

hp network storage

family guide

fall 2000



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**hp network
storage**

the complete solution

HP offers the industry's broadest selection of disk and disk array solutions in its high-end mission-critical mainframe-class storage systems. SCSI or Fibre Channel connectable, HP products support common operating systems, including UNIX® and Windows NT®—thanks to HP's powerful and productive R&D alliances with vendors around the world.

**leading-edge storage—
bigger, faster, compact, open**

HP has the industry's ONLY true high-end storage platform, featuring explosive performance, incredible scalability and reliability, and unmatched manageability. This platform is bigger—for more scalability, faster—for dramatically increased performance, compact—with a remarkably small footprint, and open—ideal for truly heterogeneous environments. So the resources to access the information you need are "Always On" for your use anytime, anywhere.

**the versatility of
crossbar architecture**

The Crossbar Architecture relegates other bus-based arrays to a mid-range solution, with its explosive performance, and allows excellent sequential I/O for data warehousing applications and technical computing environments. The exceptional random I/O performance paves the way for leading SAP, Oracle®, and messaging workloads.

**dependable without failure—
the ultimate uptime assurance**

The fault-tolerant, redundant architecture ensures there is no single point of failure, so your data is available when you need it. Online firmware upgrades virtually eliminate planned downtime. Proven ultra-high availability disk drives guarantee superior uptime. And with no single point of failure, an "Always Up, Always Available" storage system, giving you data access anytime; also nondisruptive upgrades and additional capabilities for both hardware and firmware eliminate downtime as you scale your system to meet new business needs.

**management: broad,
simple, powerful**

HP provides the broadest integrated software portfolio, uniquely solving your IT management, disaster recovery, back-up and restore, and other business critical issues. A powerful Web-based management platform gives you the freedom to manage your data from anywhere—anytime—all the time.

Concerned over distance? We solved that, too. We've extended our disaster recovery solutions to anywhere on the planet and created zero impact, zero downtime back-up and restore solutions. So relax; your data is safe and managed. Intelligent SAN management software simply extends the capability by providing centralized monitoring and management of SAN infrastructure and your XP Disk Arrays.

Secure LUN Management software provides heterogeneous manageability in both Windows NT and Solaris environments. And a common graphical user interface (GUI) eliminates the task of learning one set of commands each time you move to another application or workstation.

**strength that withstands
all situations**

Best of all, it is THE OPEN CHOICE of third-party vendors. We work with what you have and what you might want: Sun, Compaq/DEC, Sequent, Novell, SGI, IBM, and Hitachi and also with providers such as STK, Brocade, Ancor, Emulex, and McData.

hp surestore
disk array fc60



The new HP Surestore Disk Array FC60 is designed to deliver a large volume of high-performance, high-availability disk storage at an extremely affordable price. Combining the best of Fibre Channel speed, RAID protection, and multi-drive capacity, the Disk Array FC60 gives you the advantages of superior disk storage for HP computing environments.

Technologies such as data warehousing, online transaction processing (OLTP), and enterprise resource planning (ERP) have created an expanding need for data storage that is spacious without sacrificing speed. These enterprise environments require maximum uptime for use in mission-critical high-availability storage.

hp surestore disk array fc60

key features

- ultra-fast sequential performance up to 170 MB/second
- expandable to 4.4 TB of data storage in a 2-meter rack
- supports up to eight logical partitions with LUN security
- 120-hour cache memory battery back-up and hot-swappable components
- excellent sequential and random performance on real applications
- cluster configuration with no single point of failure
- supports 9 GB, 18 GB, 36 GB and 73 GB 10,000 rpm and 18 GB 15,000 rpm drives
- supported on HP-UX, Windows NT, and Windows® 2000 platforms

technical specifications

host interface type

One or two Fibre Channel interfaces, each 100 MB/s peak performance

drive bus

Six Ultra2 SCSI interfaces, each 40 MB/s

**array chassis capacity
single enclosure**

Each SC10 contains up to 10 drives per enclosure. Using ten active data drives, each SC10 can have up to the following maximum capacities:

- up to 734 GB (usable capacity) using 73.4 GB drives
- up to 364 GB (usable capacity) using 36.4 GB drives
- up to 182 GB (usable capacity) using 18.2 GB drives
- up to 91 GB (usable capacity) using 9.1 GB drives

maximum capacity per array

Each FC60 can support up to six disk enclosures. Using six disk enclosures, each with 10 data drives, the FC60 can support the following maximum capacities:

- up to 4,404 GB using 73.4 GB drives
- up to 1,092 GB using 18.2 GB drives
- up to 2,184 GB using 36.4 GB drives
- up to 546 GB using 9.1 GB drives

storage controller

One or two high-performance controllers per FC60. Up to 1024 MB of cache memory per array.

average seek time

- 3.9 ms for 15,000 rpm drives
- 6.6 ms for 10,000 rpm drives

average latency

- 2.0 ms for 15,000 rpm drives
- 2.99 ms for 10,000 rpm drives

hp surestore
disk array fc60

**faster
and
more capacity**

technical specifications (continued)

power	100/120/127 VAC or 200/230/240 VAC (autorange)
va rating	300 VA maximum
minimum power cord gauge	18 AWG
minimum number of power supplies	1 supply (The base FC60 will run with 1 supply and is always delivered with 2 supplies)
maximum number of power supplies	2 supplies
heat dissipation	environmental characteristics 615 BTU/hr maximum
inrush current	21.7 A max @ 230 VAC; or 42.9 A max @120 VAC
frequency	50/60 Hz, single phase
input current	1.5 A @120 VAC; 0.8 A 230 VAC
operating temperature	41° to 104°F (5° to 40°C)
relative humidity	operating: 10–80% RH @ 28°C (wet bulb) non-operating: 10–90% RH @ 28°C (wet bulb)
vibration	operating random: 0.21 G (rms), 5–500 Hz non-operating swept sine: 0.5 G (0 to peak), 5–500 Hz non-operating random: 2.09 G (rms), 5–500 Hz
shock	4 G, 11 ms (1/2 sine)
altitude	operating: 0–10,000 ft (0–3,048 m) non-operating: 0–15,000 ft (0–4,572 m)
temperature gradient	20°C/hr
net weight	fc60 physical characteristics 76 lb (34.5 kg); includes, dual power supplies, cache batteries, and dual controllers
shipping weight	107 lb (48.5 kg)
height	6.75 in (17.1 cm) or 4 EIA units
width	17.5 in (44.5 cm)
depth	24 in (61 cm)
net weight	sc10 physical characteristics 110 lb (50 kg) includes 10 drives, dual power supplies, fans, control cards, etc.
height	5.91 in (15 cm) or 3.5 EIA units
width	18.9 in (48 cm)
depth	24 in (61 cm)
safety and emc	See Disk Array FC60 User’s Guide for complete description of Safety and EMC certifications
operating system support	HP-UX 11.0 and HP-UX 10.20, Windows NT 4.0 Server and Enterprise editions, Windows 2000 Server and Advanced Server editions
product numbers	A5635A Disk Array FC60 for Windows, Dual Controller Array with Enclosure A5636A SC10 Disk Enclosure for Windows, for up to 10 disk drives A5658A 512 MB per controller Cache Upgrade Kit, 1024 MB per array A5637A SC10 Enclosure, 9 GB disk drive, 10,000 rpm A5638A SC10 Enclosure, 18 GB disk drive, 10,000 rpm A5639A SC10 Enclosure, 36 GB disk drive, 10,000 rpm A5657A SC10 Enclosure, 18 GB disk drive, 15,000 rpm A5640A SC10 Enclosure, 73 GB disk drive, 10,000 rpm A5277A FC60 Controller Enclosure, Field Racked A5277AZ FC60 Controller Enclosure, Factory Racked A5294A Disk System SC10 for the FC60, Field Racked A5294AZ Disk System SC10 for the FC60, Factory Racked

