

LTFS Implementation using Tandberg Data LTO-7 Stand-Alone LTO Tape Drives

Since the introduction of LTO version 5, LTFS is a standard feature of LTO tape drives. LTFS stands for Linear Tape File System, which is embedded in the LTO tape drive hardware. Backup and long term archiving using LTFS can be easier and more transparent as an LTO cartridge appears as a single, local disk drive on a host computer.

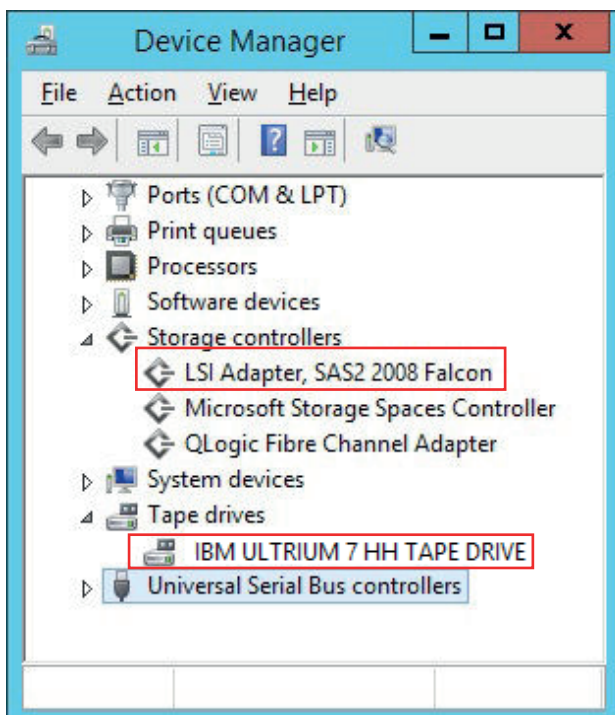
Prior to the release of LTFS, it was required to use backup or archiving software to record data to an LTO tape cartridge. Using LTFS software on a host or computer, the LTO tape drive with an LTFS formatted cartridge shows up as a single disk drive represented by a drive letter. An LTFS formatted cartridge provides similar disk functions such as copy and paste to send data to tape. LTFS enables the file system feature by partitioning the tape cartridge into two sections; a Data partition and an Index partition. The Index partition contains a subset of the data in the data partition and metadata. The Data partition contains all of the data and metadata.

The LTFS software for LTO-7 stand-alone or internal tape drives may be downloaded from the [Tandberg Data Website](#). This article will cover basic LTFS integration using Tandberg Data LTO-7 tape drives in Windows 2012 Server. The LTFS is also available for Windows 8/10, MAC and Linux.

Prerequisites

The server or host the LTO tape drive connects too must have a FC HBA or SAS HBA, which supports the tape drive SCSI command set. (see [Compatibility Matrix](#)).

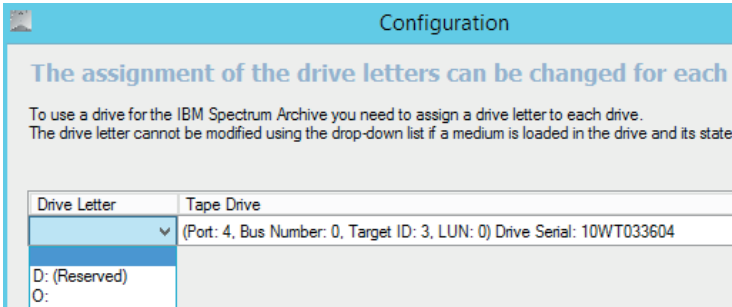
For Windows, the tape drive must show up in Windows device Manager. All other operating systems, the tape drive must show up in their respective device management. The LTFS Console will only connect to Overland Tandberg Data LTO-7 tape drives, which are listed in device manager or device management depending on the OS.



Storage adapter and LTO drives must be listed in the device manager.

