QuickSpecs

Overview

The HP ProLiant DL100 G2 Data Protection Storage Server is a network attached storage (NAS) appliance that utilizes Microsoft System Center Data Protection Manager 2006 (DPM) to provide rapid & reliable recovery, near continuous data protection, and operational simplicity for disk-based backup of Windows file servers in an Active Directory domain. Disk based backup and simple end-user file recovery deliver a low total cost of ownership.
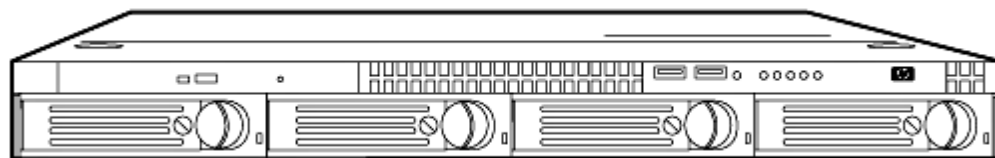
As a member of the Windows Server System Manager family, DPM has been designed to optimize disk-based backup and recovery of Windows file servers and is a fast and cost effective method to backup and recover file data lost to user error or equipment corruption. HP has worked closely with Microsoft on DPM and as such, ProLiant Data Protection Storage Servers have been optimized to deliver simplicity without compromise, resulting in a solution that is cost effective and easy to implement while providing immediate business value.

Data Protection Storage Servers complement existing IT data protection infrastructures and are non-disruptive to IT environments. They can be extended further into the data protection value chain through optional SCSI interface and tape backup software to deliver a disk-to-disk-to-tape data protection framework.

The HP ProLiant DL100 G2 Data Protection Storage Server is currently available in three pre-bundled configurations based on storage capacity. The 1TB model has 4 internal 250GB SATA drives and a hardware RAID controller. The 3TB model contains the operating system on two internal mirrored drives and is then connected to an external Modular Storage Array (MSA20) which contains twelve 250GB SATA drives. The 6TB model mirrors the 3TB configuration but adds an additional MSA20 with twelve 250GB SATA drives.

HP ProLiant DL100 G2 Data Protection Storage Server

HP ProLiant DL100 G2 Data Protection Storage Server with face plate removed

| What is Microsoft System Center Data Protection Manager (DPM)? | Data Protection Manager, the newest member of the Microsoft ® Windows Server™ System focuses on disk-based data protection and recovery of Windows based File Servers in an Active Directory domain. DPM works with Microsoft Windows 2000 Server, Microsoft Windows Server 2003, and Windows Storage Server 2003 to deliver best-in-class disk-based data protection services. DPM uses replication, Volume Shadow Copy Services infrastructure and a rich, policy-driven engine to provide businesses of all sizes with better control of their recovery infrastructure, continuous protection, and rapid data recovery at the lowest TCO. |

Overview

Benefits Of Data Protection Storage Servers running Microsoft DPM	Near continuous protection	• Snapshots data at fixed intervals based on business policy and synchronizes data between snaps so that critical data can be protected at all times, minimizing potential data loss between backups to an as little as an hour.
	End-user file restore	• Enables end users to perform point-in-time file recoveries via Windows Explorer or Microsoft Office for accidental file deletion or corruption. The server will hold up to 64 point-in-time snapshots.
	Faster backup and recovery.	• Disk based backup and recovery provides one of the fastest ways to recover individual lost files and end-user restore functionality allows users to instantly recover previous versions of their own files.
	High reliability	• The HP ProLiant Storage Server platform, RAID configured Modular Smart Array, disk-based storage, and online verification and administrative alert functionality ensures a reliable backup and recovery experience.
	Start protecting network file servers in minutes	• Fully pre-configured and optimized for out of the box deployment, this solution automatically discovers and alerts administrators that unprotected servers are on the network and the comprehensive wizard interface reduces the time it takes to protect valuable file data and delivers simplicity without compromise.
	Low total cost of ownership (TCO)	• Estimates put 70% of the cost of backup and recovery related to manual labor. This solution integrates within the existing Windows environment, utilizes industry standard components, automates much of the backup/restore function, and overcomes many issues associated with legacy or proprietary systems.
	Integrates into existing IT environments	• Works with existing tape backup and data protection strategies as well as file servers in Active Directory domains running Windows Server 2000, 2003 or Windows Storage Server 2003 based products such as the HP ProLiant Storage Server family. Supports network throttling to maximize network performance. Customer's existing tape backup software can be used to backup this server to tape.
	Eliminates backup window issues on production servers	• Eliminates the need to plan backup windows for production file servers. Storage growth due to regulatory compliance, business expansion, and increasing globalization has caused businesses to no longer have time to do a backup and for those backups to take longer than the time available.
	Bundled with full support for Data Protection Manager	• HP Data Protection Storage Server includes 1 full year of software support for Microsoft Data Protection Manager.

