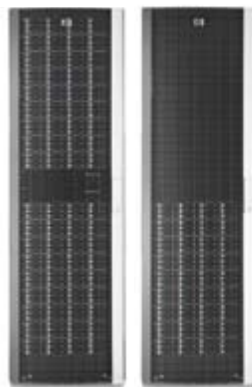




HP StorageWorks 4400
Enterprise Virtual Array



HP StorageWorks 6400
Enterprise Virtual Array



HP StorageWorks 8400
Enterprise Virtual Array



HP StorageWorks Enterprise
Virtual Array Cluster

HP StorageWorks Enterprise Virtual Array family

Data sheet

Are you looking for a storage solution that is easy to use, reliable and available at an affordable price and which provides you room to add more capacity or more services? An organisation such as yours demands a performance-leading, high-capacity and highly-available storage solution to reduce IT costs and complexity.

Now you have a tailor-made solution that can help reduce stranded storage, improve capacity utilisation and gain better control of your storage resources – all at a lower total cost of ownership (TCO).

The HP StorageWorks Enterprise Virtual Array (EVA) product family provides virtualised storage enabling capacity pooling, simplified management, automatic performance load balancing, dynamic configuration and re-configuration. With its advanced, easy-to-use management software, the EVA saves customers up to 50 per cent in storage administration costs when compared to competitive storage arrays¹.

¹ From The Edison Group, StorageWorks EVA Comparative Management Cost Survey White Paper, February 2009



Simplify your storage with HP Enterprise Virtual Array

HP innovations in the Enterprise Virtual Array (EVA) help solve big cost drivers and change barriers of today's data centres. Customised for midsize and enterprise organisations, HP StorageWorks 4400 Enterprise Virtual Array, HP StorageWorks 6400 Enterprise Virtual Array and HP StorageWorks 8400 Enterprise Virtual Array give you the ability to scale and choose the EVA that is right for your budget and environment.

The EVA family provides an easy-to-use, highly-available and affordable storage array to meet a wide variety of your business-critical needs. With EVA, your storage environment is:

- **Change ready with EVA Virtual Architecture:** Easily configure, re-configure, provision and expand.
- **Easily integrated with leading business applications:** Documented best practices and sizing tools combine the right server, storage and application components for quick deployment of typical business intelligence, disaster recovery, mail and messaging applications.
- **Ready to manage your business priorities:** Quick, easy EVA installation and simplified administration and management free you to manage your business priorities and not your storage solution.

HP StorageWorks Enterprise Virtual Array Cluster

HP StorageWorks EVA Cluster is the newest member of the EVA family and the on-ramp to creating Virtual resource pools of heterogeneous storage. EVA Cluster takes the industry leading simplicity of the EVA array to new levels and provides customers the ability to scale beyond single array limitations with a turnkey multi-array cluster that scales to almost 2000 drives. EVA Cluster is a highly available configuration that also provides transparent failover.

HP StorageWorks MPX200 Multifunction Router

The EVA4400, EVA6400, EVA8400 with HP StorageWorks MPX200 Multifunction Router enable you to run hundreds of virtual machines efficiently with increasing return on investment (ROI) using unified block storage (FC/FCoE/iSCSI) and manage storage through a single pane of glass. Additionally, MPX200 provides Fibre Channel over IP (FCIP) connectivity and data migration capabilities with optional licences. FCoE is enabled on MPX200 at no charge with just a firmware download. MPX200 extends HP EVA investment by adding multi-protocol support without requiring separate storage arrays or additional management costs. The MPX200 enables modular multi-protocol SAN designs with increased scalability, stability, ROI and simpler to manage storage solutions for virtualised server environments. The MPX200's enterprise-class high-availability design provides dual hot-pluggable power supplies and router blades with no single point of failure.

MPX200 and EVA6400/8400 hardware bundles provide exceptional value to HP customers.

Key features and benefits

Tune business application environments

Automatically adaptable performance: Adapts to improve performance by placing data across more spindles and automatically re-leveling when new storage is added. EVA solutions tightly integrate local and remote replication with highly-visible software applications. EVA offers tiered storage for the most effective use of storage dollars.

Easy management with HP Command View EVA Software: Allows IT to focus on innovation by reducing the amount of management resources needed to support, provision and maintain your storage environment. Expanding and shrinking LUNs is as easy as a few mouse clicks resulting in less administrative intervention.

