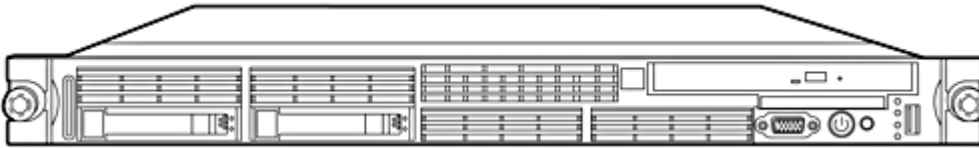


Overview

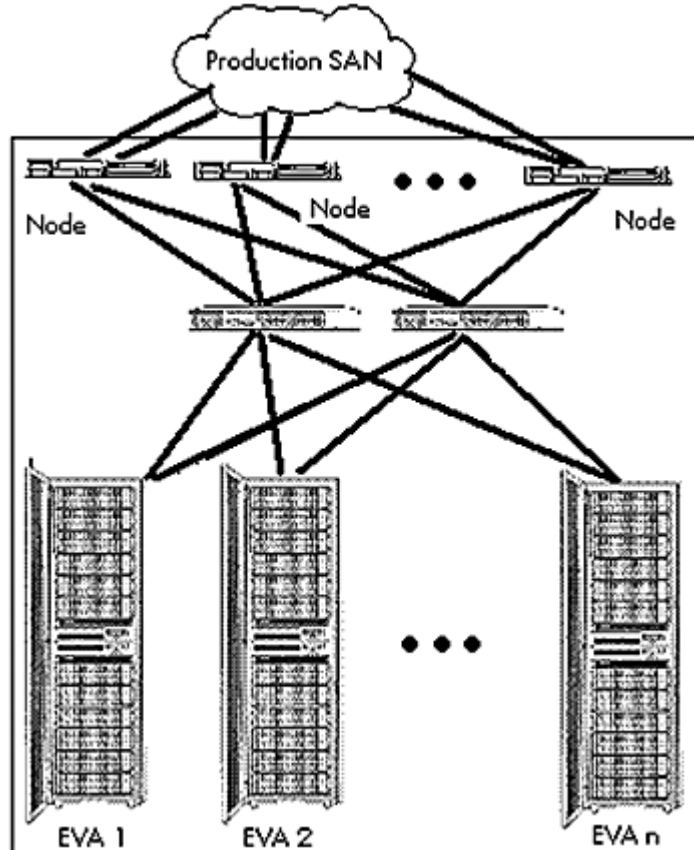
Looking for a way to provide rapid backup and restores for your HP Enterprise Virtual Array?

The HP StorageWorks 12000 Virtual Library System EVA Gateway offers fast data protection and backup in complex SAN environments for HP StorageWorks Enterprise Virtual Array installations. The VLS12000 EVA Gateway is a multi-node gateway solution for the EVA that offers industry-leading performance and scales in performance and capacity to 4800 MB/sec and 1080 TB of useable storage with 2:1 hardware compression. Accelerated deduplication delivers fast backup performance as the deduplication occurs after the backup completes. Low bandwidth replication enables fast, low-cost disaster recovery between remote sites.

The VLS12000 EVA Gateway integrates seamlessly into existing backup applications and processes and as storage needs grow it matches the environment by scaling both in capacity and performance. It is a highly available solution using HP ProLiant servers with redundant subsystems.



HP VLS12000 EVA Gateway node



HP VLS12000 EVA Gateway System

Overview

Models

HP StorageWorks Virtual Library System EVA Gateway Models	HP StorageWorks 12000 Virtual Library System Gateway Base Library	AH814B
	HP StorageWorks 12000 Virtual Library System Gateway Node Expansion Kit	AH815B
	HP StorageWorks Virtual Library System Capacity Expansion License	T4430A
	HP StorageWorks 12000 Virtual Library System Data Deduplication Capacity LTU	T9709A
	HP StorageWorks Virtual Library System Low Bandwidth Replication LTU	T5537A

NOTE: EVA storage is purchased and installed separately

Standard Features

12000 Virtual Library System EVA Gateway Customer benefits

- Seamless integration into current backup and recovery processes
- Fast data restoration and backup performance
- Your valuable data is protected by HP, your trusted and experienced storage vendor.

Key Features

- Accelerated deduplication and low bandwidth replication can be licensed for the VLS12000
- A multi-node gateway solution for the EVA that offers industry-leading performance and easily scales in performance and capacity to 4800 MB/sec and 1080 TB of useable storage, with 2:1 hardware compression
- Emulates popular tape libraries and tape formats with up to 16 libraries and 128 drives emulated per node
- Certified with popular backup software packages through HP StorageWorks Enterprise Backup Solution - www.hp.com/ebs
- A highly available solution using HP ProLiant servers with redundant subsystems: fans, power supply units, hardware-mirrored systems disks and hot swap array drives
- Ships with Automigration software included with the VLS GUI which simplifies moving cartridge data from the VLS to a tape library or another Virtual Library System.
- The VLS12000 supports up to 10,000 slots and 32,000 cartridges (only when using the VLS firmware version 3.X required for Accelerated deduplication).

