bus.

Daisy-chaining multiple devices is **not** recommended. If you do so, do not mix drive families (only daisy-chain with other Ultrium tape drives) and attach no more than two devices to the same SCSI bus. The last device on the SCSI chain must be terminated correctly.

#### SCSI HBA Card

If you do not already have a SCSI HBA card installed, you must purchase a supported HBA card along with a matching cable. You need a spare PCI slot for the card.

Your tape drive will work with lower-rated LVDS SCSI but performance may be degraded. Single-ended SCSI will degrade performance and limit cable length. Do not attach to narrow or HVD SCSI.

#### Drivers

For Windows systems, download the latest drivers from the HP tape drive drivers web site. For other operating systems, patch to the latest version of the operating system, following the instructions in the patch documentation.

#### Backup software

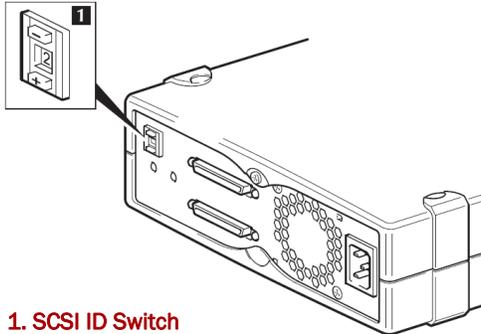
It is recommended to **upgrade** your backup software application to ensure it works correctly with the new external tape drive. We do **NOT** recommend native backup applications, such as Windows Backup, because they do not support the full features of the tape drive and may cause performance problems.

**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.



## Checking the SCSI ID

Your LTO Half-Height tape drive is shipped with a default SCSI ID of 2, but it can be assigned any unused ID between 0 and 15. Do not use SCSI ID 7, which is reserved for the SCSI controller, or SCSI ID 0, which is typically assigned to the boot disk.

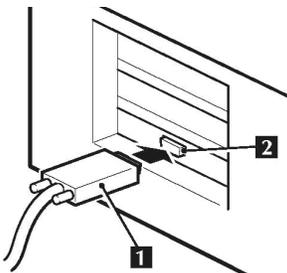


1. SCSI ID Switch

## Connecting the Tape Drive

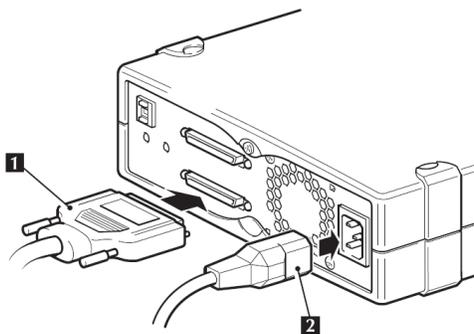
**CAUTION:** Turn off and remove the power cords from the server.

1. Connect the SCSI cable to the server HBA card.  
The cable connector may be different than the one pictured depending on the HBA card used.



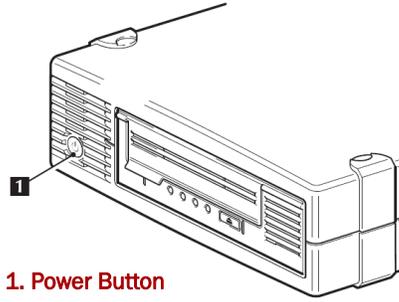
1. SCSI Cable 2. SCSI Connector

2. Connect the SCSI cable (1) and power cord (2) to the tape drive.



1. SCSI Cable 2. Power Cord

3. Power up the tape drive and server.



1. Power Button

- a. Power on the tape drive using the power button located at the front of the tape drive.
- b. Check the Ready LED on the front panel to make sure the tape drive is ready for use.
- c. Plug in and turn on the host server.

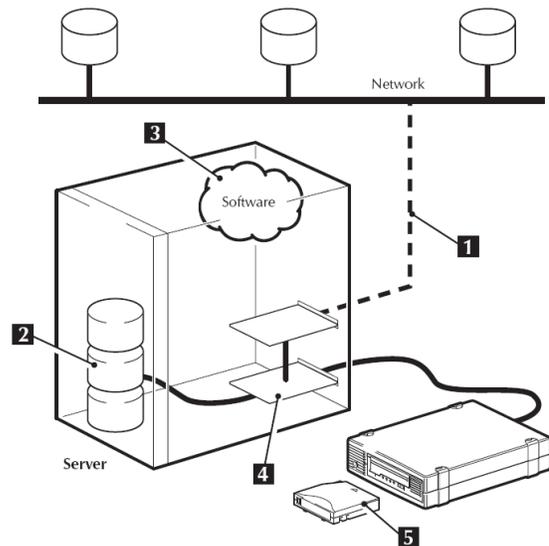
Watch the boot screen carefully during the boot process. Check to see that the new tape drive is listed in the boot sequence.

**NOTE:** If there are any error or unexpected messages, go back and check the SAS cabling carefully.

## Checking Product Performance

If performance is not meeting expectations and you are not meeting your backup window, check for bottlenecks in your system architecture.

**What causes bottlenecks?** Review the numbered items that follow which match the graphic numbering below.



1. We recommend direct connection for LTO-4 and LTO-3 tape drives. If you back up over a network, anything less than Gigabit Ethernet may limit performance.
2. A single disk may limit backup performance. Have disks in parallel (for example, RAID 5) if possible or, if your backup application supports interleaving of data, back up streams from multiple sources.

