



availability



hp StorageWorks
Enterprise Virtual
Array 3000

hp StorageWorks Enterprise Virtual Array 3000

The HP StorageWorks Enterprise Virtual Array 3000 (eva3000) is the newest HP StorageWorks disk array enabled by VersaStor technology. The eva3000 is a “virtual” RAID storage solution providing enterprise-class functionality to the mid-range storage market. Storage virtualization within the eva3000 storage system provides high performance, high data availability, fault tolerance, easy storage management, data replication and cluster support.

The eva3000 provides improved storage utilization and scalability while meeting application specific demands for consistently high transaction I/O and MB data rate performance, seamless capacity expansion (enabled by dynamic LUN expansion), instantaneous replication, simplified storage administration and cost effectiveness. The eva3000 features 162K IOPs and up to 335 MB/sec throughput per controller pair. It provides an end-to-end 2 Gb/sec Fibre Channel (FC) solution utilizing FC-Switch Fabric for interfacing with the host and 2 Gb/sec dual-loop FC-Arbitrated Loop to interface to the disk drives. This allows dual port access for redundancy and load balancing. The eva3000 is ideal for medium to large corporate customers in need of a reasonably priced FC solution.

key features and benefits

controllable

- **LiteTouch management:** allows management of larger SAN configurations, reduces management time and lowers costs
- **performance:** features outstanding self-tuning performance, accomplishes more in less time, scales capacity on-demand, and minimizes data administration
- **controller software:** provides state-of-the-art design, improves performance, disk usage, and allows for easy dynamic storage expansion

resilient

- **virtually instantaneous Snapclone:** allows immediate use of the clone copy, saving significant time

extensible

- **virtually capacity-free Snapshot (Vsnap):** saves customers disk space and improves disk utilization efficiency

what's new

- provides enterprise-class features which include dual HSV100 controllers and two Fibre Channel (FC) disk drive enclosures, mounted in a 42U 10,000 series rack (the HSV100 controller pair supports two additional disk drive enclosures)
- supports all OS platforms, interconnects and server connectivity as HP StorageWorks eva5000, MA/EMA and the VA families
- scales up to 56 disk drives or 8.1 TB (using 146 GB drives)
- features space saving Vsnap and immediately accessible Snapclones
- lower TCO by significantly reducing the amount of time needed to manage storage with eva3000's simplified, powerful, virtualized management

