

Overview

The HP ProLiant ML110 G2 Storage Server is an entry-level 5U tower form factor Network Attached Storage (NAS) solution that delivers quick-to-install and simple-to-manage networked storage with multi-protocol file sharing for small or branch office locations. Windows Storage Server 2003 (WSS 2003) operating system is pre-installed and optimized for the ProLiant ML110 G2 Storage Server and includes HP-specific management tools. The hardware is also pre-configured and optimized allowing the ProLiant ML110 G2 Storage Server to be up and running in minutes.

In a small or branch office, the ProLiant ML110 G2 Storage Server serves as the file storage device hosting local user files and/or Exchange database and log files. The ProLiant ML110 G2 Storage Server (640GB and 1 TB models) can also act as a print server for up to five network attached printers.

With optional host-based data replication, data on the ProLiant ML110 G2 Storage Server can be exchanged with a main office easily to support business continuity needs.

The HP ProLiant ML110 G2 Storage Server offers quick-restore functionality via DVD and a dual OS partition. In the event the ProLiant ML110 G2 Storage Server needs to be restored, a Quick Restore DVD allows customers to be up and running with a factory default image in minutes.

HP ProLiant ML110 G2 Storage Server models are available with three different storage capacity models.

What is a Storage Server? HP uses the Storage Server product name to describe its NAS solutions. NAS solutions are specialized file-serving devices that support heterogeneous files in a high-capacity storage solution on Ethernet based networks. NAS solutions also provide specific features to simplify the tasks and reduce the resources associated with data storage and management. The objective of NAS technology is to simplify manageability and improve data access to clients and applications. A NAS solution will generally provide network accessible storage to a mix of clients and servers running different operating systems.

Benefits of HP Storage Server

Ready to Deploy

- The hardware is pre-configured and the OS is pre-installed from the factory allowing you to deploy the system on your network in minutes.

Cost-Effective

- Low acquisition cost fits smaller capital spending budgets.
- Provides multiple storage services in a single simple-to-manage storage server.

Simple, remote management

- Web-based user interface enables system administrators to set up and manage the ProLiant ML110 G2 storage server in only a few short steps.
- Supports remote management via web GUI or command console.
- Series 100 Lights Out option provides additional remote management capabilities such as re-boot and system environmental monitoring

Versatile

- Each model provides a different processor, memory size and capacity point allowing customers to choose the one appropriate for their needs.
- The ProLiant ML110 G2 (640GB and 1TB models only) can also be used as a print server.

High Performance

- Utilizes the latest Intel® Celeron or Pentium 4 processors, fastest SATA hard disk drives and RAID for optimal performance.

Reliable

- Provides data protection capabilities like software RAID (320GB model) or Hardware-based RAID (640GB and 1TB models) and support for multiple backup and anti-virus packages.
- Built-in data "Snapshot" technology.

Open

- Supports all the major file serving protocols: SMB/CIFS, NFS, NCP, Appletalk, HTTP and FTP.

Product Features

Processor	<ul style="list-style-type: none">• Intel Celeron 2.8 GHz, 533 MHz FSB (320 GB Model)• Intel Pentium 4 3.2 GHz, 800 MHz FSB (640 GB Model)• Intel Pentium 4 3.2 GHz, 800 MHz FSB (1 TB Model)
Form Factor	<ul style="list-style-type: none">• Tower (5U) (Optional rack kit)
Memory	<ul style="list-style-type: none">• 256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz with Advanced ECC Capabilities (320 GB and 640 GB Model)• 512MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz with Advanced ECC Capabilities (1TB Model)
Storage Controller	<ul style="list-style-type: none">• Embedded SATA Controller (320GB Model)• Adaptec SA2610 6 Port SATA RAID Controller (640GB and 1TB models)
Maximum Internal Storage	<ul style="list-style-type: none">• Four (4) 1" 7200 RPM SATA Hard Drives Standard (non hot-plug on 320GB model, hot-plug on 640GB and 1TB models)<ul style="list-style-type: none">◦ 2 x 160 GB (320 GB Model, not upgradeable to 4 drives)◦ 4 x 160 GB (640 GB Model)◦ 4 x 250 GB (1 TB Model)
Network Connections	<ul style="list-style-type: none">• Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
Backup	<ul style="list-style-type: none">• Integrated SCSI Controller in a slot with external connector• See the complete listing of backup options for the base ProLiant ML110 G2 hardware platform at: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html
Bundled Software	<ul style="list-style-type: none">• Windows Storage Server 2003 OS - latest file serving OS from Microsoft® providing advanced file services in a familiar easy to manage package. Windows Storage Server provides customers better storage management with quotas and file screening via Storage Manager 2.0 (SM 2.0 not available on 320GB model), enhanced data protection, snapshots via Shadow Copy, client side snapshot management, DFS (Distributed Files System Support), and faster performance (both CIFS and NFS). Management options include GUI, Terminal Services, and Command Line interface. The HP ProLiant ML110 G2 uses Microsoft Windows Storage Server 2003 Express Edition on the 320GB Model and Workgroup Edition on the 640GB and 1 TB Models. The Express Edition OS is limited to basic file serving only. The Workgroup Edition supports file serving, storage services such as iSCSI, Backup, and Anti-virus support. The Workgroup Edition also includes print support for up to 5 network attached printers.• Web based management GUI for remote management and configuration of advanced file services• NIC Teaming software• Quick Restore DVD for restoration of Storage Server OS image
Warranty	<ul style="list-style-type: none">• The HP ProLiant ML110 G2 Storage Server has a standard one year parts, labor, on-site (standard business hours, next business day response) warranty.