hp surestore
disk array 12h



Using HP's AutoRAID technology to manage data storage, the HP Surestore Disk Array 12H automatically maintains the most frequently accessed data in cache and high-performance RAID 0/1 storage, while leaving less frequently accessed data in more efficient RAID 5 space.

The 12H continually tunes its performance for increased data availability, remembering when and how often data is accessed and moving it accordingly. When in operation, the cache on the controllers is mirrored, ECC-protected, and dual-battery protected for maximum high availability. Also, the contents of the cache are written to all disks when the 12H disk array is shut down.

hp surestore disk array 12h

key features

- AutoRAID technology for automatic optimization of data storage
- up to 2.6 TB of raw storage in a 2-meter rack
- the Model 12H supports HP's Openview, MC/Serviceguard, MC/Lockmanager and other software
- supported on HP-UX, MPE, Windows NT, and Windows 2000 platforms
- available in desk-side, rackmount, or factory-racked configurations
- includes up to twelve 9.1, 18.2, or 36.4 GB 10,000 rpm disk drives in one enclosure
- 16-bit SCSI-2 host interface with 20 MB/second throughput
- comes with either dual controllers (HP-UX and Windows NT) or a single controller (HP-UX only)
- supported with the Fibre Channel-SCSI Multiplexer (FC-SCSI MUX) for extra bandwidth/distance
- 99.95 percent uptime guarantee

technical specifications

**performance/throughput
host interface**

16-bit SCSI-2 20 MB/s (wide and differential)

drive bus

8-bit SCSI-2 10 MB/s (single-ended), 4 buses

array chassis capacity

Single enclosure	Up to 364 GB (usable capacity) using 36.4 GB disks
1.6 meter rack	Up to 731.2 GB (usable capacity) using 36.4 GB disks
1.6 meter back-to-back rack	Up to 1.46 TB (usable capacity) using 36.4 GB disks
2.0 meter rack	Up to 1.09 TB (usable capacity) using 36.4 GB disks
2.0 meter back-to-back rack	Up to 2.19 TB (usable capacity) using 36.4 GB disks

storage controller

96 MB (A3706A) mirrored read/write cache

disk drive capacity

Formatted 10,000 rpm; 9.1 GB (A3713A), 18.2 GB (A3714A), 36.4 GB (A5292A)

revolution velocity

10,000 rpm

hp surestore
disk array 12h

hassle-free
high performance

technical specifications (continued)

transfer rate [†]	10,000 rpm @ 5–20 MB/s
average seek time/ average latency	10,000 rpm: <6 ms/2.99 ms
AC power	100/120/127 VAC or 200/230/240 VAC (autorange) (A3708A)
energy consumption efficiency maximum (ratio)	0.0070 W
VA rating	870 VA maximum
minimum power cord gauge	16 AWG
minimum/maximum number of power supplies	2/3
heat dissipation	environmental characteristics 3000 BTU/hr maximum
inrush current* [†]	41 A max @ 120 VAC or 83 A max @ 230 VAC with three line cords combined
frequency	50/60 Hz, single phase
input current* [†]	7.3 A @ 120 VAC, 3.8 A @ 230 VAC with all three line cords combined
temperature	operating: 41° to 104°F (5° to 40°C); non-operating: –40° to 149°F (–40° to 65°C)
relative humidity	operating: 10–80% RH @ 28°C (wet); non-operating: 10–90% RH @ 28°C (wet)
vibration	0.21 G (rms), 5–500 Hz
shock	4 G, 11 ms (1/2) sine
acoustic	5.9 B
altitude	operating: 0–10,000 ft (0–3,048 m); non-operating: 0–15,000 ft (0–4,572 m)
temperature gradient	10°C/hr
net weight	physical characteristics* 170 lb (77.2 kg)
shipping weight	202.5 lb (92 kg)
height	22.8 in (57.8 cm)
width	16.7 in (42.5 cm)
depth	12.2 in (31 cm)
safety and emc	FCC Class A, Canadian RMC Class A complies with EMC Directive 89/336/EEC; CISPR 22:1993/ EN 55022 (1994) Class A; EN50082-1: 1992; EN61000-3-2 (1995); EN61000-3-3 (1995); VCCI Registered Class 1 IEC 950: 1991+A1+A2+A3; EN 60950: 1992+A1+A2+A3; CSA C22.2 NO.950-95; UL 1950 3rd Edition; IEC 825-1: 1993/EN60825-1: 1994 Class 1 (Laser/LED)
product numbers	A3700AD HP Disk Array with AutoRAID deskside version A3700A HP Disk Array with AutoRAID rackmount version A3700AZ HP Disk Array with AutoRAID factory-racked version

*Maximum configuration: Model 12H enclosure with 3 power supplies, 3 fans, 12 disks, and 2 controllers.

[†]Disk manufacturers specify a range of interface transfer rates. Model 12H operates at 20 MB/s.

hp surestore
disk array
xp256



The HP Surestore Disk Array XP256, a highly available, multi-platform enterprise-class disk array, provides centralized control of data across multiple server platforms—making it available when, where, and how it’s needed—with virtually zero downtime and even less hassle.

