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Product Datasheet

HP StorageWorks NAS b3000

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Overview

StorageWorks NAS b3000 v2	<ul style="list-style-type: none"> • New server platform based on ProLiant DL380 G3 • Columbia Data Products has been loaded in place of SWVR • New web interface
NAS b3000 v2	322313-001,421
	322314-001,421

What's new	<ul style="list-style-type: none"> • New updated server platform • Columbia Data Products for snapshot functionality • New web interface for easier management • Integrated Lights-Out (iLO) Management standard on system board • Intel® Xeon 2.8 GHz Processor (dual capability) with 512-KB level 2 ECC cache • 2GB SDRAM (expandable to 6GB) • Integrated Smart Array 5i Plus Controller with optional Battery-Backed Write Cache (BBWC) Enabler option kit • Three available 64-bit PCI-X slots, including two hot pluggable 100MHz slots and one 133MHz slot • Two NC7781 PCI-X Gigabit NICs (embedded) 10/100/1000 WOL (Wake on LAN) • 2 x 400-Watt Hot Plug Power Supply • Redundant Hot Pluggable Fans
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Benefits of NAS	CONTROLLABLE	<ul style="list-style-type: none"> • NAS/SAN fusion: integration of file or block data leads to increased efficiency of the storage network. • Manageable: simpler management of file or block level data leading to decreased costs for storage. • Affordable: NAS/SAN fusion provides an architecture that offers better efficiency for your storage.
	RESILIENT	<ul style="list-style-type: none"> • Reliable: HP's experience is the key to success with affordable optimized NAS solutions.
	EXTENSIBLE	<ul style="list-style-type: none"> • Extensive: low-end, remote/workgroup solutions, to consolidated fusion solutions for the enterprise. • Optimized: HP provides the right NAS solution for each customer, no need to settle for trade-offs. •

Key Features	Management & Consolidation	<ul style="list-style-type: none"> • StorageWorks NAS provides increased manageability of file services by allowing file server and storage consolidation. The integrated web GUI provides a single point of manageability for administrative function associated with advanced file serving
	Scalability	<ul style="list-style-type: none"> • While consolidating servers and storage the StorageWorks NAS products provides scalability up to 48 TB that maximizes the return on storage investment.
	Availability	<ul style="list-style-type: none"> • StorageWorks NAS provides a family of products that offer a wide range of availability, and confidence that data will available when needed. From redundant components, to replication, to no single point of failure deployments, StorageWorks NAS offers it all
	Performance	<ul style="list-style-type: none"> • Advanced file serving functions require high performance. The StorageWorks NAS family of products offers impressive performance ranging from the smallest business to the largest enterprise



Product Highlights

Product Highlights

- Capacity - the b3000 scales to 48TB of storage when attached to an MSA 1000 and taking advantage of the embedded Switch The server only model of the StorageWorks NAS b3000 will support attachment to either an MSA 1000 or VA storage array. Reducing the cost of storage management and increasing your return on storage investment.
- Innovative management GUI - for ease of use making it possible to manage all NAS function from a central location or anywhere with internet access capabilities.
- Optimized file serving - for environments that have a desire to consolidate storage and servers and get the best return on storage investment from their SAN.
- NAS/SAN fusion – taking advantage of selective storage presentation for the best return on storage investment in a preferred manner for access and utilization of both file and block level access
- Snapshots - incremental backups that are flexibly scheduled throughout the day. An additional level of data availability that provides easy restoration of data without having to access tape, with limited utilization of time and space
- NAS Data Copy - advanced host based IP replication for added confidence and disaster recovery. Providing built in disaster recovery features and the flexibility to store data at any location.
- Platform enhancements - next generation server platform delivers maximum performance and unprecedented availability in a flexible, rack optimized form factor
- Integrated Lights-Out Standard Management (iLO) on system board regardless of the state of the server
- Integrated Smart Array 5i Plus Controller with 64 MB total memory on 5i Plus Memory Module – allowing for control of the mirrored OS separate from the user data for control and peace of mind.

SOFTWARE COMPONENTS

HP Supplied Software

- Windows® Powered OS – providing advanced file services in a familiar easy to manage package. Management options include GUI, Integrated Lights Out functionality, Terminal Services, and Command Line interface
- HP NAS Data Copy – 30 day trial of advanced host based replication capabilities. Software license available as option for long term activation. NAS Data Copy is a host-based data replication package that allows data to be replicated over TCP/IP in either a synchronous or asynchronous mode. One-to-one, one-to-many, many-to-many replication is supported along with failover and failback capabilities.
- CDP Persistent Storage Manager – allowing for incremental backup or snapshots throughout the day. Use storage space and management time more efficiently with small extremely fast copies of your data. Supports up to 256 snapshots using a flexible schedule for administration of snapshots.
- Rapid Launch – for easy configuration and set up of file services. The answer to the fast pace and demands of the data center environment
- Web Based Management GUI – for remote distribution and ongoing management and configuration of advanced file service where technical resources are at a premium. Maximizing the management resources available to you
- Secure path software – for high availability for HBA failover and redundancy
- Windows Powered OS drivers, including Array Controller driver and HBA drivers
- SNMP management support – with pre-installed agents that work with management software such as HP Openview, or Tivoli TME, IBM Netview, CA Unicenter, and BMC
- NIC Teaming Drivers Pre-loaded – providing increased throughput & performance of important data
- HP & APC UPS agents – confidence that all will be well in the event of a site power failure
- Quick Restore CD – for restoration to the StorageWorks NAS standard factory image

Models

* **NOTE:** The 322313-xxx and the 322314-xxx with cluster kit 331474-B21 are needed to complete a cluster configuration.

