

**hp StorageWorks
ESL9000 series
tape libraries**

high-density, low hassle





highest data density tape library

In today's business environment, the winners maximize their investment returns in every arena. The data center should be no exception. Offering the highest LTO Ultrium and Super DLTape data density on the market the HP StorageWorks ESL9000 series tape libraries offer the most efficient use of space, power, and cooling in about half the footprint of its closest competitor. Starting at 128 TB of capacity, the ESL9000 series tape libraries meet the current needs of even the most intensive data operations. And, to support future growth all you need is a simple field upgrade and capacity is increased to 178 TB or 217 TB. Mission-critical data is readily accessible for restoring vital files and systems, and avoiding costly downtime.

lowest total cost of ownership

Wise investment decisions return benefits well into the future. In addition to providing all the features and functionality desired for data center operations, the ESL9000 series tape libraries keep their competitive edge by delivering low cost of ownership. Every design aspect is engineered for optimum savings in service, installation, power consumption, cooling requirements, and floor space. And, with the ESL9000 series tape libraries, you realize more savings through high reliability and availability. Hot-swappable drives, power supplies, fans, redundant AC controllers, and no required preventative maintenance give you more time to run critical operation instead of maintaining it.

flexible architecture retains investment

Rapidly changing system needs make a "one-size-fits-all" solution no longer practical. That's why the ESL9000 series tape libraries are engineered for growth in 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 500 TB of capacity or 7 TB/hr of throughput. Additionally, the storage architecture ensures the library accepts the most current interfaces and options today and well into the future.

**mission critical
unattended backup
and restore solution**



heavy duty backup

Today's business environments demand the best technology and performance for their IT needs. The HP StorageWorks ESL9000 series tape libraries offer the ultimate in a high-capacity, mission critical, unattended backup and restore solution. It's perfect for large server pools and centralized backup/restore requirements. With component level redundancy and high capacity, the ESL9000 series tape libraries give you years of fully automated operation. These libraries handle the toughest storage situations by offering these unique features:

- the highest density available
- best robotics reliability at 2 million MSBF
- hot-swappable components
- redundant power distribution, power supplies, and cooling fans
- easy to use graphical user interface
- optimized library performance with HP branded tape media that performs beyond industry standards

The HP StorageWorks ESL9000 series tape libraries are the ultimate in data protection, simplification, and investment protection. And, with HP StorageWorks ENSAextended strategy you get a strategic blueprint for building an adaptive storage infrastructure. ENSAextended unifies your storage system's common resources enabling it to be provisioned, managed and supported in a consistent and logical way.

maximum uptime, minimum involvement

You can't afford to be without your mission critical data. To ensure the data you need is always available, the ESL9000 libraries are engineered for maximum uptime. These low maintenance libraries put your mind at ease, with redundant power distribution, power supplies, and cooling fans. But, HP doesn't stop there. For the best in high availability and continuous operation, you also get hot-pluggable drive carriers, hot-swappable power supplies and cooling modules.

a good investment

The data protection world is constantly advancing, so how do you make sure you keep up with all the new enhancements? Answer: ESL9000 tape libraries "future ready" capabilities allow you to upgrade to future drive generations. And, with the PCI backplane architecture feature, you enhance functionality when you need it through add-on cards/controllers. The ESL9000 series tape libraries offer multi-unit scalability* enhancing capacity and performance for maximum investment protection.

compatibility

For information on ESL9000 series tape libraries backup/restoration applications software packages and qualified servers visit:
<http://h18006.www1.hp.com/storage/tapestorage.html>

** Look for multi-unit scalability slated for mid 2003*

the right solution
to grow with your needs

hp StorageWorks ESL9000 series tape libraries

HP StorageWorks ESL9000 series tape libraries are your innovative answer to backup and restore requirements. These libraries unique enterprise level features include high capacity, performance, and ease-of-use functionality — all within the industry's highest storage density. Finally, you've got the right solution to grow your needs. The ESL9000 series tape libraries delivers unprecedented levels of flexibility, capacity and availability for the most demanding enterprise environments.

hp StorageWorks ESL9322 tape library

The HP StorageWorks ESL9322 tape library with HP StorageWorks Ultrium 460 and 230 drives for enterprise customers sustain the industry's highest storage density with an extremely reliable backup and restore solution all in a compact footprint.