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performance

technical specifications

| | | | | | |
|--|--|---------------|----------------|---------------|---------------|
| controller model | HSV100 | | | | |
| controller cache | 1024 MB per controller standard | | | | |
| battery backup for cache | yes, up to 96 hours | | | | |
| virtual controller software (VCS) | FC Switch support, VCS v2.0 for HSV100, Base and optional Snapshot | | | | |
| host interface | Fibre Channel Switched Fabric | | | | |
| host ports per controller | dual 2 Gb FC enabled with VCS v2.0 for HSV100 (running at 1 Gb with 1 Gb switches and HBAs) | | | | |
| drive interface | two 2 Gb FC-AL ports per controller in redundant pairs | | | | |
| RAID levels | Vraid0, Vraid1, Vraid5 | | | | |
| maximum disks supported | 56 per controller pair | | | | |
| fibre channel switches | 64, 32, 16 and 8-Port optical | | | | |
| O/S support | Microsoft® Windows® NT, Windows 2000; HP-UX v11.0, 11.i.; HP Tru64 5.1 & 5.1a UNIX®; HP OpenVMS 7.2.2 with Fibre SCSI-V0200 & 7.3; SUN Solaris 2.6, 7, & 8; IBM AIX 4.3.3 & 5.1; NetWare® v5.1, 6.0 and Linux® (RedHat v7.2, Advanced Server 2.1, SLES7) <i>*single path support only</i> | | | | |
| sustained I/O and MB throughput | up to 162K IOPS and up to 335 MB throughput per controller pair | | | | |
| redundant blowers | yes | | | | |
| environmental monitoring unit | yes, monitors power and temperature | | | | |
| regulatory approvals | UL, CSA, TUV, FCC, CE MARK, CTICK, BSMI, VCCI | | | | |
| management software | HP StorageWorks Command View EVA 2.1 contained within the Storage Management Appliance Operating System running with the Open SAN Manager for the Storage Management Appliance | | | | |
| disk drives, interface | dual-port 2 Gb FC-AL | | | | |
| disk drives, capacity – spindle speed | 36 Gb 10K rpm | 72 Gb 10K rpm | 146 Gb 10K rpm | 36 Gb 15K rpm | 72 Gb 15K rpm |
| rotational latency | 2.99 msec | 2.99 msec | 2.99 msec | 2.0 msec | 2.0 msec |
| average read/write seek time | 4.7/5.2 msec | 5.1/5.55 msec | 4.9/5.5 msec | 3.8/4.2 msec | 3.8/4.2 msec |
| track-to-track read/write seek time | 0.6/0.9 msec | 0.6/0.9 msec | 0.55/0.75 msec | 0.3/0.4 msec | 0.4/0.6 msec |
| power requirements (domestic/Japan) – maximum configuration | <ul style="list-style-type: none"> • AC plug type (quantity 2) North America – 3 wire NEMA No. L6-30R, 30 amp (208 to 240V 60Hz 30A); Europe – 3 wire, 2 pole IEC 309, 30 amp, (220 to 240V 50Hz 32A) • number of phases single • rated current 17A @ 200V-240V AC, 60Hz total, 4.25A per power cord • BTU rating 11,604 BTU per hour • nominal airflow 660 cubic ft/minute • wattage 3600 Watts maximum • nominal line voltage North America – 208 or 230V; Europe – 230V; Japan – 206V • range line voltage 187 to 256V • line frequency North America 60 Hz, Europe 50 Hz, Japan 50 or 60 Hz • maximum input current 20.0 amps on 2 power cords (AC failover condition) • temperature operating: 50° to 95°F/10° to 35°C – Reduce rating by 1°F for each 1000 ft altitude (1.8°C/1,000m) shipping: -40° to 150°F/-40° to 66°C operating: 40% to 60% non-condensing shipping: 10% to 80% non-condensing • humidity up to 8,000 ft/2,400 m • altitude not to exceed 500,000 particles per cubic foot of air at a size of 0.5 micron or larger • air quality | | | | |
| safety | CAN/CSA-C22.2 No. 60950-00 (Canada); UL 60950 Third Edition (USA); IEC 60950:1999 (Intl) | | | | |
| accessories | <p>disks: 36 Gb 10K rpm FC disk — 238590-B21; 72 Gb 10K rpm FC disk — 238921-B21; 146 Gb 10K rpm FC disk — 293556-B21, 36 Gb 15K rpm FC disk — 236205-B21</p> <p>FC drive enclosure: M5114 FC Drive Enclosure — 321622-B21</p> <p>hp StorageWorks Business Copy for eva3000: for a complete list of functionality and ordering information, please visit the Business Copy website at: http://h18006.www1.hp.com/storage/software.html</p> <p>FC cables: 2-meter LC-LC multi-mode Fibre Cable — 221692-B21; 5-meter LC-LC multi-mode Fibre Cable — 221692-B22; 15-meter LC-LC multi-mode Fibre Cable — 221692-B23; 30-meter LC-LC multi-mode Fibre Cable — 221692-B26; 50-meter LC-LC multi-mode Fibre Cable — 221692-B27</p> <p>OS solution kits: HP Tru64 kit v2.0 EVA — 250193-B22; HP-UX kit v2.0 EVA — 282448-B21; HP OpenVMS kit v2.0 EVA — 250194-B22; Windows NT/2000 kit v2.0 EVA — 250195-B23; SUN kit v2.0 EVA — 250197-B22; AXR kit v2.0 EVA — 282447-B22; Linux kit EVA v2.0 — 309622-B22; Novell kit EVA v2.0 — 309621-B21</p> | | | | |

