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HP StorageWorks ESL Tape Libraries

Manageable, reliable and flexible

hp invent

The HP StorageWorks ESL family of enterprise tape libraries delivers unprecedented flexibility, capacity and availability for the most demanding enterprise environments.

The HP StorageWorks ESL portfolio of enterprise tape automation products is fully integrated with HP's Extended Tape Library Architecture (ETLA), providing the ability to manage more storage with fewer IT resources.

HP provides self-aware tape storage designed specifically for the storage area network (SAN). ESL enterprise tape libraries and the ETLA offer customers with enterprise SANs superior reliability, interoperability and performance. The ETLA also provides remote management of the entire library system from a single console interface, with unobtrusive management of the entire library system, including robotics, drives, interface controllers and the HP StorageWorks Interface Manager card.

The ETLA reduces the costs and complexity of configuring, installing and managing the entire tape library system within a SAN.

HP StorageWorks ESL Series Tape Libraries combine with the ETLA to offer unique features that include:

- Fully supported and tested Enterprise Backup Solutions
- A web-based, centralized user interface, in addition to telnet interface on the Interface Manager card
- Automation of complex and repetitive library system management tasks
- High SAN availability, because management traffic stays out of the data path
- SNMP support, including asynchronous alerting
- Integration with major enterprise management applications
- Fast backups and less downtime thanks to serverless HP StorageWorks Direct Backup Engine ESL
- Provides outstanding interoperability and security with HP StorageWorks Secure Manager ESL

ESL Tape Library and ETLA advantages

- Delivers best-in-class interoperability without special workarounds
- Simplifies setup of library robotics, drives and Interface Controllers in a SAN
- Reduces risk in complex SAN environments by allowing only authorized servers to access tape drives and critical data
- Eliminates backup server and LAN bottlenecks by allowing data to move directly from disk to tape under the control of your backup application—without application server overload

- Protects your investments as interface technologies change thanks to an easy upgrade path
- Provides a best-in-class enterprise solution when combined with HP StorageWorks Enterprise Backup Solutions
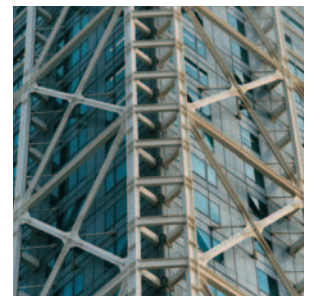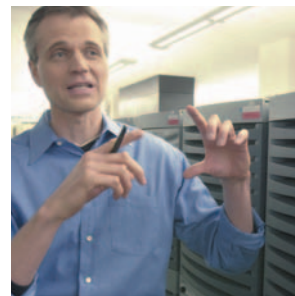- Improves backup/restore reliability and performance

Simplified control with Command View ESL

HP StorageWorks Command View ESL software provides easy-to-use monitoring, management and control of ESL Tape Libraries in SAN environments.

Command View ESL software saves time and reduces costs with comprehensive library management. Choose management options over the LAN with a browser-based or web interface. Then manage everything from library system asset information to health summaries for all library system components, including drives, robotics, interface controllers and HP StorageWorks Interface Manager.

Command View ESL software also gives you the ability to:

• View library inventory, including slots, media and drives

• Search for media by barcode label

• View details on drives, robotics, interface controllers and Interface Manager, including WWNs, speed and connection types

• Configure drives for use with HP StorageWorks Direct Backup Engine ESL

• Configure hosts/HBA-to-drive mapping and masking settings with HP StorageWorks Secure Manager ESL software

• Automatically discover hosts and HBAs on the SAN, or add your own for access control and security

• Upgrade firmware on interface controllers and Interface Manager cards

• Configure IP network parameters for the management station and Interface Manager cards in each library

• Configure SNMP trap/event destinations to receive alerts asynchronously

• View persistent event logs for the library system

Guard performance with Secure Manager ESL.

HP StorageWorks Secure Manager ESL software, a component of the ETLA, provides an additional layer of security between drives and the SAN environment by allowing only authorized hosts to access library and drives.

Secure Manager ESL software shields libraries and drives from disruptive SAN traffic that can abort operations and slow backups and restores. With the Secure Manager for ESL on guard, you facilitate stable system operations from a single interface. The library administrator chooses which library devices are accessed (drives and robotic controller) by various backup hosts on the SAN, reducing the chance of bottlenecks and errors.

Using the advanced version of Secure Manager in conjunction with HP StorageWorks Command View ESL, you have the option of partitioning your library. Partitioning allows you to create separate, logical tape libraries from a single physical tape library. This allows one physical library to house mixed media and multiple backup applications and to support two separate SANs.

Secure Manager ESL software delivers:

• Easily configured device-level security settings

• Access to tape drives and critical data by authorized servers only

• Management from a single interface

Reliable backup/restore

HP StorageWorks ESL Tape Libraries offer the ultimate in high-capacity, mission-critical, unattended backup and restore. They are perfect for large server pools and centralized backup/restore requirements. With component-level redundancy and high capacity, ESL Series Tape Libraries can provide years of reliable, fully automated operation.