The ESL9322 tape library offers extreme configuration flexibility with 222 or 322 slots and up to 8 hot-plug drives. HP StorageWorks SDLT 160/320, LTO Ultrium 230 and LTO Ultrium 460 drives provide up to 64.4 TB native capacity and 864 GB/hr native backup performance. Using a pass through mechanism*, up to five ESL9322 tape libraries can be connected together to scale up to 1474 slots and 40 drives, for up to 294.8 TB native capacity and 4.32 TB/hr native backup performance (589.6 TB and 8.64 TB/hr at 2:1 compression). Plus, the ESL9322 tape libraries are qualified for direct SCSI attach and Enterprise Backup Solution (EBS) FC SAN configuration.

hp StorageWorks
ESL9322 tape library



hp StorageWorks ESL9595 tape library

HP StorageWorks ESL9595 is geared 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 110/220, 160/320, LTO Ultrium 230 and LTO Ultrium 460 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 ESL9322 tape libraries and scale up to 2278 slots and 64 drives providing 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). And, the ESL9595 tape libraries are also qualified for direct SCSI attach and EBS FC SAN configuration.

hp StorageWorks
ESL9595 tape library



* Look for multi-unit scalability slated for mid 2003

simplify your life



The HP StorageWorks ESL9000 series tape libraries delivers unprecedented levels of flexibility, capacity and availability for the most demanding enterprise environments.

The browser-based, graphical touch-screen control panel on the ESL9000 series tape libraries achieve easy access to library functions. To increase efficiency and lower total cost of ownership, HP offers HP StorageWorks Library & Tape Tools for management and diagnostic on the ESL9000 series tape libraries.

hp StorageWorks Library & Tape Tools (L&TT)

HP knows you rely on your system to function at full capacity, and if downtime does occur you need immediate corrective actions. HP answers this challenge with a diagnostic tool that's not only free, but downloads from the web and deploys in under five minutes. Ideal for both the experience professional and entry-level administrator, it provides product reliability, self-diagnostics and fast resolution of device issues. L&TT is a single, convenient program that's a snap to install and simple to operate. This is the most robust diagnostic tool for tape, tape automation and archival in the industry. L&TT gives you:

- firmware download verification of device operation, maintenance procedures, failure analysis, corrective service actions and utility functions
- seamless integration with the HP hardware support organization by generating and e-mailing support tickets that deliver a snapshot or an in-depth view of your storage system
- operating system support for Microsoft® Windows®, HP-UX, NetWare and HP Tru64

media matters

Never assume that all media is equal or that it all performs alike. HP storage media raises the bar on industry standards. All HP storage media undergoes an exhaustive battery of procedures related directly to how the product is used in real world environments, when real data and businesses are at stake. The HP test program is designed to ensure HP branded media always offers maximum reliability even under the most extreme conditions. Our team experts, continually monitor and evaluate the quality of HP media. Our diligence provides the entire industry with continuous improvements and technological developments. And, in key areas relevant to ESL customers, we go even further performing the HP shoeshine test. This intensive test measures media durability for library applications by applying 1000 percent more stress to the media than the Ultrium logo compliance requires.