StorageWorks NAS b3000 v2 no storage 322313-001/421	Processor	(2) Intel Xeon Processor 2.80 GHz standard
	Cache Memory	512 KB level 2 ECC cache
	Memory	2 GB (Standard) to 6 GB (Maximum) SDRAM
	Network Controller	(2) NC7781 PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN) (embedded)
	Storage Controller	Smart Array 5i Plus Controller (integrated on system board)
	Hard Drive (Internal storage)	Standard two (2) 36 GB U320 10K drives for mirrored OS internal to server.
	HBA	(1) FCA 2101 fibre Host Bus Adapter
	Optical Drive	Slimline DVD (8x24)
	Form Factor	Rack (2U), (3.5-inch)
	Expansion Slots	I/O (3 Total, 3 available) (2) 64-bit/100 MHz PCI-X Hot Plug (1) 64-bit/133 MHz PCI-X Non Hot Plug

StorageWorks NAS b3000 v2 w/storage 322314-001/421	Processor	(2) Intel Xeon Processor 2.80 GHz standard
	Cache Memory	512 -KB level 2 ECC cache
	Memory	2 GB (Standard) to 6 GB (Maximum) SDRAM
	Network Controller	(2) NC7781 PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN) (embedded)
	Storage Controller	Smart Array 5i Plus Controller (integrated on system board) for OS drives
	Optical Drive	Slimline DVD (8x24)
	Hard Drive (Internal Storage)	Standard two (2) 36 GB U320 10K drives for mirrored OS internal to server.
	Hard Drive (External Storage)	Modular SAN Array 1000 with 4 x 146 GB drives
	External Storage Controller	Modular SAN Array 1000 Controller
	HBA	(1) FCA 2101 fibre Host Bus Adapter
	Switch	Modular SAN Array 1000 embedded switch 6
	Form Factor	322314-001,421 Rack (6U), (9.0-inch)
	Expansion Slots	I/O (3 Total, 2 available) (2) 64-bit/100 MHz PCI-X Hot Plug (one available) (1) 64-bit/133 MHz PCI-X Non Hot Plug

Protocol Support for all b3000 models CIFS , NFS ,NCP, AppleTalk, HTTP, FTP

Options

NAS B3000 customers who desire to have high availability clusters are required to purchase this cluster kit.	StorageWorks NAS Cluster Kit (includes heartbeat cable)	331474-B21
NAS B3000 customers who desire to activate NAS Data Copy after the 30 day trial will need to order the license part number 278546-001	NAS Data Copy	NAS Data Copy is a host-based data replication package that allows data to be replicated over TCP/IP in either a synchronous or asynchronous mode. One-to-one, one-to-many, many-to-many replication is supported along with failover and fallback capabilities.
TCP/Offload NIC (optional) NOTE: Additional technical and purchasing information can be obtained at http://www.alacritech.com/hp	Alacritech 1000x1 Single Port Gigabit Server and Storage Accelerator Copper wire	Alacritech P/N 2000-100007
	Alacritech 1000x1 Single Port Gigabit Server and Storage Accelerator Fibre	Alacritech P/N 2000-100009
	Alacritech 100x4 Quad-Port Fast Ethernet Server Accelerator	Alacritech P/N 2000-100000
Unique Options	Redundant Fan Option Kit	293048-B21
	NOTE: Hot Plug Redundant Fan Option Kit (PN 293048-B21) contains three fans per kit.	
	Round hole rack cabinet rail kit	293052-B21
	NOTE: Support for racks with round mounting holes (include HP Rack System /E and HP Systems) with an adjustment range of 24" – 36".	
	Hot Plug AC Redundant Power Supply Module (NEMA cord) (NA)	313054-001
	Hot Plug AC Redundant Power Supply Module (IEC cord) (WW)	313054-B21
FCA 2101 Host Adapter	Connector Type	LC
	Protocol	SCSI, IP
	Data Transfer Method	64 bit /66 MHz PCI
	Packaging (LxWxD)	11 x 8.5 x 3 in/27.9 x 21.6 x 7.6 cm
Processor	Intel Xeon 2.80 GHz-512 KB Processor Option Kit	257915-B21
Memory	512 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2 x 256 MB)	300678-B21
	1024 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2 x 512 MB)	300679-B21
	2048 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x1024 MB)	300680-B21
Optical Drives	Slimline DVD-ROM (8x24x) Option Kit (Servers)	264007-B21
Hard Drives	Ultra 320 SCSI – Universal Hot Plug	
	36.4 GB 10,000 rpm, U320 Universal Hard Drive, 1"	286713-B22
	72.8 GB 10,000 rpm, U320 Universal Hard Drive, 1"	286714-B22
	146.8 GB 10,000 rpm, U320 Universal Hard Drive, 1"	286716-B22
	18.2 GB 15,000 rpm, U320 Universal Hard Drive, 1"	286775-B22
	36.4 GB 15,000 rpm, U320 Universal Hard Drive, 1"	286776-B22
	72.8 GB 15,000 rpm, U320 Universal Hard Drive, 1"	286778-B22
	NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.	

Options

Hard Drives <i>(continued)</i>	Wide Ultra3 SCSI – Universal Hot Plug	
	72.8 GB Wide Ultra3 SCSI 10,000 rpm Drive (1")	232432-B22
	36.4 GB Wide Ultra3 SCSI 10,000 rpm Drive (1")	176496-B22
	18.2 GB Wide Ultra3 SCSI 10,000 rpm Drive (1")	142673-B22
	36.4 GB Wide Ultra3 SCSI 15,000 rpm Drive (1")	232916-B22
	18.2 GB Wide Ultra3 SCSI 15,000 rpm Drive (1")	188122-B22
Communications	NC3134 Fast Ethernet NIC 64 PCI Dual Port 10/100	138603-B21
	NC3135 Fast Ethernet Module Dual 10/100 Upgrade Module for NC3134	138604-B21
	NC6136 Gigabit Server Adapter, 64-bit/66MHz, PCI, 1000 SX	203539-B21
	NC7131 Gigabit Server Adapter, 64-bit/66Mhz, PCI, 10/100/1000-T	158575-B21
	NC7770 PCI-X Gigabit Server Adapter	244948-B21
	NOTE: Any NC31XX, NC61XX, NC71XX or NC77XX NIC can be used for redundancy with the embedded NC7781 Network Controller.	
DC Power Supply	DC Power Supply for the DL380 (48V)	268290-B21
	NOTE: The ProLiant DL380 G3 ships standard with a 100-240 volt auto-switching AC power supply. Each 48 volt DC option kit (PN 268290-B21) contains one power supply. Therefore, to convert to redundant DC power supplies, two must be purchased.	
Redundant Options	Hot Plug AC Redundant Power Supply Module (NEMA cord) (NA)	313054-001
	Hot Plug AC Redundant Power Supply Module (IEC cord) (WW)	313054-B21
Security	HP/Atalla AXL600L SSL Accelerator Card for ProLiant Servers	524545-B21
	AXL300 Accelerator PCI Card for ProLiant Servers	227933-B21
Tape Drives	Internal and External DAT Tape Drives	
	HP StorageWorks 20/40 GB DAT DDS-4 Tape Drive, External (Carbon) (NA)	157770-002
	HP StorageWorks 20/40 GB DAT DDS-4 Tape Drive, External (Int'l) (Carbon)	157770-B32
	HP StorageWorks 20/40 GB DAT DDS-4 Tape Drive, External (Japan) (Carbon)	157770-292
	NOTE: Please see the 20/40 GB DAT Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/10426_div/10426_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10426_na/10426_na.HTML (North America)	