Overview

Product Specifications	Processor	• (1) Intel Pentium D 2.8 GHz Dual Core/800 MHz FSB - 2MB L2 Cache
	Memory	• 1 GB of memory standard, expandable to 4 GB
	Operating System	• Windows Storage Server 2003 (Standard Edition): Optimized for file serving.
	Storage Controller	• Internal Hardware based SATA RAID controller (1TB model)
		• 6402 External Smart Array Controller w/ Hardware RAID and 128MB Write Cache (3TB and 6TB model)
	Internal Storage	• Front loading, hot plug, 7200 RPM SATA Hard Disk Drives
		○ 4 x 250GB (1TB Model)
		○ 2 x 160 GB (3TB & 6TB Models) (For O/S Only)
	Optical Drive	• 8x DVD-ROM internal
	Expansion Slots	• (2) PCI-X 64 bit 133 MHz expansion slots
		○ (1) Full height, full length slot (for SCSI card for backup or Smart Array controller for external storage expansion with MSA20) (Occupied by 6402 Smart Array controller in 3TB & 6TB Models)
		○ (1) Low profile, half length slot (occupied by Dedicated HW RAID controller 1TB models. Available for SCSI HBA in 3TB and 6TB models)
	Network Controller	• Embedded Dual Port Broadcom 5751 and 5721 10/100/1000 NIC
	Interfaces	• Serial - 1
		• Pointing Device (Mouse) - 1
		• Keyboard - 1
		• Network RJ45 - 2
		• USB - 4 (2 in front, 2 in back)
	Remote Management	• IPMI 2.0, Hitachi 2168 BMC
	Form Factor	• 1U rack mount (DL100G2 Base)
		• 2U rack mount (per MSA20 on 3TB and 6TB models)
	Power Supply	• 350w (single, non-redundant)
	Fans	• 9 chassis fans, 2 power supply fans (non-redundant)
	Warranty	• The DL100 G2 Data Protection Storage Server comes with a standard 3-1-1 warranty (3 years parts exchange, 1 year labor, and 1 year onsite, next business day response)

Optional Software

Optional Software

- **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.

Service and Support, HP Care Pack, and Warranty Information

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.

Warranty and Services Included with the Product

The HP ProLiant DL100 G2 Data Protection Servers each come with a 3-1-1 warranty (3 years parts exchange, 1 years labor, and 1 year on-site, next business day response) for product hardware.

- Note that standard HP warranty ensures Software media will be free of physical defects for a period of 90 days from delivery. However the HP ProLiant Data Protection Storage Server products all come with a full year of 9 hours by 5 days software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service.
- The HP ProLiant Data Protection Manager product software support can be uplifted to include
  - SW Phone-In, 24x7, 2 hr call back
  - SW Support for Storage, 24x7 2hr call back

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 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.

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.

- 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 information on Product Services and HP Care Pack, as well as orderable part numbers, please refer to the URL: http://www.hp.com/hps/carepack/.

If you have specific questions about availability or how to obtain services contact your local HP representative. Contact information for your local area can be found at: http://www.hp.com/services.

Service and Support, HP Care Pack, and Warranty Information

Care Pack	Duration	Commercial reseller channels	Direct & Enterprise channels
Support Plus for Storage	1 year	available	HA110A1 - xxx
	3 years	available	HA110A3 - xxx
	4 years	n/a	HA110A4 - xxx
	5 years	n/a	HA110A5 - xxx
Support Plus 24 for Storage	1 year	available	HA109A1 - xxx
	3 years	available	HA109A3 - xxx
	4 years	n/a	HA109A4 - xxx
	5 years	n/a	HA109A5 - xxx
Proactive 24 (P24)	1 year	n/a	HA111A1 - xxx
	3 years	n/a	HA111A3 - xxx
	4 years	n/a	HA111A4 - xxx
	5 years	n/a	HA111A5 - xxx
SW Phone-In, 24x7, 2 hr call back	1 year	available	HA106A1 - xxx
	3 years	available	HA106A3 - xxx
	4 years	n/a	HA106A4 - xxx
	5 years	n/a	HA106A5 - xxx
SW Support for Storage, 24x7 2hr call back	1 year	available	HA107A1 - xxx
	3 years	available	HA107A3 - xxx
	4 years	n/a	HA107A4 - xxx
	5 years	n/a	HA107A5 - xxx
Where the Flex band is:			
		397593-B21	xxx is 82L
		397594-B21	xxx is not yet available
		398714-B21	xxx is 82M
		398715-B21	xxx is 82N
		398893-B21	xxx is 82P