Product Features

Fans and Power Supplies

- 1 non-redundant system fan
- 1 350W non-redundant power supply

Software Components

Optional Software from HP for Storage Server

- HP OpenView Storage Mirroring - The ProLiant ML110 G2 Storage Server supports using Storage Mirroring as the data replication software solution (see Options section for list of part numbers)
- HP OpenView Storage Mirroring (SM) is an ideal entry host-based software product for IP networks. SM does not require high bandwidth Fibre Channel networks, high capacity replication and zero down time service levels. Storage Mirroring provides near real-time full application or file recovery up to the last byte replication. SM is an excellent choice for low bandwidth; low storage volume changes and meets business recovery goals within tens of minutes or hours. The immediate return on investment is realized in the reduced management cost associated with branch or small offices networks.

Product Highlights:

- High availability with Microsoft Windows 2000/NT/2003 servers
 - Application aware and supported with Exchange, SQL and Oracle
 - Host-based remote storage copy with TCP/IP networks
 - Data distribution one-to-many or 'fan-out' to multiple destinations
 - Data migration utility for transferring large data projects
 - Centralize backup, data protection and recovery operations
 - Built in scheduler for off hours replication
 - Built in network bandwidth utilization management
 - Disaster recovery between source and destination failover sites
 - Powered by NSI Software's Double-Take patented 'Sequential Transfer Asynchronous Replication' technology
 - Sequential transfer maintains write sequential across multiple files for data integrity
 - Asynchronous replication allows hosts to continue processing for maximum performance
- **HP OpenView Storage Data Protector** - The HP OpenView Storage Data Protector software is enterprise data protection and disaster recovery, ensuring recovery from any disruption. Data Protector integrates a variety of techniques to eliminate backup and recovery windows. The capabilities to eliminate planned downtime range from online backup and backup of open files to zero-downtime, zero-impact backup. The software provides industry-leading instant recovery as well as several disaster recovery alternatives to eliminate unplanned downtime, allowing recovery of entire data centers in minutes.

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution.

The ProLiant ML110 G2 Storage Server supports using Data Protector as the backup software solution. For more information on HP OpenView Data Storage Protector:

<http://h18006.www1.hp.com/products/storage/software/dataprotector/index.html>

- **HP ProLiant Storage Server iSCSI Feature Pack** - A powerful and easy-to-use software that adds iSCSI target functionality to HP Storage Server (NAS) devices designed for small and medium business environments. The combination creates an iSCSI Storage Server solution that is capable of hosting file, print, and application storage (block) services on a single platform.

HP ProLiant Application Storage Manager is included with HP iSCSI Feature Pack and delivers radically simple email storage management to customers hosting Microsoft Exchange 2003 storage groups on HP Storage Servers via HP iSCSI Feature Pack.

Software Components

NOTE: More information on ordering the iSCSI Feature Pack for the HP ProLiant ML110 G2 Storage Server can be found in the Product Configuration Wizard section of this document.