Options

Tape Drives <i>(continued)</i>	
External AIT Tape Drives	
HP StorageWorks AIT 50 GB Tape Drive, External (Carbon) (NA)	157767-002
HP StorageWorks AIT 50 GB Tape Drive, External (Int'l) (Carbon)	157767-B32
HP StorageWorks AIT 50 GB Tape Drive, External (Japan) (Carbon)	157767-292
HP StorageWorks AIT 50 GB Tape Drive, 3U Rackmount	274333-B21
NOTE: The Integrated Smart Array 5i Controller does not support the AIT 50-GB Tape Drive.	
NOTE: Please see the AIT 50 GB Tape Drive QuickSpecs for additional options such as adapters, controllers, and cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/10425_div/10425_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10425_na/10425_na.HTML (North America)	
HP StorageWorks External AIT 100 GB Tape Drive (Carbon)	249160-001
HP StorageWorks External AIT 100 GB Tape Drive (Carbon) (Int'l)	249160-B31
NOTE: The Integrated Smart Array 5i Controller does not support the AIT 100 GB Tape Drive.	
NOTE: Please see the AIT 100 GB Tape Drive QuickSpecs for additional options such as adapters, controllers, and cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/11062_div/11062_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/11062_na/11062_na.HTML (North America)	
External DLT Tape Drives	
HP StorageWorks External 20/40-GB DLT Drive (opal)	340744-B22
HP StorageWorks External 20/40-GB DLT Drive (opal) (Japan)	340744-292
NOTE: The Integrated Smart Array 5i Controller does not support the 20/40-GB DLT Tape Drive.	
NOTE: Please see the 20/40-GB DLT Drive QuickSpecs for additional options such as data and cleaning cartridges, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/10234_div/10234_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10234_na/10234_na.HTML (North America)	
HP StorageWorks 40/80-GB DLT Tape Drive, External (Carbon) (NA)	146197-B23
HP StorageWorks 40/80-GB DLT Tape Drive, External (Carbon) (Japan)	146197-293
HP StorageWorks Rackmount DLT 40/80, 3U (Single Drive)	274332-B21
HP StorageWorks Rackmount DLT 40/80, Dual Drive 3U (Two Drives)	274335-B21
HP StorageWorks Rackmount DLT 40/80, Tape Array III, 5U (Four Drives)	274337-B21
NOTE: Please see the 40/80-GB DLT Drive QuickSpecs for additional options such as host bus adapters, controllers, cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/10658_div/10658_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10658_na/10658_na.HTML (North America)	
Internal and External SDLT Tape Drives	
HP StorageWorks SDLT 110/220, External (Carbon) (NA)	192103-002
HP StorageWorks SDLT 110/220, External Int'l (carbon)	192103-B32
HP StorageWorks SDLT 110/220, External Japan (Carbon)	192103-292
HP StorageWorks Rackmount SDLT 110/220, 3U (Single Drive)	274331-B21
HP StorageWorks Rackmount SDLT 110/220, Dual-Drive, 3U (Two Drives)	274334-B21
HP StorageWorks Rackmount SDLT 110/220, Tape Array III, 5U (Four Drives)	274336-B21
NOTE: Please see the SDLT 110/22 0GB Tape Drive QuickSpecs for additional options such as adapters, controllers, and media, and for an up-to-date listing of the latest O/S Support details, please see the following: http://www5.hp.com/products/quickspecs/10772_div/10772_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10772_na/10772_na.HTML (North America)	

Options

Tape Drives *(continued)*

External LTO Ultrium Tape Drives

HP StorageWorks LTO Ultrium 230 Tape Drive, External (Carbon) NA	Q1516A
HP StorageWorks LTO Ultrium 230 Tape Drive, External (Carbon) Int'l	Q1517A

NOTE: Please see the HP StorageWorks LTO Ultrium Tape Drive QuickSpecs for additional options such as controllers, and other related items, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://www5.hp.com/products/quickspecs/11415_div/11415_div.HTML (Division/World Wide)
http://www5.hp.com/products/quickspecs/11415_na/11415_na.HTML (North America)

HP StorageWorks Ultrium 460 Tape Drive for ProLiant, External (Carbon) NA	Q1519A
HP StorageWorks Ultrium 460 Tape Drive for ProLiant, External (Carbon) Int'l	Q1520A

NOTE: Please see the HP StorageWorks Ultrium 460 Tape Drives for ProLiant QuickSpecs for additional options such as data and cleaning cartridges, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://www5.hp.com/products/quickspecs/11530_div/11530_div.HTML (Division/World Wide)
http://www5.hp.com/products/quickspecs/11530_na/11530_na.HTML (North America)

External DAT Autoloader

20/40-GB DAT 8 Cassette Autoloader External (Opal)	166505-001
20/40-GB DAT 8 Cassette Autoloader External (Opal) (Int'l)	166505-B31
20/40-GB DAT 8 Cassette Autoloader External (Opal) (Japan)	166505-291

NOTE: Please see the 20/40-GB DAT DDS-4 8 Cassette Autoloader QuickSpecs for additional options such as adapters, controllers, and cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://www5.hp.com/products/quickspecs/10518_div/10518_div.HTML (Division/World Wide)
http://www5.hp.com/products/quickspecs/10518_na/10518_na.HTML (North America)

AIT Autoloader

HP StorageWorks AIT 35 GB Autoloader, Rackmount (Carbon) (NA)	280349-001
HP StorageWorks AIT 35 GB Autoloader, Rackmount (Carbon) (Int'l)	280349-B31

NOTE: The Integrated Smart Array 5i Controller does not support the AIT 35-GB Autoloader.

