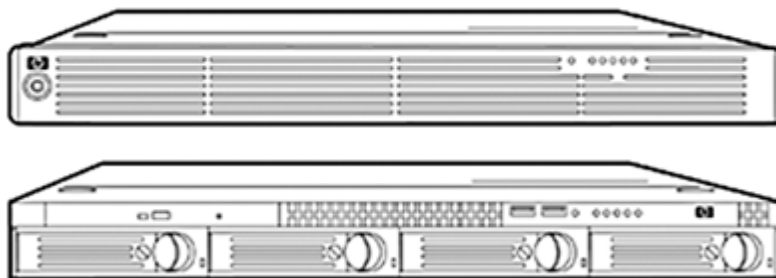


Overview

The HP StorageWorks 1000i Virtual Library System is a disk-based storage solution that provides both unattended backup and rapid restores of data for LAN-based servers. An entry-level solution in the HP family of virtual library systems, it is ideal for mid-market companies and remote or branch office IT environments.

The HP VLS1000i delivers disk-to-disk (D2D) backup by utilizing tape virtualization, allowing seamless integration into current tape-based data protection environments. By emulating a tape drive or autoloader, it can be configured to provide unattended backup using the customer's current backup software application. The VLS1000i also supports Gigabit (Gb) Ethernet iSCSI connectivity which allows for simultaneous backup of multiple servers to a single storage device on the network.

The VLS1000i adds value to the backup environment by improving both the performance and efficiency of backup and restore jobs. Aggregate backup performance can reach 60MB/second while restore times are reduced from hours to minutes for individual file restores. The VLS1000i also simplifies the backup management process by providing "anywhere, anytime" access through a web-based browser interface. The VLS1000i is preconfigured for use in data protection applications and includes a copy of HP StorageWorks Data Protector Express Single Server Edition, providing a ready-to-use solution. Capable of storing 1.5 TB of data (up to 3.0 TB compressed), the VLS1000i offers the ability to dynamically size virtual tape media allowing for efficient use of available storage capacity.



Key Features

Seamless integration

Unattended backup

iSCSI connectivity

Disk-based storage

Faster backup performance

Faster restore performance

Preconfigured for easy setup and management

Customer Benefits

The VLS1000i emulates both virtual tape drives and autoloaders allowing for easy and seamless integration into current tape-based backup environments

The VLS1000i works seamlessly with compatible backup software applications to provide automated backup of all application and file data

The VLS1000i integrates easily into existing Ethernet networks using iSCSI (gigabit Ethernet) connectivity

The VLS1000i uses disk-based storage to store all application and file data, minimizing both the issues and costs associated with tape media management

The VLS1000i can emulate multiple tape drives and tape autoloaders, allowing for simultaneous backup of multiple servers to a single device on the network

Accessing files and data from disk-based storage simplifies the restore process and can improve restore performance from hours to minutes

The VLS1000i is preconfigured for virtual tape applications and can be easily configured and managed through the web-based management tool

Overview

Data compression

An integrated data compression feature allows the VLS1000i to store more than 1.5 TB of data (up to 3.0 TB compressed) allowing for more efficient use of storage capacity

High standards of reliability

The VLS1000i is based on HP ProLiant server technology which incorporates such standards as RAID 5 data protection and hot-plug drive technology to ensure maximum reliability

Secure as tape

Protected access to both software and data ensures the highest levels of data protection while eliminating the need for security patching and virus checking

Includes HP StorageWorks Data Protector Express Single Server Edition backup software

This backup software application, combined with the VLS1000i, provides a ready-to-use data protection solution right out of the box

Features and Benefits

Unattended disk-assisted backup The HP StorageWorks 1000i Virtual Library System provides unattended, disk-assisted backup by working with the automation (backup scheduling) feature found in most backup software applications. By automating the backup process, the VLS1000i serves as either a direct replacement for a tape autoloader (disk-to-disk) or it can be used to consolidate backups in distributed IT environments where multiple tape drives or autoloaders are used (disk-to-disk-to-tape). Backup reliability is dramatically improved by automating the backup process and minimizing human error, while allowing IT resources to be redeployed to other critical tasks.