Product Highlights

Accelerated deduplication The data deduplication capacity LTU will be licensed by the # of EVA LUNS presented to the VLS. The customer must know how many LUNS the VLS is using before ordering. (use Command View VLS (CV-VLS)). One license per 2 TB LUN (T9709A) is required. Accelerated deduplication retains up to 50 times more data readily available on disk by replacing redundant blocks of data with pointers to the original block. Accelerated deduplication delivers fast backup performance since the deduplication process does not impact the backup. Accelerated deduplication delivers fast restore performance since the latest backup copy is always retained in its entirety while data reduction occurs on the previous backups. The VLS12000 can scale data deduplication performance by simply adding additional nodes. Accelerated deduplication needs to recognize the specific backup application being used since it initially strips out the cartridge headers in order to decompose all the files and data types in order to do file-level comparisons to previous backups.

Investment protection through scaling both capacity and performance As environments and needs change, so does the VLS12000 EVA Gateway - capacity and performance can be scaled by provisioning additional storage from existing EVA arrays, or a new HP StorageWorks 12000 Virtual Library System can be designed using dedicated EVA Storage Arrays.

Seamless integration The HP StorageWorks 12000 Virtual Library System EVA Gateway is deployed, managed and operated just like a tape library minimizing disruptions to your environment. Emulations include the HP ESL E-series and MSL tape libraries as well as 1/8 G2 tape autoloaders. The HP StorageWorks VLS12000 EVA Gateway also emulates the HP Ultrium 230 tape drive (LTO-1), HP Ultrium 460 tape drive (LTO-2), HP Ultrium 960 tape drive (LTO-3), HP Ultrium 1840 tape drive (LTO-4), DLT 7000, DLT 8000, and SDLT 320 tape drives.

Fast data restoration and backup performance A multi-node gateway solution for the EVA that offers industry-leading performance and easily scales in performance and capacity to 4800 MB/sec and 1080 TB of useable storage, with 2:1 hardware compression without impact on performance. Accelerated deduplication (an optional license) retains up to 50 times more data readily available on disk. Accelerated deduplication delivers fast backup performance since the deduplication process does not impact the backup.

Reliability While the HP 12000 Virtual Library System EVA Gateway contains reliable hardware featuring hot plug disk drives, standard redundant power supplies and fans, the real reliability is for your data protection process. Simplifying the process by which storage is shared means fewer errors occur, allowing your process to run more smoothly and faster.

Low Bandwidth Replication All sites involved with low bandwidth replication must be fully licensed for Accelerated deduplication. The number of VLS low bandwidth replication licenses, for target sites only, is determined by the number of VLS12000 nodes (AH815B). One license per node is required. Target sites are those sites that receive replicated data from one or many sites. If replicating in both directions (Active-Active) both sites need to be licensed for low bandwidth replication. This application allows these VLS systems to synchronize via low cost IP-WAN connections by only sending the changes (after data deduplication) across the wire. Low bandwidth replication provides an improved disaster recovery solution that allows customers to reduce or eliminate off site vaulting of tapes (including associated services) and reduce or eliminate media handling costs.

Automigration The HP StorageWorks 12000 Virtual Library System EVA Gateway supports Automigration. This service is



Product Highlights

a form of a "disk cache to tape", called "echo copy", which allows copies of data to be moved off the virtual library to a physical library or another VLS under the control of the VLS, not the backup application. Future updates will allow full integration with ISVs via SMI-S 1.3 specifications supporting what we will call "smart copy". HP Data Protector 6.1 supports smart copy. Automigration is an HP developed intellectual property and does not require licensing. SAN based Automigration is only supported on non-deduplication/replication enabled VLS systems.

Automigration - Echo Copy

Echo copy can streamline the process and reduce the costs of making physical tape cartridges from virtual tape cartridges, for vaulting and off-sitting purposes. Echo copy is run through the Automigration software (a tab on the VLS GUI), not the backup application. It acts as a transparent disk cache to the physical library, so that the backup application writes to virtual cartridges in the virtual library, and Automigration then automatically schedules the copies from virtual cartridges to their matching physical cartridges (with the same barcodes) based on the Automigration policies the user establishes.

Since Echo copy is managed through the Automigration software, not the backup application, the destination library is not visible to the backup application - so no licensing is required. Copy traffic is no longer routed through the SAN which speeds up the copy process. Since the tape library is dedicated to the VLS no copy servers are required. Echo copy also eliminates the need for tape-to-tape copy administration since this is automated through copy policy management. All destination tapes created by echo copy are in the native tape format, so they can be easily restored directly from any tape drive or library that is visible to the backup application.

Automigration - Smart Copy

Smart copy provides the same capabilities with one important exception. Smart copy allows the backup ISV to initiate the copy with the VLS12000 actually implementing the move. The cartridge bar codes between the two copies are different and the backup ISV is able to track the move. SMI-S 1.3 support is required by the ISV in order to be able to implement Smart copy. HP Data Protector 6.1 supports smart copy.