NOTE: Please see the AIT 35 GB Autoloader QuickSpecs for additional options such as adapters, controllers, and cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://www5.hp.com/products/quickspecs/11404_div/11404_div.HTML (Division/World Wide)
http://www5.hp.com/products/quickspecs/11404_na/11404_na.HTML (North America)

HP StorageWorks 1/8 Autoloader

HP StorageWorks 1/8 Autoloader, Tabletop, Ultrium 230	C9572CB
HP StorageWorks 1/8 Autoloader, Tabletop, DLT VS80	C9264CB
HP StorageWorks 1/8 Autoloader, Rackmount kit	C9268R

Options

Tape Drives <i>(continued)</i>	Rackmount Tape Drive Kits	
	3U Rackmount Kit	274338-B21
	NOTE: The 3U Rackmount Kit (PN 274338-B21) can support up to (2) full-height or (4) half-height tape drives and compatible with multiple Single-Ended and LVD SCSI Tape Drives including the 12/24 GB DAT, 20/40 GB DAT, AIT 35 GB LVD, AIT 50 GB, 20/40 GB DLT, 40/80 GB DLT, and the SDLT 110/220 GB Tape Drives.	
	5U Rackmount Kit	274339-B21
	NOTE: The 5U Rackmount Kit (PN 274339-B21) can support up to (4) full-height tape drives and is compatible with all DLT/SDLT tape drives including the 20/40 GB DLT, 35/70 GB DLT, 40/80 GB DLT, and the SDLT 110/220 GB tape drives.	
	NOTE: Please see the Rackmount Tape Drive Kits QuickSpecs for additional information regarding these kits, please see the following: http://www5.hp.com/products/quickspecs/10854_div/10854_div.HTML (Division/World Wide) http://www5.hp.com/products/quickspecs/10854_na/10854_na.HTML (North America)	
	Rackmount Tape Drive Cable Kits	
	LVD Cable Kit, VHDCI/HD68	168048-B21
	NOTE: For use with the 3U RM Storage Enclosure and DLT Tape Array III only.	
	LVD Cable Kit, HD68/HD68	242381-B21
	NOTE: For use with the 3U RM Storage Enclosure and DLT Tape Array III only.	
Tape Automation	SSL2020 – AIT50 based library with up to 2 drives and 20 slots	
	SSL2020 AIT Mini-Library 1 drive, 20 slot Table Top	175195-B21
	SSL2020 AIT Mini-Library 2 drive, 20 slot Table Top	175195-B22
	SSL2020 AIT Mini-Library 1 drive, 20 slot Rackmount	175196-B21
	SSL2020 AIT Mini-Library 2 drive, 20 slot Rackmount	175196-B22
	SSL2020 AIT Library Pass Thru with Transport	175312-B21
	Add-on drives and accessories	
	SSL2020 AIT Library Pass Thru Extender	175312-B22
	AIT 50GB Drive Add-On LVD Drive for SSL2020 AIT Library	175197-B21
	19 Slot Magazine for SSL2020 AIT Library	175198-B21
	AIT 50-GB Data Cassette (5 pack)	152841-001
	AIT Cleaning Cassette	402374-B21
	NOTE: Please see the SSL2020 Automated AIT Tape Library Solution QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/10580_na/10580_na.HTML (North America) http://www5.hp.com/products/quickspecs/10580_div/10580_div.HTML (Division/World Wide)	
MSL5060L1 – LTO Ultrium 1 based departmental library up to 4 drives and 60 slots		
MSL5060L1, 0 DRV LTO1 RM Library	301899-B21	
MSL5060L1, 2 DRV LTO1 RM Library	301899-B22	
MSL5060L1, 2 DRV LTO1 TT Library	301900-B21	
MSL5060L1FC, 2 DRV LTO1 RM-with integrated FC router	301899-B23	
NOTE: Please see the HP StorageWorks MSL5060 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/11438_na/11438_na.HTML (North America) http://www5.hp.com/products/quickspecs/11438_div/11438_div.HTML (Division/World Wide)		

Options

Tape Automation <i>(continued)</i>	MSL5052S2 – SDLT160 based departmental library up to 4 drives and 52 slots	
	MSL5052S2, RM 0 DRV SDLT ALL	255102-B21
	MSL5052S2, 2 DRV SDLT2 TT LIB	293476-B21
	MSL5052S2, 2 DRV SDLT2 RM LIB	293474-B21
	MSL5052S2FC 2 DRV SDLT2 RM- with integrated FC router	293474-B24
NOTE: Please see the HP StorageWorks MSL5052S2 Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/11442_na/11442_na.HTML (North America) http://www5.hp.com/products/quickspecs/11442_div/11442_div.HTML (Division/World Wide)		
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HP StorageWorks MSL5000 mid-range libraries		
MSL5030L1 – LTO Ultrium 1 mid-range library up to 2 drives and 30 slots		
	MSL5030L1, 0 DRV LTO1 RM Library	301897-B21
	MSL5030L1, 1 DRV LTO1 RM Library	301897-B22
	MSL5030L1, 2 DRV LTO1 RM Library	301897-B23
	MSL5030L1, 1 DRV LTO1 TT Library	301898-B21
	MSL5030L1, 2 DRV LTO1 TT Library	301898-B22
	MSL5030L1FC, 1 DRV LTO1 RM- with integrated FC router	301897-B24
	MSL5030L1FC, 2 DRV LTO1 RM- with integrated FC router	293472-B25
NOTE: Please see the HP StorageWorks MSL5030 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/11439_na/11439_na.HTML (North America) http://www5.hp.com/products/quickspecs/11439_div/11439_div.HTML (Division/World Wide)		
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MSL5026S2 – SDLT160 based mid-range library up to 2 drives and 26 slots		
	MSL5026S2, 0 DRV SDLT2 RM Library	293472-B21
	MSL5026S2, 1 DRV SDLT2 RM Library	293472-B22
	MSL5026S2, 2 DRV SDLT2 RM Library	293472-B23
	MSL5026S2, 1 DRV SDLT2 TT Library	293473-B21
	MSL5026S2, 2 DRV SDLT2 TT Library	293473-B22
	MSL5026S2FC, 1 DRV SDLT2 RM- with integrated FC router	293472-B24
	MSL5026S2FC, 2 DRV SDLT2 RM- with integrated FC router	293472-B25
NOTE: Please see the HP StorageWorks MSL5026SL Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/11453_na/11453_na.HTML (North America) http://www5.hp.com/products/quickspecs/11453_div/11453_div.HTML (Division/World Wide)		
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MSL5026SL Graphite – SDLT110 based mid-range library up to 2 drives and 26 slots		
	MSL5026SL, 1 DRV SDLT TT, graphite	302511-B21
	MSL5026SL, 2 DRV SDLT TT, graphite	302511-B22
	MSL5026SL, 1 DRV SDLT RM, graphite	302512-B21
	MSL5026SL, 2 DRV SDLT RM, graphite	302512-B22
NOTE: Please see the HP StorageWorks MSL5026SL Graphite Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/11440_na/11440_na.HTML (North America) http://www5.hp.com/products/quickspecs/11440_div/11440_div.HTML (Division/World Wide)		