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=ELNL

Deployment and Per Event Service Descriptions

The Installation 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

Care Pack	Duration	Commercial reseller channels	Direct & Enterprise channels
Installation for Storage (per event)	One time	available	HA113A1 - 5D6

Service and Support, HP Care Pack, and Warranty Information

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

HP Education Services

For more information about HP Education Services for Storage and SAN, visit
http://education.hp.com/curr-storsan.htm

Awards

HP IT Resource Center (ITRC) and HP Business Support Center (BSC) were selected as two of the Association of Support Professional's (ASP) Top Ten award winners in its seventh annual Ten Best Web Support Sites competition for 2004, an award that showcases excellence in online service and support.
http://www.hp.com/hpinfo/newsroom/press/2004/040616a.html

HP earned the No. 1 ranking in customer satisfaction among vendors of corporate information technology (IT) service and support, according to the newly released Technology Business Research Inc.'s Corporate IT Service and Support survey covering the first quarter of 2004.
http://www.hp.com/hpinfo/newsroom/press/2004/040624a.html

Components

For more information about Deployment, Per Event, Consulting and Education services for HP Storage, visit: http://www.hp.com/hps/storage/
For more information about HP Care Pack Services for Storage, visit:
http://www.hp.com/hps/carepack/storage/cp_networked.html
For more information about HP Storage Software, services and updates, visit:
http://h18006.www1.hp.com/storage/software.html
If you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" http://www.hp.com

QuickSpecs

Product Configuration Wizard

In the following steps you will be guided through a series of steps to help you configure a customized model.
NOTE: Options ship separately and are not factory integrated.

Step 1- Order desired model based on capacity determined by the desired data protection profile

Select one of the available base models listed here

HP ProLiant DL100 G2 1 TB Data Protection Storage Server 397593-B21		
Processor	(1) Intel Pentium D 2.8 GHz Dual Core/800 MHz FSB - 2MB L2 Cache
Memory	1GB (2x512MB) of Memory standard, expandable to 4 GB
Storage Controller	HW RAID Controller (Pre-Configured with RAID 1 for O/S and RAID 5 for DPM available use)
Internal Storage	Front loading, hot plug, 7200 RPM SATA Hard Disk Drives
	4 x 250 GB (1TB raw capacity)
Expansion Slots	(1) Full height, full length slot
	(1) Low profile, half length slot (occupied by HW RAID controller)
DPM Agent LTU's	Each Data Protection Storage Server ships with three (3) Data Protection Management Licenses (DPML) which license the server to protect 3 production file servers.
	See step 2 for information on adding additional licenses.
Data Protection Profile	**On average, the 1TB Data Protection Storage Server will protect approximately 460 GB of file data residing on Windows file servers.**
	The remaining raw capacity is used for the Windows Storage Server OS, DPM snapshots and overhead while some is lost to RAID. This factor is based on an average change rate of 10% per snapshot. Many installations will be able to realize larger protection groups due to lower churn profiles.

HP ProLiant DL100 G2 3 TB Data Protection Storage Server 398714-B21		
Processor	(1) Intel Pentium D 2.8 GHz Dual Core/800 MHz FSB - 2MB L2 Cache
Memory	1GB (2x512MB) of Memory standard, expandable to 4 GB
Storage Controller	6402 Smart Array Controller with 128MB Battery Backed Up Write Cache
Internal Storage	Front loading, hot plug, 7200 RPM SATA Hard Disk Drives
	2 x 160 GB (Mirrored O/S Drives)
Expansion Slots	(1) Full height, full length slot (occupied by 6402 Smart Array Controller for external storage connection and RAID)
	(1) Low profile, half length slot)
External Storage	(1) Modular Smart Array 20 (MSA20) with 12 x 250GB SATA drives. (1 drive configured as a failover spare) for a total of 3TB raw storage.
DPM Agent LTU's	Each Data Protection Storage Server ships with three (3) Data Protection Management Licenses (DPML) which license the server to protect 3 production file servers.
	See step 2 for information on adding additional licenses.