Non-HP Software for Exchange Backup and Archive

HP has qualified CommVault Systems to provide simplified and cost-effective Exchange data management and protection solutions for HP ProLiant Storage Server customers. The solution helps SMB customers address the issues of growing business and regulatory compliance requirements for data retention, reduced data backup windows and increasing storage management administration cost and complexity.

CommVault's QiNetix software suite running on an HP ProLiant Storage Server device includes the following key features:

- Complete protection and management of Microsoft Exchange and NAS data, including backup, restore, archiving and data migration to secondary storage devices.
- Use of HP ProLiant Storage Server devices as backup and archive targets to stage Microsoft Exchange and other data.
- Content-based indexing of Exchange data to assist in compliance and specific searching of Exchange e-mail text, e-mail attachments and Windows files.

For more information on CommVault QiNetix software for HP ProLiant Storage Server, please visit:

http://www.commvault.com/mk/get/hp_smb_req

NOTE: Support for this software is provided by CommVault.

Service and Support, HP Care Pack, and Warranty Information

Warranty The HP ProLiant ML110 G2 Storage Server comes with a 1-1-1 warranty (1 years parts exchange, 1 years labor, and 1 years on-site, next business day response)

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

HP offers a portfolio of services ranging from Storage Design and Architecture that provides a complete multi-site design and implementation, to various levels of on-going maintenance support. Additionally the basic warranty service can be enhanced and/or HP Installation services can be purchased. Specifically HP Care Pack services include

	Through channels	Through HP
Proactive 24 (P24)	UB938A/UB938E	HA111A1 thru A5 Band 8PA
Support Plus for Storage	UB940A/UB940E	HA110A1 thru A5 Band 8PA
Support Plus 24 for Storage	UB939A/UB939E	HA109A1 thru A5

HP Proactive 24

- An integrated hardware and software support solution that combines efficient problem prevention with responsive technical assistance whenever you need it.
- Improves the effectiveness of technologies across your IT infrastructure, and also, establishes a collaborative relationship between you and HP that strengthens your IT team and gives you rapid access to our expertise as issues arise

HP Support Plus

- Increases the performance and availability of your IT infrastructure with comprehensive, consistent hardware and software services. HP Services engineers deliver onsite hardware support and over-the-phone software support 13 hours per day, 5 days per week.
- Encompasses the HP ProLiant Storage Server products, selected multi-vendor hardware and provides trouble-shooting software problems which range from the Storage Server 2003 operating system to the available utilities. In addition, this service makes software updates available to you at substantial savings.
- Provides recovery and re-configuration assistance of the HP ProLiant Storage Server using the recovery disk and your saved configuration file.

HP Support Plus 24

- Provides all the benefits of the regular Support Plus Care Pack, plus HP Services engineers are available to deliver onsite hardware and over-the-phone software support around-the-clock 365 days per year.

Service and Support, HP Care Pack, and Warranty Information

Software Product Services

- Standard HP warranty ensures Software media will be free of physical defects for a period of 90 days from delivery.
- These services are available to upgrade the warranty to (1 or 3) full year of 9 hours by 5 days (or 24x7) software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service.

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
- Migration service consulting via statement of work

For additional hardware installation and maintenance information, please refer to the URLs listed below:
http://www.hp.com/hps/storage/ns_nas.html

HP offers a portfolio of services ranging from Storage Design and Architecture that provides a complete multi-site design and implementation, to various levels of on-going maintenance support. Additionally the basic warranty service can be enhanced and/or HP Installation services can be purchased.

Our Proactive 24 annuity service (with the SAN Module) allows continuous SAN/NAS growth by ensuring that your entire SAN/NAS is safely kept updated with analysis and recommendations on relevant, ongoing firmware (FW) changes and it ensures rapid resolution of complex SAN/NAS issues.

Our SAN Solution Service is a one-time review of your entire SAN/NAS and all the components (applications, HBAs, switches and FW, arrays etc) to ensure that all components are at tested, HP Certified levels. The HP SAN Design/Architecture Service provides as broad and as deep a review and recommendation as needed of how your SAN/NAS environment can be designed and implemented to meet your business storage needs.

The on-going support offerings include various response times (4 hour same day, next day, etc) as well as coverage periods (Monday - Friday, 24x7, 1 yr, 3 yr, etc). These services are available for both hardware and software to ensure all customer support needs are met and can be purchased from either value or volume channels.

