QuickSpecs

Overview

HP StorageWorks Library and Tape Tools (L&TT) is a free, robust diagnostic tool for all of HP's tape storage and magneto-optical storage products.

Targeted for a wide range of users, it is ideal for customers who want to verify their installation, ensure product reliability, perform their own diagnostics and achieve faster resolution of tape device issues.

L&TT performs firmware upgrades, verification of device operation, failure analysis and a range of utility functions. Performance tools assist in troubleshooting bottlenecks and system configuration checks warn of common host issues. It also provides seamless integration with HP support by generating and e-mailing test results and support tickets.

HP Support will require the use of L&TT to troubleshoot most device issues, so it is recommended that a support ticket is pulled and the device assessment test is run before calling.

Operating systems currently supported include HP-UX, Microsoft® Windows®, Linux, OpenVMS and Solaris.

Features & Benefits

- Free, easy to install and easy to use diagnostic tool
  - Downloaded and installed from HP.com (http://www.hp.com/support/tapetools) in less than five minutes
  - Intuitive user interface requires no customer training
  - Choose between local installation or running from a remote installation, CD or memory stick
- Reduce product downtime through preventative maintenance, fast issue diagnosis with corrective actions
  - Automated, smart firmware downloads, updates and notifications
  - Comprehensive device analysis and troubleshooting tests
  - First level failure analysis of both the device and system without HP involvement
  - Troubleshoot system performance issues through the use of analysis tools
  - Identify the most common host system configuration issues
  - Provides a direct link to the ITRC web-based troubleshooting content
- Seamless integration with HP's hardware support organization
  - Generate and e-mail support tickets to the support center for faster service and support
  - Provides an all-inclusive source of device information for HP support center
- Get the most out of your device through access to operational, health and usage data in the support ticket
  - Drive health, life, usage, utilization, performance
  - Media health, life, usage (Ultrium only)
  - Backup quality (Ultrium only)

What's New

L&TT is frequently updated and developed to:

- Support all of HP's latest tape storage products including the virtual tape D2D and VLS devices
- Run on the latest versions of the most commonly used operating systems
- Provide the most effective support and diagnostics for these products in the industry

For details of new features in any particular release, please refer to the release notes located with the L&TT download on HP's support web pages or in the L&TT user guide.

It is highly recommended that the latest version of L&TT is used at all times as the support of even older products can benefit from improvements in the latest releases of the tool.

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Product Highlights

HP StorageWorks Library and Tape Tools	L&TT download location: http://www.hp.com/support/tapetools

Automatic device discovery

L&TT automatically scans the system for supported devices when the tool is started. By default, only the current number of devices found is displayed during the I/O scan. Additional information such as host adapters, drivers, and matching of embedded drives to the associated library can also be shown during the scan process. Scan results can be saved in an event log and attached to a support ticket email if necessary.

Device Identification & Listing

L&TT identifies and displays a list of all products connected to the system by product group or by connection. Tabs allow the user to toggle between the following commands in this area of the main screen: scan, by product, by connection, and instructions.

- By product displays four categories: libraries/autoloaders, drives, enclosures/processors, and other devices; all with the specific device address.
- By connection shows all products connect to the system by the HBA they are connected to; aids in understanding system I/O performance issues.

Device Information Screen

All of the main functions of L&TT are displayed in this window. The content of the window depends on the device and tool function selected. Device information may include a visual presentation of the product, compatible media, and cartridge (media) inventory for all the drives and slots. General product information such as product ID, drive technology, mechanism serial number, firmware revision, SCSI target ID, and SCSI LUN will also be displayed.

Firmware from Web

If 'check for updates on Web' is enabled in the preferences menu, L&TT will automatically look for new firmware files for each supported device on the system when the application is run. If files are found, the application will ask the user if they should be downloaded to the application. By default, the latest firmware files for the devices on the system will be shown. L&TT will scan the local firmware folder and if the latest versions are not present, it will automatically select them for download. Users then perform the standard firmware update function to perform the actual update to each device.

Firmware Management

This L&TT functionality allows easy upgrades to the storage product firmware. By default, the tool will select all of the devices that have newer revisions of firmware in the L&TT firmware file folder. L&TT automatically matches the appropriate firmware files to each storage device. If multiple versions of firmware are available, selection boxes can be used to select the desired file. All drives are downloaded in parallel to reduce update time. All firmware update processes provide final results which can be saved in an events log and sent to HP support if necessary.