Implementing LTFS

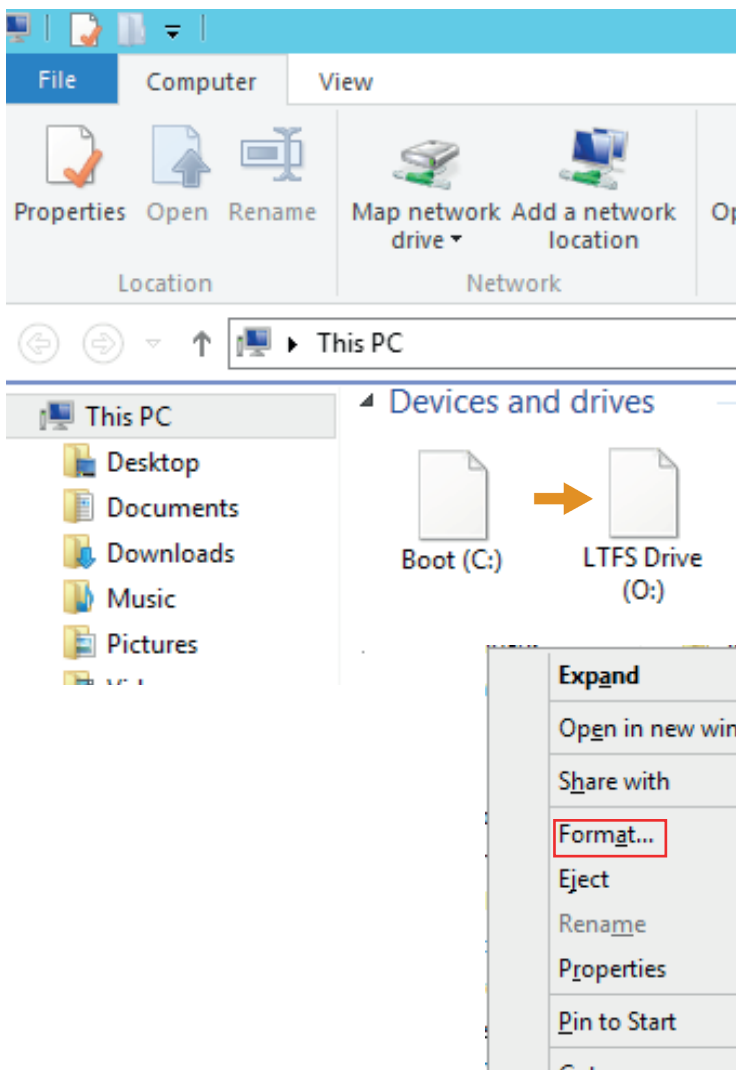
After the software installation, a few parameters need to be set to implement LTFS on the system. Start “LTFS Configuration”.



With the LTFS Configurator, LTO tape drives will be prepared for usage with LTFS.

Previously configured or mounted LTO LTFS tape cartridges will be shown with their corresponding drive-letter in the table. For new tape cartridges, drive letters can be selected from the “Drive Letter” listbox.

Click “OK” to confirm your selection.



The LTO tape drive shows up as a drive letter in the Windows data explorer.

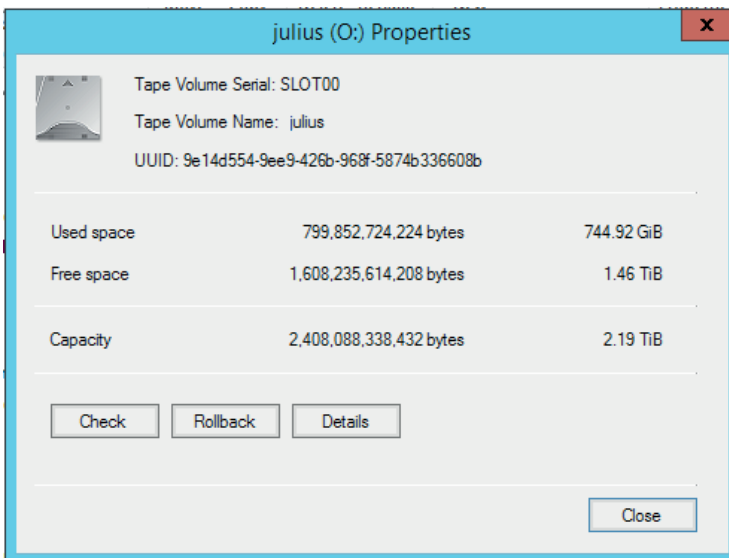
As a next step, tape cartridges need to be formatted as a LTFS cartridge if not already done previously.