Data Protection Software & ISV support

Check the EBS website for the latest VLS and Accelerated deduplication supported backup ISVs and data types: <http://www.hp.com/go/ebs>

Compatibility

HP's Enterprise Business Solutions (EBS) assures that your HP StorageWorks 12000 Virtual Library System EVA Gateway works with leading servers, operating systems, and backup applications - and not just those sold by HP. Based on a foundation of extensive interoperability testing, EBS 1-2-3 provides a step-by-step methodology for designing, configuring, and implementing your SAN ensuring the HP VLS12000 EVA Gateway will work seamlessly in many environments. HP VLS12000 EVA Gateway is especially suitable in a mixed system environment. For the latest list of servers, workstations, operating systems, and backup software that support HP12000 Virtual Library System EVA Gateway, check the tape backup compatibility pages on our web site at: <http://www.hp.com/go/ebs>.

Server Compatibility

The HP StorageWorks 12000 Virtual Library System EVA Gateway is supported on many popular industry servers including HP ProLiant and HP-UX servers. For a complete list of HP and third party servers, please visit the Enterprise Backup Solution on the Worldwide web at: <http://www.hp.com/go/ebs>.

Product Highlights

OS Support

HP provides extensive support on most major operating systems. For the most up-to-date information, please visit the latest compatibility matrix at <http://www.hp.com/go/ebs>

Backup Software Support

The HP StorageWorks 12000 Virtual Library System EVA Gateway is supported on leading backup software applications. As new certifications are achieved, they are posted on the Enterprise Backup Solution Compatibility Matrix. Please visit: <http://www.hp.com/go/ebs> for the latest compatibility information.

Service and Support, HP Care Pack, and Warranty Information

Warranty Information, HP Care Pack and Service and Support

Warranty and Services Included with the Product Hewlett-Packard provides a 1-year, next-day, on-site, limited warranty for the HP StorageWorks VLS12000 hardware, plus 9x5 phone support for the duration of the warranty. All hard drive modules have a 1-year, parts exchange, limited warranty, with next business day response, plus 9x5 phone support for the duration of the warranty.

HP warrants only that the Software media will be free of physical defects for a period of ninety (90) days from delivery.

For more information about HP's Global Limited Warranty and Technical Support, visit:
ftp://ftp.compaq.com/pub/products/storageworks/warranty/en_321708-008.pdf

HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy to buy, easy to use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements, from basic to mission-critical. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

Why purchase an HP Care Pack service?

Your standard warranty protects against product defects. HP Care Pack Services help you guard against unplanned downtime, which can reduce your productivity and profitability. These convenient service packages:

- Protect your investment in HP products
- Provide consistent, predictable levels of support across your entire department or business
- Ease budget planning with fixed-cost support that includes parts and labor
- Give you direct access to proven technical and problem-solving expertise
- Offer a choice of response-time and repair-time commitments
- Deliver prompt, measurable results
- Are available whenever and wherever you do business

HP Care Pack availability may vary by country and product.

Service and Support, HP Care Pack, and Warranty Information

Recommended Services HP Software 3 year Support Plus 24 HA110A3 is recommended.

HP Support Plus 24 provides software support services designed specifically for the VLS12000 product family. This includes:

- **Telephone software support** - An HP Response Center engineer provides problem-analysis and problem-resolution support within 2 hours after your call is logged. The Center also offers help with trouble-shooting problems and setting configuration parameters, as well as usage assistance for applications, operating systems, and utilities.
- **4-hour response onsite hardware support** - For issues that cannot be resolved remotely, HP Services delivers onsite technical support to return your covered hardware products to operational condition, repairing or replacing components or entire units as necessary. An HP authorized representative arrives at your site within 4 hours after your call is logged. Your coverage includes all required parts and materials.
- **24x7x365 coverage** - Onsite and remote services are available around the clock, including all holidays.
- **Escalation management** - Established escalation procedures enlist specialized expertise from HP and selected third-party hardware and software vendors.
- **Software updates and licensing** - Deduplication products and documentation updates are available to your system manager. You receive a license to use and copy the updates to all systems covered by your original software license. Subscription-based service gives you substantial savings vs. the cost of individual updates.
- **Electronic support** - Access HP's electronic support facility for software patches, a symptom-solution database, product descriptions, specifications, technical literature, and more.
- **Distribution of updates and upgrades**
- **Available in 1 year and 3 year Care Packs**

Available HP Care Pack Services Extend your product warranty with a wide choice of cost-saving support packages.

HP Care Pack Services are sold by HP and HP authorized enterprise and commercial resellers. Services for customers purchasing via direct and enterprise resellers are quoted using HP order configuration tools. Additional information about HP Care Pack Service features and benefits is available at: <http://www.hp.com/hps/carepack/services/>.