Drive storage utilisation to unprecedented levels: With EVA there is no need to pre-allocate dedicated storage capacity. The easy management of the EVA allows you to add disks when you want or use Dynamic Capacity Management Software to grow or shrink capacity when needed.

Integrated local and remote replication: EVA offers Business Copy EVA and Continuous Access EVA Software for local and remote replication needs. EVA solutions improve data availability and business agility and support business continuance and disaster-tolerant environments for your key business applications.

Powerfully unique data protection solution: With HP Data Protector Zero Downtime Backup (ZDB) and Instant Recovery (IR), the EVA overcomes the server performance and application data inconsistency challenges in virtual server environments. Data Protector ZDB automates snapshots of virtual machines for non-disruptive backup and Business Copy snapshots are maintained on the EVA for use by Data Protector IR.

Storage for virtualised IT environments

Change-ready storage for change-ready servers: In the dynamic virtual server environment, the most complementary storage is that which can respond to changes quickly. The EVA allows you to seamlessly provision storage while growing your applications. Keep pace in the agile world of virtual servers with the EVA.

No stranded performance: EVA virtualisation allows you to use the power and speed of all your drives by spreading data across all the disks in the storage array.

No stranded capacity: Remove the guesswork from your purchasing decisions. No need to purchase disks that would be allocated but not in use. The flexibility of EVA virtualisation allows you to grow or shrink your storage dynamically as your business needs change. EVA uses all the drives for the highest disk utilisation.

Total solutions for your environment

Extensive hardware and software solutions:

HP integrates EVA as part of total solutions for your data centre. These include backup solutions with Virtual Library System (VLS) and Data Protector, data migration with SAN Virtualization Services Platform (SVSP) and file services with HP StorageWorks Enterprise File Services Clustered Gateway.

Data placement on storage assets that are right for the business:

EVA also supports tiered storage through Fibre Channel solid state disks for high I/O low latency requirements, 10,000 and 15,000 rpm Fibre Channel disk drives for primary storage needs and Fibre Attached Technology Adapted drives for bulk storage.

Robust integration: Integration of applications and operating systems with tested and proven solutions brings simplicity to your complex and changing environment.

Configure an entire data centre in a single rack:

HP Factory Express can configure your entire order (SAN/POS/servers/backup) in a rack and securely load your data prior to shipment, saving time and money by providing a fully configured green solution.

Easy-to-use equals cost savings

Improves capacity usage, reduces management

time: Reduces complexities of installations typically found in traditional arrays by employing EVA virtualisation capabilities to improve utilisation of your management resources.

Spend less time managing storage: HP Command View EVA and HP Dynamic Capacity Manager free you to manage your business priorities and not your storage solution. HP EVA provides easy installation through SmartStart EVA for the EVA4400 or Installation and Startup, which is included for the EVA6400 and EVA8400. You can easily upgrade, repair and replace components yourself, without the need for a service call.

Lower total cost of ownership: Contributing to an attractive TCO, the EVA is more affordable and less complex than traditional arrays. Get started quickly with an EVA4400 Starter Kit.

Reliable and available

Complete solution for storage and servers: As part of the HP BladeSystem Matrix, the EVA provides a complete solution where storage and servers are managed together. This offers you a simple management and resource solution.

Easy and robust disaster recovery: Local and remote replication software, Business Copy EVA and Continuous Access EVA protect data so in the event of a service disruption, recovery is quick and easy.

High availability for planned uptime: Organisations can expect high availability with the dual-redundant EVA architecture that supports vRAID 1, vRAID 5 and vRAID 6 and end-to-end data protection with solutions for VMware Site Recovery Manager and Cluster Extension EVA with live migration with Microsoft Hyper V.