Finally HP offers an optional migration service to assist the customer in moving to the newest product release. This may be in the form of a defined kit and service, or may alternatively be performed on a time & material basis.

HP Services allows the customer to leverage HP's experience in selecting and configuring the most widely used security features, and provides an environment that is immediately more available due to increased change control and significantly improved data security.

For more information on these and other service options, please contact any of our worldwide sales offices or visit our Web site at: http://www.hp.com/hps/storage/ns_nas.html

Service and Support, HP Care Pack, and Warranty Information

Installation Services

The service deployment activities will include:

- Unpacking the product, performing initial inspection, and setting up product hardware and power connectivity
- Connecting Customer-provided cables
- Setting the network address and setting appropriate domain variables in the NAS operating system
- Configuring the storage by creating a file share
- Configuring user mapping to make the share available for access
- Creating a sample file data copy or Snapshot

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
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling

Product Configuration Wizard

In the following steps you will be guided through a series of steps to help you configure a Storage Server.

NOTE: options ship separately and are not factory integrated.

Step 1 - Order required model

Select one of three available models of the ML110 G2 Storage Server. The ProLiant ML110 G2 Storage Server is a fixed capacity box that is not upgradeable.

Specifications for all HP ProLiant ML110 G2 Storage Servers	OS	Microsoft Windows Storage Server 2003
	Network Controller	Single auto sensing Gigabit NIC (embedded)
	Controller for backup device	SCSI card (embedded)
	Expansion Slots	Four total Three 64-bit/100 MHz PCI-X One 32-bit/33 MHz PCI
	Optical Drive	16 X DVD-ROM
Protocol Support	CIFS/SMB, NFS, NCP, Appletalk, HTTP and FTP	
Form Factor	Tower (5U) - 16.9 x 7.9 x 21.7 in (43.0 x 20.0 x 55.0 cm)	

NOTE: Five PCI slots available on 320GB Model since a HW RAID controller is not included in this configuration.

Specifications for HP ProLiant ML110 G2 Storage Server Model 320 GB 383716-B21	Processor	(1) Intel Celeron Processor 2.8 GHz, 533 MHz FSB standard
	Memory	256 MB of Memory standard, expandable to 4 GB
	OS	Windows Storage Server 2003 Express Edition
	Hard Drive (Internal storage)	Two (2) 160 GB 1" 7200 RPM SATA non hot-plug hard drives standard
	Raw Storage Capacity	320 GB
RAID Support	Software RAID 0, 1	

NOTE: The ML110 G2 Storage Server 320GB Model uses Windows Storage Server 2003 Express Edition. This OS is limited to basic file serving functionality. This OS DOES NOT include support for Storage Resource Manager 2.0 (file screening and quotas) or print serving. Also, this OS does not allow MS Exchange storage, iSCSI Feature Pack, OpenView Storage Mirroring, Anti-virus, Backup or any other third party storage service applications to be loaded on the Storage Server.

If any of the above features are required, please select the 640GB or 1 TB model listed below.

