HP Library and Tape Tools 4.16 Release Notes

HP Part Number: EH957-90957
Published: June 2013
Edition: First



© Copyright 2013 Hewlett-Packard Development Company, L.P.

Version:

4.16

Description

This release includes an updated version of HP Library and Tape Tools (L&TT).

L&TT 4.16 is an incremental release and targets:

- Supporting the HP StoreEver MSL6480 Tape Library.
- Extending the diagnostic capability for LTO tape drives.
- Improving usability.

Update recommendation

Recommended.

Supersedes

All earlier versions of L&TT.

Devices supported

- Virtual libraries and D2D backup devices — Reinstated support for D2D virtual drives for performance testing.
- Tape libraries and autoloaders — Added support for the MSL6480.
- Tape drives — Same as L&TT 4.15.
- Other backup devices — Same as L&TT 4.15.

See the QuickSpecs for a full list of supported devices.

Operating systems

Table 1 L&TT operating system support

Operating system	OS variant	Last supported version of L&TT
Windows	Windows 2012	Current
	Windows 8	Current
	Windows 7 (x86, x86_64) Windows 7 SP1 (x86, x86_64)	Current
	Windows Vista SP2 (x 64, x86, x86_64)	Current
	Windows 2008 R2 (x86, IA64, x86_64) Windows 2008 R2 SP1 (x86, IA64, x86_64)	Current
	Windows 2003 and Windows 2003 R2 (x86, x64, ia64) Editions	Current
	Windows 2000 Server SP4, Advanced Server, and Datacenter Server	Current
	Windows XP (x86, x64, ia64) Editions	Current
	Windows NT	L&TT 4.2
	Windows ME	L&TT 3.5 SR4a
	Windows 98	L&TT 3.5 SR4a
	Windows 95	L&TT 3.5 SR4a

Table 1 L&TT operating system support *(continued)*

Operating system	OS variant	Last supported version of L&TT
HP-UX	HP-UX 11i v3 (PA-RISC,IPF)	Current
	HP-UX 11i v2 (PA-RISC,IPF)	Current
	HP-UX 11i (PA-RISC)	Current
	HP-UX 11.0 (PA-RISC)	L&TT 4.2 SR1
Linux	RedHat EL 6.4	Current
	RedHat EL 6.3 (x86, x86_64)	Current
	RedHat EL 6.0 (x86, x86_64)	Current
	RedHat EL 5.0 (x86, x86_64, IA64) (Updates 3, 4, 5, and 7)	Current
	RedHat EL 4.0 (x86, x86_64, IA64) (Updates 7 and 8)	Current
	RH EL 3.0 (x86, x86_64, ia64)	Current
	RedHat AS 2.1 (ia64)	L&TT 4.2
	RedHat 9.0	Current
	RedHat 8.0	L&TT 4.2
	RedHat 7.3	L&TT 4.2
	RedHat 7.2	L&TT 4.2
	RedHat 7.1	L&TT 4.2
	RedHat 7.0	L&TT 4.2
	SuSE SLES 11 (x86, IA64, x86_64) SuSE SLES 11 SP1 (x86, IA64, x86_64) SuSE SLES 11 SP2 (x86, IA64, x86_64) SuSE SLES 11 SP3 (x86, IA64, x86_64)	Current
	SuSE SLES 10 SP2 (x86, x86_64) SuSE SLES 10 SP3 (x86, IA64, x86_64)	Current
	SuSE SLES 9 (x86, x86_64)	Current
	Fedora Linux	Not supported
	Debian Linux	Current
OpenVMS	OpenVMS 8.4 (Alpha/IPF)	Current
	OpenVMS 8.3-1 (IPF)	Current
	OpenVMS 8.2 (Alpha)	Current
	OpenVMS 7.3–2 (Alpha)	Current
Solaris	Oracle Solaris 10.0 (x86, SPARC, AMD64) Oracle Solaris 10 Update 9 (x86, SPARC, AMD64)	Current
Mac	Mac 10.8 (x86) — Standalone drives, L&TT CSI only	Current
	Mac 10.7 (x86) — Standalone drives, L&TT CSI only	Current
	Mac 10.6 (x86) — Standalone drives, L&TT CSI only	Current
	Mac 10.5 (x86) — Standalone drives, L&TT CSI only	Current

Table 1 L&TT operating system support *(continued)*

Operating system	OS variant	Last supported version of L&TT
	Mac 10.4 (PPC, x86) — Standalone drives, L&TT CSI only	Current
Netware	Netware (5.1, 6.0, 6.5)	L&TT 4.2 SR1
Tru64	Tru64 5.x	L&TT 4.4