The XP256 offers a wide range of options for server connectivity, including mainframe, open system UNIX, and Intel®-based solutions. The hassle-free, modular storage brings economic, multi-terabyte scalability, and the no-penalty cache architecture allows 100% of cache memory to be dedicated to your critical application workload.

hp surestore disk array xp256

key features

- no single point of failure, nondisruptive upgrades, and multi-terabyte scalability without downtime
- RAID 1 and RAID 5 support
- open, secure SAN management
- broad, multi-vendor server connectivity
- super high-reliability 15 GB, 36 GB, and 47 GB drives
- support for Fibre Channel, SCSI, and ESCON host connectivity
- battery-protected, mirrored write cache
- 24 x 7 x 365 proactive support
- broad software suite
- hot-plug components and online no-impact firmware upgrades
- full investment protection

technical specifications

client host interface processor (CHIP)	control frame		
	number of CHIP pairs:	1, 2, 3, or 4	
host interfaces per subsystem	ESCON:	0–32	
	SCSI-2 FWD or ULTRA:	0–32	
	Fibre Channel:	0–16	
transfer rates	ESCON:	17 MB/s	
	FWD/ULTRA-SCSI interfaces:	20/40 MB/s	
	Fibre Channel:	100 MB/s	
nonvolatile cache	1 GB–16 GB		
minimum/maximum array capacity	disk drives 60 GB/11 TB		
capacity	15 GB	36 GB	47 GB
head technology	MR	MR	MR
form factor	2.5 in	3.5 in	3.0 in
actuator	Recoilless rotary	Recoilless rotary	Recoilless rotary
servo system	Digital	Digital	Digital
interface	Dual-ported SCSI-2	Dual-ported SCSI-2	Dual-ported SCSI-2
rotation speed	12,030 rpm	6,300 rpm	10,000 rpm
data transfer rate	20 MB/s	20 MB/s	20 MB/s
average seek time (read/write ms)	5.5/6.5	11.5/12.5	5.5/6.6

hp surestore
disk array
xp256

**more capacity,
performance,
and choice**

technical specifications (continued)

physical specifications

	control frame	array frame
height	70.5 in (1,790 mm)	70.5 in (1,790 mm)
width	29.5 in (750 mm)	21.7 in (550 mm)
depth	31.5 in (800 mm)	31.5 in (800 mm)
weight	903 lb (410 kg)	931 lb (422 kg)
power	1.7 kVA	2.7 kVA
heat	1.6 kW	2.0 kW

array control processors (ACP)	ACP pairs:	1, 2, 3, or 4
	physical FWD-SCSI buses per ACP pair:	8
	maximum physical FWD-SCSI per array:	32
transfer rate	per FWD-SCSI bus:	20 MB/s
	per ACP pair:	Up to 160 MB/s
	internal XP256 bus bandwidth:	744 MB/s
array frame	disk frames per subsystem:	1, 2, 3, or 4
	spare drives per subsystem (minimum):	1 per drive capacity installed
	spare drives per subsystem (maximum):	8
open systems server connect	operating system support	
	HP-UX	
	IBM AIX	
	Novell NetWare	
	Microsoft® Windows NT	
	Microsoft Windows 2000	
	Linux	
	HP-MPE	
	Compaq/Tru64 UNIX	
	NCR UNIX	
	Sequent Dynix	
	SCO UNIX	
	Sun Solaris	
	SGI IRIX	
mainframe connectivity	IBM system 370 and 390 compatible mainframes from IBM, HDS, Hitachi, and Amdahl	
mainframe operating system support includes	OS/390, MVS/ESA, MVS/XA, MVS/370, VM/ESA, VM/XA, VM/HPO, VSE/ESA, VSE/SP (4.1)	
ordering information	Contact your local HP sales representative	

hp surestore
disk array
xp512



The HP Surestore Disk Array XP512 is the industry's only true high-end storage platform. It features optimized performance, great scalability, reliability, and unmatched manageability in heterogeneous environments. With non-disruptive upgrades, no single point-of-failure, and additional hardware and firmware to eliminate downtime, the storage system is "always on."

The XP512's Crossbar Architecture relegates bus-based arrays to a mid-range solution, optimizes performance, and allows sequential I/O for data warehousing applications, SAP, Oracle, and messaging workloads.

hp surestore disk array xp512

key features

- RAID 0/1 and RAID 5 support
- super high-reliability 18 GB and 47 GB 10,000 rpm Fibre Channel drives
- support for Fibre Channel (FC), SCSI, and ESCON
- battery-protected, mirrored write cache
- 24 x 7 x 365 proactive support

technical specifications

client host interface processor
(CHIP)

control frame
number of CHIP pairs: 1, 2, 3, or 4

host interfaces per subsystem

maximum: 32
ESCON: 0-32
FWD SCSI (via bridge): 0-32
Fibre Channel: 0-32

transfer rates

ESCON: 17 MB/s
FWD-SCSI: 20 MB/s
Fibre Channel: 100 MB/s

nonvolatile cache

2 GB-32 GB

minimum/maximum
array capacity

disk drives
72 GB/24 TB

capacity
head technology
form factor
actuator
servo system
interface
rotation speed
data transfer rate
mean seek time
average latency time

	18 GB	47 GB
capacity	18 GB	47 GB
head technology	MR	MR
form factor	3 in	3 in
actuator	Recoilless rotary	Recoilless rotary
servo system	Digital	Digital
interface	Dual-ported FC	Dual-ported FC
rotation speed	10,025 rpm	10,025 rpm
data transfer rate	30-46 MB/s	30-46 MB/s
mean seek time	5.2-6.0 ms	5.7-6.5 ms
average latency time	2.99 ms	2.99 ms

hp surestore
disk array
xp512

**bigger
faster
compact**

technical specifications (continued)

physical specifications

	control frame	array frame
height	70.5 in (1,790 mm)	70.5 in (1,790 mm)
width	29.5 in (750 mm)	23.6 in (600 mm)
depth	31.5 in (800 mm)	31.5 in (800 mm)
weight	1024 lb (465 kg)	980 lb (445 kg)
power	2.41 kVA	3.0 kVA
heat	2.33 kW	2.86 kW

array control processors (ACP)

ACP pairs: 1, 2, 3, or 4

Fibre Channel Arbitrated Loop (FC-AL) paths per ACP: 8

FC-AL paths per subsystem: 32

transfer rate **FC-AL peak transfer rate:** 100 MB/s
internal XP512 crossbar bandwidth: 6.54 GB/s

array frame **array frames per subsystem:** 1, 2, 3, 4, 5, or 6

spare drives per subsystem (minimum): 1 per drive capacity installed

spare drives per subsystem (maximum): 16

operating system support

open systems server connect

HP-UX
IBM AIX
Novell NetWare
Microsoft Windows NT
Microsoft Windows 2000
Linux
HP-MPE
Compaq/Tru64 UNIX
Sequent Dynix
Sun Solaris
SGI IRIX

mainframe connectivity

IBM system 370 and 390 compatible mainframes from IBM, Hitachi, and Amdahl

mainframe operating system support includes

MVS/370, VM/HPO, MVS/ESA, VM/ESA, VSE/ESA, MVS/XA, VM/XA, VSE/SP (4.1)

ordering information

Contact your local HP sales representative

hp surestore
disk array
xp48



The HP Surestore Disk Array XP48, the latest member of the XP product family, brings you a high-end storage system on a smaller footprint. It delivers the same architecture, software, and solutions as the HP Surestore E Disk Array XP512, but on a footprint that allows for more effective use of the scarce floor space in data centers. The XP48 provides up to 3.5 TB of capacity and support for heterogeneous environments—including HP-UX, Windows NT, Solaris, and AIX.