Key for HP Care Pack Service availability in the table below:

E = Service available for customers purchasing direct and via enterprise resellers

C = Service available for customers purchasing via commercial resellers

NA= Service not applicable

HP Care Pack Services Deployment and Per Event Services	Service Available
HP Installation	HA113A1
HP Installation & Startup	NA
HP Implementation	NA

For more information about Deployment and Per Event Services for HP Storage, visit: <http://www.hp.com/hps/storage/>.

Service and Support, HP Care Pack, and Warranty Information

HP Care Pack Services Availability Services		1 yr	3 yr	4 yr	5 yr
SW Phone	HA106A1	E/C	E/C	E/C	E/C
SW Updates *	HA108A1	-	-	-	-
HP Software Support 24x7	HA107A1	E/C	E/C	E/C	E/C
HP Support Plus	HA109A1	E/C	E/C	E/C	E/C
HP Support Plus 24	HA110A1	E/C	E/C	E/C	E/C
HP Proactive 24 Service	HA111A1	E	E	E	E
HP Critical Service	HA112A1	E	E	E	E

Since the De-duplication is part of the library firmware there will no cost associated with the SW Updates

To find HP Care Pack Services available via HP authorized commercial resellers, visit:
http://h30125.www3.hp.com/csn/salesmktg/elfpack/elf_nonlkup_ctrylang.asp?code=eln1

Installation Services via HP Direct and HP authorized enterprise resellers

Description	Part Number
HP StorageWorks 12000 Virtual Library System EVA Gateway base Library (AH814A)	
Tape Library Installation And Start Up	HA114A1#5KG
Tape Installation HW Installation Only	HA113A1#5KG
HP StorageWorks 12000 Virtual Library System Gateway Node Expansion Kit (AH815A)	
Tape Library Installation And Start Up	HA114A1#55Z
Tape Installation HW Installation Only	HA113A1#55Z
Each additional library on the same site	HA124A1#5B1
NOTE: Installation and Start up (HA114A1) includes the installation of all subcomponents.	
NOTE: If the additional library is to be configured at a different site the customer must purchase an additional instance of HA114A1#5KG	
NOTE: New system node must include installation and startup (HA114A1#552)	

Description	Part Number
HW, "3-year", "next-day", "13x5", "on-site"	HA101A3
HW, "3-year", "4-hour", "13x5", "on-site"	HA103A3
HW, "3-year", "4-hour", "24x7", "on-site"	HA104A3
HW, "3-year", "6hr CTR", "24x7", "on-site"	HA105A3
HW Only, Support Plus, "3-year", "13x5"	HA109A3
HW Only Support Plus 24, "3-year", "24x7"	HA110A3
HW Only, Proactive 24, "3-year", "24x7"	HA111A3
HW Only, Critical Service, "3-year", "24x7"	HA112A3

* 6hr CTR 'standalone' service is not offered in Latin or North America.
 ** Support Plus covers 4hr Hardware response (Software support is not applicable).
 *** Both Proactive 24 & Critical Service only relate to 'reactive elements', work is ongoing to offer the 'proactive elements' in the near future (Software support is not applicable).

The HP Care Pack information quoted above relates to 3 year offerings only, 1yr, 4yr and 5yr packs are available for each offering



Service and Support, HP Care Pack, and Warranty Information

(replace A3 with A1, A4, A5 respectively).

In order to maximize ROI and product uptime, and minimize the cost of ownership, Hewlett Packard recommends the 3-year, 24x7 service options. These offerings will ensure that any product issue can be tackled when they occur (most back up issues will occur outside standard business hours) and that the service coverage regarding period, covers the minimum expected life of the host system.

To find HP Care Pack Services available via HP authorized commercial resellers, visit:

http://h30125.www3.hp.com/csn/salesmktg/elfpack/elf_nonlkup_etrylang.asp?code=elnl