Languages

English

Enhancements and fixes in L&TT 4.16

- Tape libraries and autoloaders
  - Added support for the new MSL6480 Tape Library.
  - Replaced illustrations for the ESL-e Tape Library and the 1/8 G2 Tape Autoloader.
  - Fixed a case where library-assigned drive serial numbers were not shown correctly.
  - Updated ESL G3 service action decoding.
- Tape drives
  - Removed the read-only option for the Media Assessment test, which has been superseded by the Data Assessment test. These two tests are now separate and named more clearly.
  - Improved the tape life algorithm for LTO-6 drives for increased accuracy.
  - Now decodes all LTO-6 error codes.
  - Added rules to check for specific types of tape wear, invalid EOD, and other write issues.
  - Increased the time granularity for real time decoding from seconds to milliseconds.
  - Displays more ticket details for LTO-6 drives, including tape particle types and decoded TapeAlert logs.
- Virtual libraries and D2D backup devices — reinstated support for D2D virtual drives for performance testing.
- Other backup devices — same as L&TT 4.15
- Operating system specific
  - Windows 2012 support added.
  - Windows 8 support added.
  - Red Hat Enterprise Linux 6.4 support added.
  - SuSE 11 SP3 support added.
- Generic to tool
  - Ethernet access is now available for LTO-6 drives.
  - The Ethernet IP address can now be entered manually for library drives.
  - Included more “Factory” level content in the “Everything” level.

Known issues and limitations in L&TT 4.16

Virtual libraries and D2D

- L&TT support for the most recent releases of D2D emulated drives is broken for all emulated LTO drive types, due to a change within the drive emulation behavior and therefore cannot be worked around with previous versions of L&TT.
- L&TT support is limited to what can be done with emulated devices. Please use the relevant Command View GUI for access to the support information for the physical device.

Tape libraries

- The MSL6480 does not currently support the Device Self-Test.
- Ethernet access specifics
    - Minimum firmware versions for LTO-5 drives: I58W, Y58W, Z58W
    - Minimum firmware versions for LTO-6 drives: J27W, J2AS, 22CW, 32AW
    - Firmware update over Ethernet updates the firmware but the drives are not always rediscovered by the library on completion. HP recommends that you continue to use Command View TL or the MSL RMI for updating drive firmware in libraries.
    - Drive and L&TT behavior is unpredictable (and not fully tested) when the drive is being used at the same time that L&TT is talking to it. It is recommended that the library is quiescent when using L&TT over Ethernet, as is recommended for host access.
- In the front panel window, the ESL G3 library shows LTO-6 drives as LTO-5 drives. This is a library firmware issue and will be fixed in a future library firmware release.
- The ESL G3 tape library does not offer diagnostic access over its host interface, which limits L&TT to standard functionality. This still allows most of the library tests to be run, but pulling tickets and updating firmware is not supported. Please use Command View TL to pull tickets and update library firmware. Access to the drives is unchanged and full functionality is available
- When using L&TT on a Linux operating system, firmware downloads to an MSL2024 Library may fail. If this happens, the firmware does get downloaded to the unit, but L&TT does not properly reflect the status of the unit when the download completes.
- In a library with mixed drive technologies, drive firmware cannot be downloaded from the library firmware download screen. Each drive must be selected individually for download. (Future enhancement)
- If a device is in a 'Not Ready' state, L&TT may not be able to perform all diagnostic functions. Most devices are only very briefly in this state, but some libraries can take a significant amount of time after power-up or after a firmware download before becoming ready. If this problem is encountered, wait until the device is in a ready state and then use L&TT. (Future enhancement)

Autoloaders

- DAT72x6 – After using the L&TT front panel and then closing L&TT, the autoloader is left ‘locked'. This is expected product behavior. The workaround is to eject the magazine to unlock.
- DDS2/3/4 autoloaders do not function in L&TT with the option switch value set to return the standalone drive ID. This causes an ‘unsupport product' response. L&TT works fine with the switch in default position. This is expected product behavior.

Tape drives

- USB devices — Hot plugging a device (such as a USB memory stick) on the same USB bus as a Tape Drive can cause a bus reset, and therefore any test in progress on that drive may abort or fail.
- DLT 8000 – Firmware upgrade appears to fail with LSI U320 HBA. It does actually upgrade OK. Using firmware upgrade tape works fine.

Operating system specific

- Windows — Device scan can fail intermittently with 'Unexpected Win32 error encountered during I/O scanning: 2' error message. Work-around is to re-scan.
- Windows Vista, 7, and 2008 — L&TT will sometimes APPCRASH on exit.
- Windows — if installing with Microsoft Installer package 4.5 uninstall the previous version manually first otherwise the installation will not complete correctly.
- HP-UX — Running the LTO Drive Assessment test on multiple drives concurrently can cause a core dump. The exact number is not known but is in the region of 8 or more.
- Linux in CLF (command line) mode – LTO Drive Assessment test output scrolls off the screen at the end of the test. Test results can still be found in the `ResultLog.ltt` files.
- Mac — Device performance tests are limited to approximately 220 MB/s. The *Get files from web* feature is not supported so L&TT cannot check for the availability of the latest firmware.
- OpenVMS
  - The *Get files from web* feature is not supported so L&TT cannot check for the availability of the latest firmware.
  - L&TT stops part way through the Read Write test when used with the `Full Volume` option because of excess memory consumption.
- VMware – L&TT has limited testing and support for standalone SAS drives and all libraries. There are no known issues. Install check and system performance tests are not supported.