Options

Tape Automation <i>(continued)</i>	HP StorageWorks MSL5000 mid-range libraries <i>(continued)</i>	
	MSL5026SL Opal – SDLT110 based mid-range library up to 2 drives and 26 slots	
	MSL5026, 0 DR, LVD, RM	231979-B21
	MSL5026SL, 1 SDLT 110/220,LVD, TT	231822-B21
	MSL5026SL, 2 SDLT 110/220,LVD, TT	231822-B22
	MSL5026SL, 1 SDLT 110/220,LVD, RM	231892-B21
	MSL5026SL, 2 SDLT 110/220,LVD, RM	231892-B22
	MSL5026DLX– 40/80 GB DLT based mid-range library up to 2 drives and 26 slots	
	MSL5026DLX, 1 40/80 GB DLT, LVD, TT	231821-B21
	MSL5026DLX, 2 40/80 GB DLT, LVD, TT	231821-B22
	MSL5026DLX, 1 40/80 GB DLT, LVD, RM	231891-B21
	MSL5026DLX, 2 40/80 GB DLT, LVD, RM	231891-B22
	NOTE: Please see the HP StorageWorks MSL5026DLX Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at: http://www5.hp.com/products/quickspecs/10860_na/10860_na.HTML (North America) http://www5.hp.com/products/quickspecs/10860_div/10860_div.HTML (Division/World Wide)	
	MSL5000 Add-on drives & accessories	
	MSL5000 SDLT 160/320 Upgrade DRV (MSL5052S2 & MSL5026S2 only)	293475-B21
	MSL5000 LTO Ultrium 1 Upgrade DRV (MSL5060L1 & MSL5030L1 only)	301901-B21
	MSL5000 SDLT 110/220 Upgrade DRV	231823-B22
	MSL5000 40/80GB DLT Upgrade DRV	231823-B21
	MSL5000 Dual Magazine LTO (2 X 15 slot magazines)	301902-B21
	MSL5000 Dual Magazine DLT (2 X 13 slot magazines)	232136-B21
	MSL5000, Pass through mechanism 10U (includes elevator mechanism and router, required to connect first two units in a stack)	231824-B21
	MSL5026, 5U Pass through extender (required one for each unit connected to the stack, for third and additional units) – for MSL5026 & MSL5030	231824-B22
	MSL5052, 10U Pass-Through Extender (required one for each unit connected to the stack, for third and additional units) – for MSL5052 & MSL5060	231824-B23
External Storage - Rack	StorageWorks Enclosure Model 4314R (rack-mountable)	190209-001
	StorageWorks Enclosure Model 4314R (rack-mountable) (Int'l)	190209-B31
	StorageWorks Enclosure Model 4314R (rack-mountable) (Japan)	190209-291
	StorageWorks Enclosure Model 4354R (rack-mountable)	190211-001
	StorageWorks Enclosure Model 4354R (rack-mountable) (Int'l)	190211-B31
	StorageWorks Enclosure Model 4354R (rack-mountable) (Japan)	190211-291
	NOTE: The StorageWorks Enclosure 4300 Family supports the Wide Ultra2/Ultra3 1" Hot Plug Hard Drives.	
UPS Power Cord Reference Guide	<i>Please see the UPS Power Cord Reference Guide for that lists cable descriptions, requirements, and specifications for UPS units.</i> http://www.hp.com/products/servers/proliantstorage/power-protection/options/index.html	