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storage

technical specifications — continued

accessories — continued

hp StorageWorks SAN switches and software: SAN 2/16 FC switch with dual power supplies — 287055-B21; SAN 2/16-EL FC switch — 283056-B21; SAN 2/8-EL FC switch — 258707-B21; Edge Switch 2/16 — A7284A; Edge Switch 2/32 — A7283A; Edge Switch 2/32 8-port upgrade license-to-use (LTU) — A7290A; Edge Switch 2/16 LTU — A7292A; Edge Switch 2/32 LTU — A7291A; Director 2/64 — A6354B; Director 2/64 (factory racked model) — A6534BZ; High Availability Fabric Manager software — A6575A; High Availability Fabric Manager Omnibook add-on kit — A6582A; Director 2/64 8-port add-on kit — A6574B; Director 2/64 2 Gb upgrade kit — A6579A

hp OpenView Storage Management Appliance: Storage Management Appliance II — 189715-002

2 Gb Transceiver: 2 Gb SFF-SW Trncvr Kit — 221470-B21

hp StorageWorks Secure Path: Secure Path v4.0A for Windows NT/2000, 1 license-to-use (LTU) — 165989-B23; Secure Path v4.0A for Windows NT/2000 — 5 LTU 231292-B23; Secure Path v4.0A for Windows NT/2000, 10 LTU — 231293-B23; Secure Path v4.0A for Windows NT/2000, 25 LTU — 231294-B23; Secure Path v4.0A for Windows NT/2000, 50 LTU — 231295-B23; Secure Path Upgrade to V4.0A for Windows — 165988-B23; Secure Path v3.0B for SUN Solaris, 1 LTU — 165991-B24; Secure Path v3.0B FOR SUN Solaris, 5 LTU — 231300-B24; Secure Path v3.0B for SUN Solaris, 10 LTU — 231301-B24; Secure Path v3.0B for SUN Solaris, 25 LTU — 231302-B24; Secure Path v3.0B for SUN Solaris, 50 LTU — 231303-B24; Secure Path Upgrade to v3.0B for SUN Solaris — 165990-B23; Secure Path v2.0C for IBM AIX, 1 LTU — 231495-B23; Secure Path V2.0C for IBM AIX, 5 LTU — 231312-B23; Secure Path v2.0C for IBM AIX, 10 LTU — 231313-B23; Secure Path v3.0B for HP-UX, 1 LTU — 261705-B23; Secure Path v3.0B for HP-UX, 5 LTU — 261706-B23; Secure Path v3.0B for HP-UX, 10 LTU — 261707-B23; Secure Path v3.0B for HP-UX, 25 LTU — 261708-B23; Secure Path v3.0B for HP-UX, 50 LTU — 261709-B23; Secure Path v3.0c for NetWare, 1 LTU — 165993-B22; Secure Path v3.0c for NetWare, 5 LTU — 231308-B22; Secure Path v3.0c for NetWare, 10 LTU — 231309-B22; Secure Path v3.0c for NetWare, 25 LTU — 231310-B22; Secure Path v3.0c for NetWare, 50 LTU — 231311-B22; Secure Path v3.0 for Linux, 1 LTU — 282412-B21; Secure Path v3.0 for Linux, 5 LTU — 282413-B21; Secure Path v3.0 for Linux, 10 LTU — 282414-B21; Secure Path v3.0 for Linux, 25 LTU — 282415-B21; Secure Path v3.0 for Linux, 50 LTU — 282416-B21