Technical specifications



	HP StorageWorks 4400 Enterprise Virtual Array	HP StorageWorks 6400/8400 Enterprise Virtual Array	HP StorageWorks Enterprise Virtual Array Cluster
Number of drives	96	216/324 Note: EVA6400 and EVA8400 support up to 216 and 324 drives respectively	624
Storage capacity (Including expansion)	96 TB Maximum	216/324 TB Maximum	624 TB Maximum, depending on drive type
Drives per enclosure	12 Maximum	12 Maximum	12 Maximum
Servers supported	HP servers (HP-UX, ProLiant, AlphaServers), x86 servers, Dell servers, Sun servers, IBM servers, Apple XsApple servers (PowerPC and Intel), Fujitsu Siemens and Primergy servers	HP servers (HP-UX, ProLiant, AlphaServers), x86 servers, Dell servers, Sun servers, IBM servers, Apple XsApple servers (PowerPC and Intel), Fujitsu Siemens and Primergy servers	HP servers (HP-UX, ProLiant, AlphaServers), x86 servers, Dell servers, Sun servers, IBM servers
Disk Drive Types (Capacity, Port type, Speed, Form factor, Technology)	72 GB Solid State Disk 450 GB 15K Fibre Channel 300 GB 15K Fibre Channel 146 GB 15K Fibre Channel 600 GB 10K Fibre Channel 450 GB 10K Fibre Channel 400 GB 10K Fibre Channel 300 GB 10K Fibre Channel 1 TB FATA Note: Supported within the same enclosure	72 GB Solid State Disk 450 GB 15K Fibre Channel 300 GB 15K Fibre Channel 146 GB 15K Fibre Channel 600 GB 10K Fibre Channel 450 GB 10K Fibre Channel 300 GB 10K Fibre Channel 1 TB FATA Note: Supported within the same enclosure	72 GB Solid State Disk 600 GB 15K Fibre Channel 450 GB 15K Fibre Channel 300 GB 15K Fibre Channel 600 GB 10K Fibre Channel 450 GB 10K Fibre Channel 300 GB 10K Fibre Channel 1 TB FATA Note: Supported within the same enclosure
Cache	4 GB	8 GB for EVA6400 14 GB or 22 GB for EVA8400	44 GB Maximum, depending on model
Fault-tolerant features	Dual redundant controllers Power supplies Fans Power distribution units Embedded switches	Dual redundant controllers Power supplies Fans Power distribution units	Redundant critical modules – VSMs, DPMS, Controller pairs and Fibre Channel Switches. Modules have redundant features as well – power supplies, fans. EVAs utilise RAID 1, 5 and 6 for disk redundancy.
Hot plug support	Hot pluggable power supplies, fans, cache batteries, I/O modules, environmental monitoring units, disks	Hot pluggable power supplies, fans, cache batteries, I/O modules, environmental monitoring units, disks	Redundant critical modules – VSMs, DPMS, Controller pairs and Fibre Channel Switches. Modules have redundant features as well – Power supplies, fans. EVAs utilise RAID 1, 5 and 6 for disk redundancy.
Type and number of controllers	Number of controllers: 2 Controller name: HSV300	Number of controllers: 2 Controller name: HSV400 or HSV450	Number of controllers: 2 Controller name: HSV400 or HSV450
Type and number of enclosures	Up to 8 M6412A enclosures	EVA6400 supports up to 18 M6412A enclosures EVA8400 supports up to 27 M6412A enclosures	Up to 52 M6412A enclosures
Supported operating systems	HP-UX Windows Server 2003 Windows Server 2008 Linux HP OpenVMS Sun Solaris VMware IBM AIX Apple Mac OS X XenServer Novell NetWare	HP-UX Windows Server 2003 Windows Server 2008 Linux HP OpenVMS Sun Solaris VMware IBM AIX Apple Mac OS X XenServer	HP-UX Microsoft® Windows® 2003 Microsoft Windows 2008 Microsoft Windows Hyper-V IBM AIX SUN Solaris HP OpenVMS Red Hat Linux SUSE Linux
Host Interface	4 Gb/sec Fibre Channel (2) per controller: or 8 Gb/sec Fibre Channel (10) per switch/controller Note: MPX200 Adds 1 GbE iSCSI and 10 GbE FCoE/iSCSI	4 Gb/sec Fibre Channel (4) per controller Note: MPX200 Adds 1 GbE iSCSI and 10 GbE FCoE/iSCSI	4 Gb/sec Fibre Channel (8) Ports per controller
Warranty (parts-labour-onsite)	3/3/3	3/3/3	Varies by module.
Warranty (abbreviated description)	3-year parts, 3-year labour, 3-year onsite 9x5 hardware support, with next business day (NBD) support.	3-year parts, 3-year labour, 3-year onsite 9x5 hardware support, with next business day (NBD) support	Varies by component.
QuickSpec URLs	http://h18000.www1.hp.com/products/quickspecs/12893_div/12893_div.pdf	http://h18000.www1.hp.com/products/quickspecs/13206_div/13206_div.pdf	http://h18000.www1.hp.com/products/quickspecs/13637_div/13637_div.pdf