Product Highlights

Performance Tools

Effects of poor system performance can range from increased mechanical wear to missed backup windows. There may also be increased cleaning requests or reduced media life due to multiple passes of the media over the tape drive head. This all leads to decreased customer satisfaction. L&TT offers users a variety of performance analysis tools to identify where bottlenecks may exist in a system. These tools will help assess the system allowing the user to:

- Verify that the tape drive operates at specified transfer rates
- Verify that the disk subsystem can provide data that fast
- Verify that the disk subsystem can accept restored data at the expected rates

Test Functions

L&TT provides several standard and advanced tests that can be used to check the performance of or to diagnose issues with storage hardware. After each test is run, test results can be reviewed and are included in the application's event log. A user may perform the following tests on libraries and autoloaders:

- Device Self Test (internal self-test of the device)
- Device Analysis Test (analysis of the device logs)
- Library Exerciser Test (exercise the robotics and robot drive hardware)
- Library Read Write Test (exercise the robotics and drives together)
- Media IDs Test (link media cartridge ID to barcode)

A user may perform the following tests on drives:

- Tape Drive Assessment Test (15 minute comprehensive health check)
- Media Assessment Test (comprehensive media health check for Ultrium)
- Device Self Test (internal self-test of the device)
- Device Analysis Test (analysis of the device logs)
- Connectivity (ability of the host to communicate with the device)
- Media Validation (determine quality of the media)
- Read/Write (verify the ability of the drive to read/write data independent of the storage application) - superseded by the Assessment Test

Support Tickets

L&TT will automatically generate a support ticket based on information that the application determines about the system. This information can be used to diagnose the issues with the storage hardware. The tool can automatically email the support ticket to the HP service and support organization to assist the help desk technician in resolving the issues. Browser links to common HP Web sites are also provided.

Support tickets can also be used to find out operational and usage information from the device. Ultrium, in particular, has a very useful support ticket categorized into user friendly sections rather than basic device logs.

System Configuration Checking

Checks the configuration of the server that L&TT is running on for services such as RSM (Windows) that should not be running during backups. Also checks driver versions and Insight Manager agents giving warnings if issues are found.

Product Highlights

Auxiliary Menu Commands

L&TT uses pull-down menu commands that provide the user with the following access or functionality:

- Load previously generated support ticket
- Retrieve firmware files from the web
- Sign-off and close the application
- Change options that set the behavior and display characteristics for L&TT
- Enable factory overrides when supplied a password from the HP service and support organization
- Run non-device specific utilities such as system configuration checks
- Run a custom script written by the HP service and support organization

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Compatibility Information

Device Support

NOTE: This list may include discontinued products and is shown for compatibility purposes only.

Tape Libraries (includes HP/Compaq StorageWorks & Surestore families)

HP SSL2020 AIT library	HP ESL9322S2 tape library
HP MSL5026DLX tape library	HP ESL9595L1 tape library
HP MSL502S2 tape library	HP ESL9595S2 tape library
HP MSL5026SL tape library	HP ESL9595SL tape library
HP MSL5030 tape library	HP ESL9326D tape library
HP MSL5052S2 tape library	HP ESL9326DX tape library
HP MSL5052SL tape library	HP ESL9326SL tape library
HP MSL5060 tape library	HP Tape Library Model 2/15
HP TL895 tape libraries	HP Tape Library Model 3/30
HP TL891 tape libraries	HP Tape Library Model 2/28
HP MSL6060 tape library	HP Tape Library Model 4/48
HP MSL6030 tape library	HP Tape Library Model 2/20
HP ESL 712e tape library	HP Tape Library Model 4/40
HP ESL 630e tape library	HP Tape Library Model 6/60
HP ESL322e tape library	HP Tape Library Model 8/80
HP 286e tape library	HP Tape Library Model 10/100
HP ESL E-series multi-cabinet library with Cross Link	HP Tape Library Model 6/140
HP EML E-series libraries	HP Tape Library Model 6/100
HP ESL9322 tape library	HP Tape Library Model 10/180
HP ESL9595 tape library	HP Tape Library Model 20/700
HP ESL9322 extended tape library	HP MSL2024 tape library
HP ESL9595 extended tape library	HP MSL4048 tape library
HP ESL9198SL tape library	HP MSL8096 tape library
HP ESL9322L1 tape library	

Tape Autoloaders (includes HP/Compaq StorageWorks & Surestore families)

HP Tape Autoloader Model 1/8	HP 818 DLT autoloader
HP Tape Autoloader Model 1/9	HP 20/40 GB DAT DDS-4 autoloader
HP SSL1016 tape autoloader	HP DAT 24x6 tape autoloader
HP DLT1 1280 tape superloader	HP DAT 40x6e tape autoloader
HP AIT 35 GB autoloader	HP DAT 72x6 tape autoloader
HP 418 DLT autoloader	HP DAT 72x10 tape autoloader
HP 718 DLT autoloader	HP 1/8 G2 tape autoloader

Compatibility Information

Virtual Library Systems and D2D Backup Systems (includes HP StorageWorks families)

HP D2D Backup Systems	HP 9xxx Virtual Library Systems
HP 1xxx Virtual Library Systems	HP 12xxx Virtual Library Systems
HP 6xxx Virtual Library Systems	HP Virtual Library System 300 Gateway

