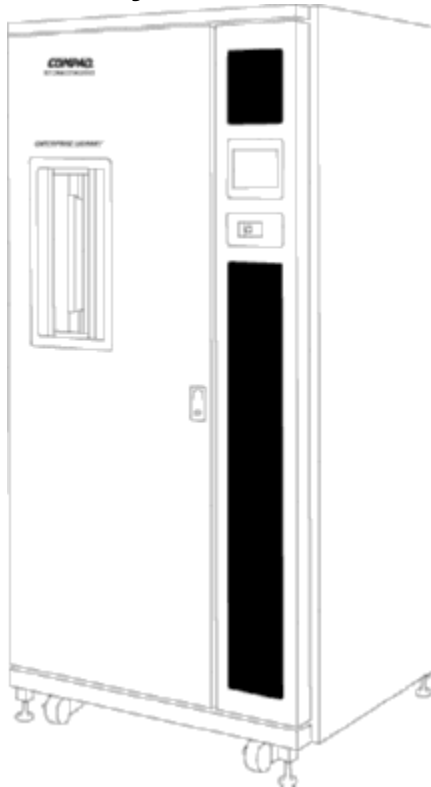


Overview

HP StorageWorks ESL9198SL Library



At A Glance

- The Ultimate in High-Capacity Unattended Backup and Restore:
- The HP StorageWorks ESL9198SL Tape Library provides the ultimate in high-capacity unattended backup and restore for customers with large server pools and centralized backup and restore requirements, serviced by network attached storage devices or storage area networks. The consolidation of tape backup into a single shared storage device requires these devices to provide both high capacity and high performance, and the need for redundancy and high availability. With high availability features, component level redundancy and high capacity, the ESL9198SL can provide years of fully automated operation for backup, save and restore, and hierarchical storage management of critical data, it is qualified with a variety of industry-standard backup application solutions and operating systems. With 198 slots and up to eight hot plug SDLT drives, the ESL9198SL offers up to 21.78 TB of native data storage and native transfer rates up to 316.8 GB/hr.

Standard Features

HP StorageWorks ESL9198SL Enterprise Tape Library Models	The HP StorageWorks ESL9198SL Tape Library comes equipped with 198 media slots and up to eight SDLT tape drives (number of drives determined by SKU chosen).	
	0 drive/198 Slots	194993-B21
	4 drive/198 Slot	234618-B21
	8 drive/198 Slot	234618-B22
	ESL9198DLX, 0 Drive, LVD – Bundle	253736-001
	ESL9198SL, 4 Drive/198 Slot – Bundle	253751-001
	ESL9198SL, 8 Drive/198 Slot – Bundle	253752-001

HP StorageWorks ESL9198SL Enterprise Tape Library Upgrade Kits	ESL9000 passthrough mechanism	161268-B21
	ESL9000 field upgrade SDLT 110/220 LVD drive in hot plug canister	234617-B21
	ESL9000 field upgrade SDLT 160/320 LVD drive in hot plug canister	293414-B21
	ESL9000 field upgrade LTO Ultrium 230 drive in hot plug canister	301930-B21
	LVD Extender kit (required for HBA to Library SCSI cable lengths exceeding 10 m)	221249-B21
	ESL9000 6 slot magazine	229909-B21
	Network Storage Router e2400, ESL9000 embedded fibre option – Base, 2 FC X 4 LVD SCSI ports (Includes ESL9000 cPCI card cage)	262665-B21
	ESL9000 embedded Fibre option upgrade (no card cage included; SKU 262665-B21 must be installed before this SKU can be installed)	262664-B21
	ESL9000 5-MB memory module for ESL9198 & ESL9326 libraries (required to support firmware versions 3.00 and later)	274673-B21
	ESL9000 passthrough kit – Bundle	253713-001
	ESL9000 SDLT LVD upgrade drive – Bundle	253749-001

The ESL9198SL comes with a complete 198 slot library system configured with the associated number of drives, installation and user's manual, one-piece SDLT media, one cleaning tape, and a copy of the HP Storage Management Solutions CD. Customers are required to also purchase the necessary number of host bus adapters, SCSI cables, SDLT media, country specific power cords (pair) and applications software licenses in order to complete the library solution.

Due to the size and weight of the unit, a pre-sales site survey is required. The pre-sales site survey document is on

http://www.compaq.com/support/techpubs/installation_guides/146587-001.html

Installation services can be ordered separately on HP Services as part of each library order (requires scheduling with local HP Services provider).