HP StorageWorks SAN Virtualization Services Platform (SVSP)	The SVSP is a network-based virtualisation solution that helps customers improve efficiency, simplify operations and lower TCO. It aggregates capacity from multiple arrays to create pools of virtual storage that can be easily provisioned. It also provides a comprehensive set of data services across EVA families and heterogeneous arrays that improves productivity, capacity utilisation and decreases business risk, including thin provisioning, data migration, copy services (snapshot and clones) and mirroring (local sync and remote async). For more information, visit: www.hp.com/go/svsp	Optional
HP StorageWorks 12000 Virtual Library System EVA Gateway	The HP StorageWorks 12000 Virtual Library System EVA Gateway offers fast data protection and backup in complex SAN environments utilising EVAs as the storage pool. It is a multi-node (up to 8 nodes) gateway solution for the EVA that offers industry-leading performance and easily scales in performance and capacity to 4800 MB/sec and 1080 TB of usable storage with 2:1 hardware compression. For more information, visit: www.hp.com/go/vls	Optional
Data Protection with HP StorageWorks Enterprise Modular Library (EML) E-series	The EML E-series Tape Library capacity points are ideal for use with the HP StorageWorks Enterprise Virtual Array. As additional capacity or performance is added to the EVA, the EML can be scaled to meet it. Adding HP Data Protector software completes the data protection solution. For more information on the HP StorageWorks EML E-series visit: www.hp.com/go/esleml	Optional
HP StorageWorks B-series Switch Options	HP StorageWorks B-series Switch Options: ISL Trunking, Extended Fabric, Fabric watch, Advanced Performance Monitoring and Adaptive Networking – are also available with the EVA4400 embedded switch model. For more information, visit: http://h18006.www1.hp.com/storage/saninfrastructure/switches/sanswitch416/index.html	Optional
HP StorageWorks EVA Virtualization Adapter	HP and VMware introduce an integrated disaster recovery solution featuring VMware Site Recovery Manager (SRM) – software designed to automate the recovery process – and the remote replication of HP StorageWorks Continuous Access EVA with HP StorageWorks Enterprise Virtual Arrays. The solution provides central management through VMware Virtual Center and enables more frequent testing. For more information, visit: www.hp.com/go/storage/vmware	Optional
HP Insight Control Storage Module for vCenter	HP Insight Control Storage Module for vCenter allows EVA customers who are using the VMware vSphere management console or vCenter, to monitor and manage the storage associated with VMware virtual machines. vCenter administrators can list LUN/volume connections, determine the storage attributes associated with virtual machines and monitor the arrays. www.hp.com/go/vmware	Optional
Oracle Certification/Validations	Oracle Validated Configurations: Oracle recommends more HP Storage Linux configurations than any other vendor. http://www.oracle.com/technology/tech/linux/validated-configurations/index.html Oracle Storage Compatibility Program (OSCP): As a member of the OSCP, HP successfully completed all test requirements stated in Oracle’s snapshot (split-mirroring) test suite for 9i and 10g. For detailed information about Oracle Storage Program Change Notice, visit: http://www.oracle.com/technology/deploy/availability/htdocs/oscp.html	Optional
HP StorageWorks Cluster Extension EVA Software	Cluster Extension EVA works with EVA storage resources to offer protection against system downtime from fault, failure or disaster by extending a single Windows cluster over metropolitan distances. http://h18006.www1.hp.com/products/storage/software/ceeva/index.html	Optional
HP Metrocluster Support	Verify protection of your data centre with HP Metrocluster support for HP StorageWorks Continuous Access Enterprise Virtual Array (EVA). http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html	Optional