Kit Contents

Model	Description	Part Number
HP StorageWorks 12000 Virtual Library System EVA Gateway Base Unit	<p>HP StorageWorks 12000 Virtual Library System EVA Gateway Base Library</p> <p>Supplied with each Virtual Library System</p> <ul style="list-style-type: none"> • Two HP StorageWorks 12000 Virtual Library System Gateway libraries - each enabled for 20 TB [10 LUNS] • Five HP StorageWorks Virtual Library System Capacity Expansion Licenses [10 TB] (T4430A) • One HP Procurve 2824 Ethernet switch • One HP Procurve 2524 Ethernet switch • Two USB to LAN converters • Includes full 16 GB of RAM • Installation Poster • HP 12000 Virtual Library System Gateway Documentation CD • System recovery CD <p>NOTE: EVA storage purchased and installed separately NOTE: Total capacity enablement = 50 TB (25 LUNS) NOTE: #0D1 will appear after the part number if factory racking is desired</p>	AH814B
HP StorageWorks 12000 Virtual Library System EVA Gateway Node Expansion Kit	<p>HP StorageWorks 12000 Virtual Library System EVA Gateway Node Expansion Kit</p> <p>Supplied with each Virtual Library System</p> <ul style="list-style-type: none"> • HP StorageWorks 12000 Virtual Library System Gateway library - enabled for 20 TB [10 LUNS] • USB to LAN converter • Includes full 16 GB of RAM • Installation Poster 	AH815B
HP StorageWorks 12000 Virtual Library System EVA Gateway Capacity Expansion License	<p>HP StorageWorks 12000 Virtual Library System EVA Gateway Capacity Expansion License</p> <p>Supplied with each Virtual Library System</p> <ul style="list-style-type: none"> • enables 2 TB [1 LUN] 	T4430A
HP VLS12000 Data Deduplication Capacity LTU	<p>HP StorageWorks 12000 Virtual Library System Data Deduplication Capacity LTU</p> <ul style="list-style-type: none"> • The data deduplication capacity LTU will be licensed by the # of EVA LUNS presented to the VLS. The customer must know how many 2 TB LUNS the VLS is using before ordering. (Use Command View VLS (CV-VLS)). One license per LUN (T9709A) is required. <p>NOTE: In addition to the capacity deduplication licensing for VLS here are four other key considerations:</p> <ol style="list-style-type: none"> 1. There is a REQUIREMENT for 16 GB of RAM for each ProLiant server node in order to support data deduplication and low bandwidth replication. Newer systems (AH814B, AH815B) come standard with 16 GB of RAM. For older VLS12000 systems (AH814A, AH815A) you will need to add 12 GB RAM. This involves ordering the following part numbers for each node: 397413-B21 HP 4GB FBD PC2-5300 2x2GB Kit 	T9709A

Kit Contents

397415-B21 HP 8GB FBD PC2-5300 2x4GB Kit

2. Minimum of VLS firmware 3.1 must be used to support Accelerated deduplication. This firmware will only be available (initially) as a web download.
3. You will need to reference the following website for configuration, capacity and performance considerations for sizing VLS Accelerated deduplication configurations and usage models: www.hp.com/support/vls_dedup
4. Accelerated deduplication needs to recognize the specific backup application being used since it initially strips out the cartridge headers in order to decompose all the files and data types in order to do file-level comparisons to previous backups. Check the EBS website for the latest Accelerated deduplication supported backup ISVs and data types:
<http://www.hp.com/go/ebs>

NOTE: The entire VLS device (provisioned by the EVA) must be licensed for deduplication - no partial licenses supported. Deduplication licenses will be installed via the VLS GUI license plug-in.

HP VLS Low Bandwidth Replication License

HP StorageWorks Virtual Library Systems Low Bandwidth Replication LTU Supplied with license

T5537A

- One VLS license T5537A is required per VLS12000 node for target sites only - none required on source site for active-passive configurations. For active-active configurations involving bi-directional replication, each site requires a license. Multi-node VLS12000s require multiple licenses - one per node.

NOTE: In addition to the low bandwidth replication licensing for VLS here are other key considerations:

1. All VLS systems involved with replication (whether a source or target) must all be licensed for Accelerated deduplication. In addition they have the same HW requirements and considerations as for Accelerated deduplication (see above).
2. Minimum of VLS firmware level 3.2 must be used to support low bandwidth replication. This replication firmware will be included in the 3.2 release and can be activated through licensing.
3. Four modes of low bandwidth replication will be supported including: two-site active-passive (replication in one direction), two-site active-active (replication in both directions) many to one supporting up to four sites all replicating to a fifth site and N-way with four sites (similar to two-site active-active). Each site is a source and target.
4. C&I services will provide analysis, design, implementation and testing necessary to deploy a VLS solution with Accelerated deduplication and low bandwidth replication.

Feature Comparison

Kit Contents

VLS Firmware Level	2.3 (VLS not running Accelerated deduplication)	3.2 (VLS running Accelerated deduplication)
Supported Platforms	All VLS models: VLS6200, VLS6600, VLS9000, VLS12000 with 4 GB RAM	VLS 4 GB models: VLS6200, VLS6600, VLS9000, VLS12000 with 16 GB RAM
VLS9000/VLS12000 node support	Up to 8 nodes	Up to 4 nodes with supported ISVs
Backup ingest performance per node	600 MB/sec per node	550 MB/sec per node
Number of slots	1024 per library	10000 per library
Number of libraries	16 per node	16 per node
Number of cartridges	8192	32000
Automigration - Echo Copy	Yes	No
Automigration - Smart Copy	Yes with DP 6.1**	No
Delete Cartridge	Yes	No
Replication support	High-bandwidth	Low-bandwidth
Hot Add Arrays	Yes	No
Hot Add Nodes	Yes	No
Storage pool support	Multiple storage pools	Single storage pool
Virtual LUN Support	144 per node	96 per node
LTO4 Emulation (capacity only, no encryption)	No	Yes
LUN Masking usability, Command line interface enhancements	No	Yes
	<p>**Important Note: The initial release of Data Protector 6.1 allows customers to manage VLS automigration using only a single drive in the physical tape library that is connected to a Virtual Library System. Please take this into account when deploying Data Protector / VLS solutions. For the time being, customers requiring migration of VLS backup data to tape libraries containing 2 or more drives should do so in the standard way (using the Data Protector Object Copy feature). Work is already in progress for an update release later in 2009, which will allow the automigration of VLS backup data to multiple tape drives simultaneously.</p>	