NOTE: Does not include special site work, which may be required as a result of not meeting minimum site survey requirements.

The ESL9000 Enterprise Library Family

The HP StorageWorks ESL9000 library family, including the ESL9198SL, is comprised of high performance, highly reliable enterprise DLT/SDLT libraries from HP. With its high availability feature set, the ESL9000 family provides for maximum uptime. Based on PCI backplane architecture, the ESL9000 family also provides a simple upgrade path for future plug-in features.

Standard Features

High Availability	As data becomes more and more mission critical, and downtime becomes more costly to the enterprise, customers are requiring high availability consolidated storage solutions which offer hot-swappable components and redundancies of key operating sub-systems (tape drives, controllers, power supplies). With redundant power distribution, power supplies, and cooling fans, coupled with hot pluggable drive carriers, power supplies and cooling fan modules, the ESL9198SL offers the best in high availability for continuous operation.
Hot Pluggable Drives	The ESL9198SL uses hot pluggable DLT drive carriers, allowing drives replacement and additional DLT drives to be added for capacity expansion without interrupting backup and restore functions. These hot pluggable drive trays allow for easy scalability of performance, as well as provide an easy upgrade path towards future DLT drive technologies. NOTE: The ESL9198SL accepts only library ready drives specifically modified for use in the ESL9198SL library.
Proven Reliability	Using SDLT tape drives, and proven library robotics with a rating of 1,000,000 load/unload cycles, the ESL9198SL provides the necessary high reliability.
SDLT Technology	Digital Linear Tape uses a proven linear recording technology, a highly accurate tape guide system, and a read after write correction system to provide high-capacity, high reliability data backup and restoration. DLT has fast become the industry-standard secondary storage tape format for departmental and enterprise backup. The new generation SDLT tape drive, in addition to enhanced capacity and backup performance provides advantages several new features such as Laser Guided Magnetic Recording (LGMR™) technology, Pivoting Optical Servo (POS), Magneto-Resistive Cluster Heads (MRC), Partial Response Maximum Likelihood (PRML) channel technology and Backward Read Compatible with earlier generation of DLT drives, to be able to read media written in DLT IV format.
Manageability	The ESL9198SL library configurations are fully supported through HP Insight Manager, providing information to administrators for both robotic and tape status changes, and fault status of redundant components (high availability fault status requires use of CIM 5.0 or later). HP TSMC (tape storage management console) software provides diagnostics and easy firmware upgrade capabilities. Other data and automation manageability features, including multi-host direct connectivity, are provided via specific, third party applications software packages.
Multi-unit Scalability	The ESL 9198SL has the capability for multi-unit scalability; up to 5 libraries can be scaled together in a virtual library using a passthrough kit. The ESL9198SL can be scaled with ESL9326SL or other ESL9198SL libraries. *Current software limitations restrict support to 32 drives.
What is Storage Services Bundling?	The Storage Services Bundling takes the existing storage products along with the existing services and creates bundles of storage hardware/software and appropriate services. The increased level of support provides for a higher level of storage system availability for the customer.
Warranty	One-year warranty, on-site next day response. Additional warranty protection can be purchased for all ESL9198SL DLT Library products products. NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.