hp StorageWorks FCA host bus adapters (HBAs): FCA2257P 2 Gb FC HBA for Solaris PCI — 254456-B21; FCA2257C 1 Gb FC HBA for SUN Solaris cPCI — 254457-B21; FCA2257S dual 1 Gb FC HBA for Solaris SBUS — 254458-B21; FC PCI HBA for IBM AIX — 197819-B21; FCA2101 64-bit/66-MHz PCI HBA for Windows — 245299-B21; FCA2354 64-bit/66MHz PCI HBA for Tru64 and OpenVMS — 261329-B21; FCA 2210 2Gb FC HBA for NetWare — 281540-B21; FCA2214 2 Gb FC HBA for Linux — 281541-B21; FCA2214DC dual port 64-bit/133-MHz PCI-X for Windows and Linux — 321835-B21

software applications: HP Network View v2.0B, 64 Switch Port license-to-use (LTU) — 253904-B24; Network View v2.0B, 128 Switch Port LTU — 235905-B24; Network View v2.0B, 256 Switch Port LTU — 236073-B24; Network View v2.0B, 512 Switch Port LTU — 236074-B24; HP StorageWorks Enterprise Volume Manager starter kit — 263670-B22; HP OpenView Storage Virtual Replicator v3.0B base media & doc — 261769-B23; Virtual Replicator v3.0 license, 1 server — 261770-B21; Virtual Replicator v3.0 license, 3 servers — 266236-B21; Virtual Replicator v3.0 license, 5 servers — 261775-B21; Virtual Replicator v3.0 license, 10 servers — 261771-B21; Virtual Replicator v3.0 license, 25 servers — 261772-B21; Virtual Replicator v3.0 license, 50 servers 261773-B21

supplies

2-meter LC-LC multi-mode Fibre Cable — 221692-B21; 5-meter LC-LC multi-mode Fibre Cable — 221692-B22; 15-meter LC-LC multi-mode Fibre Cable — 221692-B23; 30-meter LC-LC multi-mode Fibre Cable — 221692-B26; 50-meter LC-LC multi-mode Fibre Cable — 221692-B27