Related Options

HP StorageWorks Disk Arrays support EVA4100, EVA4400, EVA6100 and/or EVA8100, as well as, EVA3000, EVA4000, EVA5000, EVA6000 and/or EVA8000 arrays. We also support the EVA6400 and EVA8400.
For details please visit <http://www.hp.com/go/eva>

Power Distribution units **NOTE:** For more information on power distribution units, please consult the QuickSpecs on the Worldwide web at http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html

Low Voltage Modular PDU Model, 100 - 127 VAC 24A Model - mPDU, 24A, Low 252663-D71

High Voltage Modular PDU Model(s), 200 - 240 VAC 16A Model - mPDU, 16A, High 252663-B24
24A Model - mPDU, 24A, High 252663-D72
40A Model - mPDU, 40A, High 252663-B21
40A Model - mPDU, 40A, High (power cord attached) 252663-D73

Power Cords
(for connection to standard wall outlets)

Power Cord, North American C13, 10A, 1.83m	AF556A
Power Cord, Euro, C13,10A , 1.83m	AF568A
Power Cord, UK, C13,10A , 1.83m	AF570A
Power Cord, Danish, C13, 10A , 1.83m	AF566A
Power Cord, Swiss, C13,10A , 1.83m	AF565A
Power Cord, Italian, C13,10A , 1.83m	AF571A
Power Cord, South Africa, C13,10A , 1.83m	AF567A
Power Cord, Taiwan, C13,10A , 1,83m	AF561A
Power Cord, China, C13,10A 1.83m	AF557A
Power Cord, Japan, C13,10A , 1.83m	AF572A
Power Cord, Australia, C13,10A , 2.5m	AF569A
Power Cord, Argentina, C13,10A , 2.5m	AF558A
Power Cord, Brazil, C13,10A , 1.83m	AF559A
Power Cord, Korea, C13,10A , 1.83m	AF560A
Power Cord, Israel, C13,10A , 1.83m	AF564A
Power Cord, India, C13,10A , 2.0m	AF562A

FC Host Bus Adapters For more information on FC HBAs please consult the EBS connectivity matrix at <http://www.hp.com/go/ebs>.

Related Options

HP Data Protector software

LTU (license-to-use), media and manuals

Data Protector Starter Pack Single Drive, for Windows B6961AA

Data Protector Starter Pack Single Drive, for HP-UX B6951AA

Data Protector Starter Pack Single Drive, for Sun Solaris B6951DA

LTU only

Data Protector Starter Pack Single Drive, for Windows LTU only B6961BA

Data Protector Starter Pack Single Drive, for HP-UX LTU only B6951BA

Data Protector Starter Pack Single Drive, for Sun Solaris LTU only B6951CA

Media

Data Protector Media B6960MA

Manuals

Data Protector Manuals B6960LA

Drive Extensions

Data Protector drive license for Windows, NetWare, or Linux (Intel) B6963AA

Data Protector drive license for UNIX, NAS, or SAN B6953AA

Data Protector Library Extension, 61-250 Slots B6957BA

Data Protector Library Extension, unlimited Slots B6958BA

Functional Extensions

Data Protector on-line extension for Windows B6965BA

Data Protector on-line extension for UNIX B6955BA

Data Protector open file backup license for 1 server BA153AA

Data Protector open file backup license for 10 servers BA153BA

Data Protector open file backup license for 5 workstations BA154AA

Data Protector open file backup license for 1 Enterprise Server BA155AA

Data Protector open file backup media. no license BA152AA

Data Protector Manager-of-Managers extension for Windows B6966AA

Data Protector Manager-of- Managers extension for UNIX B6956AA

Advanced backup to disk license, 1 TB B7038AA

Manuals for Functional extensions B6960EA

Configuration Information

NOTE: For rack-mount units only.

Step 1 – Select a Configuration

HP StorageWorks 12000 Virtual Library System EVA Gateway Base Library

AH814B

Step 2 – Add additional nodes and enable additional capacity(optional)

HP StorageWorks 12000 Virtual Library System EVA Gateway Node Expansion Kit

AH815B

NOTE: Consult the tables in "Technical Specifications" to determine the optimal number of nodes for the amount of storage in your system

HP StorageWorks Virtual Library System EVA Gateway Capacity Expansion License

T4430A

NOTE: To determine the number of licenses required (T4430A) use the following equation:

$(\text{Total number of EVA LUNs desired}) - (25) - (10 \times \text{the number of expansion kits}) = \text{the number of additional licenses required}$

NOTE: Recommended configuration is for each LUN to be 2 TB. Configurations with LUNs configured to less than 2 TB are supported; however, the licensing is per LUN resulting in less than optimal utilization of licenses.