Standard Features

O/S Support	OS Supported (Under direct SCSI attach and EBS for SANs)	Windows® NT® v4.0 and Windows 2000 Novell NetWare® v 5.1 Tru64 UNIX® v4.0G and 5.1 OpenVMS v 7.2-1 Sun Solaris 2.6, 7, 8 IBM AIX 4.3.3 HP-UX 11, 11i, 10.2 Linux Red Hat 6.2 Linux SuSE 7.0
<hr/>		
Server Support	High-End ProLiant Servers	ProLiant DL760 ProLiant 8500 ProLiant ML750 ProLiant 8000
	Departmental ProLiant Servers	ProLiant DL580G2 ProLiant ML570G2 ProLiant ML530G2
	AlphaServer Systems	AlphaServer GS320, GS160, GS 80 AlphaServer ES40
	HP-UX Servers	D-Class K-Class A-, L-, N-, V-Class, rp8400, Super Dome
	SCSI controller supported ProLiant Adapters: Alpha Adapters:	64-bit/66MHz PCI dual channel Wide Ultra3 SCSI adapter 129803-B21 Hewlett-Packard Ultra2 LVD, single channel 3X-KZPCA-AA
<hr/>		
Application Support	Hewlett-Packard supports the following backup/restoration applications software packages (Under direct SCSI attach and Hewlett-Packard EBS for SANs) (Under direct SCSI attach only) Media Partitioning Support	HP Omniback 4.x for HP-UX 11i, 10.2, 11.0 HP Data Protector 5.0 for HP-UX 11i, 10.2, 11.0 VERITAS Backup Exec v8.6 for Windows NT/2000 VERITAS Backup Exec v8.5 for Netware Computer Associates ARCserve 2000 Windows NT/2000 Computer Associates ARCserve v7.0 for NetWare Legato NetWorker v6.1 for Windows NT/2000 Legato NetWorker v6.1 for Tru64 UNIX VERITAS NetBackup v3. 4 for Windows NT/2000 Storage Library System (SLS) v2.9d for OpenVMS Archive/Backup System (ABS) v3.0 for OpenVMS Media partitioning is the capability to create logical pools or partitions in a tape library. The ESL9198DLX tape library supports media partitioning capability to support multiple drives types within a single library. Currently this capability supports the 40/80GB DLT, SDLT 110/220GB drives (LVD only), and SDLT160/320. Media partitioning will support Ultrium 230 tape drives for ProLiant in the near future. Media partitioning capability is available via the ISV backup application software being used to perform backup and restores. The following applications support media partitioning capability <ul style="list-style-type: none"> ● Computer Associates Arcserve 2000 Build 15 for Windows NT/2000 ● VERITAS Backup Exec 8.6 for Windows NT/2000 Build 8.6.3808 and later ● VERITAS Netbackup 3.4 or 3.4.1 with patch NB_3.4.1_1 for

Standard Features

Windows NT/2000 and patch NB_3.4_1 for UNIX

- Legato NetWorker 6.1 with Legato SmartMedia 1.5 (SM 1.5 releases in Oct)

The ESL9198DLX Library support media partitioning, 40/80GB DLT, SDLT110/220 (LVD only), and SDLT 160/320 (LVD only) may be mixed in the library, when they are configured in separate partitions. Upgrade of firmware to v 3.0+ , extension axis kit (249632-B21), and 5 MB memory module (274673-B21) on the ESL9198DLX is required to support SDLT 160/320 drives.

Automation and Network Utilities

Media Robot Utility (MRU) v1.4

Insight Manager v7.0

TSMC (Tape Storage Management Console) v2.3+

HP Care Pack Service and Support

Hewlett-Packard Installation and Care Pack Information

HP Services provides a one-year, limited warranty, fully supported by a worldwide network of resellers and service providers, and also provides hardware technical phone support. In addition, available service offerings include a full range of hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services

Additional warranty protection and/or Hewlett-Packard Installation packages can be purchased for the ESL9198SL library products:

Software Product Services

- Stand-alone telephone support
- Rights to a new license
- Media and documentation updates

Hardware Product Services

- Installation services
- On-site Maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage

For additional hardware installation and maintenance information please refer to the URLs listed below:

<http://h18005.www1.hp.com/services/carepaq/us/install/>

<http://h18005.www1.hp.com/services/carepaq/us/hardware/>

For EMEA: Contact your local Global Services Department

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4-hours
- Coverage - Extend hours of coverage from 5 days x 9 hours to 7 days x 24 hours
- Duration - Select duration of coverage for a minimum period of 1 year or multiple years

Additional warranty protection and/or HP Installation packages can be purchased for the ESL9198SL library:

Installation Services (NA)

For library SKUs (0 to 8 drive units)

163463-002
FM-T6INS-IN

For Pass-Through Mechanism Kit

215330-002
FM-T7INP-IN

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

HP Care Pack Service and Support

EMEA HP Care Pack	3 year, uplift to 5 x 9, Next Day Response	FP-WARPL-36
PS Information	3 year, uplift to 5 x 9, 4-hour Response	FP-PRIOR-36
Sample part numbers:	3 year, uplift to 7 x 24, 4-hour Response	FP-PRI24-36
	Basic Installation Service	FP-INSTA-IN

HP Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.

HP Care Pack is not available for less than the products warranty duration.

HP Care Pack is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.

HP Care Pack services are prepaid.

For additional HP Care Pack (hardware & software) information, as well as orderable part numbers, please contact your local Global Services Representative.