The VLS1000i helps to reconfigure traditional direct-backup-to-tape solutions into disk-to-disk-to-tape (D2D2T) environments. Because initial backups are stored on hard disk drives rather than tape, media management issues (storage, cataloguing, retrieval, and replacement) and costs are minimized or completely eliminated. For IT environments that are required to store data offsite to meet archival or regulatory needs, the VLS1000i supports automated, daily backup to disk while allowing for migration of data to a tape drive or autoloader on an as-needed basis. Data can be kept on the VLS1000i's disk-based storage for short time periods to allow for quick and easy access, while longer-term storage needs can be met by moving the data to a tape device through the network. By moving daily backups to disk-based storage, users can minimize or eliminate tape media management issues and costs associated with daily backup to tape.

The VLS1000i is especially applicable to managing short-term retention data or data that changes frequently. However, it is not a substitute for disaster recovery or archival needs that can be best met using a tape-based storage device.

Ease of use The HP StorageWorks 1000i Virtual Library System is easy to install, configure and manage. This 1U small-form-factor device is easily integrated into most HP rack systems and can also be used in standalone desktop applications. The VLS1000i is preconfigured for virtual tape usage and is auto-discovered on the LAN during installation. As a dedicated virtual-tape-backup appliance, there are no configuration steps for hard disk drive RAID, LUN or file system management. The VLS1000i also provides "anywhere, anytime access" through a web-based user interface that allows users to access system settings, configurations, and diagnostics. The web-based interface also supports remote management features such as proactive monitoring, email alerts and event notification from a location that is convenient for the user.

Seamless integration The HP StorageWorks 1000i Virtual Library System is deployed, managed and operated just like a tape autoloader or tape drive. The VLS1000i emulates both the HP 1/8 autoloader and the HP Ultrium 460 (LTO2) standalone tape drive. Because both of these devices are supported by most backup software applications, this device integrates seamlessly into existing Ethernet networks with minimal disruption to the IT environment. Each VLS1000i can emulate up to twelve virtual LTO2 tape drives, with up to six of these configured as autoloaders. This provides each iSCSI compatible host with the appearance of having its own local SCSI tape device.

Improved backup and recovery performance With flexible virtual device support, each HP StorageWorks 1000i Virtual Library System provides the ability to configure up to twelve virtual tape drives simultaneously within a single virtual library system. Because it can receive multiple independent server data streams concurrently, the VLS1000i can handle more than one backup job at the same time, thus, potentially reducing the duration of your backup window. Very importantly, because the data resides on disk, restore times are significantly improved from hours to minutes as compared to tape-based backup devices.

Features and Benefits

Efficient use of storage capacity	The VLS1000i includes a software-based data compression feature which enables the device to store up to 3 TB -- twice its native usable storage capacity. The software compression engine can be enabled or disabled as required by the user. However, it is important to note that software compression will decrease backup performance.
Reliability	The HP StorageWorks 1000i Virtual Library System is built using HP ProLiant server technology. Each system is preconfigured with hardware-supported RAID 5 data protection to ensure the highest levels of reliability. The VLS1000i also utilizes hot-plug hard drives which simplifies the process of hard drive replacement or upgrades.
Security	The HP StorageWorks 1000i Virtual Library System is inherently secure because, like a tape device, there is no external file system or server operating-system access to protect. Each iSCSI host (server) has sole access to its virtual tape device and media within the VLS1000i, which adds additional data protection by allowing only the intended host to access its own data and files.
HP Data Protector Express Single Server Edition	The VLS1000i includes a complementary copy of HP StorageWorks Data Protector Express, Single Server Edition. The single server edition supports one server/one virtual tape drive configurations. HP StorageWorks Data Protector Express software provides simple and reliable backup and recovery for file servers, application servers and desktops that is suitable for organizations without dedicated IT staff. The current Data Protector Express support matrix is located at http://www.hp.com/go/dataprotectorexpress .
HP Factory Express Services	Factory Express is a robust portfolio of flexible, pre-priced, configured, customized and integrated factory solutions and deployment services. Factory Express offers factory integration of rack mounting for the VLS1000i as option #OD1. Please contact your account manager to purchase HP products and take advantage of our Factory Express services. If you don't have an account manager, call 1 (800) 282-6672 and one will be assigned to you.

Compatibility

HP's extensive compatibility testing program assures that your HP StorageWorks 1000i Virtual Library System works with leading servers, operating systems, and backup applications, including those not manufactured by HP. The VLS1000i works seamlessly in many environments, making it especially suitable if you have a multi-vendor environment. You may also elect to copy data from your VLS1000i to physical tape via the backup application software as an integrated part of your offsite disaster recovery or archive processes. For the latest list of servers, workstations, operating systems, and backup software that support the VLS1000i, check the HP StorageWorks Enterprise Backup Solution compatibility matrix at <http://www.hp.com/go/ebs>.