Options

Uninterruptible Power Systems - Rack	UPS R1500 XR (1440VA, 1340 Watt), Low Voltage (NA)	204404-001
	UPS R1500 XR (1500VA, 1340 Watt), High Voltage (Int'l)	204404-B31
	UPS R1500 XR (1500VA, 1340 Watt), Low Voltage (Japan)	204404-291
	UPS R3000 XR (2880VA, 2700 Watt), Low Voltage (NA)	192186-001
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (NA)	192186-002
	UPS R3000 XR (2400VA, 2250 Watt), Low Voltage (Japan)	192186-291
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Japan)	192186-292
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Int'l - detachable cord)	192186-B31
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A IEC309 Plug)	192186-B32
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A CEE 7/7 SCHUKO Plug)	192186-B33
	UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A BS-546 Plug)	192186-AR1
	Rackmountable UPS R6000 (6000VA, 6000 Watt) High Voltage (NA)	347207-001
	Rackmountable UPS R6000 (6000VA, 6000 Watt) High Voltage (Int'l)	347207-B31
	Rackmountable UPS R6000 (6000VA, 6000 Watt) High Voltage (Japan)	347207-291
	UPS R12000 XR, N+x (12KVA, 12KW) High Voltage (WW)	207552-B22
	NOTE: UPS R6000 has a hardwired input; and the UPS R12000 XR has a hardwired input and output connection.	
UPS Options	SNMP Serial Port Card	192189-B21
	NOTE: Supports tower and rack UPS XR models ranging from 1000 – 3000VA.	
	Six Port Card	192185-B21
	NOTE: Supports tower and rack UPS XR models ranging from 1000 – 3000VA.	
	High to Low Voltage Transformer (250VA)	388643-B21
	NOTE: Supports R6000 UPS series only. 2.5 amps @ 125 Volts max output across two NEMA 5-15.	
	Extended Runtime Module, R1500 XR, 2U	218971-B21
	NOTE: 2U each, two ERM maximum.	
	Extended Runtime Module, R3000 XR, 2U	192188-B21
	NOTE: 3U each, one ERM maximum.	
	Extended Runtime Module, R6000, 3U	347224-B21
	NOTE: 3U each, two ERM maximum.	
	Extended Runtime Module, R12000 XR, 4U	217800-B21
NOTE: 4U each, two ERM maximum.		
SNMP-EN Adapter	347225-B21	
NOTE: Supports R6000 UPS series only.		
Multi-Server UPS Card	123508-B21	
NOTE: Supports R6000 UPS series only.		
Scalable UPS Card	123509-B21	
NOTE: Supports R6000 UPS series only.		
Rackmountable PDUs – 1U/0U (Up to 12 outlets)	Power Distribution Unit-16A (200 to 240V) (WW)	207590-B21
	NOTE: The 16A PDU also connects to the high volt models of the UPS R3000 XR (need cable P/N 340653-001) and the UPS R6000 models.	
	Power Distribution Unit-32A (200 to 240V) (Int'l)	207590-B31
	Power Distribution Unit-40A (200 to 240V) (WW)	207590-B23
NOTE: Please see the following Power Distribution Unit (Zero-U/1U PDU) QuickSpecs for additional options including cables: http://www5.hp.com/products/quickspecs/10838_na/10838_na.HTML (North America) http://www5.hp.com/products/quickspecs/10838_div/10838_div.HTML (Division/World Wide)		

Options

Dual Input PDUs, 1U/0U (Up to 12 outlets)	Dual Input Power Distribution Unit-24A High Voltage (NA only)	191186-001
	Dual Input Power Distribution Unit-24A High Voltage (Int'l)	191186-B31
<p>NOTE: Please see the following Power Distribution Unit (Zero-U/1U PDU) QuickSpecs for additional options including cables: http://www5.hp.com/products/quickspecs/10838_na/10838_na.HTML (North America) http://www5.hp.com/products/quickspecs/10838_div/10838_div.HTML (Division/World Wide)</p>		
Modular PDUs 1U/0U (Up to 32 outlets)	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan)	252663-D71
	NOTE: The above mPDU may also be used to connect to the low volt model of the UPS R3000 XR.	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)	252663-B21
	NOTE: The 40A model has a hardwired input.	
HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24	
<p>NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR and R6000.</p> <p>NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://www5.hp.com/products/quickspecs/11041_na/11041_na.HTML (North America) http://www5.hp.com/products/quickspecs/11041_div/11041_div.HTML (Division/World Wide)</p>		
PDU Options	1U PDU Mounting Brackets Kit	215852-B21
	NOTE: The 1U PDU Mounting Brackets are required when mounting PDU's PN 207590-xxx series in 1U configurations.	
	Third Party PDU Mounting Kit	310777-B21
NOTE: This kit allows you to mount the Modular PDUs in racks other than the 9000/10000 Series racks (any racks using the standard 19" rail). For more details please refer the Modular PDU QuickSpecs.		
Rack Options for Third Party Cabinet Racks	Input Device Telco Rails	287138-B21
	NOTE: Input Device Telco Rails (287138-B21) are for use ONLY with the TFT5110R, TFT5600RKM and integrated keyboard/drawer which is used in mounting into third party racks.	
	Round hole rack cabinet rail kit	293052-B21
NOTE: Support for racks with round mounting holes (include HP Rack System /E and HP Systems) with an adjustment range of 24" - 36".		

Memory

HP StorageWorks b3000 v2

STANDARD MEMORY

2 GB PC2100 Registered DDR SDRAM DIMM Memory comes installed (2 x 1GB MB SDRAM)

STANDARD MEMORY WITH OPTIONAL MEMORY

Up to 6,144 MB of memory is available with the optional installation of PC2100 Registered DDR SDRAM DIMM Memory Option Kits.

NOTE: Chart does not represent all possible configurations.

Memory		Slot					
		1	2	3	4	5	6
Standard	2048 MB	1024 MB	1024 MB	Empty	Empty	Empty	Empty
Maximum	6,144 MB	1024 MB	1024 MB	1024 MB	1024 MB	1024 MB	1024 MB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, Online spare memory is configured through RBSU.

Following are memory options available from HP:

- 2048 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x1024 MB) 300680-B21
- 1024 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2 x 512 MB) 300679-B21
- 512 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2 x 256 MB) 300678-B21

Storage



0-5	Six 6" Wide Ultra3 SCSI hot plug hard drives 0-1 used for mirrored OS drives
A	1.44-MB Diskette Drive
B	Slimline DVD-ROM (8x24x)
C	Six 1" Wide Ultra3 SCSI hot plug hard drives or for five hot plug hard drives and one AIT or 20/40-GB DAT hot plug tape drive