Customized Installation Services (including installation of vendor backup software) and contract based support services are available by contacting your local Global Services department

Related Options

		UPC Code	Part Number
ESL9198SL Tape Library	ESL9198SL, 0 drives, LVD	720591447625	194993-B21
	ESL9198DLX, 0 drive, LVD – Bundle		253736-001
	ESL9198SL, 4 SDLT 110/220 drive	720591777029	234618-B21
	ESL9198SL, 4 Drive/198 Slot – Bundle		253751-001
	ESL9198SL, 8 SDLT 110/220 drive	720591777043	234618-B22
	ESL9198SL, 8 Drive/198 Slot – Bundle		253752-001
Supplied with each Library Unit			
Library unit (pre-configured with drives)			
Documentation kit			
Documentation CD including translations			
Users Guide			
Unpacking and Installation Guide			
Pre-Installation Site Survey			
Diagnostic CD			
Diagnostic Software Guide			
Warranty Card			
Safety Card			
Driver CD			
(1) SDLT 110/220 Media Cartridge			
Bar Code Labels			
Cleaning Labels			
(2) Keys			
SCSI terminators (1 per drive, installed)			
Diagnostic cable (for PC attach)			
<hr/>			
Power Cord (Pair Required)	ESL9000 POWER CORDS 2X, US/CANADA/MEX*	743172935649	146210-001
	ESL9000 POWER CORDS 2X, SE ASIA/INDIA	743172935625	146210-AR1
	ESL9000 POWER CORDS 2X, CENTRAL EUROPE	743172935632	146210-021
	ESL9000 POWER CORDS 2X, AUS/CHINA/NZL	743172935670	146210-011
	ESL9000 POWER CORDS 2X, SWITZERLAND	743172935656	146210-111
	ESL9000 POWER CORDS 2X, UK/HONG KONG	743172935663	146210-031
	ESL9000 POWER CORDS 2X, ITALY	743172935687	146210-061
	ESL9000 POWER CORDS 2X, DENMARK	743172935694	146210-081
	ESL9000 POWER CORDS 2X, JAPAN	743172935700	146210-291

Related Options

Drive, capacity, and memory upgrade kits	ESL9000 field upgrade SDLT 110/220 LVD drive in hot plug canister	720591776985	234617-B21
	ESL9000 SDLT LVD upgrade drive – Bundle		253749-001
	ESL 9000 field upgrade DLT 40/80 GB LVD drive in hot plug canister	720591597658	221248-B21
	ESL9000 SDLT Ext axis kit upgrade	613326274255	249632-B21
	ESL9000 LVD SDLT 160/320 drive upgrade	613326517642	293414-B21
	ESL9000 LTO Ultrium 230 drive upgrade	613326562840	301930-B21
	ESL9000 5 MB memory module for ESL9198 & ESL9326 libraries (required to support firmware versions 3.00 and later)	613326380215	274673-B21

Media and Bar Code Labels	SDLT Media 5-Pack	720591390273	188527-B21
	SDLT Media 10-Pack	720591390587	188527-B22
	SDLT Media 20-Pack	720591433208	188527-B26
	Supplied with each Power Cord		
	Additional media		
	Additional magazines		
	Bar code labels		

SCSI Cables	Wide/Wide SCSI cable, 5 m	743172633910	328215-001
	Wide/Wide SCSI cable, 10 m	743172633927	328215-002
	Wide/Wide SCSI cable, 15 m (do not order for multiple device per HBA configurations)	743172633934	328215-003
	Wide/Wide SCSI cable, 20 m (do not order for multiple device per HBA configurations)	743172633941	328215-004
	SCSI Cable, VHDCI/Wide, 6 ft	743172660831	341176-B21
	SCSI Cable, VHDCI/Wide, 12 ft	743172660848	341177-B21
	SCSI Cable, VHDCI/Wide, 10 m	720591469108	201160-B21
	SCSI Cable, VHDCI/Wide, 20 m	720591624491	201160-B23

NOTE: Check the cable-adapter matrix for tape libraries on:
<ftp://ftp.compaq.com/pub/products/storageworks/tape-and-optical-storage/adapter-cable-matrix.pdf>