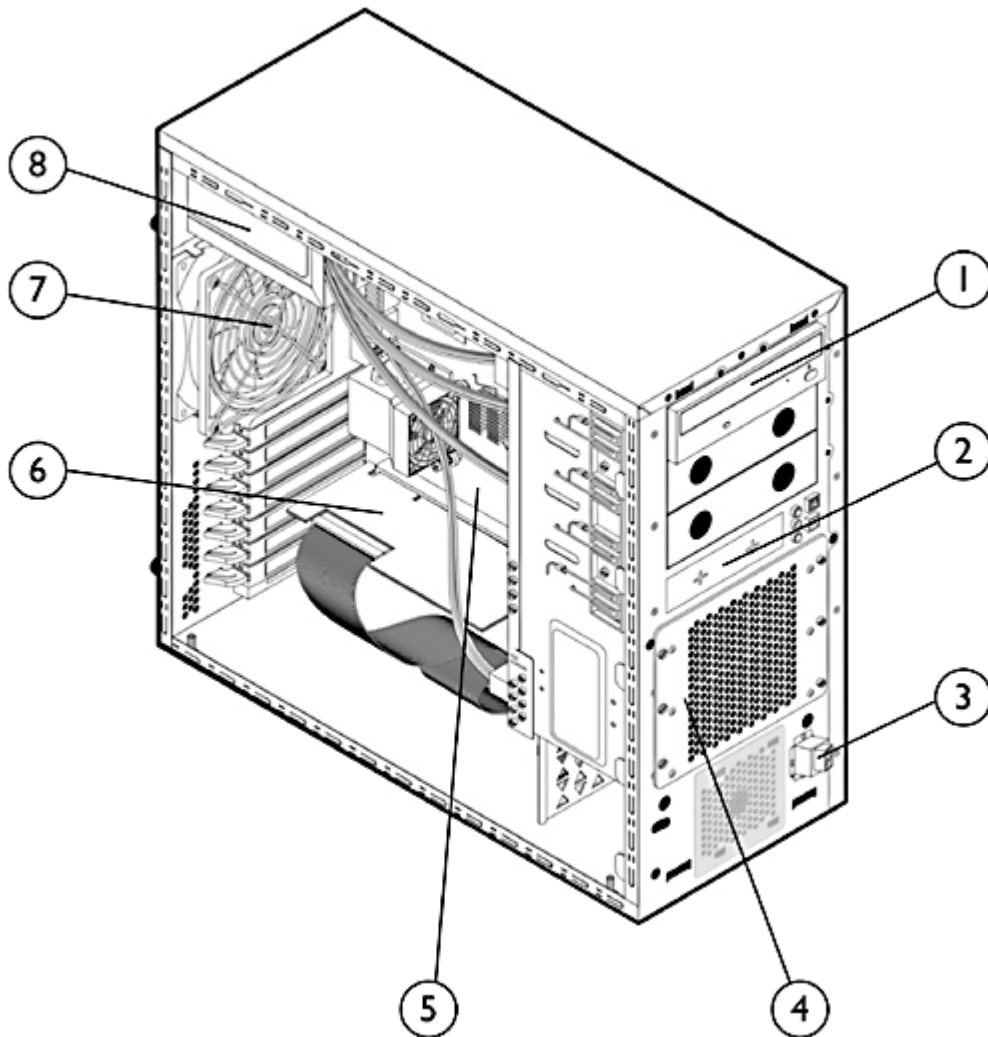
Specifications for HP ProLiant ML110 G2 Storage Server Model 640 GB 383717-B21	Processor	(1) Intel Pentium 4 Processor 3.2 GHz, 800MHz FSB standard
	Memory	256MB MB of Memory standard, expandable to 4 GB
	OS	Windows Storage Server 2003 Workgroup Edition
	Hard Drive (Internal storage)	Four (4) 160 GB 1" 7200 RPM SATA hot-plug hard drives standard
	Raw Storage Capacity	640 GB
RAID Support	Hardware RAID 0,1, 5, 0+1	

Product Configuration Wizard

Specifications for HP
ProLiant ML110 G2
Storage Server Model 1
TB
383718-B21

Processor	(1) Intel Pentium 4 Processor 3.2 GHz, 800MHz FSB standard
Memory	512 MB of Memory standard, expandable to 4 GB
OS	Windows Storage Server 2003 Workgroup Edition
Hard Drive (Internal storage)	Four (4) 250 GB 1" 7200 RPM SATA hot-plug hard drives standard
Raw Storage Capacity	1 TB
RAID Support	Hardware RAID 0,1, 5, 0+1

Model Design



1. 16 X DVD-ROM & Two Removable Media Bays
2. 1.44MB Diskette Drive (Optional)
3. Two Front USB Ports
4. Four 1" Non-Hot Plug Drive Bays(320GB model) or Four 1" Hot Plug Drive Bays (640GB and 1TB models)
5. Main System Board
6. Adaptec SA2610 6 Port SATA RAID Controller (640GB and 1TB models)
7. System Fan
8. Power Supply

Product Configuration Wizard

Step 2 - add additional memory

Standard Memory

256 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory (320 GB Model)

256 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory (640 GB Model)

512 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory (1 TB Model)

Standard Memory Replaced with Optional Memory

Up to 4096-MB (4GB) of memory is available with optional installation of Advanced ECC PC3200 DDR SDRAM DIMM Memory kits.

NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		4	3	2	1
Standard	256 MB	Empty	Empty	Empty	256 MB
Standard	512 MB	Empty	Empty	Empty	512 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP	256 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	354557-B21
	512 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	354560-B21
	1024 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	354563-B21

Step 3 - add additional network cards

The system comes with an embedded Intel 82541P1 PCI Gigabit NIC. Select additional cards if required for higher performance or redundancy.

NC320T PCI-Express 10/100/1000T Server Adapter	367047-B21
NC1020 Cu Gigabit Server Adapter 32 PCI Single Port	353376-001
NC150T PCI 4-port Gigabit Combo Switch Adapter	367132-B21
Modem adapter option kit localizations -	DC131C#xxx

NOTE: RJ11 Modem adapter kit country/network-specific telecoms adapter for use with DC131B, DC132B or DC132C modems

Modem adapter option kit Country Code Key

#ACP=	Austria	#ABZ=	Italy
#ABW=	Belgium (Dutch/Flemish)	#ABH=	Netherlands
#AKN=	Bosnia, Herzegovina, Croatia, Slovenia, Yugoslavia (Slovenian)	#UUW=	Nordic Region
#AKB=	Czech Republic (Czech) & Slovakia	#ACB=	Russia
#ABF=	France	#ACQ=	South Africa
#ABD=	Germany	#ACD=	Switzerland
#AB7=	Greece	#AB8=	Turkey

Product Configuration Wizard

#AKC=	Hungary	#ABU=	UK
#ABT=	Israel	#ABG=	Australia, New Zealand
		#ACJ=	India

Step 4 - add host based data replication

HP OpenView Storage Mirroring (SM) is an ideal entry host-based software product for IP networks. SM does not require high bandwidth Fibre Channel networks, high capacity replication and zero down time service levels. Storage Mirroring provides near real-time full application or file recovery up to the last byte replication. SM is an excellent choice for low bandwidth; low storage volume changes and meets business recovery goals within tens of minutes or hours. The immediate return on investment is realized in the reduced management cost associated with branch or small offices networks.

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- Data migration utility for transferring large data projects
- Centralize backup, data protection and recovery operations
- Built in scheduler for off hours replication
- Built in network bandwidth utilization management
- Disaster recovery between source and destination failover sites
- Powered by NSI Software's Double-Take patented 'Sequential Transfer Asynchronous Replication' technology
- Sequential transfer maintains write sequential across multiple files for data integrity

Asynchronous replication allows hosts to continue processing for maximum performance

HP OpenView Storage Mirroring	HP OpenView Storage Mirroring v4.4.2 Media Kit	T2558AA
	HP OpenView Storage Mirroring NAS Edition LTU 1	T3841AA
	HP OpenView Storage Mirroring NAS Edition LTU 10	T3842AA

NOTE: For more information go to the HP OpenView Storage Mirroring website at:
<http://h18006.www1.hp.com/products/storage/software/sm/index.html>

Product Configuration Wizard

Step 5 - add iSCSI Feature Pack

HP ProLiant Storage Server iSCSI Feature Pack is powerful and easy-to-use software that adds iSCSI target functionality to HP Storage Server (NAS) devices designed for small and medium business environments. The combination creates an iSCSI Storage Server solution that is capable of hosting file, print, and application storage (block) services on a single platform.

HP ProLiant Application Storage Manager is included with HP iSCSI Feature Pack and delivers radically simple email storage management to customers hosting Microsoft Exchange 2003 storage groups on HP Storage Servers via HP iSCSI Feature Pack.

Features and Benefits:

- Single storage platform to manage, scale, and protect: HP iSCSI Feature Pack software adds iSCSI target capability to HP ProLiant Storage Servers (NAS), creating platforms with combined storage services (file, print, and block) and enabling migration from multiple direct-attached storage devices to a consolidated storage model.
- Uses existing Ethernet infrastructure: Protects and enhances existing technology investments.
- Microsoft "Designed for Windows" Logo Certified: Certified by Microsoft Windows Hardware Qualification Lab (WHQL) to be fully compliant and compatible with Microsoft-supported servers and client systems.
- Qualified to host Microsoft Exchange Storage Groups and Microsoft SQL databases
- Works with Oracle Database: Verified with Oracle Database 9i and 10g
- Radically simple Microsoft Exchange 2003 storage management: HP ProLiant Application Storage Manager works with iSCSI Feature Pack to simplify hosting, monitoring, and managing Microsoft Exchange 2003 storage groups on HP Storage Servers.
- Compliant iSCSI target implementation: Ensures compatibility with other devices conforming to the Internet Engineering Task Force (IETF)-ratified iSCSI specification.