Product Configuration Wizard

	Data Protection Profile	On average, the 3TB Data Protection Storage Server will protect approximately 1.54TB of file data residing on Windows file servers.
		The remaining raw capacity is used for the Windows Storage Server OS, DPM snapshots and overhead while some is lost to RAID. This factor is based on an average change rate of 10% per snapshot. Many installations will be able to realize larger protection groups due to lower churn profiles.
HP ProLiant DL100 G2 6 TB Data Protection Storage Server 398715-B21	Processor Memory Storage Controller Internal Storage	(1) Intel Pentium D 2.8 GHz Dual Core/800 MHz FSB - 2MB L2 Cache 1GB (2x512MB) of Memory standard, expandable to 4 GB 6402 Smart Array Controller with 128MB Battery Backed Up Write Cache Front loading, hot plug, 7200 RPM SATA Hard Disk Drives
		2 x 160 GB (Mirrored O/S Drives)
	Expansion Slots	(1) Full height, full length slot (occupied by 6402 Smart Array Controller for external storage connection and RAID) (1) Low profile, half length slot)
	External Storage	(2) Modular Smart Array 20 (MSA20) each with 12 x 250GB SATA drives. (1 drive configured as a failover spare) for a total of 6TB raw storage capacity.
	DPM Agent LTU's	Each Data Protection Storage Server ships with three (3) Data Protection Management Licenses (DPML) which license the server to protect 3 production file servers.
		See step 2 for information on adding additional licenses.
	Data Protection Profile	On average, the 6TB Data Protection Storage Server will protect approximately 3.08TB of file data residing on Windows file servers.
		The remaining raw capacity is used for the Windows Storage Server OS, DPM snapshots and overhead while some is lost to RAID. This factor is based on an average change rate of 10% per snapshot. Many installations will be able to realize larger protection groups due to lower churn profiles.

Step 2 - add additional DPM Server Agent LTU's

Server Agent License Packs	Microsoft System Center Data Protection Management License, 1 Server Agent NOTE: The base configuration ships with licenses to protect 3 Windows file servers. One Data Protection Management License (DPML) is required for each additional Windows file server that is protected by the Data Protection Storage Server.	403557-B21

QuickSpecs

Product Configuration Wizard

Step 3 - Order memory upgrades

Memory Upgrade Option	512MB of Advanced ECC PC4200 DDR SDRAM DIMM Memory Kit (1 x 512MB)	390825-B21
	1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 X 1024MB)	390824-B21

NOTE: The ProLiant DL100 G2 Data Protection Storage Server has 4 memory slots allowing a total of 4GB of memory maximum (4 x 1024MB)

NOTE: If a ProLiant DL100 G2 Data Protection Storage Server requires field replacement, the memory option(s) should be removed and re-installed into the ProLiant DL100 G2 Data Protection Storage Server replacement unit.

Step 4 - add SCSI HBA to connect tape devices

SCSI HBA	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Step 5 - add tape backup device

Tape Drives   The DL100 G2 Data Protection Storage Server can be part of a complete disk-to-disk-to-tape data protection infrastructure by integrating a tape backup solution.

HP offers industry leading tape backup solutions. For more information and assistance in determining which solution is right for your needs, please visit: http://www.hp.com/go/tape

Step 6 - add a power cord

NOTE: The ProLiant DL100 G2 Data Protection Storage Server is designated as a rack mount solution and ships standard with rack mount PDU power cables, if a customer desires to not rack the ProLiant DL100 G2 Data Protection Storage Server the appropriate power cord option kit must be ordered.

Power Cords	Central Europe - CORD, PWR,AC LINE,EUR,12'	157215-021
	UK, Hong Kong - CORD, PWR,AC,UK/SINGAPORE, 12'	157216-031
	Italy - CORD, PWR,AC LINE,ITL, 12'	157217-061
	Denmark - CORD, PWR,AC LINE,DAN, 12'	157218-081
	Switzerland - CORD, PWR,AC LINE,SWI, 12'	157219-111
	SE Asia, India - CORD, PWR,AC IND/SOUAF, 12'	157220-AR1
	Australia, China, New Zealand - CORD, PWR,AC LINE,AUS/N.ZEAL, 12'	227098-011
UPS Power Cord Reference Guide	Please see the UPS Power Cord Reference Guide for that lists cable descriptions, requirements, and specifications for UPS units. ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.	