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management

ordering information

| product number | product name | description |
|----------------|---------------------------------------|---|
| 335620-B21 | eva3000/50Hz/72 GB/10 | one 3U Controller assembly with two HSV100 controllers, two M5114 3U Dual-redundant FC loop 14-bay disk enclosures, 42U Graphite Storage Cabinet, VCS for HSV100 Dual Controllers, 8x72 GB 10K rpm HDDs) |
| 335622-B21 | eva3000/50Hz/72 GB/15 | one 3U Controller assembly with two HSV100 controllers, two M5114 3U Dual-redundant FC loop 14-bay disk enclosures, 42U Graphite Storage Cabinet, VCS for HSV100 Dual Controllers, 8x72 GB 15K rpm HDDs) |
| 335624-B21 | eva3000/50Hz/8x146 GB | one 3U Controller assembly with two HSV100 controllers, two M5114 3U Dual-redundant FC loop 14-bay disk enclosures, 42U Graphite Storage Cabinet, VCS for HSV100 Dual Controllers, 8x146 GB 10K rpm HDDs) |
| 321622-B21* | M5114 FC drive enclosure | M5114 14 bay FC disk enclosure |
| 321623-B21* | rail kit for M5114 -10K | rail kit for M5114 for the 10K rack |
| 238590-B21* | 36 GB 10K rpm FC disk | 36 GB 10K rpm dual-port 2 Gb FC-AL 1-inch disk drive |
| 238921-B21* | 72 GB 10K rpm FC disk | 72 GB 10K rpm dual-port 2 Gb FC-AL 1-inch disk drive |
| 293556-B21* | 146 GB 10K rpm FC disk | 146 GB 10K rpm dual-port 2 Gb FC-AL 1-inch disk drive |
| 236205-B21 | 36 GB 15K rpm FC disk | 36 GB 15K rpm dual-port 2 Gb FC-AL 1-inch disk drive |
| 293568-B21* | 72 GB 15K rpm FC disk | 72 GB 15K rpm dual-port 2 Gb FC-AL 1-inch |
| 221692-B21 | 2-meter LC-LC multi-mode Fibre Cable | 2-meter LC-LC multi-mode Fibre Cable used to interconnect eva3000 to switches (with LC connectors) or switches to FC HBAs (with LC connectors) |
| 221692-B22 | 5-meter LC-LC multi-mode Fibre Cable | 5-meter LC-LC multi-mode Fibre Cable used to interconnect eva3000 to switches (with LC connectors) or switches to FC HBAs (with LC connectors) |
| 221692-B23 | 15-meter LC-LC multi-mode Fibre Cable | 15-meter LC-LC multi-mode Fibre Cable used to interconnect eva3000 to switches (with LC connectors) or switches to FC HBAs (with LC connectors) |
| 221692-B26 | 30-meter LC-LC multi-mode Fibre Cable | 30-meter LC-LC multi-mode Fibre Cable used to interconnect eva3000 to switches (with LC connectors) or switches to FC HBAs (with LC connectors) |
| 221692-B27 | 50-meter LC-LC multi-mode Fibre Cable | 50-meter LC-LC multi-mode Fibre Cable used to interconnect eva3000 to switches (with LC connectors) or switches to FC HBAs (with LC connectors) |
| 250195-B22 | Windows NT/2000 kit v2.0 for EVA | OS solution kit v2.0 for Windows NT 4.0 (SP6a)/Windows 2000 (SP2 and SP3) |
| 250193-B22 | HP Tru64 kit v2.0 for EVA | OS solution kit v2.0 for Tru64 UNIX 5.1 and 5.1a |
| 250194-B22 | HP OpenVMS kit v2.0 for EVA | OS solution kit v2.0 OpenVMS 7.2-2 with Fibre SCSI-V0200, 7.3 |
| 282448-B21 | HP-UX kit v2.0 for EVA | OS solution kit v2.0 HP-UX v11.0, 11.i |
| 250197-B22 | SUN Solaris kit v2.0 for EVA | OS solution kit v2.0 for SUN Solaris v6, v7, v8 (or 2.6, 2.7, 2.8) |
| 282447-B21 | IBM AIX kit v2.0 for EVA | OS solution kit v2.0 for IBM AIX v4.3.3 and v5.1 |
| 309622-B21 | Linux kit v2.0 for EVA | OS solution kit v2.0 for Linux |
| 309621-B21 | Novell kit v2.0 for EVA | OS solution kit v2.0 for NetWare |
| 189715-002 | Storage Management Appliance II | 2U 19-inch rackable, Management Appliance II, required to manage (up to 16) eva3000(s) |

*These items can be factory installed using the factory integration part number.