Generic to tool

- There is some inconsistency between the reporting of data capacity and volume between tests. Some tests report data based on the power of 10, whereas others report data based on the power of 2. L&TT is transitioning to the power of 10–based reporting to match industry specifications.
- If L&TT is unable to automatically verify successful completion of a firmware update and is then re-selected from the previous scan, L&TT may exit with an exception. The cause is that the operating system has performed its own re-scan and logically moved the device after its update. If this happens, use L&TT rescan to locate the device. In these cases the firmware update was usually successful.

Prerequisites

- Windows
  - Device drivers for the connected tape devices/libraries or default device driver should be present.
- HP-UX
  - Devices do not need to be claimed by the operating system with ioscan for L&TT to access them.
  - The sctl driver must be installed for L&TT to access the device you want to test. L&TT builds its own pass-through SCSI device files using the sctl driver, so that driver must be installed; however, L&TT does not need the operating system to list any of the devices as "CLAIMED." They may be listed that way (if the appropriate driver is installed), but they don't need to be for L&TT to fully access them.
  - Devices must NOT be listed as "NO HARDWARE" in ioscan. If the device you want to test with L&TT is listed as "NO HARDWARE" in ioscan, the communication path between the host and the device is not working and must be fixed before L&TT will be able to communicate with the device.

- Linux
  - Device should be recognized by proc/SCSI subsystem.
  - Device drivers for the connected tape devices/libraries or default device driver should be present.
- HP OpenVMS

  L&TT requires the following patches or higher to run successfully:

V7.3–2 Alpha	VMS732_FIBRE_SCSI-V0800
	VMS732_UPDATE-V0500
V8.2 Alpha	VMS82A_FIBRE_SCSI-V0100
	VMS82A_UPDATE-V0200
V8.2 Itanium	VMS821_FIBRE_SCSI-V0100
	VMS821_UPDATE-V0200

- Solaris
  - The device should be shown in the `cfgadm -al` and `prtconf -v` command output.
  - The device driver for connected tape drives and libraries or the default device driver should be present.

Installation instructions

Download L&TT from http://www.hp.com/support/tapetools

Windows

The Windows version of L&TT uses the InstallShield application.

Reboot requirements

- A reboot is required only if your system requires ASPI or an upgrade to the currently installed version. On systems that require ASPI, if the installer detects a previously installed version of ASPI older than v4.57, it will install a more recent version of ASPI, which will require a reboot.
- On Windows NT and 2000, ASPI is not installed as part of the operating system. If a reboot is unacceptable, do not select the checkbox for this option in the installation process. If you choose not to install ASPI, you must use the Miniport driver (Miniport I/O mode) to scan for devices.
- Issues may arise, however, when using the Miniport I/O mode with devices that use non-standard OS drivers, or are "claimed" by other applications or the OS. When using the Miniport I/O mode when a device is claimed, it may be necessary to shut down any running backup/storage application services to make the device accessible to L&TT. Alternatively, using the ASPI I/O mode may make the device accessible without requiring any further action.

Known issues

- When downloading the L&TT application from the Web to your local system, name the download folder to something other than `HP Library and Tape Tools` or the installation will fail if you attempt to install from that folder. The failure error will indicate that a different instance of the installer is already running.
- Also, do not rename the L&TT installation file. Renaming the file may create a conflict that prevents L&TT from installing.

To install the current Windows version of L&TT:

1. Download or copy the self-extracting executable file to a temporary location.

IMPORTANT: Do not rename this file. Renaming the file may create a conflict that prevents L&TT from installing.

2. Double-click the self-extracting executable file to launch the installer. The InstallShield Wizard screen is displayed.
3. Click **Next**. Read the program license agreement and click **Yes** if you agree to and accept the terms of the license agreement.
4. Read the `readme` file for any last-minute changes to the documentation, then click **Next**. The Select Features screen is displayed.
5. Select the desired components to install and click **Next**.

   In most cases, the default settings of this screen are adequate. Windows 2000 and Windows XP users have the option to install Advanced SCSI Programming Interface (ASPI) support. HP does not recommend installing ASPI support unless you have a good reason to do so.