Product Configuration Wizard

Step 7 - add a rack

HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP 10842 (42U, 800mm wide) Rack Cabinet - Pallet	257415-B21
	HP 10842 (42U, 800mm wide) Rack Cabinet - Shock Pallet	257415-B22
	HP 10647 (47U) Rack Cabinet - Pallet	245160-B21
	HP 10647 (47U) Rack Cabinet - Shock Pallet	245160-B23
	HP 10642 (42U) Rack Cabinet - Pallet	245161-B21
	HP 10642 (42U) Rack Cabinet - Shock Pallet	245161-B22
	HP 10642 (42U) Rack Cabinet - Crated	245161-B23
	HP 10636 (36U) Rack Cabinet - Pallet	245162-B21
	HP 10636 (36U) Rack Cabinet - Shock Pallet	245162-B22
	HP 10636 (36U) Rack Cabinet - Crated	245162-B23
	HP 10622 (22U) Rack Cabinet - Pallet	245163-B21
	HP 10622 (22U) Rack Cabinet - Shock Pallet	245163-B22
	HP 10622 (22U) Rack Cabinet - Crated	245163-B23

NOTE: -B21 (pallet) used to ship empty racks shipped on a truck
-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels)
-B23 (crated) used for air shipments of empty racks
NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed.

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML
(Worldwide)
NOTE: For additional information regarding Rack 10000 Cabinets, please see the following URL:
http://h18000.www1.hp.com/products/servers/proliantstorage/racks/10000series.html

Step 8 - Order HPTS Service Care Packs

Service Care Packs or warranty upgrades enhance the base hardware warranty provided with the HP ProLiant Storage Server. The Care Packs provide support for product software and operating system with extended hours of coverage and reduced response time. And Care Packs allow the customer to budget fixed cost support rather than variable costs that include parts and labor.
Note that the standard HP warranty ensures software media will be free of physical defect for a period of 90 days from delivery. However the HP ProLiant Data Protection Server products all come with a full year of 9 hours by 5 days software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service. Extended hours of coverage and additional years of service are available should the customer require more protection.

Technical Specifications

DL100G2 base unit	Dimensions (HxWxD)	Rack	1.7 x 17 x 26.5 in (4.3 x 43.2 x 67.3 cm)
	Weight		46.89 lb (21.27 kg) shipping
			25.64 lb (11.63 kg) out of box
	LED Indicators (On Front Panel) (if applicable)	Drive Status, Drive Fault, NIC 1 and NIC2, UID. System power LED's	
	Drives Supported	SATA drives. All models ship with hard drives pre-installed	
	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)
	Drive Interface	Serial ATA	
	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%
	Temperature Range	Operating	50° to 104° F (10° to 40° C)
		Shipping	-40° to 149° F (-40° to 60° C)

MSA20 External Storage	LED Indicators for Drive Modules (2)	Online (bottom)
		Drive Failure/ID (top)
	LED Indicators on Rear Panel (7)	Power Supply/Blower Assembly Fault (2)
		Fan Module (2)
		Controller Module Fault (1)
		Enclosure Monitor Status (left)
		Enclosure Fault (right)
	Interface	SATA 1.5Gb/s to Hard Drives
		Ultra320 SCSI to Host Servers
	Maximum Number of Drives	12, 1-in SATA 1.5Gb/s Universal SATA Hard Drives (Modular Smart Array 20 cabinet)

	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Shipping	-40° to 150° F (-40° to 66° C) NOTE: Rated 1°C per 1000 feet of elevation to 10000 ft.
		Operating	40% to 60%
		Non-operating	Up to 80%
	Input Power Requirements	Rated Input Voltage	100 to 240 VAC
		Rated Input Frequency	50 to 60 Hz
		Rated Input Current	3.9 A at110 VAC typical, 6A Maximum
		Input Power (max)	345 W*

Technical Specifications

Heat Dissipation (maximum)	1175 Btu/hr*	
	*NOTE: Input Power and Heat Dissipation specifications are maximum values and apply to worst-case conditions at full rated power supply load. The power/heat dissipation for your installation will vary depending on the equipment configuration.	
Smart Array 6402, 642 Controllers	Protocol	Ultra320 SCSI
	SCSI Electrical Interface	Low Voltage Differential (LVD)
	SCSI Port Connectors	One external and one internal SCSI port
	Channel Transfer Rate	640-MB/s total; 320-MB/s per channel
	PCI Bus Speed	64-bit, 133-MHz PCI-X (1 GB/s maximum bandwidth)
	PCI	3.3 volt CPI slot compatibility only
	Dimensions (HxWxD)	12.3 x 4.2 x 0.6 in (31.24 x 10.7 x 1.5 cm)
	Weight (Net)	
Modular Smart Array 20 Cabinet	2U Rack Form Factor	
	Dimensions (HxWxD)	3.5 x 19.2 x 23.5 in (8.8 x 48.8 x 59.7 cm)
	Weight (Net)	53 lb (24.0 kg)
	Dimensions (LxWxD)	33.0 x 10.8 x 32.0 in (83.8 x 27.4 x 81.3 cm)
	Weight (Gross)	75 lb (34.0 kg)