Server Compatibility

Servers that run supported operating systems can be backed up by the VLS1000i.

OS Support

Servers using operating systems such as Unix, Linux, and NetWare can backup to a VLS1000i via a backup server which is running Windows 2003 Server. Please check with your backup software application provider to ensure that suitable backup agents are available for these operating systems.

Software Support

Reference the EBS compatibility matrix for the most up-to-date backup application software compatibility information at <http://www.hp.com/go/ebs>.

NOTE: For customers using the Symantec Backup Exec 10.d software application, each iSCSI host (or server) will require the installation of an iSCSI host bus adapter for proper VLS1000i usage. HP recommends purchasing the QLogic Single Port 1-Gbps TOE to PCI-X Host Bus Adapter (QLA4050C-CK or QLA4050C-BK). Please check with your local reseller or service provider regarding pricing and availability of this product.

Service and Support, HP Care Pack, and Warranty Information

Warranty Hewlett-Packard provides a 1-year, parts exchange, limited warranty, with next-business-day response, plus 9x5 phone support for the duration of the warranty.

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4 hours
- Coverage - Extend hours of coverage from 13 hours x 5 days up to 24 hours x 7 days
- Duration - Select duration of coverage for a period of 1, 3, 4 or 5 years

HP Care Pack Information 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 product's 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 refer to the URL <http://www.hp.com/hps/carepack/>.

Hardware Product Services

- Installation services
- On-site maintenance (includes warranty support)
- Response-time upgrades during the warranty period
- Post-warranty coverage
- RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information, please refer to the URL <http://www.hp.com/hps/hardware/>

eSupport HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit <http://www.hp.com/support>

Service and Support, HP Care Pack, and Warranty Information

Components

The following brick level options/components do not have individual HP Care Pack Services. These items will be included in product HP Care Pack Services into which they are installed.

Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans

Configuration Information

Step 1 – Select a Configuration

Select one:

Model Name	Model Description	Part Number
HP StorageWorks 1000i Virtual Library System	<p>HP StorageWorks 1002i 2TB Virtual Library System</p> <p>NOTE: #0D1 will appear after this part number on your sales order if factory integration is indicated.</p> <p>Kit Contents:</p> <ul style="list-style-type: none"> HP StorageWorks 1002i 2TB Virtual Library System End User license Quick restore/diagnostic CD Device firmware CD Rack mount hardware (for use with HP 10000 series racks) IEC power cord to connect VLS to rack PDU (PN 307348-B21) Data Protector Express Single Server Edition Software CD Documentation kit including User & Service Guide (CD) and Getting Started Poster 	AG124A

NOTE: For customers using the Symantec Backup Exec 10.d software application, each iSCSI host (or server) will require the installation of an iSCSI host bus adapter for proper VLS1000i usage. HP recommends purchasing the QLogic Single Port 1-Gbps TOE to PCI-X Host Bus Adapter (QLA4050C-CK or QLA4050C-BK). Please check with your local reseller or service provider regarding pricing and availability of this product.

Step 2- Related Options

NOTE: The VLS1000i is designated as a rack mount solution and ships standard with a 10' IEC power cord to connect the VLS1000i to a rack PDU, if a customer desires to NOT rack the VLS1000i, the appropriate geographic power cord option kit must be ordered.

HP Data Protector Express Options	HP Data Protector Express Single Server Edition to HP Data Protector Express upgrade	
	HP StorageWorks Data Protector Express Media Server	BB117AT
	HP StorageWorks Data Protector Express Media Server 3-pack	BB119AA
	HP StorageWorks Data Protector Express Network Server Backup Agent	BB120AA
	HP StorageWorks Data Protector Express Network Server Backup Agent 3-pack	BB121AA
	HP StorageWorks Data Protector Express Agent for MS Exchange	BB122AA
	HP StorageWorks Data Protector Express Agent for MS SQL Server	BB123AA
	HP StorageWorks Data Protector open file backup for one server LTU	BB124AA
	HP StorageWorks Data Protector Express Windows open file backup media	BA153AA
	HP StorageWorks Data Protector Express Drive Expansion	BA152AA
		BB133AA