Insert the desired cartridge into the drive, right-click on the drive and select “Format...”

The tape will be prepared according to the LTFS specification.

Using LTFS

By using LTO-7 tape drives with properly formatted LTFS cartridges, users can create directories, subdirectories, and copy data to and from the LTFS device; similar to disk. As it is still a tape device, it requires minimal data transfer rates to keep streaming. An LTFS best practice is to keep the data transfer speeds between the data source and LTFS cartridge as fast as possible. If not followed, will lead to a shorter life span of the tape drive hardware and or cartridges.



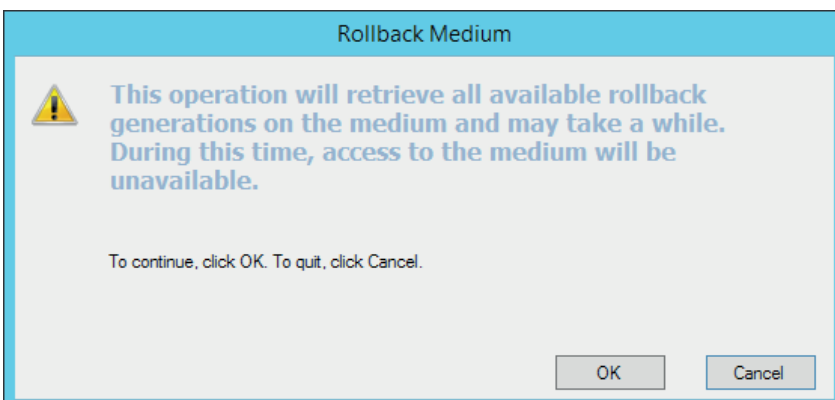
The tape drive can be used like a disk. A right mouse click shows the properties and the serial number of the device

Furthermore, users can run a consistency-check or perform a rollback.

Rollback

A rollback in time enables accessing data, which was formerly written to a LTFS cartridge and still exist on the tape. Even if LTFS-tapes show up as a disk, they still behave as a tape. Data cannot be deleted from the data partition, they just disappear from the index partition. Each time, a cartridge is ejected, the index partition will be updated. Deleted files won't be listed any more, but physically still exist on the tape.

Because of this, the rollback functionality can recover previously deleted files by just rebuilding the index table on the index partition of the LTFS tape, which makes them visible again.



General Information

LTFS Compatibility

Details provided in this document refer to LTFS-Software from IBM with Tandberg Data LTO-7 drives. Data, which was written with a LTO-7 drive to a LTO-6 cartridge, can be read and written with a Tandberg LTO-6 drive with HPE StoreOpen Standalone Software without conversion.

Scripting

A list of CLI commands is available for scripting and automation purposes of LTFS tasks.

Downloads

Software downloads and user Guides are available using the following [Link](#).

Supported LTO Hardware:

Partnumber	Model
TD-LT07iSA	Tandberg LTO-7 HH - Internal bare drive, black, SAS
TD-LT07iFC	Ltandberg LTO-7 HH - Internal bare drive, black, FC
TD-LT07xSA	Tandberg LTO-7 HH - External drive kit, black, SAS

Sales and support for Overland/Tandberg products and solutions are available in over 90 countries.
Contact us today at sales@overlandstorage.com or sales@tandbergdata.com

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