Storage Area Network (SAN) (includes HP StorageWorks & Surestore families)

HP Interface Manager	HP Network Storage Router E1200 & E2400
ESL Interface Manager	HP Network Storage Router E1200-160 & E2400-160
HP Bridge FC 4/2	HP Network Storage Router N1200
HP Bridge FC 4/1 (HVDS)	HP N1200-320 4Gb Network Storage Router
HP Bridge FC 2/1 (LVDS)	

Tape Drives (includes HP/Compaq StorageWorks & Surestore families)

HP Ultrium 1840 tape drives	HP DLT VS80 tape drives
HP Ultrium 1760 tape drives	HP DAT160 tape drives (SCSI and USB)
HP Ultrium 960 tape drives	HP DAT72 tape drives (SCSI and USB)
HP Ultrium 920 tape drives	HP DAT40 tape drives (SCSI and USB)
HP Ultrium 460 tape drives	HP DAT24 tape drives (SCSI and USB)
HP Ultrium 448 tape drives	HP DAT8 tape drives
HP Ultrium 232 tape drives	HP DDS-4 tape drives
HP Ultrium 230 tape drives	HP DDS-3 tape drives
HP Ultrium 215 tape drives	HP DDS-2 tape drives
HP SDLT 600 tape drives	HP Tape 6000 tape drives
HP SDLT 320 tape drives	HP Tape 5000 Plus tape drives
HP DLT 80 tape drives	HP AIT 35/70 GB tape drives
HP DLT 70 tape drives	HP AIT 50/100 GB tape drives
HP DLT1 tape drives	HP AIT 100/200 GB tape drives
HP DLT VS160 tape drives	

Compatibility Information

Magneto-Optical Storage (includes HP StorageWorks & Surestore families)

HP Optical Disk Drive 1300t	HP Optical Jukebox 320ex
HP Optical Disk Drive 2600fx	HP Optical Jukebox 330fx
HP Optical Jukebox 100st	HP Optical Jukebox 440ex
HP Optical Jukebox 1200ex	HP Optical Jukebox 40fx
HP Optical Jukebox 1200mx	HP Optical Jukebox 40st
HP Optical Jukebox 125ex	HP Optical Disk Drive 5200ex
HP Optical Jukebox 160ex	HP Optical Jukebox 600fx
HP Optical Jukebox 160fx	HP Optical Jukebox 600mx
HP Optical Jukebox 200fx	HP Optical Jukebox 660ex
HP Optical Jukebox 20xt	HP Optical Jukebox 700mx
HP Optical Jukebox 2200mx	HP Optical Jukebox 80ex
HP Optical Jukebox 220mx	HP Optical Jukebox 80fx
HP Optical Jukebox 300mx	HP Optical Jukebox 80st
HP Optical Jukebox 300st	HP Optical Disk Drive 9100mx

Ultra Density Optical Storage (includes HP StorageWorks families)

HP Optical Disk Drive 30ux	HP Optical Jukebox 2300ux
HP Optical Jukebox 700ux	HP Optical Jukebox 3800ux
HP Optical Jukebox 1000ux	HP Optical Jukebox 7100ux
HP Optical 1100ux	
HP Optical Jukebox 1900ux	

Operating System Support L&TT is supported on the following operating systems:

- Microsoft Windows 2000 Server, Advanced Server & Datacenter Server
- Microsoft Windows 2003 (& R2) (x86, x64 & ia64) Editions
- Microsoft Windows XP (x86, x64 & ia64) Editions
- Microsoft Windows Vista (x86, x64) Editions
- HP-UX 11i (PA-RISC)
- HP-UX 11i v2 (PA-RISC & IPF)
- HP-UX 11i v3 (PA-RISC & IPF)
- Linux RedHat 9.0 (x86)
- Linux RedHat EL 3 (x86, x86_64 & ia64)
- Linux RedHat EL 4 (x86, x86_64 & ia64)
- Linux RedHat EL 5 (x86, x86_64 & ia64)
- Linux SUSE SLES 9 (x86 & x86_64)
- Linux SUSE SLES 10 (x86, x86_64 & ia64)
- OpenVMS 7.3-2 (Alpha)
- OpenVMS 8.2 (Alpha)
- OpenVMS 8.2-1 (IPF)
- OpenVMS 8.3 (Alpha, IPF)
- Solaris 10 (Sparc, AMD64)

NOTE:

Compatibility Information

- HP L&TT has not been tested in cluster environments.
- NetWare is no longer supported from L&TT 4.3 - please use L&TT 4.2 SR1a for device support.
- Tru64 is no longer supported from L&TT 4.5 - please use L&TT 4.4 for device support.
- For a list of the last versions of L&TT that support older versions of operating systems please see the L&TT user guide