<p>HP StorageWorks Command View EVA Software</p>	<p>Command View EVA software provides a comprehensive software suite designed to simplify, enhance and increase the high performance EVA family of storage array products. It provides a powerfully simple storage management experience when compared to managing traditional array storage management products. http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html</p>	<p>Required</p>
<p>HP StorageWorks EVA Dynamic Capacity Management Software</p>	<p>HP StorageWorks EVA Dynamic Capacity Management Software is a comprehensive software solution that automates storage provisioning and improves capacity utilisation on the HP StorageWorks Enterprise Virtual Array (EVA) family. Designed for the enterprise market, EVA Dynamic Capacity Management Software uses advanced automation to automatically 'right-size' the file system and storage volumes to make sure the highest levels of capacity utilisation are achieved while reducing ongoing storage administration needs. For more information, visit: http://h18006.www1.hp.com/products/storage/software/eva_dcm/index.html</p>	<p>Optional</p>
<p>HP StorageWorks Business Copy EVA Software</p>	<p>Unique, powerfully simple, integrated management and point-in-time solution in an easy-to-use, efficient and cost-effective business continuance application offering quick implementation and accelerated payback. For more information please visit: http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html</p>	<p>Optional</p>
<p>HP StorageWorks Continuous Access EVA Software</p>	<p>Unique, powerfully simple, integrated management and remote replication solution in an easy-to-use, efficient and cost-effective business continuance application offering quick implementation and accelerated payback. For more information please visit: http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html</p>	<p>Optional</p>
<p>HP Storage Essentials Software Suite</p>	<p>HP Storage Essentials Storage Resource Management (SRM) software suite offers standards-based support for your heterogeneous physical and virtual environments. This storage automation solution enables you to increase staff efficiency and asset utilisation and meet service-level agreements. By replacing manual processes with automated tools, this storage management software helps you manage the growth of your storage environment. You can also resolve performance problems, adopt virtualisation technology and exceed the storage requirements of your applications and business processes. For more information on HP Storage Essentials Software, visit: www.hp.com/go/storageessentials</p>	<p>Optional</p>
<p>HP Storage Essentials Performance Edition SRM Software</p>	<p>HP Storage Essentials Performance Edition provides performance management for SANs using HP EVA, HP XP and Hitachi Data Systems arrays. This software increases staff efficiency, improves the performance of storage services and enables your staff to solve performance problems quickly. The standards-based architecture of this storage management software supports a heterogeneous, multi-vendor infrastructure in both virtual and physical environments. HP Storage Essentials Performance Edition is the only performance management solution available for HP EVA arrays. It provides a single console for managing performance in HDS and HP array environments. For more information, visit: www.hp.com/go/storageessentials</p>	<p>Optional</p>

Service and support

HP Factory Express

HP Factory Express is designed to help you get a better return from your IT investment by providing customisation, integration and deployment services along with your storage and server purchases. It provides predictable, trusted and tested IT solutions tailored to your business needs. We allow you to customise hardware to your exact specifications in the factory – helping to speed up deployment and free up internal resources.

www.hp.com/go/factoryexpress

Customer technical training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centres worldwide to onsite training customised to your needs or online. www.hp.com/learn/storage

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programmes to help customers cost-effectively acquire, manage and ultimately retire their HP solutions. For more information on these services, please contact your HP representative or visit:

www.hp.com/go/hpfinancialservices

HP Services

HP Technology Services, trusted professionals to boost availability and avoid costly downtime, with your HP StorageWorks EVA storage solution.

Recommended Services

3-Year HP Support Plus 24 Service: For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.

HP StorageWorks EVA4400 Disk Array Installation and Startup Service: For smooth start-up, this service provides hardware and software installation.

Related Services

3-Year HP Proactive 24: For improved stability, availability and operational effectiveness, this 3-year, integrated hardware and software support service combines industry-leading technical assistance with proactive account services.

HP Data Migration Service: To help you move data between technologies, this service transfers your information across a data centre or around the globe.

For more information about HP services and support, contact your HP sales representative or HP-authorized Channel Partner or, visit www.hp.com/hps/storage

To know how HP StorageWorks Enterprise Virtual Array family can help you reduce stranded storage, improve capacity utilisation and gain better control of your storage resources, visit www.hp.com/go/eva or www.hp.com/go/evacluster

Share with colleagues



Get connected

www.hp.com/go/getconnected

Current HP driver, support, and security alerts delivered directly to your desktop

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