hp StorageWorks ESL9000 series tape libraries matrix

	hp StorageWorks ESL9322 tape libraries with support for various drive technologies			hp StorageWorks ESL9595 tape libraries with support for various drive technologies		
drive type	LTO Ultrium 230	SDLT 320	LTO Ultrium 460	LTO Ultrium 230	SDLT 320	LTO Ultrium 460
unit dimensions (H x W x D) inch/cm	75x40x29 in / 190.5x101.6x73.7 cm	75x40x29 in / 190.5x101.6x73.7 cm	75x40x29 in / 190.5x101.6x73.7 cm	75x60x29 in / 190.5x152.4x73.7 cm	75x60x29 in / 190.5x152.4x73.7 cm	75x60x29 in / 190.5x152.4x73.7 cm
shipping dimensions (H x W x D) (cm)	80x52x48 in / 203.2x132.1x121.9 cm	80x52x48 in / 203.2x132.1x121.9 cm	80x52x48 in / 203.2x132.1x121.9 cm	80x71x48 in / 203.2x180.3x121.9 cm	80x71x48 in / 203.2x180.3x121.9 cm	80x71x48 in / 203.2x180.3x121.9 cm
unit weight (lbs/Kg)	1335lbs / 605.5kg	1335lbs / 605.5kg	1335lbs / 605.5kg	1660lbs / 753kg	1660lbs / 753kg	1660lbs / 753kg
shipping weight (lbs/Kg)	1362 lbs / 617.8kg	1362 lbs / 617.8kg	1362 lbs / 617.8kg	1822 lbs / 826.4 kg	1822 lbs / 826.4 kg	1822 lbs / 826.4 kg
native drive throughput (MB/sec)	15	16	30	15	16	30
recording method	Linear Serpentine	Linear Serpentine	Linear Serpentine	Linear Serpentine	Linear Serpentine	Linear Serpentine
maximum number of drives supported in a single unit	8	8	8	16	16	16
single unit maximum native backup performance (GB/hr)	432	460.8	864	864	921.6	1728
single unit number of slots	222, 322	222, 322	222, 322	400, 500, 595	400, 500, 595	400, 500, 595
single unit native backup capacity (TB)	32.2	51.52	64.4	59.5	95.2	119
robotics reliability (MSBF)	2 Million	2 Million	2 Million	2 Million	2 Million	2 Million
multi-unit scalability	Yes, up to 5 units*	Yes, up to 5 units*	Yes, up to 5 units*	Yes, up to 4 units*	Yes, up to 4 units*	Yes, up to 4 units*
maximum native scaled capacity (TB)	146.8	235.84	337.6	227.8	364.48	455.6
maximum native scaled performance (GB/hr)	2160	2304	4320	3456	3586.4	6912
inventory time	less than 7 minutes	less than 7 minutes	less than 7 minutes	less than 7 minutes	less than 7 minutes	less than 7 minutes
average slot to drive time	6 seconds	6 seconds	6 seconds	6 seconds	6 seconds	6 seconds
average cartridge swaps	180 swaps/hour	180 swaps/hour	180 swaps/hour	180 swaps/hour	180 swaps/hour	180 swaps/hour
management and diagnostics	HP L&TT	HP L&TT	HP L&TT	HP L&TT	HP L&TT	HP L&TT
interface	Ultra2 SCSI (LVD)	Ultra2 SCSI (LVD)	Ultra3 SCSI (LVD)	Ultra2 SCSI (LVD)	Ultra2 SCSI (LVD)	Ultra3 SCSI (LVD)
high availability features	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input	Hot-plug drives Hot-swap redundant power and cooling Dual AC power input
control panel	GUI touch screen	GUI touch screen	GUI touch screen	GUI touch screen	GUI touch screen	GUI touch screen
power requirements	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz	90-132V AC @ 47-63Hz 180-264V AC @ 47-63Hz
power consumption	1200W	1200W	1200W	1600 W	1600 W	1600 W
warranty	One year, next business day on-site	One year, next business day on-site	One year, next business day on-site	One year, next business day on-site	One year, next business day on-site	One year, next business day on-site
mission critical support services	Optional	Optional	Optional	Optional	Optional	Optional
servers supported**	HP ProLiant servers HP-UX servers HP Netervers	HP AlphaServer systems HP ProLiant servers HP-UX servers	HP ProLiant servers HP-UX servers HP Netervers	HP ProLiant servers HP-UX servers HP Netervers	HP AlphaServer systems HP ProLiant servers HP-UX servers	HP ProLiant servers HP-UX servers HP Netervers

* Multi-unit support on ESL9322 and ESL9595 libraries available in mid 2003

** For specific servers supported by individual libraries refer to products Quick Specs www.hp.com/products/tapestorage

for more information, visit:
hp.com/products/tapestorage

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