These libraries provide unique features that include:

- The highest density available
- Outstanding robotics reliability
- Hot-swappable components
- Redundant power distribution, power supplies and fans
- Optimized library performance with HP branded tape media

Flexibility protects your investment.

The ESL family of tape libraries is engineered for scalable capacity, throughput and interfaces. The base system scales throughput performance up to 1.73 TB per hour, satisfying even the smallest backup windows. The expansion option allows system growth to over 142.4 TB of native capacity or 2.5 TB/hr native throughput.

ESL Tape Libraries allow you to easily upgrade to future drive and interface technologies. And they offer multi-unit scalability,[1] enhancing capacity and performance for investment protection today and tomorrow.

Proven interoperability

HP conducts extensive testing of backup/restore components. Qualified combinations of components are documented in the Enterprise Backup Solution compatibility matrix, simplifying deployment and operation for our customers.

For a complete list of ESL Tape Libraries qualified with leading backup/restore applications, components and servers, please visit: **www.hp.com/go/ebs**.

[1]Multi-unit scalability on HP StorageWorks ESL E-Series Tape Libraries is scheduled for availability in 2005.

HP StorageWorks ESL E-Series Tape Libraries

The new HP StorageWorks ESL E-Series Enterprise Tape Libraries offer best-in-class drive and cartridge density. They scale to 712/322 LTO or 630/286 SDLT cartridges and 24 drives in a single library frame. Offered with both HP StorageWorks Ultrium 460 (native Fibre Channel and Ultra 3 models) and SDLT 320 tape drive technology, the ESL E-Series offers up to 14.2 LTO2 terabytes of native storage capacity per square foot.

ESL E-Series Tape Libraries offer licensed capacity upgrade for the 322-slot LTO and 286-slot SDLT models. These models can be upgraded to the full capacity of 712 LTO or 630 SDLT slots in increments of 108/104 LTO or 96/92 SDLT.

ESL E-Series Tape Libraries enable you to mix drive types and can house LTO Ultrium 460 (native Fibre Channel or Ultra 3 SCSI) and SDLT 320 tape drives in the same cabinet.

For loading/unloading media without interrupting operation, ESL E-Series Tape Libraries offer configurable mail slots. Bin panel subsections pull out for load port access.

In addition, 16, 32 or 48 LTO or 14, 28 or 42 SDLT slots can be configured as load port, and the load port magazines are removable for off-site storage.
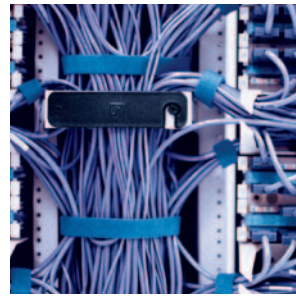
When combined with the advantages of Secure Manager, the ESL E-Series offers the option to partition the library into virtual sections to support multiple backup application software on a single cabinet.

For more information on HP StorageWorks ESL E-Series Tape Libraries, visit: **http://h18006.www1.hp.com/ products/storageworks/esltapelibraries/index.html**.
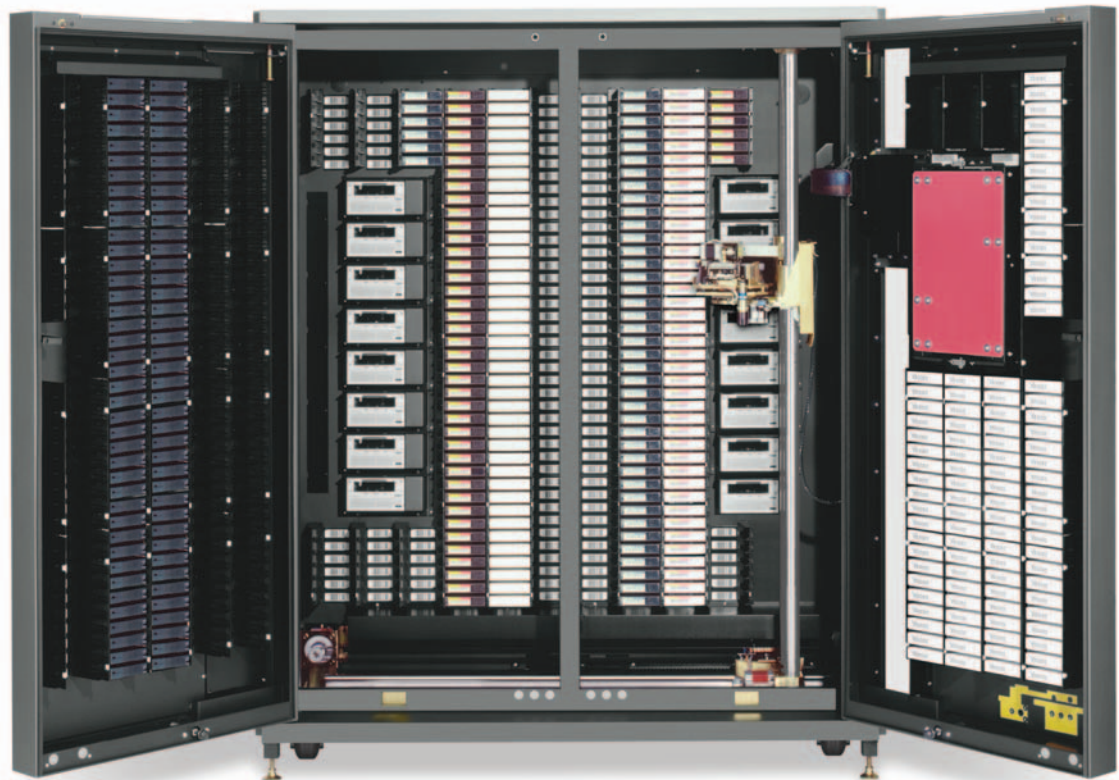
HP StorageWorks ESL9595 Tape Library