Step 3 - Select appropriate EVA (optional)

- Add additional HP StorageWorks Enterprise Virtual Arrays (EVAs) or expand existing EVAs.
 - See the EVA QuickSpecs at: <http://www.hp.com/go/eva>
-

Step 4 - Select appropriate Services/Support

- Installation and Startup for SAN based libraries is required. (Details of specific part numbers in service section.)
 - Choose support uplift type. There are different service uplifts uplifting years of service, hours of availability and response time. HP recommends three year 24X7 support uplifts for SAN libraries. (Details of specific part numbers in service section.)
-

Configuration Information

Step 5- Select the Appropriate Rack (optional)

HP Rack 10000 G2 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet - Shock Pallet*	292302-B22
	HP Rack 10842 (42U, 800mm wide) - Pallet	AF041A
	HP Rack 10842 (42U, 800mm wide) - Shock Pallet*	AF042A
	HP Rack 10647 (47U) - Pallet	AF031A
	HP Rack 10642 (42U) - Pallet	AF001A
	HP Rack 10642 (42U) - Shock Pallet	AF002A
	HP Rack 10642 (42U) - Crated	AF003A
	HP Rack 10642 (42U) - with Extension -Shock Pallet*	AF004A
	HP Rack 10636 (36U) - Pallet	AF011A
	HP Rack 10636 (36U) - Shock Pallet*	AF012A
	HP Rack 10636 (36U) - with Extension -Shock Pallet*	AF014A
	HP Rack 10636 (36U) - Crated	AF013A
	HP Rack 10622 (22U) - Pallet	AF021A
	HP Rack 10622 (22U) - Shock Pallet	AF022A
	HP Rack 10000 G2 Series QuickSpec :	
	http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html	
	HP Rack 10000 Series QuickSpec:	
	http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html	
	* It is mandatory to use a shock pallet in order to ship racks with equipment installed.	
	NOTE: -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels)	
Rack kits	Universal Rail Kit	356906-001
	NOTE: This kit is for installation into HP 9000 racks.	

Technical Specifications

	HP StorageWorks 12000 Virtual Library System EVA Gateway Base Unit		HP StorageWorks 12000 Virtual Library System EVA Gateway Node Expansion Kit		HP StorageWorks 12000 Virtual Library System EVA Gateway Capacity Expansion License	
Capacity Enablement	50 TB	25 LUNs	20 TB	10 LUNs	2 TB	1 LUN
Throughput	600 MB/s (1200 MB/s with 2:1 compression)	2.16 TB/hr (4.32 TB/hr with 2:1 compression)	300 MB/s (600 MB/s with 2:1 compression)	1.08 TB/hr (2.16 TB/hr with 2:1 compression)	n/a	n/a
	2 nodes		1 node			
Power Consumption	1070 W (total)		535 W		n/a	
	NOTE: Input Power specifications are maximum values and apply to worst-case conditions at full rated power supply load. The power for your installation will vary depending on the equipment configuration.					
Interface	Two 4 Gb front-side ports; Two 4 Gb back-side ports (each VLS 12000 EVA Gateway node requires 4 FC switch ports)		Two 4 Gb front-side ports; Two 4 Gb back-side ports (each VLS 12000 EVA Gateway node requires 4 FC switch ports)		n/a	

NOTE: 1MB = 1,000,000 bytes

		Number of VLS12000 EVA Gateway Nodes with uncompressible data or deduplication enabled						
		2	3	4	5	6	7	8
Number of EVA3000 or EVA5000 Arrays (assumes 56 drives per array controller)	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	2	200 MB/s	n/a	n/a	n/a	n/a	n/a	n/a
	3	300 MB/s	300 MB/s	n/a	n/a	n/a	n/a	n/a
	4	400 MB/s	400 MB/s	400 MB/s	n/a	n/a	n/a	n/a
	5	500 MB/s	500 MB/s	500 MB/s	500 MB/s	n/a	n/a	n/a
	6	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	n/a	n/a
	7	700 MB/s	700 MB/s	700 MB/s	700 MB/s	700 MB/s	700 MB/s	n/a
	8	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
Number of EVA4000 or EVA4100 Arrays (assumes 56 drives per array controller)	1	200 MB/s	200 MB/s	200 MB/s	200 MB/s	200 MB/s	200 MB/s	200 MB/s
	2	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s
	3	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s
	4	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	5	1000 MB/s	1000 MB/s	1000 MB/s	1000 MB/s	1000 MB/s	1000 MB/s	1000 MB/s
	6	1080 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s
Number of EVA6000 or EVA6100 or EVA4400 Arrays (assumes 112 drives per array controller for)	1	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s
	2	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	3	1080 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s
	4	1080 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s