- Use the latest version of your backup application. Native backup applications, such as Windows backup, may limit performance.
- Connect the tape drive to a dedicated SCSI bus. Use a PCI-express or a 64-bit PCI expansion slot for your SCSI card. Use an Ultra320 SCSI HBA in a 64-bit/66MHz or better expansion slot for LTO-4/LTO-3. Use an Ultra160 or higher for LTO-2.
- For optimum performance, use LTO-4 R/W and WORM cartridges with LTO-4 tape drives, LTO-3 R/W and WORM cartridges with LTO-3 tape drives, and LTO-2 R/W cartridges with LTO-2 tape drives.

## LTO-4 Hardware Encryption

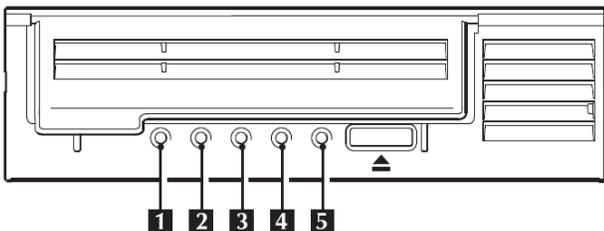
Your LTO-4 tape drive provides the ability to hardware encrypt your data, applying the strongest level of AES industry-standard encryption and protecting the data from unauthorized access and use. Encryption is supported only on LTO-4 media (1.6 TB); media encrypted on a LTO-4 drive can only be read 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.
- 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 Overland Storage will be able to access the encrypted data.

## Understanding LEDs



- Clean** – amber
  - On: cleaning cartridge in use.
  - Off: the drive does not require cleaning.
  - Flashing: the drive needs cleaning.
- Tape** – amber
  - On: no fault has been detected.
  - Flashing: the cartridge currently in the drive is faulty (damaged / 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.

## Media Choice and Care

Your high-performance tape drive works best with high-performance LTO media. For optimum performance, always use a data cartridge that matches the specification of your tape drive (see [Table 1](#)).

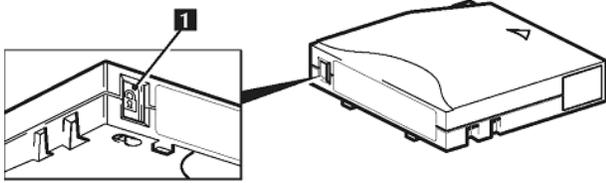
**Table 1: LTO SCSI Data Cartridge Compatibility**

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

\* Capacity assumes 2:1 compression.

The recommended cleaning cartridge is the 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



1. Write-Protect Switch

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 Overland's web site.

## More Information

### Access Product Information

For detailed information about your products including entitlement, click the Service & Support tab and select **My Products > View Products**. Log in if you haven't already done so.

For the answers to the most commonly asked questions, select the appropriate product family page under **Downloads and FAQ's** tab.

To search our extensive knowledge base for more answers, select **Get Help > Search Knowledgebase**.

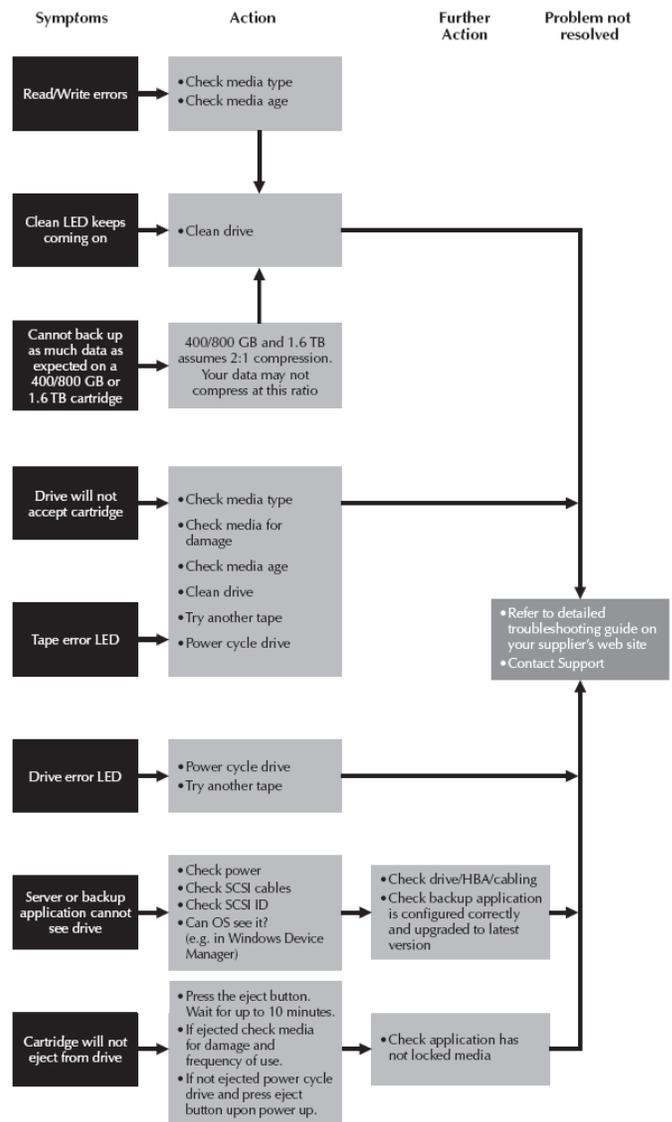
**NOTE:** If you want to be notified whenever a change is made, click *Watch Category* in the *Tools* box on the upper right on the *Knowledgebase sub-category* pages.

## Detailed Warranty Information

To view detailed warranty information for Overland products, click **Service > Warranty** or follow this link:

- <http://support.overlandstorage.com/support/service-coverage.html>

## Troubleshooting



You can get additional technical support on the Internet at <http://support.overlandstorage.com>, or by contacting Overland Storage using the information found on the [Contact Us](#) page on our web site.