hp surestore disk array xp48

key features

- compact single-cabinet design
- RAID 0/1 and RAID 5 support
- super-high-reliability 18 GB and 73 GB 10,000 rpm Fibre Channel drives
- Fibre Channel, ESCON, and FWD-SCSI* connectivity
- battery-protected, mirrored write cache
- 24 x 7 x 365 proactive support

*via a Fibre Channel to FWD-SCSI bridge

technical specifications

client host interface processor (CHIP)	number of CHIP pairs:	1, 2, or 3
	simultaneous data transfers per CHIP pair:	4 or 8
	host interfaces per CHIP pair:	4 or 8
host interfaces per subsystem	maximum:	24
	ESCON adapters:	0–24
	FWD SCSI (via bridge):	0–24
	Fibre Channel:	0–24
transfer rates	extended serial adapters:	17 MB/s
	FWD-SCSI:	20 MB/s
	Fibre Channel:	100 MB/s
nonvolatile cache		2 GB–16 GB
ACP pairs (included with the XP48 frame)	array controller processor (ACP)	1
Physical FC-AL loops per ACP		8
Physical FC-AL loops per system		8
maximum per subsystem	spare drives	4
capacity	hard disk FC drives	
head technology	18 GB	73 GB
form factor	MR	MR
actuator	3 in	3 in
servo system	Recoilless rotary	Recoilless rotary
interface	Digital	Digital
rotation speed	Dual-ported FC	Dual-ported FC
data transfer rate	10,025 rpm	10,025 rpm
mean seek time	30–46 MB/s	30–46 MB/s
average latency time	5.2–6.0 ms	5.7–6.5 ms
	2.99 ms	2.99 ms

hp surestore
disk array
xp48

**smaller
footprint**

technical specifications (continued)

physical specifications

height	70.5 in (1,790 mm)
width	28.0 in (700 mm)
depth	31.5 in (800 mm)
weight	939.4 lb (427 kg)
power	1.48 kVA
heat	1.28 kW

operating system support

open systems server connect

HP-UX
IBM AIX
Novell NetWare
Microsoft Windows NT
Microsoft Windows 2000
Open VMS
HP MPE/iX
Compaq/DEC Tru64
DYNIX
Sun Solaris
SGI IRIX
Linux Red Hat

mainframe connectivity
mainframe operating system
support includes
ordering information

IBM system 370 and 390 compatible mainframes from IBM, Hitachi, and Amdahl
OS/390, MVS/370, VM/HPO, MVS/ESA, VM/ESA, VSE/ESA, MVS/XA, VM/XA,
VSE/SP (4.1)
Contact your local HP sales representative

hp surestore
disk system
sc10



low-cost, protected
disk storage

The HP Surestore Disk System SC10 packs up to 8 TB of physical storage into a standard rack. At the same time, it features the performance of Ultra2 SCSI, excellent scalability, and ease of reconfiguration.

With hot-swappable hardware and extensive software monitoring tools, the SC10 is well suited for use in mirrored-protected storage, where downtime cannot be tolerated. In addition, with RAID software installed, the SC10 provides robust protection against data loss and system downtime.

hp surestore disk system sc10

key features

- hot-swappable redundant components—minimal service interruption
- remote monitoring—easier administration
- HP reliability and support—more “stress-free” storage
- 10,000 rpm drive—enhanced I/O performance
- 15,000 rpm drive—high performance for I/O intensive applications
- Ultra2 SCSI solid-state drives—breaks through performance barriers
- Ultra2 SCSI—superior scalability and performance
- low cost/MB—excellent return on investment
- high racking density—improved use of data center floor space
- expandable storage—better handling of changing capacity needs

technical specifications

performance/throughput

Ultra2 SCSI low voltage differential 80 MB/s
10 HH disk drives, or 10 LP disk drives, for up to 730 GB per enclosure
hot-swappable drives, fans, power supplies
redundant, hot-swappable bus control cards
SES (SCSI Enclosure Services)

dimensions

height: 3-1/2 EIA units (150 mm)
width: 17.65 in (448 mm)
depth: 28.68 in (728 mm)
weight: 100 lb (45.35 kg)

drive

9.1 GB, 18.2 GB, 36.4 GB, 73.4 GB; formatted	18.2 GB; formatted
10,000 rpm	15,000 rpm
up to 15 MB/s	up to 48 MB/s
8.0–10.0 ms	3.9 ms

host interface type
enclosure capacity
high availability features

rackmount enclosure

capacity
rotational velocity
transfer rate
average seek time

hp surestore
disk system
sc10

**easy to
maintain**

technical specifications (continued)

input requirements	ac power
input power	100–240 VAC, single-phase input, 50–60 Hz
power factor	650 W
inrush current	PFC-compliant to EN61000-3-2
ac inlet	10 A max per supply @ 240 VAC
ac protection	C-22 appliance coupler internally fused, 8 A
temperature	operating environment
temperature gradient	50–100.4°F (10–38°C)
relative humidity	10°C/hr
elevation	20–80% (noncondensing)
shock	8,000 ft (2,438.4 m)
vibration	3 G + 11ms 1/2 sin pulse
safety and emissions	0.25 G at 5–500 Hz
quality	FCC Class A, VDE Class A, UL 1950, CSA C22-2-950, ENG950
standard accessories	manufactured at an ISO 9000-certified facility rack rail kits for HP standard rack and HP Rack System/E
product numbers	A5272A Field-rackable version A5272AZ Factory-racked version

hp surestore
disk system
hvd10



low-cost, protected
disk storage

The HP Surestore Disk System HVD10 packs up to 8 TB of data in a 2-meter rack—up to 10 times the storage capacity of a 2-meter rack using High Availability Storage System (HASS).

With installed RAID software, hot-swappable hardware, and extensive software monitoring tools, the HVD10 provides robust, enterprise-wide protection against data loss and system interruption. The HVD10 is well suited for mirrored-protected storage where unplanned downtime cannot be tolerated.