HP StorageWorks ESL9595 Tape Library is designed for enterprise customers who need a highly reliable backup and restore solution. This innovative tape library offers 400, 500 or 595 slots and up to 16 hot-plug drives. For configuration flexibility, the ESL9595 tape library supports HP StorageWorks SDLT 320, LTO Ultrium 230 and LTO Ultrium 460 tape drives, giving you up to 119 TB native capacity and 1.728 TB/hr native backup performance.

This library also allows you to use a pass-through mechanism to connect up to four ESL9595 Tape Libraries and scale up to 2,278 slots and 64 drives. That provides 455.6 TB native capacity and 6.91 TB/hr native backup performance (911.2 TB and 13.82 TB/hr at 2:1 compression). ESL9595 Tape Libraries are also qualified for direct SCSI attach and EBS FC SAN configurations. In addition, the browser-based, touch-screen control panel on all ESL9000 Series Tape Libraries provides easy access to library functions.

For more information on HP StorageWorks ESL9000 Series Tape Libraries, visit **http://h18006.www1.hp.com/ products/storageworks/esl9000/index.html**.

HP StorageWorks Enterprise Backup Solution

To ensure compatibility with your current environment, ESL Tape Libraries are fully certified for use in the Enterprise Backup Solution (EBS) program.

The HP StorageWorks EBS is a data protection solution for customers looking to consolidate backup and recovery across multi-vendor platforms and operating systems. EBS provides complete, fully tested and supported configurations that scale from entry-level workgroups to enterprise-level data centers.

EBS offers support for a broad selection of backup applications, tape technologies and operating systems and offers centralized management to manage more with less. EBS is the foundation of multi-level backup and recovery strategies using the ETLA for integrated solution management. EBS makes it simple to protect your data with tools and guides to design, configure and implement your backup and recovery solution.

To get started with EBS 1-2-3, please visit: **www.hp.com/go/ebs**.

HP StorageWorks Library and Tape Tools (L&TT)

The ESL tape library portfolio is fully supported on HP's industry-leading diagnostic tool kit—HP StorageWorks Library and Tape Tools (L&TT). L&TT is a single, convenient program that's a snap to install and simple to operate. L&TT's intuitive user interface virtually eliminates the need for training and deploys in less than five minutes. This robust diagnostic tool is designed for both the experienced professional and the untrained administrator. It helps ensure product integrity through self-diagnostics and fast problem resolution.

Additional information on L&TT, including download information, can be found at: **www.hp.com/support/tapetools.**

Media matters

All media are not created equal. All HP storage media undergoes an exhaustive battery of tests that simulate real-world usage. The HP test program is designed to ensure HP branded media offers maximum reliability even under the most extreme conditions. Our experts continually monitor and evaluate the quality of HP media, and our testing programs continually exceed industry standards. In fact, we measure durability by applying 1,000 percent more stress to the media than Ultrium logo compliance requires.

HP OpenView Storage Media Operations software

HP OpenView Storage Media Operations is a software product that provides tracking and management of offline storage media, such as magnetic tapes used in ESL Tape Libraries, resulting in more reliable backups, faster data recovery, improved staff efficiency and reduced costs.
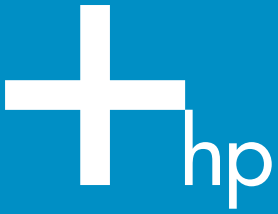
Unlike "home-grown" tools, Storage Media Operations software and ESL Tape Libraries offer a professional solution for IT operations that manage thousands of removable media. It tracks all media, whether online, offline or offsite, protecting vital data from loss.

Data retention and media recycling policies are enforced for assured service quality. And to help ensure backup success, Storage Media Operations software monitors media quality and preloads ESL Tape Libraries with sufficient scratch tapes.

Together, Storage Media Operations software and ESL Tape Libraries maximize the effectiveness of media procedures by creating daily task lists, organizing tapes for logical data center walk-throughs, and enabling operator control of tape libraries and barcode scanners.

Storage Media Operations software provides:

- A centralized media database
- Consolidated information across multiple media production sites
- Full support through firewalls and other network configurations
- Native Microsoft® Windows® client and web client for access from multiple locations

For more information please visit: www.hp.com/go/automation.

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