HP ProLiant Storage Server iSCSI Feature Pack - Standalone Edition T3669A

NOTE: Feature Pack includes the HP ProLiant Application Storage Manager software

HP ProLiant Storage Server iSCSI Snapshots - Standalone Edition T3671A

NOTE: Snapshot feature upgrade for T3669A

HP ProLiant Storage Server iSCSI Direct Backup - Standalone Edition T3674A

NOTE: Direct Backup feature upgrade for T3669A

NOTE: For more information and specifications for the HP ProLiant Storage Server iSCSI Feature Pack go to

<http://h18006.www1.hp.com/products/storage/software/inas/index.html>

Step 6 - add tape backup solution

Tape Backup Drives

NOTE: For complete listing of tape drive offerings see

<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For recommended tape drive offerings for this ProLiant Storage Server see the following:

HP DAT24 Internal SCSI DAT Drive C1555D

HP DAT40 Internal SCSI DAT Drive C5686B

HP DAT72 Internal SCSI DAT Drive Q1522A

NOTE: Installation of DAT40 or DAT72 Internal DAT Drives in a ML110 G2 Storage Server requires SCSI controller kit (PN: 365289-B21).

Technical Specifications

System Unit	Dimensions (HxWxD) (with feet)	16.9 x 7.9 x 21.7 in (43.0 x 20.0 x 55.0 cm)		
	Weight (approximate)	37 lb (16.8 kg)		
	Input Requirements (per power supply)	Range Input Voltage	90 to 135 VAC/180 to 265 VAC	
		Normal Line Voltage	115 or 230 VAC	
	Line Frequency	50 to 60 Hz		
	Rated Input Current	load 8A at 115VAC, 4A at 230VAC		
	BTU Rating	1907 BTU		
	Power Supply Output Power (per power supply)	Rated Steady-State Power	320W	
		Maximum Peak Power	350W	
	Temperature Range	Operating	50° to 93° F (10° to 35° C)	
		Shipping	-40° to 150° F (-40° to 66° C)	
	Relative Humidity (non-condensing)	Operating	20% to 80%	
		Non-operating	5% to 90%	
	Acoustic Noise	Idle (Fixed Disk Drives Spinning)	L WAd (BELS)	4.7
		L pAm (dBA)	31	
Operating (Random Seeks to Fixed Disks)		L WAd (BELS)	4.8	
		L pAm (dBA)	32	

SATA Hard Drives	160 GB 7.2K	Capacity	160,000 MB	
		Height	1.028 in (2.611cm)	
		Width	4.0 in (10.16 cm)	
		Interface	SATA 1.5 Gb	
		Transfer rate synchronous (maximum)	1.5 Gb/s	
		Seek time (typical reads, including settling)	Single track	0.9 ms
			Average	9.0 ms
			Full-stroke	17.8 ms
			Rotational speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	312,581,808
Operating Temperature	41° to 131° F (5° to 55° C)			

Technical Specifications

250 GB 7.2K	Capacity	250,000 MB
	Height	1.028 in (2.611cm)
	Width	4.0 in (10.16 cm)
	Interface	Serial ATA
	Transfer rate synchronous (maximum)	1.5 Gb/s
	Seek time	Single track 1.0 ms
	(typical reads, including settling)	Average 10.0 ms
		Full-stroke 18.0 ms
		Rotational speed 7,200 rpm
	Physical Configuration	Bytes/Sector 512
		Logical Blocks 488,397,168
	Operating Temperature	41° to 131° F (5° to 55° C)

Intel 82541 PI PCI Gigabit NIC (embedded)	Network Interface	Ethernet Standards: IEEE 802.3, 802.3u, 802.3ad, and 802.3ab, 802.1x, 802.1Q and 802.1p	
10/100/1000 WOL (Wake on LAN)	Data Transfer Method	32-bit PCI	
	Network Transfer Rate	10/100/1000 Mbps, Half- and full-duplex	Auto-negotiated speeds of 10/100/1000 Mbps in both half and full duplex
	Connector	RJ-45 connector	
	Cable Support	Category 5 or higher UTP wiring	

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