DRIVE SUPPORT

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44 MB Diskette Drive	1	A	Integrated
Slimline DVD-ROM (8x24x)	1	B	Integrated IDE
Hard Drives			
<i>Ultra 320 Hot Pluggable Drives</i>			
1-inch	Internal to server Up to 4 additional to the mirrored OS drives	2-5	Smart Array 5i Controller (integrated on system board) Smart Array 532 Controller Smart Array 5302/128 Controller Smart Array 5304/256 Controller Smart Array 5312 Controller 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter 64-Bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter
146.8 GB 10,000 rpm			
72.8 GB 10,000 rpm			
36.4 GB 10,000 rpm			
72.8 GB 15,000 rpm			
36.4 GB 15,000 rpm			
18.2 GB 15,000 rpm			
NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.			
<i>Wide Ultra3 Hot Pluggable Drives</i>			
1-inch	Internal to server Up to 4 additional to the mirrored OS drives	2-5	Smart Array 5i Controller (integrated on system board) Smart Array 532 Controller Smart Array 5302/128 Controller Smart Array 5304/256 Controller Smart Array 5312 Controller 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter 64-Bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter
72.8 GB 10,000 rpm			
36.4 GB 10,000 rpm			
18.2 GB 10,000 rpm			
36.4 GB 15,000 rpm			
18.2 GB 15,000 rpm			
External Storage			
3U Rackmount Kit	Up to 3	External	64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter
5U Rackmount Kit			64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter
3U RM Storage Expander	Up to 3	External	64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter
			64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter
Maximum Storage Capacity (StorageWorks Enclosure SCSI Attached)			
Internal	Two (2) 36GB drives for mirrored OS		
External	Based on MSA or VA connection		

Power Specifications

POWER SPECIFICATIONS

Part Number	194989-002
Spare Kit	199382-B21
Operational Input Voltage Range (V rms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	400	400	400	400	400	400
Nominal Input Current (A rms)	5.8	5.0	2.7	2.5	2.4	2.3
Max Rated Input Wattage Rating (Watts)	571	563	548	541	541	541
Max. Rated VA (Volt-Amp)	583	575	559	552	552	552
Efficiency (%)	70	71	73	74	74	74
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.31	0.36	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	50	50	50	50	50	50
Maximum Inrush Current duration	20	20	20	20	20	20

Technical Specifications

System Unit	Dimensions (HxWxD)	3.38 x 17.50 x 25.75 in/ 8.59 x 44.45 x 65.41 cm
	Weight	Maximum: 60 lb/27.22 kg No drives: 47.18 lb/20.41 kg
Input Requirements (per power supply)	Range Line Voltage	90 to 132 VAC/180 to 265 VAC
	Nominal Line Voltage	100 to 120 VAC/220 to 240 VAC
	Rated Input Current	6A (110V) to 3A (220V)
	Rated Input Frequency	50 to 60 Hz
	Rated Input Power	600W
BTU Rating	1,475 BTU/HR	
SCSI Connectors	One external VHDCI connector	
Power Supply Output Power (per power supply)	Rated Steady-State Power	400W
	Maximum Peak Power	400W
Temperature Range	Operating	50° to 95°F/10° to 35°C
	Shipping	-40° to 158°F/-40° to 70°C
Relative Humidity (non-condensing)	Operating	10% to 90%
	Non-operating	5% to 95%
Maximum Wet Bulb Temperature	82.4°F/28°C	
Acoustic Noise	Idle Minimum (Fixed Disk Drives Spinning)	
	L_{WA}d (BELS)	7.0
	L_{pAm} (dBA)	55
	Operating Minimum (Random Seeks to Fixed Disks)	
	L_{WA}d (BELS)	7.0
	L_{pAm} (dBA)	55
Acoustic Noise	Idle Maximum (Fixed Disk Drives Spinning)	
	L_{WA}d (BELS)	7.2
	L_{pAm} (dBA)	56
	Operating Maximum (Random Seeks to Fixed Disks)	
	L_{WA}d (BELS)	7.3
	L_{pAm} (dBA)	57

Technical Specifications

1.44-MB Diskette Drive	Diskette Size	3.5 in	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/mid/low density)	1.44 MB/1.2 MB/720 KB formatted	
	Drive Supported	One	
	Drive Height	0.50 in/1.27 cm	
	Drive Rotation	300/360/300 rpm	
	Transfer Rate (high/mid/low)	500/500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/mid/low)	18/15/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/mid/low)	3/3/6 ms
		Average (high/mid/low)	174/94/94 ms
		Settling Time	15 ms
		Latency Average	100 ms/83.3 ms/100 ms
Cylinders (high/low)	80/80		
Read/Write Heads	Two		

Technical Specifications

Integrated Smart Array 5i Plus Controller	Data Compatible with all Smart Array Controllers	Yes
	Instant Upgrades to other Smart Array Controllers	Yes
	Consistent Software Manageability Tools	Yes
	PCI-X Bus	64-bit, 100 MHz (integrated on system board)
	PCI-X Peak Data Transfer Rate	800 MB/s
	SCSI Protocols Supported	Ultra3, Ultra2
	SCSI Peak Data Transfer Rate	160 MB/s per channel NOTE: For ProLiant servers having TWO internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s total; 160 MB/s per channel and Channels is 2.
	Channels	2 NOTE: For ProLiant servers having two internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s total; 160 MB/s per channel and Channels is 2.
	SCSI Ports (external/internal)	0/2 NOTE: For ProLiant servers having two internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s total; 160 MB/s per channel and Channels is 2.
	Drives Supported (maximum)	Maximum = total number of drives NOTE: Maximum is the total number of internal drives on each specific ProLiant server.
	Cache	64 MB Read and/or Write Cache
	Battery-Backed Write Cache	Yes, with installation of Battery-Backed Write Cache Enabler, up to 64 MB
	RAID Support	0, 1, 1+ 0, 5
	Logical Drives (maximum)	Maximum = total number of drives
	Online Configuration	Yes
	Online Capacity Expansion	Yes
	Logical Drive Capacity Extension	Yes
	Online Stripe Size Migration	Yes
	Online RAID Level Migration	Yes
	Online Spare Support	Yes
	Automatic Data Recovery	Yes
	Drive Roaming	Yes
	Redundant Controllers	No

Technical Specifications

NC7781 PCI-X Gigabit NIC
(embedded) **10/100/1000 WOL**
(Wake On LAN)

Network Interface 10Base-T/100Base-TX/1000 BaseTX

Compatibility IEEE 802.3/802.3u compliant

Data Transfer Method 64-bit bus-master PCI-X

Network Transfer Rate

10Base-T (Half-Duplex) 10 Mb/s

10Base-T (Full-Duplex) 20 Mb/s

100Base-TX (Half-Duplex) 100 Mb/s

100Base-TX (Full-Duplex) 200 Mb/s

1000BaseTX (Half-Duplex) 1000 Mb/s

1000BaseTX (Full-Duplex) 2000 Mb/s

Connector RJ-45

Cable Support

10Base-T Categories 3, 4 or 5 UTP; up to 328 feet (100 meters)