   ASPI support is beneficial when installed storage applications cannot be shut down, and those applications have locked access to the device through the Miniport driver. If ASPI is installed, it is generally not necessary to shut down these applications to access devices through L&TT (although the applications should not be accessing the devices while L&TT is running). ASPI lets you run L&TT on a locked device without rebooting, but a reboot is required after installing ASPI. The benefit of using ASPI is not realized the first time L&TT is run, but it is realized on subsequent runs.

   One drawback of ASPI is that USB drives are not supported. If you have USB drives, you must use the Miniport driver.

   L&TT supports Microsoft Storport technology. Storport is a new storage driver model created by Microsoft for Windows Server 2003 and future Windows® operating systems. Storport offers a higher performance architecture and better Fibre Channel compatibility in Windows systems. If Storport drivers are installed, L&TT automatically uses Storport when you select Miniport I/O.

   NOTE: ASPI is not officially supported by Windows Server 2003. However, in most cases, it will function properly. If ASPI is installed with Windows Server 2003, L&TT can make use of it if the ASPI I/O mode is selected. However, HP recommends that you use the default NT MiniPort I/O option with Windows Server 2003.

6. Select a destination location to install the program. You can accept the default location or click **Browse** to install to a different location. After choosing the destination location, click **Next**.
7. Indicate the program directory in which you want the setup program to create program icons and click **Next**. The program directory is created in the `Programs` directory of the **Start** menu.
8. On the Ready to start installation process screen, click **Next**. If you need to review or change installation settings, click **Back**.
9. When installation is complete, the InstallShield wizard displays its final screen. Select **Start HP L&TT** or **Run LTT InstallCheck** if you would like the wizard to start L&TT or the installation check. Click **Finish** to close the InstallShield wizard.

HP-UX and Linux

Uninstalling previous versions

Before installing L&TT on Linux, you must first uninstall any previous versions.

To determine if L&TT is already installed, use the following command:

```
rpm -qa | grep ltt
```

To remove a previous version of L&TT, use the following command:

```
rpm -e ltt
```

Installing the latest version

To install L&TT for HP-UX or Linux:

1. Log in as `root`.
2. Navigate to the temporary directory:

   ```
   cd /tmp
   ```

3. Download or copy the L&TT tar file, `hp_ltt<xx>.tar` (where <*xx*> is the version number) to this directory. If you are copying the file from a different location, enter the following (substitute the directory in which the file currently resides for <*directory name*>):

   ```
   cp /<directory name>/hp_ltt<xx>.tar /tmp
   ```

4. Un-tar the L&TT tar file:

   ```
   tar -xvf hp_ltt<xx>.tar
   ```

5. Run the install script in the `/tmp` directory:

   ```
   ./install_hpltt
   ```

   NOTE: For Linux, the L&TT installer verifies that the operating system you are installing on is supported. If the Linux distribution or release is unsupported, the install script displays a message indicating an installation failure and lists the supported operating systems.

6. After the software is successfully installed, enter the following commands to remove the `/tmp/ltt` directory and its contents:

   ```
   cd /tmp
   rm -rf ltt
   rm -rf install_hpltt
   ```

HP OpenVMS

To install L&TT on HP OpenVMS:

1. Download or copy the L&TT .zipexe file to a temporary directory.
2. Navigate to the directory you copied the install file to and enter the following commands:

   `run hp-axpvms-ltt-v<xx>-1.zipexe` (where <*xx*> is the version number) (alpha platforms)

   ```
   product install ltt
   ```

   The installation procedure creates the directory structure `opt.ltt` in `sys$sysdevice:[vms$common]` and installs all the required files for L&TT.

Solaris

To install the L&TT package:

1. Login as root.
2. Navigate to the temporary directory:

   ```
   cd /tmp
   ```

3. Download or copy `hp_ltt<xx>.tar` (where `<xx>` is the version number) to this directory.

   If you are copying the file from a different directory, enter the following command, substituting the directory in which the file currently resides for `<directory name>`:

   ```
   cp /<directory name>/hp_ltt<xx>.tar /tmp
   ```

4. Un-tar the L&TT tar file:

   ```
   tar –xvf hp_ltt<xx>.tar
   ```

5. Run the installation script in the `/tmp` directory:

   `./install_hpltt`

6. After the software is successfully installed, enter the following commands to remove the temporary files from the installation process:

   `cd /tmp`

   `rm –rf install_hpltt`

   `rm –rf HPLTT<xx>` (where `<xx>` is the version number)

Mac

1. Log in to the Mac GUI using root or full system privileges.
2. Download or copy the install file to a temporary location. The install file is `hpltt_<xx>_mac.dmg` (where `<xx>` is the version number).
3. Double-click the downloaded file. This action will mount the image.
4. Double-click the `hp_ltt<xx>.mpkg` icon.
5. Follow the screen instructions.
6. On completion, click the finish button.

Effective date

June 2013