hp surestore disk system hvd10

key features

- exceeds the storage capacity of HASS but uses the same Logical Volume Manager, Event Management System, and device support to extend the useful life of Fast/Wide HVD SCSI HP server environments
- supports half-height/low-profile 9-GB to 73-GB drives
- eliminates service interruption—allows you to hot-swap redundant components while the system is operating
- ensures guaranteed stress-free storage
- uses dual HVD10 bus control cards for twice the availability to guarantee 99.95% uptime
- delivers 30 percent more I/O throughput and scalability than HASS via Ultra2 10,000-rpm drives
- breaks through performance barriers using Ultra2 SCSI solid state drives
- disk drives rotate at 10,000-rpm or 15,000-rpm for higher I/O rates and better throughput for fast access to OLTP and data warehousing data
- the lowest price-per-megabyte non-RAID SCSI storage solution
- three-year onsite, three-day response warranty

technical specifications

performance/throughput

host interface type

Fast/Wide High-Voltage Differential SCSI 20 MB/s per connect
2 connections per bus control card
2 bus control cards per HVD10

disk drives

Ultra2 SCSI Low Voltage Differential 80 MB/s per disk

enclosure capacity

10 half-height disk drives, or 10 low-profile disk drives, for up to 730 GB per enclosure

high availability features

Hot swappable drives, fans, power supplies
Redundant, hot-swappable bus control cards

rackmount enclosure

dimensions

height: 3-1/2 EIA units (150 mm)
width: 17.65 in (448 mm)
depth: 28.68 in (728 mm)
weight: 100 lb (45.35 kg)

solid state drive

536 MB

capacity
rotational velocity
transfer rate
average seek time

disk drive
9.1 GB, 18.2 GB, 36.4 GB, 73.4 GB; formatted 18.2 GB; formatted
10,000 rpm 15,000 rpm
up to 15 MB/s up to 48 MB/s
8.0–10.0 ms 3.9 ms

hp surestore
disk system
hvd10

**easy to
maintain**

technical specifications (continued)

input requirements	ac power
input power	100–240 VAC, single-phase input, 50–60 Hz
power factor	650 W
inrush current	PFC-compliant to EN61000-3-2
ac inlet	10 A max per supply @ 240 VAC
ac protection	C-22 appliance coupler internally fused, 8 A
temperature	operating environment
temperature gradient	50–100.4°F (10–38°C)
relative humidity	10°C/hr
elevation	20–80% (noncondensing)
shock	8,000 ft (2,438.4 m)
vibration	3 G + 11ms 1/2 sin pulse
safety and emissions	0.25 G at 5–500 Hz
quality	FCC Class A, VDE Class A, UL 1950, CSA C22-2-950, ENG950
standard accessories	manufactured at an ISO 9000-certified facility rack rail kits for HP standard rack and HP Rack System/E
product numbers	A5616A Field-rackable version A5616AZ Field-racked version

hp netserver
rack storage/12
and 12FC



high availability
and scalable
mass storage
solutions

Leading-edge Fibre Channel interconnect technology with blazing speeds and incredible scalability is now available in an even more cost-effective enclosure. The same external storage enclosure is available using familiar SCSI interconnect technology and featuring the advantages of Ultra3 SCSI. Both external storage enclosures support 160 MB/s Ultra3 SCSI.

Let your business needs dictate the choice and HP will protect your investment. Choose Fibre Channel and leverage current SCSI disk drives and enclosures; choose Ultra3 SCSI and the upgrade path to Fibre Channel is simple, quick, and inexpensive.

key features

hp netserver rack storage/12

- 3U rackmount package with industry-leading storage density
- supports 12 low-profile (1-inch) or 8 half-height (1.6-inch) hot-swap Ultra2 or Ultra3 SCSI disk drives
- up to 320 MB/s throughput via dual HP Netserver Rack Storage/12 Ultra2 or Ultra3 SCSI cards and Net-RAID-4M controllers
- high availability with up to two hot-swap HP Netserver Rack Storage/12 SCSI cards
- redundant, hot-swappable power supplies and cooling fans; redundant power cords
- management board monitors enclosure fans and temperature
- Microsoft Cluster Server support
- cluster-ready management board simplifies cluster setup
- complete Ultra3 SCSI solution with the HP Net-RAID-4M disk array controller option
- flexible cable options up to 32.8 ft (10 m)
- fits into industry-standard racks
- easy upgrade into Fibre Channel environment by replacing the SCSI card with the HP FC-array controller

key features

hp netserver rack storage/12FC

- all the features of the HP Netserver Rack Storage/12 with the benefits of Fibre Channel connectivity—higher availability, scalability, performance, and ease-of-use
- one or two hot-swappable, redundant, dual-ported HP FC-array Fibre Channel disk array controllers
- up to 200 MB/s bandwidth with dual HP FC-array disk array controllers (on separate Fibre Channel arbitrated loops)
- supports dual-ported, active-active; concurrent access; and dual-controller implementations for maximum availability and performance
- each HP Netserver Rack Storage/12FC supports up to 36 drives, with SCSI connections to two RS/12 enclosures; each FC Host Bus Adapter (HBA) supports up to five 36-drive arrays using a FC Hub
- up to 128 MB battery-protected read/write cache in dual-controller configuration
- intelligent 6-port FC Hub is cascadable; direct-connect configurations
- configuration and management of enclosure is easily facilitated by FC-array Assistant, based on client/server SNMP architecture
- copper cables and Gigabit Interface Converter (GBIC) included for ease of ordering
- cable options from 9.8 – 1,640 ft (3 – 500 m) for maximum flexibility
- easy FC-array controller card upgrade delivers SCSI investment protection for HP Netserver Rack Storage/12 enclosures and disk drives in a Fibre Channel environment

hp netserver
rack storage/12
and 12FC

**industry-leading
density**

technical specifications

hp netserver rack storage/12 and hp netserver rack storage/12fc

drive bays	<ul style="list-style-type: none">• four; each bay holds three low-profile (1 in, 2.54 cm) or two half-height (3.5 in, 8.9 cm) disks• total of twelve low-profile or eight half-height disk drives
supported drives	<ul style="list-style-type: none">• Ultra3 SCSI hot-swap disk drives, both half-height and low-profile• 7,200 rpm disks: 9.1 GB, 18.2 GB, and 36.4 GB• 10,000 rpm disks: 9.1 GB, 18.2 GB, and 36.4 GB
maximum storage	<ul style="list-style-type: none">• 432 GB (twelve low-profile drives at 36 GB) or 288 GB (eight half-height drives at 36 GB)• 5.6 TB per rack• 13 HP Netserver Rack Storage/12 or Rack Storage/12FC enclosures per 2-meter rack
SCSI channel	<ul style="list-style-type: none">• two Ultra3 SCSI<ul style="list-style-type: none">• accessible from rear
power supplies	<ul style="list-style-type: none">• dual, hot-swappable<ul style="list-style-type: none">• AC input, 100V/240V, 50Hz/60Hz wide-range
cooling fans	<ul style="list-style-type: none">• dual, hot-swappable<ul style="list-style-type: none">• thermal monitoring and speed control
LED indicators	<ul style="list-style-type: none">• front-panel enclosure status<ul style="list-style-type: none">• component status indicators• back-end subassembly status
dimensions	<ul style="list-style-type: none">• rackmount package• up to 5.25 in H x 17.6 in W x 27.6 in D (133 mm H x 449 mm W x 700 mm D)
electromagnetic compliance	<ul style="list-style-type: none">• USA: CFR 47 part 15, Class A• Canada: Industry Canada, ICES-003, Class A• EU Countries: EN 55022 1994, Class A• Eastern Europe (ISE) Countries: CISPR 22, Class A• Korea: Ministry of Communications, Class-8A• Japan: VCCI, CISPR 22 Class A ITE• Australia: AUS/NZS 3548• New Zealand: AUS/NZS 3548• Taiwan: BCIQ, CNS 13438, Class A• Harmonic Current Flicker: EN 61000-3-2, EN 61000-3-3
safety compliance	<ul style="list-style-type: none">• USA: UL 1950 (File E139742)• Canada: cUL 950• International: EN 60950• Germany: TÜV
FC-array standards	<ul style="list-style-type: none">• all applicable ANSI X3T11 Fibre Channel standards• ANSI X3T11 Ultra3 SCSI• PCI 2.1• SAF-TE enclosure management• HP Environmental and Quality Specifications

