

MODELS

StorageWorks ESL9326SL Enterprise Library

The StorageWorks ESL9326SL Enterprise Library comes with 326 media slots and up to 16 SDLT 110/220GB tape drives (number of drives determined by SKU chosen).

234488-B21	ESL9326 LVD 0 DRV
234615-B21	ESL9326SL LVD 6 SDLT 110/220 DRV
234615-B22	ESL9326SL LVD 8 SDLT 110/220 DRV
234615-B26	ESL9326SL LVD 16 SDLT 110/220 DRV

Library Upgrade Kits

234617-B21	ESL9K field upgrade SDLT 110/220 LVD drive in hot plug canister
161268-B21	ESL9000 Pass through Mechanism kit
221249-B21	LVD Extender kit (Required for HBA to Library SCSI cable lengths exceeding 10 m)
229909-B21	ESL9000 6 slot magazine
274673-B21	ESL9000 5 MB Memory Module for ESL9198 & ESL9326 libraries, (required to support firmware versions 3.00 and later)
262665-B21	Embedded Data Router, ESL 9000 embedded fibre option E2400 – Base, 2 FC X 4 LVD SCSI ports (Includes ESL9000 cPCI card cage)
262664-B21	ESL9000 Embedded Fibre Option upgrade (no card cage included; SKU 262665-B21 must be installed before this SKU can be installed)

The ESL9326SL comes with a complete 326 slot library system configured with the associated number of drives, installation and user's manual, one-piece SDLT media, a copy of the 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.

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.

OVERVIEW

The Ultimate in High-Capacity Unattended Backup and Restore

The StorageWorks ESL9326SL Enterprise Library provides the ultimate in high-capacity unattended backup and restore for customers with large server pools serviced by network attached storage devices or storage area networks. The consolidation of the enterprise's data into a single shared storage device requires that these devices provide both high capacity and high performance. With the consolidation of backup data into a single device also comes the increased need for redundancy and high availability. The ESL9326SL can provide years of fully automated operation for backup save and restore, and hierarchical storage management of critical data when coupled with a variety of qualified industry standard backup application solutions. With 326 slots and up to 16 SDLT drives, the ESL9326SL offers up to 35.86-TB of native data storage and native transfer rates up to 633.6GB/hr.

The ESL9000 Enterprise Library Family

The ESL9326SL enterprise library is part of the ESL9000 class enterprise DLT library family. 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.

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 ESL9326SL offers the best in high availability for continuous operation.

QuickSpecs

StorageWorks ESL9326SL Enterprise Library

OVERVIEW *(continued)*

Hot Pluggable Drives

The ESL9326SL 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 ESL9326SL accepts only library ready drives specifically modified for use in the ESL9326SL library.

Proven Reliability

Using DLT tape drives, and proven library robotics with a rating of 1,000,000 load/unload cycles, the ESL9326SL 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.

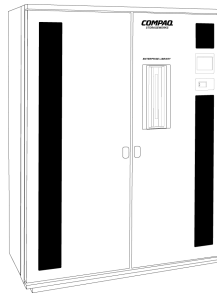
Manageability

The ESL9326SL library configurations are fully supported through Insight Manager, providing information to administrators for both robotic, tape status changes, and fault status of redundant components (high availability fault status requires use of CIM 5.0 or later). 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 ESL9326SL has the capability for multi-unit scalability, up to 5 libraries can be scaled together in a "virtual library" using Passthrough kit to provide a maximum of 80 drives and 1630 cartridges*

*Current software limitations restrict support to 32 drives.



StorageWorks ESL9326SL Enterprise Tape Library

OVERVIEW *(continued)*

O/S Support

OS Supported

(Under direct SCSI attach and HP EBS for SANs):

Microsoft® Windows® NT® v4.0 and Windows 2000

Novell® NetWare® v 5.1

Tru64 UNIX v4.0G and 5.1

OpenVMS v 7.2-1

(Under HP EBS for SANs):

Sun™ Solaris™ 2.6, 7, 8

IBM AIX 4.3.3

HP UX 11

Linux® Red Hat® 6.2

Linux SuSE® 7.0

Server Support

Enterprise ProLiant Servers

ProLiant DL760

ProLiant 8500

ProLiant ML750

ProLiant 8000

ProLiant DL580G2

Departmental ProLiant Servers

ProLiant ML570G2

ProLiant ML530G2

AlphaServer

AlphaServer GS320, GS160, GS80

AlphaServer ES40

SCSI Controllers

ProLiant Adapters

64-bit/66-MHz PCI dual channel Wide Ultra 3 SCSI adapter 129803-B21

Alpha Adapters

Ultra 2 LVD, single channel SCSI adapter 3X-KZPCA-AA

OVERVIEW *(continued)*

Application Support

HP supports the following backup/restoration applications software packages:

(Under direct SCSI attach and HP EBS for SANs):

VERITAS Backup Exec v8.6 for Windows NT/2000
VERITAS Backup Exec v9.0 for Netware
Computer Associates Brightstor ARCserve 2000 Windows NT/2000
Computer Associates Brightstor ARCserve v7.0 for NetWare
Legato NetWorker v6.1.1 for Windows NT/2000
Legato NetWorker v6.1.1 for Tru64 UNIX
VERITAS NetBackup v4.5 for Windows NT/2000
VERITAS NetBackup v4.5 for Tru64 UNIX
Legato Smart Media v1.5 for Tru64 Unix and NT/2000
Syncsort Backup Express v2.1.3f for Windows 2000 and Tru64

(Under HP EBS for FC SANs only):

Tivoli TSM v4.2.1
Atempo Time Navigator v3.6
Backbone Netvault v6.5.1
Commvault Galaxy v3.7.1

(Under direct SCSI attach only):

Storage Library System (SLS) v2.9d for OpenVMS
Archive/Backup System (ABS) v3.0 for OpenVMS

For the latest updated compatibility matrix for ISV backup software supported go to:

<http://www.compaq.com/products/storageworks/ebs/EBScompatmatrix.html>

Automation and Network Utilities

Media Robot Utility (MRU) v1.4
Insight Manager v5.0
TSMC (Tape Storage Management Console) V 2.3+

Media Partitioning Support:

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

- 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 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 ESL9326SL 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+, and 5 MB memory module (274673-B21) on the ESL9326SL is required to support SDLT 160/320 drives.

QuickSpecs

StorageWorks ESL9326SL Enterprise Library

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		
SCSI Interface	Statistics		
	Ultra II 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)	Height	75 in/191 cm	
	Width	57 in/145 cm	
	Depth	29 in/75 cm	
Unit Weight	Without data cartridges, 6 drives	1165 lb/529 kg	
	Without data cartridges, 16 drives	1300 lb/590 kg	
	326 data cartridges, 16 drives	1457 lb/661 kg	
Performance (native) (11MB/s per drive)	Minimum configuration	6 HP SDLT drives Native transfer rates up to 237.6 GB/hr (Zero drive configuration also available for custom field configuration)	
	Maximum configuration	16 HP SDLT drives, 326 cartridge slots Native transfer rates up to 633.6 GB/hr With Multi-unit Scalability Up to 80 drives* and 1630 cartridges *Current software limitations support up to 32 drives	
Storage Capacity	Supports 326 DLT IV cartridges for compressed capacity up to: 35.86 TB native, 71.72 TB compressed (2:1) With Multi-unit Scalability 179.3 TB native, 358.6 TB compressed (2:1)		
Input/Output Port	2 x 6 slot removable magazines		
Initialization Time	< 9 minutes		
Tape Access Time	< 33 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 100-120V/200-240V, 50/60 Hz, 20A/16A (5-20P plug for U.S. and Canada)	
	Power Consumption	VA Maximum 1,600W	
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,	
	EMC	FCC Part 15 Class A, CISPR Publication 22 Class A, ICES-003 Class A, VCCI Class 1, SMA AZ/NZS 3548 Class A EN6100-3-2, EN50082-1: 1992, EN50022: 1994	

SPECIFICATIONS *(continued)*

Warranty

1 year, on-site next-day response

Additional Warranty protection can be purchased for all ESL9326SL DLT Library products.

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

HP INSTALLATION AND CAREPAQ

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

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

HP SERVICE AND WARRANTY SUPPORT

Additional Warranty protection and/or HP Installation packages can be purchased for the ESL9326SL 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://www.compaq.com/services/carepaq/us/install/>

<http://www.compaq.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 multiyears

Additional Warranty protection and/or HP Installation packages can be purchased for the ESL9326SL DLT Library products:

Installation Services (NA only)	2-5-2 Part No.	6-3 Part No.
For library SKUs ending in suffix -B21 through -B24 (0 to 8 drive units)	FM-T6INS-IN	163463-002
For library SKUs ending in suffix -B25 through -B28 (9 to 16 drive units)	FM-T7INS-IN	163473-002
For Pass through Mechanism Kit	FM-T7INP-IN	215330-002

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

HP SERVICE AND WARRANTY SUPPORT *(continued)*

CarePaq Information

- CarePaq is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePaq is not available for less than the products warranty duration.
- CarePaq 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.
- CarePaq services are prepaid.

For additional CarePaq (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

<http://www.compaq.com/services/carepaq/index.html>.

EMEA CarePaq PS Information

Sample part numbers:

- FP-WARPL-36 3 year, uplift to 5 x 9, Next Day Response
- FP-PRIOR-36 3 year, uplift to 5 x 9, 4-hour Response
- FP-PRI24-36 3 year, uplift to 7 x 24, 4-hour Response
- FP-INSTA-IN basic installation Service
- CarePaq is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePaq is not available for less than the product's warranty duration.
- CarePaq 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.
- CarePaq services are prepaid.