Related Options

SCSI Host Bus Adapter/Hewlett-Packard Fibre Channel to SCSI Router (optional)	Host Bus adapter for SCSI connectivity from server to tape library in direct SCSI environment		
	Modular Data Router, Network Storage Router, Embedded FC Router to connect SCSI Library to Fibre Channel Hub/Switch		
	ProLiant Controllers		
	64-bit/66 MHz PCI dual channel Wide Ultra3 SCSI adapter	743172876379	129803-B21
	Alpha Controllers		
	Single Channel Ultra LVD Controller		3X-KZPCA-AA
	Modular Data Router (required for SAN configuration)		
	Modular Data Router (1 FC x 2 LVD SCSI)	720591260897	163083-B21
	Modular Data Router (2 FC x 4 LVD SCSI)	720591570651	218241-B21
	Network Storage Router (required for SAN configuration)		
Network Storage Router m2402 (2FC X 4 LVD SCSI)	613326254516	262653-B21	
Network Storage Router e2400, ESL9000 embedded fibre option – Base 2 FC X 4 LVD SCSI ports (Includes card cage for installation of embedded router which is required for configuration; Includes two router cards each with 1 FC X 2 LVD SCSI ports, 4 VHDCI-WIDE SCSI cable, user guide CD, and the ESL9000 cPCI card cage) It is recommended that the installation CarePaq be ordered with this SKU.	613326254752	262665-B21	
Embedded Data Router, ESL 9000 embedded fibre option E2400 – Upgrade 2 FC X 4 LVD SCSI ports (Includes: two 1FC x 2LVD SCSI router cards, four VHDCI-WIDE SCSI cables, User Guide CD.) This SKU does not include a card cage; it is an upgrade SKU and requires 262665-B21 to be configured first, when configured it increases the number of SCSI ports available to connect drives in an ESL9000 library to the SAN, to a total of eight). It is highly recommended that the installation CarePaq be ordered with this SKU.	613326254998	262664-B21	
Passthrough mechanism	ESL9000 passthrough Kit	720591252915	161268-B21
	ESL9000 passthrough Kit – Bundle		253713-001
LVD Extender Kit	LVD Extender kit (Required for HBA to Library SCSI cable lengths exceeding 10 m)	720591597658	221249-B21
ESL9000 magazine	ESL9000 6 slot magazine	720591696979	229909-B21

Technical Specifications

SCSI Identification	Product ID	ESL9000 Series	
	Vendor ID	HP	
Control Panel	Library and drive status Move tape cartridges Load/unload tape drives Maintenance (drive cleaning, diagnostics) Library configuration Statistics		
SCSI Interface	Ultra2 SCSI LVD, 68HD Interconnect (External cable length between library and HBA, limited to 10 m without LVD extender, extends up to 25 m when using the LVD extender)		
Form Factor	Free Standing		
Dimensions (H x W x D)	75 x 36 x 29 in/191 x 91.4 x 75 cm		
Unit Weight	Without data cartridges, 0 drives	850 lb/385.55 kg	
	Without data cartridges, 8 drives	958 lb/434.54 kg	
	198 data cartridges, 8 drives	1,053 lb/477.63 kg	
Performance (native) (11MB/s per drive)	Minimum configuration	2 SDLT drives Native transfer rates up to 79.2 GB/hr (Zero drive configuration also available for custom field configuration)	
	Maximum configuration	8 SDLT drives, 198 cartridge slots Native transfer rates up to 316.8 GB/hr With multi-unit scalability up to 40 drives and 870 slots* *Current software limitations restrict support to 32 drives	
Storage Capacity	Supports 198 SDLT cartridges for native capacity up to 21.78 TB native, 43.56 TB compressed (2:1) Multi-unit Scalability, 95.7 TB native, 191.4 TB compressed (2:1) (Can also be scaled with mix of ESL9326SL & ESL9198SL)		
Input/Output Port	2 x 6-slot removable magazines		
Initialization Time	< 5 minutes		
Tape Access Time	< 22 seconds		
Swaps	135 swap/hour		
Electrical Specifications	AC Voltage	Auto-range to domestic and international AC voltages AC Voltage Range: 90 to 132 VAC or 180 to 264 VAC, single phase Nominal: 100 to 120 VAC or 220 to 240 VAC Line Frequency Range: 47 to 63Hz AC Receptacle: IEC-320 C19 Type 100-120 V/200-240 V, 50/60 Hz, 20A/16A (5-20P plug for U.S. and Canada)	
	Power Consumption	1200 VA Maximum	
Acoustic Noise	Noise Power Emission Level	Idle	7.8 bels
		Operating	8.1 bels
Reliability (Library Only)	MTBF	250,000 hours	
	MSBF	2,000,000 load/unload cycles	
Regulatory Compliance	Safety	UL1950, CSA C22.2 950, EN 60950:1992/A11, IEC 60950:1992/A11, DHHS/FDA (US CFR21 part 1040, Class 1 laser)	
	EMI	EN 60825:1994/A11, FCC Part 15 Class A, CISPR Publication 22 Class A, ICES-003 Class A, VCCI Class 1, SMA AZ/NZS 3548 Class A	
	EMC	EN6100-3-2, EN50082-1: 1992, EN50022: 1994	

Technical Specifications

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