hp netserver
rack storage/12
and 12FC

high bandwidth
and fast throughput

technical specifications (continued)

product number	
	SCSI:
D5989B	HP Netserver Rack Storage/12 external mass storage enclosure for Ultra2 SCSI
D5989C	HP Netserver Rack Storage/12 external mass storage enclosure for Ultra3 SCSI
D6025B	HP Netserver Rack Storage/12 SCSI Card (80 MB/s)
D6025C	HP Netserver Rack Storage/12 SCSI Card (160 MB/s)
D5955A	HP Net-RAID-3Si Ultra2 SCSI disk array controller card
D9161A	HP Net-RAID-4M Ultra3 SCSI disk array controller card (64 MB)
D9351A	HP Net-RAID-4M Ultra3 SCSI disk array controller card (128 MB)
	HP Netserver Rack Storage/12 Cables:
D3636C	2.5-meter SCSI cable, high density to high density
D6020A	2.5-meter SCSI cable, high density to very high density offset
D6982A	5-meter SCSI cable, high density to very high density offset
D6983A	10-meter SCSI cable, high density to very high density offset
D4991A	HP Netserver Y power cable ¹
	fibre channel:
D5991A	HP Netserver Rack Storage/12FC external mass storage enclosure for Fibre Channel
D5990A	HP FC-array disk array controller
D6976A	HP FC Hub
D6977A	HP Fibre Channel host bus adapter card (for non-clustered FC configurations only)
D8602A	HP Fibre Channel host bus adapter card (for clustered or non-clustered FC configurations)
	Storage Devices:
P1213A	9.1 GB, 7200 rpm hot-swap Ultra3 SCSI disk drives, half-height
P1214A	9.1 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, half-height
P1215A	18.2 GB, 7200 rpm hot-swap Ultra3 SCSI disk drives, half-height
P1167A	18.2 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, half-height
P1169A	36.4 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, half-height
P1217A	9.1 GB, 7200 rpm hot-swap Ultra3 SCSI disk drives, low profile
P1168A	9.1 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, low profile
P1216A	18.2 GB, 7200 rpm hot-swap Ultra3 SCSI disk drives, low profile
P1166A	18.2 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, low profile
D9419A	36.4 GB, 10,000 rpm hot-swap Ultra3 SCSI disk drives, low profile

¹ One kit is required for each of the 10th to 15th HP Netserver Rack Storage/12 or HP Netserver Rack Storage/12FC units to be installed in a single rack.

hp netserver
rack storage/12
and 12FC

**easy deployment
and manageability**

technical specifications (continued)

fiber channel: (continued)

HP Netserver Rack Storage/12FC cables:

product numbers

D6978A	3-meter Fibre Channel HSSDC to HSSDC copper cable with 2 copper GBICs ²
D6979A	5-meter Fibre Channel HSSDC to HSSDC copper cable with 2 copper GBICs
D7080A	10-meter Fibre Channel HSSDC to HSSDC copper cable with 2 copper GBICs
D6980A	50-meter Fibre Channel multimode short-wave optical with 2 optical fibre GBICs
D6981A	100-meter Fibre Channel multimode short-wave optical with 2 optical fibre GBICs
D6975A	Up to 500-meter Fibre Channel multimode short-wave optical cable ³
D6975A	HP short-wave Fibre Channel optical GBIC

automated back-up:

C6340F	HP Surestore Fibre Channel SCSI Bridge 2100ER
C6287J	HP Surestore DLT4000 drive Autoloader 8-slot 418 (rackmount kit)
C6287J	HP Surestore DLT7000 drive Autoloader 8-slot 718 (rackmount kit)
C5173F	HP Surestore DLT4000 drive Library 15-slot 4115/4215 (rackmount kit)
C5173J	HP Surestore DLT7000 drive Library 15-slot 7115/7215 (rackmount kit)
C5695A	HP Surestore Rack Tape

support:

H5518A	Same day, 4-hour response, Monday – Friday 8 am to 9 pm service
H5513A	Same day, 4-hour response, 24 x 7 service
H1819A	Call-to-Repair Commitment

²Gigabit interface converter (GBIC) is attached to each end of the cable and is installed into the FC Hub and the FC HBA.

³HP Netserver Rack Storage/12FC supports the use of multimode 50/125 micron fiber optical cable from AMP Corporation for distances between 101 and 500 meters. Requires 2 x D6975A optical GBICs.

hp netstorage
6000



quick,
seamless
integration

HP Surestore Netstorage 6000 is a network attached storage (NAS) device that provides reliable and cost-effective storage to keep your network and business up and running.

HP Netstorage 6000 plugs directly into a LAN connection and can be easily configured to the existing network and be up and running within minutes. In addition, HP Netstorage 6000 integrates seamlessly into your existing backup and manageability strategy, providing a reliable, low-maintenance solution for additional storage.

HP Netstorage 6000 offers scalable storage solutions for department and large workgroups and is ideal for storage intensive applications such as CAD/CAM, multimedia, and electronic imaging.

hp netstorage 6000

key features

- optimized for dedicated file serving
- high availability features: hot-swap capability, redundant power supplies, fans, HDDs
- easy integration into network management environments
- compatible with heterogeneous network environments (NT, UNIX)
- scalable capacity
- hp toptools Web-based administration
- file serving performance comparable to NT and UNIX
- user/share-level security and administrator function password protected

technical specifications

Easy network install, NT pass-through user authentication, Secure GUI Web browser interface, DHCP support

usability features

Windows NT Workstation 4.0, Windows NT Server 4.0, Windows 95, OSR2, Windows 98, HP-UX 10.2 and 11.0, Sun Solaris 2.6, Red Hat Linux 6.1, IBM AIX

compatible operating systems

Users of Windows NT 4.0, 95 OSR2, and 98 may use Internet Explorer 4.01 or higher, or Netscape Navigator 4.51 or higher

supported web browsers

Users of HP-UX 10.2 & HP-UX 11.0, and Solaris may use Netscape Navigator 4.51 or higher

Users of Red Hat Linux 6.1 may use Netscape Navigator 4.61 or higher

security features

system security:

Primary Domain Controller (PDC)

CIFS: NTLM 0.12 (Windows)

Network Information Services (NIS)

NFS: 2 & 3 (UNIX)

SNMP set commands are not enabled providing system integrity protection

Password protected Web-based administration page

data protection

local backup:

Supports HP DLT Autoloader Model 818

Checkpoint feature ensures a complete and consistent backup

network backup:

Compatible with HP Omniback II, VERITAS Backup Exec, and Computer Associates' ARCserve IT

hp netstorage
6000

scalability for
today and
tomorrow

technical specifications (continued)

availability	network connectivity: 10/100Base-TX—100+, half or full duplex, dual 10/100Base-TX, half or full duplex gigabit 1000Base-SX fiber: Half or full duplex self-correcting memory: Manageable Error Checking and Correcting (ECC) system memory and ECC cache memory embedded OS: FLASH ROM (Field upgradable) thin operating system: Optimized for file sharing and serving multiple redundancy—automatic server restart, environmental monitoring, UPS support: Power supplies, fans, HDDs, audible alarm for network failure
mean time between critical failures	Approximately 487,000 hours* or 55 years
scalability	hot-swap HDDs: 36 GB & 73 GB disk drives, Ultra2 SCSI, 10,000 rpm native capacity: 144–730 GB, Hardware RAID 5 standard (hot-swap drives) number of drives: 4 to 10 hard disk drives, includes a standard global hot spare network interface card options: (Up 2 NIC/4 ports) 10/100Base-TX, Dual 10/100Base-TX, or Gigabit
performance	processor: Intel Pentium III 700MHz cache: 256 KB on CPU cache, ECC protected system memory: 256 MB ECC SDRAM built in I/O ports: Serial communications port for UPS monitoring (DB9 male), Serial communications port for TTY interface for system debug and status disk drive interface—configurable LAN connectivity: Ultra2 Wide SCSI; SCA connector
installation and configuration	installation: Step-by-step illustrated instructions DHCP enabled or LCD menu driven configuration Storage configuration is completed from the Web-based administration pages configuration: GUI enabled configuration System name, security settings, SNMP and SMTP e-mail, LUN creation, and volume creation Optional configuration for integration into existing management platforms
manageability	remote administration: HP Toptools Web-based administration interface provides secure server access via LAN compatible manageability tools: HP Openview Network Node Manager, HP Manage-x, Computer Associates' Unicenter TNG, Tivoli NetView 6.0
product numbers	10-bay network attached storage device: C4473A With four 36 GB disks, 144 GB raw capacity C4474A With seven 36 GB disks, 252 GB raw capacity C4475A With 10 36 GB disks, 360 GB raw capacity C4485A With four 73 GB disks, 292 GB raw capacity C4486A With seven 73 GB disks, 511 GB raw capacity C4487A With 10 73 GB disks, 730 GB raw capacity hp supportpack: H4516A/E** Warranty upgrade to 3 years, next day, onsite

*Assumes replaceable components are maintained regularly

**A = physical pack, E = electronic

hp surestore
brocade 8-port
and 16-port
fc switches



The Brocade 8-Port and 16-Port FC Switches create an intelligent connectivity infrastructure, or Fabric, to support the connectivity of a wide range of host and storage types.

These switches provide the cornerstone for a broad range of storage area network configurations, from Windows NT-based workgroups to large enterprises, and diverse SAN applications, including storage consolidation, enterprise back-up, and clustering environments.

hp brocade 8-port and 16-port fibre channel switches

key features

- each port delivers 100 MB/second line-speed, plus non-blocking architecture and buffer-pool management optimize overall performance
- simple hot-swap of connections
- multiple simultaneous conversations for improved bandwidth versus hub-based Fibre Channel loops
- seamless expansion to thousands of ports
- simple management with no single point of failure
- routing software automatically detects link failure and reconfigures without operator interaction
- online and offline diagnostics, and failing ports automatically disabled

technical specifications

system architecture

FC-AL Rev 4.5	FC-PH-2 Rev 7.4
FC-AL-2 Rev 7.0 (draft)	FC-PH-3 Rev 9.4
FC-FLA Rev 2.7	FC-PLCDA Rev 2.1
FC-GS-2 Rev 5.3 (draft)	FC-SW Rev 3.3
FC-FG Rev 3.5	FC-V1 Rev 1.0 (draft)
FC-PH Rev 4.3	

Fibre Channel standards

Fibre Channel ports

8 or 16 universal ports

scalability

Architecture: 239 switches maximum

certified maximum

32 switches, 7 hops. Larger Fabrics to be certified as required

interoperability

SilkWorm II, SilkWorm Express, or any SilkWorm 2000 Family Switch

performance

Full line-speed switching, 200 MB/second per port, full Duplex

switch bandwidth

8 GB/s or 16 GB/s end to end

switch core

Non-blocking

fabric latency

<2μ with no contention, cut through routing

maximum frame size

2112-byte payload

frame buffers

8 port: 224 dynamically allocated / 16 port: 448 dynamically allocated

classes of service

Class 2, Class 3, Class F (Interswitch Frames)

port types

F_Port, FL_Port, and E_Port, Self-discovery based on connection type

data traffic types

Unicast, multicast (256 groups), and broadcast

media types

Hot pluggable, industry-standard GBICs
Short-wave laser, up to 1,640 ft (500 m)
Long-wave laser, up to 6.2 miles (10 km)
Passive copper, up to 43 ft (13 m)

supported industry-standard

D6980A	Two optical short wave GBICs with one 50-meter optical cable
D6981A	Two optical short wave GBICs with one 100-meter optical cable
D6978A	Two copper GBICs with one 3-meter copper cable
D6979A	Two copper GBICs with one 5-meter copper cable
D7080A	Two copper GBICs with one 10-meter copper cable

GBICs

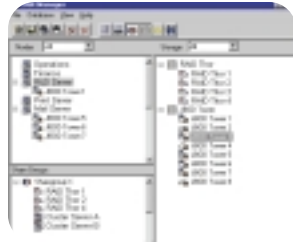
hp surestore
brocade 8-port
and 16-port
fc switches

cost-effective switch
for storage area
networks

technical specifications (continued)