Configuration Information

Power Cord Options:	120V NEMA to IEC320 Jmpr Cord (North America)	E7743A
	HP Power Cord (Europe)	AD526A
	HP Power Cord (Australia)	AD527A
	HP Power Cord (United Kingdom)	AD528A
	HP Power Cord (Switzerland)	AD529A
	HP Power Cord (Denmark)	AD530A
	HP Power Cord (Japan)	AD531A
	HP Power Cord (South Africa)	AD532A
	HP Power Cord (China)	AD533A
	HP Power Cord (Latin America)	AD534A
	HP Power Cord (Taiwan)	AF913A

WARNING: This product can only be used with an HP approved power cord for your specific geographic region. Use of a non-HP approved power cord may result in: 1) not meeting individual country specific safety requirements; 2) insufficient conductor ampacity that could result in overheating with potential personal injury and/or property damage; and 3) an unapproved power cord could fracture resulting in the internal contacts being exposed, which potentially could subject the user to a shock hazard. HP disclaims all liability in the event a non-HP approved power cord is used.

Rack Cabinets

HP 10000 Series G1 Rack Options

10647 (47U) Rack Cabinet - Pallet	245160-B21
10647 (47U) Rack Cabinet - Crated	245160-B23
10642 (42U) Rack Cabinet - Pallet	245161-B21
10642 (42U) Rack Cabinet - Shock Pallet	245161-B22
10642 (42U) Rack Cabinet - Crated	245161-B23
10636 (36U) Rack Cabinet - Pallet	245162-B21
10636 (36U) Rack Cabinet - Shock Pallet	245162-B22
10636 (36U) Rack Cabinet - Crated	245162-B23
10622 (22U) Rack Cabinet - Pallet	245163-B21
10622 (22U) Rack Cabinet - Shock Pallet	245163-B22
10622 (22U) Rack Cabinet - Crated	245163-B23
S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
10842 (800 mm wide, 42U) Rack Cabinet - Pallet	257415-B21
10842 (800 mm wide, 42U) Rack Cabinet - Shock	257415-B22
10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
10642 (42U) Infrastructure Rack (High Voltage)	379005-001

NOTE: Factory integration of the VLS1000i into HP rack systems is available by ordering AG124A#0D1.

HP 10000 Series G2 Rack Options:

10642 G2 (42U) Rack Cabinet - Pallet	AF001A
10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
10642 G2 (42U) Rack Cabinet - Crated	AF003A
10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
10642 G2 (42U) Rack Cabinet, without door - Shock Pallet	AF005A
10642 G2 (42U) Rack Cabinet - with Extension, without door - Shock Pallet	AF006A
10636 G2 (36U) Rack Cabinet - Pallet	AF011A
10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
10636 G2 (36U) Rack Cabinet - Crated	AF013A

Configuration Information

10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
10636 G2 (36U) Rack Cabinet, without door - Shock Pallet	AF015A
10636 G2 (36U) Rack Cabinet, with Extension, without door - Shock Pallet	AF016A

NOTE: Factory integration of the VLS1000i into HP rack systems is available by ordering AG124A#0D1.

Other Supported HP Rack Options:

42U EVA cab 60Hz	338042-B21
42U EVA cab 50Hz	338043-B21
36U EVA cab 60Hz	338044-B21
36U EVA cab 50Hz	338045-B21
22U EVA cab 60Hz	338046-B21
22U EVA cab 50Hz	338047-B21
HP9000 Std Rack System E25	A4900A
HP Rack System/E, 33U, quartz color	A4901A
HP Rack System/E, 33U, graphite color	A4901D
HP Rack System/E, 41U, quartz color	A4902A
HP Rack System/E, 41U, graphite color	A4902D

NOTE: Factory integration of the VLS1000i into HP rack systems is available by ordering AG124A#0D1.

HP Care Pack Options

Care Packs available from Commercial Resellers

Care Pack	Description
UD056E	HP Basic Installation
UD816E	HP 1y 4h 13x5 1000i Library Hardware Support
UD817E	HP 1y 4h 24x7 1000i Library Hardware Support
UD818E	HP 3y Nbd 1000i Virtual Library Hardware Support
UD819E	HP 3y 4h 13x5 1000i Library Hardware Support
UD820E	HP 3y 4h 24x7 1000i Library Hardware Support
UD821E	HP 3y 6h 24x7 CTR 1000i Library Hardware Support
UD822E	HP 4y 4h 13x5 1000i Virtual Hardware Support
UD823E	HP 4y 6h 24x7 CTR 1000i Library Hardware Support
UD824E	HP 5y 4h 13x5 1000i Library Hardware Support
UD825E	HP 5y 4h 24x7 1000i Library Hardware Support
UD826PE	HP 1y PW Nbd 1000i Virtual Lib Hardware Support
UD827PE	HP 1y PW 4h 13x5 1000i Library Hardware Support
UD828PE	HP 1y PW 4h 24x7 1000i Library Hardware Support
UD829PE	HP 1y PW 6h 24x7CTR 1000i Library Hardware Support

Nbd=Next Business Day

CTR=Call to repair

PW=Post warranty

NOTE: 'E' signifies an electronic HP Care Pack.