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capacity

ordering information — continued

| product number | product name | description |
|----------------|--|--|
| 287055-B21* | SAN Switch 2/16 with 2 power supplies | 16-port, 2 Gb per port, dual power supply SAN Switch, 1U 19-inch rackable |
| 212776-B21* | SAN Switch 2/16-EL | 16-port, 2 Gb per port, SAN Switch 1.5U 19-inch rackable |
| 258707-B21* | SAN Switch 2/8-EL | 8-port, 2 Gb per port, SAN Switch 1U 19-inch rackable |
| 240603-B21* | SAN 2/32 FC switch | 32-port 2 Gb per port, SAN Switch |
| A7284A | Edge Switch 2/16 | 16-port 2 Gb per port Edge Switch |
| A7283A | Edge Switch 2/32 | 32-port 2 Gb per port Edge Switch |
| A6534B | Director 2/64 | 64-port 2 Gb per port Director |
| A6509A | Core Switch 2/64 | 64-port 2 Gb per port Core Switch |
| 221470-B21 | 2 Gb SFP Fibre Channel Transceiver Kit | 2 Gb Small-Form-Factor-Fibre Channel Transceiver Kit (used on switches with SFP Ports) |
| 322118-B21 | SAN Switch 2/16 | 16-port, 2 Gb per port, SAN Switch 1.5U 19-inch rackable |
| 322119-B21 | SAN Switch 2/16 PowerPak | 16-port, 2 Gb per port, SAN Switch 1.5U 19-inch rackable with software bundle |
| 322120-B21 | SAN Switch 2/8-EL | 8-port, 2 Gb per port, SAN Switch 1U 19-inch rackable |
| 322121-B21 | SAN Switch 2/8 PowerPak | 8-port, 2 Gb per port, SAN Switch 1U 19-inch rackable with software bundle |
| 240603-B21 | SAN Switch 2/32 | 32-port 2 Gb per port, SAN Switch |
| 333764-B21 | SAN Switch 2/32 PowerPak | 32-port 2 Gb per port, SAN Switch with software bundle |
| 332177-B21 | SAN Core Switch 2/64 | 64-port 2 Gb per port Core Switch (32 port active) |
| 332178-B21 | SAN Core Switch 2/64 PowerPak | 64-port 2 Gb per port Core Switch (32 port active) with software bundle |
| 334883-B21 | 16 Port Blade for SAN Core 2/64 | 16 port blade for SAN Core 2/64 |
| 254456-B21 | FCA2257P 2 Gb FC HBA for Solaris PCI | FCA2257P 2 Gb FC HBA for Solaris PCI |
| 254457-B21 | FCA2257C 1 Gb FC HBA for Solaris cPCI | FCA2257C 1 Gb FC HBA for Solaris cPCI |
| 254458-B21 | FCA2257S dual 1 Gb FC HBA for Solaris SBUS | FCA2257S dual 1 Gb FC HBA for Solaris SBUS |
| 197819-B21 | FC PCI HBA for IBM AIX | 1 Gb FC HBA for IBM AIX |
| 245299-B21 | FCA2101 64-bit/66-MHz PCI HBA for Windows NT/2000 | FCA2101 2 Gb 64-bit/66-Mhz PCI HBA for Windows NT/2000 |
| 261329-B21 | FCA2354 64-bit/66MHz PCI HBA for Tru64 and OpenVMS | FCA2354 2 Gb 64-bit/66MHz PCI HBA for Tru64 and OPENVMS |
| 281540-B21 | FCA2210 2 Gb FC HBA for NetWare | FCA2210 2 Gb FC HBA for NetWare |
| 281541-B21 | FCA2214 2 Gb FC HBA for Linux & Windows | FCA2214 2 Gb FC HBA for Linux & Windows |
| 308540-B21 | FCA2355 dual port 64-bit/66-MHz PCI HBA for Windows 2000 | FCA2355 dual port 64-bit/66-MHz PCI HBA for Windows 2000 |

*These items can be factory installed using the factory integration part number.

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virtual

what's included

HP StorageWorks eva3000 includes: 42U graphite cabinet; dual Power Distribution Units with power cords; Dual Controller pair assembly with power supply, fan, HSV100 controllers, cache batteries; 2 Drive enclosures, each with dual redundant hot-plug power supplies and fans, Environmental Monitoring Unit (EMU) and dual hot-plug I/O modules; CAN bus; FC interconnect cables; VCS v.2.0a and 8 x 2 GB FC disk drives: either 8 x 72 GB 10K rpm or 8 x 72 GB 15K rpm or 8 x 146 GB drives

warranty and support

warranty features — hp service and support

hardware warranty: entitlement covers 3-year on-site with a next business day response; hardware product warranty varies by location, please see the warranty information or contact your local HP sales organization for details

software warranty: HP warrants that the software media will be free from defect for 90 days

Enhancements to basic factory warranty are available through upfront and contractual HP Services providing increased response times and call windows to match the demands of your business. Installation and Startup Services will ensure a fast and efficient deployment of these technologies. For further information contact your local HP Services or Certified Channel Partner.

for more information

For more information on the HP StorageWorks eva3000, contact any of our worldwide sales offices or visit our web site at: <http://www.hp-emea-storage.com>

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