fabric services	Simple Name Server, Registered State Change Notification (RSCN), Alias Server (Multicast), BROCADE ZONING, and Quickloop		
options	Redundant power supply (1 power supply included), GBICs, and rackmount kit		
management	management SNMP, Telnet, BROCADE SES, and BROCADE WEB TOOLS		
management access	Ethernet (RJ-45, 10/100Base-TX (UTP), in-line over Fibre Channel link and front control panel		
diagnostics	POST and embedded online/offline diagnostics		
enclosure	mechanical specifications Back to front airflow, power out the front		
	8-port		16-port
	Airflow:	1u, 19-in-EIA compliant	2u, 19-in-EIA compliant
	Height:	1.17 in (4.34 cm)	3.44 in (8.73 cm)
	Width:	16.87 in (42.86 cm)	16.87 in (42.86 cm)
	Depth:	17.72 in (45.0 cm)	17.72 in (45.0 cm)
weight	Single power supply:	14 lb (6.36 kg)	25.6 lb (11.59 kg)
	Dual power supply:	17 lb (7.73 kg)	28.5 lb (12.94 kg)
temperature	environment operating: 50°F – 104°F (10°C – 40°C) non-operating: –31°F – 146°F (–35°C – 65°C)		
humidity	operating: 5% – 85% non-condensing @ 104°F (40°C)		
altitude	Up to 9,800 ft (3,000 m)		
shock	5 g, 11ms half sine		
vibration	operating: 5, 0 5-500-5 Hz @ 1.0 octave/min non-operating: 10, 5-500-5 Hz @ 1.0 octave/min		
supported power range	power 85–265 VAC, 47–63 Hz		
regulatory compliance	country	safety	emc
	Canada	CSA 950 3rd Ed	CSA C108.8 Class A
	United States	UL 1950 3rd Ed	FCC Part 15 Class A
	Japan		VCCI Class A
	European Community	EN60950 A4	EN55022 Level A
	Australia/New Zealand		EN55082-2 (Immunity) AS/NZS 3548
product numbers	A5667A	HP Brocade 8-Port FC Switch, Field Racked	
	A5625A	HP Brocade 8-Port FC Switch, Field Racked	
	A5625AZ	HP Brocade 8-Port FC Switch, Factory Racked	
	A5624A	HP Brocade 16-Port FC Switch, Field Racked	
	A5624AZ	HP Brocade 16-Port FC Switch, Factory Racked	
	A5682A	HP Brocade Power Supply	
	A5671A	HP Brocade Power Supply	
	H4620E	HP Supportpack, warranty upgrade to 3 years, 4-hour response time, onsite	
	H4621E	HP Supportpack, warranty upgrade to 3 years, 24 x 7, on-site	

hp surestore
san manager lm
(lun management)



efficient management

new!

HP Surestore SAN Manager LM is a host (server) based software solution designed to facilitate the management of storage area networks (SAN). SAN Manager LM enables heterogeneous or homogeneous systems to use a common pool of storage devices on a SAN. Administrators can assign storage from the pool when and where it is needed in a matter of seconds through a simple drag-and-drop device, without host reboots. With SAN Manager LM, file systems on LUNs assigned to Windows NT or UNIX systems can be made available for immediate use.

hp surestore san manager lm (lun management)

key features

- optimizes storage utilization by enabling any LUN to be assigned to any host
- security feature prevents data loss and unauthorized access
- one software solution can be used in a range of configurations for extra scalability
- storage can be assigned without host reboots for maximum uptime
- system availability is maintained by mirrored SAN configuration database
- automated storage network discovery reduces configuration time and reduces errors
- clear visualization of storage accessible to multiple hosts prevents errors when setting up cluster server and shared tape device environments

product numbers

Software	J6100AA	SAN Manager LM Software
Software	J6104AA	Storage Key 100 GB LTU
Software	J6106AA	Storage Key 500 GB LTU
Software	J6107AA	Storage Key 1000 GB LTU
Software	J6109AA	Server Key 10 LTU
Software	J6110AA	Server Key 50 LTU
Software	J6111AA	Combo Key 4 250 GB LTU
Software	J6112AA	OS Key Solaris LTU
Software	J6113AA	SAN Manager LM—LTU 5000 GB Storage
Software	J6114AA	SAN Manager LM—LTU HP-UX

hp surestore
san manager dm
(device
management)



simple



HP Surestore SAN Manager DM provides comprehensive, centralized management of storage area networks through the use of SAN topology maps, event monitoring and by serving as a launch point for device applications.

Simple, efficient management of the SAN is a critical component of successful implementation, and the ability to recognize and resolve issues quickly ensures improved application performance and productivity.

hp surestore san manager dm (device management)

key features

- integration capabilities provide an environment in which solution providers can easily develop storage area networks
- management console can be run from any location, remote or local
- changes in the SAN are automatically identified and mapped through continual auto-discovery
- SAN topology map can be customized into views with drag-and-drop simplicity
- device-specific applications can be launched directly from the central console
- device status information is reported to a central console for early and precise identification of issues
- HP SAN Manager DM maintains an ongoing log of device events
- HP software developer kit enables customers to integrate their device management and value-add applications into the HP SAN Manager

product numbers

Software J6115BA	SAN Manager DM 1.2 Media Kit
Software J6116AA	SAN Manager DM 1.2 LTU 10 HBA
Software J6117AA	SAN Manager DM 1.2 LTU 50 HBA
Software J6118AA	SAN Manager DM 1.2 LTU 100 GB Storage
Software J6119AA	SAN Manager DM 1.2 LTU 500 GB Storage
Software J6120AA	SAN Manager DM 1.2 LTU 1,000 GB Storage
Software J6121AA	SAN Manager DM 1.2 LTU 5,000 GB Storage

hp service and support



warranty extension

All HP Supportpacks for storage products have a three-year term. HP Supportpacks must be purchased within 90 days of the product purchase.

next-day replacement

HP will send a permanent replacement unit, freight prepaid, via a premium air freight provider to a customer who calls HP between 9 am and 6 pm eastern time, Monday through Friday, except HP holidays. Once the replacement unit has arrived, the customer must return the defective unit to HP within 3 working days of the receipt of the replacement unit with the enclosed shipping materials.

3-year, next-day response

An HP Authorized Representative will arrive on-site to begin hardware maintenance service between Monday and Friday, except HP holidays, during the next working day after call receipt. This applies to sites within 100 miles of a primary HP Support Responsible Office.

3-year, 4-hour response (4-hour response time)

This service level provides HP's best response time during HP standard business hours. An HP Authorized Representative will arrive at customer's location to begin hardware maintenance service within 4 hours of service calls received by HP during HP standard business hours, excluding HP holidays. The 4-hour on-site response is available in major metropolitan areas (see the HP Supportpack Office Guide).

3-year, 4-hour response, 24 x 7 on-site service

Provides HP's best possible response time during coverage 7 days a week, 24 hours a day. An HP Authorized Representative will arrive at the customer's site to begin hardware maintenance service within 4 hours of service calls received by HP. This response time applies to customer locations in major metropolitan areas (see the HP Supportpack Office Guide).

contact us

For additional information on HP products and services, visit us at www.hp.com. For location of the nearest sales office, call: U.S. 1-800-637-7740.



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5980-3767ENUC

express exchange

Express Exchange is available in most countries. In those countries which do not currently support Express Exchange, support is provided through either the Low End Support Program or the local parts centre.

compressed capacity

All capacities and transfer rates quoted as typical use a 2:1 compression ratio; this may vary since compression is data dependent.