For additional CarePaq (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

<http://emea-inline.eur.compaq.com/csd/smb/prioritysupportmaterial.asp>

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

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.

RELATED OPTIONS

The ESL9326SL solution includes the following related options:

ESL9326SL Tape Library

Part Number	Part Description	UPC Code
234488-B21	ESL9326SL LVD 0 DRV	720591775728
253745-001	ESL9326 LVD 0 DRV – Bundle	
234615-B21	ESL9326SL LVD 6 SDLT 110/220 DRV	720591775704
234615-B22	ESL9326SL LVD 8 SDLT 110/220 DRV	720591775681
253747-001	ESL9326SL LVD 8 SDLT 110/220 DRV – Bundle	
234615-B26	ESL9326SL LVD 16 SDLT 110/220 DRV	720591775605
253748-001	ESL9326SL LVD 16 SDLT 110/220 DRV – Bundle	

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)

Power Cord (Pair Required)

146210-001	ESL9000 POWER CORDS 2X, US/CANADA/MEX* *(shipped with all units)	743172935649
146210-AR1	ESL9000 POWER CORDS 2X, SE ASIA/INDIA	743172935625
146210-021	ESL9000 POWER CORDS 2X, CENTRAL EUROPE	743172935632
146210-011	ESL9000 POWER CORDS 2X, AUS/CHINA/NZL	743172935670
146210-111	ESL9000 POWER CORDS 2X, SWITZERLAND	743172935656
146210-031	ESL9000 POWER CORDS 2X, UK/HONG KONG	743172935663
146210-061	ESL9000 POWER CORDS 2X, ITALY	743172935687
146210-081	ESL9000 POWER CORDS 2X, DENMARK	743172935694
146210-291	ESL9000 POWER CORDS 2X, JAPAN	743172935700

**Order Local power cords separately.

RELATED OPTIONS *(continued)*

Drive, capacity, and memory upgrade kits

234617-B21	ESL9000 field upg SDLT 110/220 LVD drive in hot plug canister	720591776985
293414-B21	ESL9000 LVD SDLT 160 drive upgrade (Requires 274673-B21 5 MB memory module)	613326517642
274673-B21	ESL9000 5 MB Memory Module for ESL9198 & ESL9326 libraries, (required to support firmware versions 3.00 and later)	613326380215

Media and Bar Code Labels

188527-B21	SDLT Media 5-Pack	720591390273
188527-B22	SDLT Media 10-Pack	720591390587
188527-B26	SDLT Media 20-Pack	720591433208

- Additional media
- Additional magazines
- Bar Code Labels

SCSI Cables

328215-001	Wide/Wide SCSI cable, 5 m	743172633910
328215-002	Wide/Wide SCSI cable, 10 m	743172633927
328215-003	Wide/Wide SCSI cable, 15 m	743172633934
328215-004	Wide/Wide SCSI cable, 20 m*	743172633941
341176-B21	SCSI Cable, VHDCI/Wide, 6 ft	743172660831
341177-B21	SCSI Cable, VHDCI/Wide, 12 ft	743172660848
201160-B21	SCSI Cable, VHDCI/Wide, 10 m	720591469108
201160-B23	SCSI Cable, VHDCI/Wide, 20 m*	720591624491

Check the cable-adapter matrix for tape libraries on:

<ftp://ftp.compaq.com/pub/products/storageworks/tape-and-optical-storage/adapter-cable-matrix.pdf>

* Requires LVD extender 221249-B21.

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

SCSI Host Bus Adapters

ProLiant Controllers		
129803-B21	64 bit/66-MHz PCI dual channel Wide Ultra III SCSI adapter	743172876379
Alpha Controllers		
3X-KZPCA-AA	Single Channel Ultra LVD Controller	

Modular Data Router (required for SAN configuration)

163083-B21	Modular Data Router (1 FC x 2 HVD SCSI)	720591260880
218241-B21	Modular Data Router (2 FC x 4 HVD SCSI)	720591571115

RELATED OPTIONS *(continued)*

Network Storage Router (required for SAN configuration)

262653-B21	Network Storage Router M2402 (2FC X 4 LVD SCSI)	613326254516
262665-B21	Embedded Data Router, ESL 9000 embedded fibre option E2400 – 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
262664-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

Pass through mechanism

161268-B21	ESL9000 Passthrough Kit	720591252915
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LVD Extender Kit

221249-B21	LVD Extender kit (Required for HBA to Library SCSI cable lengths exceeding 10 m)	720591597658
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ESL9000 magazine

229909-B21	ESL9000 6 slot magazine	720591696979
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