Care Packs available from Enterprise Resellers and Direct Sales

Care Pack	Description	VLS1000 band
HA113A1	HP Basic Installation	80J

Configuration Information

HA101A3	HW, "3-year", "next-day", "13x5", "on-site"	80J
HA103A3	HW, "3-year", "4-hour", "13x5", "on-site"	80J
HA104A3	HW, "3-year", "4-hour", "24x7", "on-site"	80J
HA105A3	HW, "3-year", "6hr CTR", "24x7", "on-site"*	80J
HA109A3	HW Only, Support Plus, "3-year", "13x5"**	80J
HA110A3	HW Only Support Plus 24, "3-year", "24x7"***	80J
HA111A3	HW Only, Proactive 24, "3-year", "24x7"***	80J
HA112A3	HW Only, Critical Service, "3-year", "24x7"***	80J

* 6hr CTR 'standalone' service is not offered in Latin or North America.

** Support Plus covers 4hr H/W 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 future.

The Care Pack information quoted above relates to 3 year offerings only, 1yr, 3yr and 5yr packs are available for each offering (replace A3 with A1, A4, A5).

Contractual offerings are also available.

NOTE: In order to maximize ROI and product uptime, and minimize the cost of ownership, Hewlett-Packard recommends the 3-year, 24 x 7 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.

Technical Specifications

HP 1002i 2TB Virtual Library System

Form Factor	1U, rack mount or desktop configurations
Total (Raw) Capacity	2 TB
Usable Capacity	
Native	1.5 TB
Compressed	Up to 3TB

NOTE: Compressed storage capacity of up to 3 TB can be achieved by enabling the software compression feature.

Disk Drive Interface	Serial ATA (SATA)
Disk Drive Capacity, Type	500 GB, SATA 7200rpm
Number of Disk Drives	4
Array Controller	Single RAID Controller
RAID Support	RAID 5

NOTE: Preconfigured with RAID 5 data protection support.

Interface	1x1Gb iSCSI
Performance	Up to 60 MB/s

NOTE: Actual performance will vary depending server and network configurations. To maximize the performance of the VLS1000i, please review the VLS1000i whitepaper in the "Related Information" section at <http://www.hp.com/go/vls1000i>.

HP 1002i 2TB Virtual Library System

Number of Virtual Tape Autoloaders	Up to 6 (1/8 Ultrium LTO2)
Number of Virtual Tape Drives	Up to 12 (Ultrium LTO2)
Number of Virtual Tape Cartridges	Up to 180 (up to 200GB each)
Operating System Compatibility	Microsoft Windows 2003 Server

NOTE: Servers using operating systems such as Unix, Linux, and NetWare can backup to a VLS1000i via a backup server which is running Windows 2003 Server. Please check with your backup software application provider to ensure that suitable backup agents are available for these operating systems.

Dimensions (HxWxD)	Rack	1.7 x 17 x 26.5 in (4.3 x 43.2 x 67.3 cm)
Weight	Shipping	46.89 lb (21.27 kg)
	Out of box	25.64 lb (11.63 kg)
LED Indicators (On Front Panel)	NIC 1, Hard Disk Drive Activity, and System Power	
Input Requirements	Nominal Line Voltage	115/230 VAC
	Range Line Voltage	90/264 VAC
	Rate Input Frequency	47 to 63 Hz
	Rated Input Current	6 Amps (115 VAC) , 3 Amps (230 VAC)
Power Supply Output	350 W (rated steady state power output)	
	NOTE:	

1. +3.3V and +5V total O/P power 130W maximum
2. +3.3V, +5V and +12V total O/P power 324W Maximum

Relative Humidity (non-condensing)	Operating	8% to 80%
	Shipping	8% to 80%

Technical Specifications

Temperature Range	Operating	10° to 40° C (50° to 104° F)
	Shipping	-40° to 60° C (-40° to 149° F)

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