100Base-TX Category 5 UTP; up to 328 feet (100 meters)

1000BaseTX Category 5 UTP; up to 328 feet (100 meters)

Technical Specifications

MODULAR SAN ARRAY 1000 (INCLUDED IN 322314-XXX)

LED Indicators on Front (3)	Power
	Fault detected in one or more sub-systems
	Fault in Enclosure Management
LED Indicators for Drive Modules (3)	Drive Access (center)
	Online (left)
	Drive Failure (right)
LED Indicators on Rear Panel (4)	Power Supply/Blower Assembly Fault (1)
	EMU (3) Power, A bus, B bus
Interface	Ultra3 SCSI to Hard Drives
	2 Gb Fibre Channel to Hosts
Maximum Number of Drives	Fourteen, 1-inch HP Ultra2, Ultra3 or Ultra 320 Universal Hard Drives (msa1000 Cabinet); expandable to 42 using two additional StorageWorks 4200/4300 Enclosures
Temperature Range	Operating 50° to 95° F/10° to 35° C
	Shipping -22° to 122° F/-30° to 50° C
NOTE: Derated 1° C per 1,000 feet of elevation to 10,000 ft.	
Relative Humidity	Operating 10% to 90%
	Non-operating Up to 95%
Input Power Requirements	Rated Input Voltage 100 to 240 VAC
	Rated Input Frequency 50 to 60 Hz
	Rated Input Current 6 A Max
	Input Power (max) 549 W*
* 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.	
msa1000 Cabinet	4U Rack Form Factor
	Dimensions (H x W x D) 6.9 x 19 x 20.5 in/17.5 x 48.3 x 52.1 cm
	Weight Net 55 to 85 lb/24.95 to 38.56 kg
Shipping Packaging	Dimensions (L x W x D) 28.5 x 14.81 x 33.13 in/72.4 x 37.6 x 84.1 cm
	Weight (Gross) 75 to 105 lb/34.02 to 47.63 kg

Technical Specifications

Modular SAN ARRAY 1000 Controller (Included in 322314-xxx)

User Interface	Controller Display with Status Indicators (2) and Push Buttons (4) Status Indicators on front of Controller (16)	
Electrical Interface	LVD (Low Voltage Differential)	
Protocol Support	Wide Ultra3 SCSI (160 MB/s per channel)	
SCSI Ports	4-channel: 2 external/2 Internal	
Drives Supported	Up to 42 drives	
Maximum Capacity	6.0 TB (42 drives x 146 GB)	
Logical Drives	Up to 32 logical drives	
RAID Support	RAID ADG (Advanced Data Guarding) RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)	
Cache Memory	Up to 512 MB Read/Write (256 MB modules). Added cache size must match original and if a second controller is employed, it too must have equally configured cache. ECC protection, battery-backed, and removable Standard, starting November 19, 2002: 256 MB cache memory (single module)	
Cache Batteries	Up to three days of redundant battery life, removable for easy replacement	
Upgradeable Firmware	2 MB flashable ROM	
Disk Drive and Enclosure Protocol Support	HP Ultra 320, Ultra3, and Ultra2 SCSI 1-inch Universal drives	
Packaging	Dimensions (L x W x D)	17 x 12.5 x 7.75 in/43.2 x 31.75 x 19.7 cm
	Weight (Gross)	6 lb/2.72 kg

MODULAR SAN ARRAY FABRIC SWITCH 6 (INCLUDED IN 322314-XXX)

Connector Type	LC	
Number of Fibre Channel Ports	Four external Fibre Channel ports using integrated 2 Gb Small-Form-Factor SW Transceiver (SFF) One external Fibre Channel ports using removable 2 Gb Small-Form-Factor SW Pluggable Transceiver (SFP) One internal 2 Gb Fibre Channel Port	
Aggregate Bandwidth	1200 MB/s	
Operation Modes	Fibre Channel Class 2 and 3 connectionless service	
Protocols Supported	Telnet, SNMP	
Switch Management Access	Ethernet (RJ-45, 10/100 Base TX UTP) & Serial port; Out of band Management	
Packaging	Dimensions (L x W x D)	17 x 12.5 x 7.75 in/43.2 x 31.75 x 19.7 cm
	Weight (Gross)	6 lb/2.72 kg

FCA2101 HOST ADAPTER (INCLUDED IN 322313-XXX AND 322314-XXX)

Connector Type	LC	
Protocol	SCSI, IP	
Data Transfer Method	64-bit/66 MHz PCI	
Maximum Transfer Rate	200 MB/s	
Packaging	Dimensions (L x W x D)	11 x 8.5 x 3 in/27.9 x 21.6 x 7.6 cm
	Weight (Gross)	1 lb/0.45 kg

Service & Support, Care Pack and Warranty Information

Software Product Services	<ul style="list-style-type: none">• Stand-alone telephone support• Media and documentation updates
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Hardware Product Services	<ul style="list-style-type: none">• 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 URLs listed below:• http://www.hp.com/services/carepaq/cp_installation.html• http://www.hp.com/services/carepaq/cp_hardware.html
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Warranty	The NAS b3000 is covered standard with a 3, 3, 3 warranty
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Warranty Upgrade Options	<ul style="list-style-type: none">• 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 period of 1, 3, or 5 years <p>Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.</p> <ul style="list-style-type: none">• Care Pack is not available for less than the product's warranty duration.• 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.• Care Pack services are prepaid.• For additional Care Pack (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below: http://www.hp.com/services/carepaq/index.html
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Components	<p>The following brick-level options/components do not have individual Care Packs. These items will be included in product Care Packs into which they are installed.</p> <table><tr><td>Disk Drives</td><td>Tape Drives</td><td>CD/DVD ROM</td><td>SCSI Hubs in SBBs</td><td>Adapters</td></tr><tr><td>Bus Converters</td><td>Backplane RAID Controllers</td><td>Power Supplies</td><td>Cabling</td><td>Fans</td></tr></table>	Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters	Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans
Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters							
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans							

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