Technical Specifications

Controller for EVA6x00 and 96 drives per array for EVA4400)	5	1080 MB/s	1620 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s
	6	1080 MB/s	1620 MB/s	2160 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s
Number of EVA8000 or EVA8100 Arrays (assumes 112 drives per array controller)	1	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s
	2	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	3	1080 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s
	4	1080 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s
	5	1080 MB/s	1620 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s
	6	1080 MB/s	1620 MB/s	2160 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s
		Number of VLS12000 EVA Gateway Nodes with 2:1 compressible data or deduplication disabled						
		2	3	4	5	6	7	8
Number of EVA3000 or EVA5000 Arrays (assumes 56 drives per array controller)	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	2	400 MB/s	n/a	n/a	n/a	n/a	n/a	n/a
	3	600 MB/s	600 MB/s	n/a	n/a	n/a	n/a	n/a
	4	800 MB/s	800 MB/s	800 MB/s	n/a	n/a	n/a	n/a
	5	1000 MB/s	1000 MB/s	1000 MB/s	1000 MB/s	n/a	n/a	n/a
	6	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	n/a	n/a
	7	1200 MB/s	1400 MB/s	1400 MB/s	1400 MB/s	1400 MB/s	1400 MB/s	n/a
	8	1200 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s
Number of EVA4000 or EVA4100 Arrays (assumes 56 drives per array controller)	1	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s
	2	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	3	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s	1200 MB/s
	4	1200 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s
	5	1200 MB/s	1800 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s	2000 MB/s
	6	1200 MB/s	1800 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s
Number of EVA6000 or EVA6100 or EVA4400 Arrays (assumes 112 drives per array controller for EVA6x00 and 96 drives per array for EVA4400)	1	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	2	1200 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s
	3	1200 MB/s	1800 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s
	4	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3200 MB/s	3200 MB/s	3200 MB/s
	5	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3600 MB/s	4000 MB/s	4000 MB/s
	6	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3600 MB/s	4200 MB/s	4800 MB/s
Number of EVA8000 or EVA8100 Arrays (assumes 112 drives per array)	1	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s	800 MB/s
	2	1200 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s	1600 MB/s
	3	1200 MB/s	1800 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s	2400 MB/s
	4	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3200 MB/s	3200 MB/s	3200 MB/s

Technical Specifications

controller)	5	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3600 MB/s	4000 MB/s	4000 MB/s
	6	1200 MB/s	1800 MB/s	2400 MB/s	3000 MB/s	3600 MB/s	4200 MB/s	4800 MB/s

HP 12000 Virtual Library System EVA Gateway

Number of Virtual Libraries	1 to 16 per node, up to 128 per system
Number of Virtual Tape Drives	1 to 128 per node, up to 1024 per system
Number of Virtual Cartridges	Up to 8192 per system

NOTE: The maximum number of virtual devices is dependent on the number of nodes, not the capacity. The maximum number of virtual cartridges is dependent on the amount of capacity (number of LUNs) with 1024 cartridges per LUN. The EVA currently supports 2 TB/LUN, therefore, maximum of 8192 cartridges would be reached with 16 TB.

Dimensions and Physical Characteristics HP StorageWorks 12000 Virtual Library System Gateway Base Library

Form Factor	4U (total installed form factor - base unit)	
Physical Dimensions (HxWxD):	Node	1.7 x 16.8 x 27.8 in (4.3 x 42.6 x 70.5 cm)
	Procurve 2524 Ethernet Switch	1.8 x 17.4 x 8.0 in (4.57 x 44.2 x 20.32 cm)
NOTE: 2 nodes and 2 switches in each base configuration	Procurve 2824 Ethernet Switch	1.75 x 17.32 x 14.4 in (4.45 x 43.99 x 36.58 cm)
	Shipping (HxWxD)	48 x 40 x 40 in (121.9 x 101.6 x 101.6 cm)
Out of Box Weight	Node (each)	37 lb (16.78 kg)
	Procurve 2524 Ethernet Switch	6.0 lb (2.72 kg)
	Procurve 2824 Ethernet Switch	10.2 lb (4.63 kg)
Shipping Weight	100 lb (45.4 kg)	

HP StorageWorks 12000 Virtual Library System Gateway Node Expansion Kit

Form Factor	1U (total installed form factor - base unit)	
Physical Dimensions (HxWxD):	Node	1.7 x 16.8 x 27.8 in (4.3 x 42.6 x 70.5 cm)
	Shipping (HxWxD)	11.3 x 23.3 x 35.7 in (28.6 x 59.2 x 90.7 cm)
Out of Box Weight	Node	37 lb (16.78 kg)
Shipping Weight	46 lb (20.9 kg)	

HP StorageWorks 12000 Virtual Library System Capacity License

Shipping (HxWxD)	8.5 x 11.0 in (21.6 x 27.9 cm)
Shipping Weight	1 lb (0.5 kg)

Technical Specifications

Environmental	Operating temperature range	50° to 95° F (10° to 35° C)
	Shipping temperature range	-40° to 150° F (-40° to 66° C)
	Operating Humidity (non-condensing)	10 - 90% RH

Worldwide Product Safety and EMC Approvals Safety: Worldwide compliance to 60950-1

VLS12000 Gateway Nodes: Regulatory Model Number HSTNM-2105, RSVLC-0207, RSVLC-0303, CISPR 22, CISPR 24, & FCC

NOTE: For country specific compliance contact your local sales representative.

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