

change
+
hp



HP StorageWorks 4000/6000/8000
Enterprise Virtual Array (EVA) family
Powerfully simple.

Solutions for the adaptive enterprise.



To be able to respond to the demands of your business, you need IT processes that manage costs, mitigate risk, increase quality of service and enable enterprise agility. HP takes a horizontal, integrated approach to designing, implementing, measuring, monitoring and operating business processes.





Introduction

Today's business climate requires that you do more with less, are available 24/7 and have all relevant information available at the click of a button. To be able to respond to the demands of your business, you need IT processes that manage costs, mitigate risk, increase quality of service and enable enterprise agility. HP takes a horizontal, integrated approach to designing, implementing, measuring, monitoring and operating business processes. This approach provides you simplicity without compromise, change without chaos and growth without limits. The HP StorageWorks Enterprise Virtual Array (EVA) family of products provides the power and simplicity that you need to respond to the more demanding and changing needs of your users, customers and applications.

Responding to today's challenges

With increasing numbers of customers and users accessing more information using more sophisticated applications, storage capacity is at a premium. Applications such as e-mail, digital imaging and databases are taking more and more storage space.

The challenges that you face on a daily basis continue to be more demanding. You need scalability to be flexible and able to quickly and easily add or modify your capacity real-time when your users need it—this also means that you need to implement automation and consolidation into

your IT environment. Total storage needs for your organization continue to grow, yet you are being asked to work with reduced budgets, reduce total cost of ownership (TCO) and have an IT staff that is more efficient in order to reduce costs in a very competitive business environment. You also need to ensure ease of use as your IT staff has little opportunity to participate in expensive systems training.

With increasing regulatory requirements across many industries, you benefit from solutions that help ensure adherence to these regulations. Additionally, you must implement business continuity and disaster tolerance programs as your organization cannot afford for systems to go down—thus a higher need for redundancy within your systems.

You + HP—Better Together

Through a thorough understanding of your organization and bringing together the right combination of best-in-class services, hardware, software, systems, partners and financing, HP delivers the best solution for your specific business and IT needs.

HP understands that your situation is unique and that you need just the right combination of services, software, systems, partners and financing to be successful. HP is your partner and will work with you to fully understand your business and implement a solution that will make your life easier, be cost-effective and provide a good return on your investment, while delivering value to your business.

HP provides total end-to-end solutions including server, storage, software and services. Customers recognize the business value of working with one enterprise-class vendor to provide a complete solution. The cost of ownership of an HP StorageWorks EVA solution is less than that of a traditional array, when considering characteristics such as reduced array setup time, minimal training requirements and high rates of capacity utilization.

HP combines storage virtualization and software in the HP StorageWorks Enterprise Virtual Array (EVA) family, to provide you with the simplest storage management experience, compared to managing traditional arrays.

By working closely with you to fully understand your needs, HP can design and implement a customized solution that works for you because:

- HP has deep knowledge and expertise in storage systems
- HP provides a seamless, heterogeneous integration
- IT performance and resources will be optimized
- HP provides a more robust environment
- HP solutions work better together with your existing infrastructure

HP solutions are cost effective in that they:

- Require lower operating costs
- Are in a virtualized environment
- Provide customized financing
- Utilize portfolio planning
- Provide superior investment protection and evolution
- Are the right technology at the right price

The right solution for today and tomorrow

HP combines storage virtualization and software in the HP StorageWorks Enterprise Virtual Array (EVA) family, to provide you with the simplest storage management experience, compared to managing traditional arrays. This allows you the flexibility and scalability to respond to specific business needs instantly, providing your IT staff with the focus they need to manage other daily IT tasks, not just storage.

Virtualization enables capacity pooling, simplified management, automatic performance load balancing and dynamic configuration. The HP StorageWorks EVA, with its unique virtualization capability, automates storage by requiring fewer steps to manage the array and aggregates storage with fewer pieces to manage. These devices help optimize storage capacity utilization like no other array and offers maximum investment value and simplicity.

The virtualization features of the HP EVA continue to provide unique capabilities that help you in several areas:

- ROI—better utilization of storage
- Ease of management—simple point-and-click setup and expansion
- Business agility—expand storage without major reconfigurations



- Cost reduction—do more with fewer IT resources, less equipment and less storage space
- Consolidation—exceptional performance allows more data to be stored and accessed by more servers

Who is using HP EVA solutions

HP EVA devices have been installed in and are now supporting a wide range of customer businesses. For a complete listing of customer references, success stories and more, please visit

<http://h18006.www1.hp.com/storage/casestudies/byproduct.html>.



HP EVA solutions support many customers across many industries, here are a few examples:

- **Retail**—Meijer Inc.
- **Financial**—Callcredit, NetBank, PREMIER Bank Card, Banco Bolivariano
- **Healthcare**—Aurora Health Care, Capital Regional Orthopaedic Group, Childrens' Hospital-Boston, Genesis Health System, Priority Health
- **Local, state and federal governments**—City of Fontana (CA), European Legislature, Los Angeles County Department of Registrar-Recorder/County Clerk
- **Manufacturing**—Komax AG
- **Utilities**—Genesis Energy, Scottish and Southern Energy plc
- **Airlines**—Boeing, Continental Airlines, Instituto Nacional de Técnica Aeroespacial
- **Transportation**—Atkins Danmark, DaimlerChrysler Services
- **Universities/Schools**—College of Saint Benedict/Saint John's University, Detroit Medical Center (Wayne State University), Pittsburg Public Schools, University of Oslo

HP EVA solutions are supporting all types of applications, including such diverse areas as database, banking, payroll, e-mail, imaging, airline management, billing, manufacturing, scientific records and medical records.

HP StorageWorks EVA4000/6000/8000 hardware family

The HP StorageWorks Enterprise Virtual Array family is designed for mid-range and enterprise-class environments where IT challenges must be met head on. They help eliminate storage shortfalls that can produce a domino effect across your network.

HP EVA storage devices provide the following features and benefits:

- **High availability, no single-point-of-failure, high performance**—provides industry-leading automation, simplified storage management; helps ensure that business-critical data and applications are available to your users when they need them
- **Highly modular/scalable**—scales up to 72TB, offering storage consolidation for mid-range and enterprise organizations
- **State-of-the-art virtualization**—automatically manage and optimize the storage array, saving time and lowering overall total cost of ownership (TCO)
- **Compatibility across major operating systems**—simplifies storage management
- **Cost effective**—manage more data with fewer IT resources; provides industry-leading TCO

EVA4000



EVA6000



EVA8000



Drive capacity	56 drives	112 drives	240 drives
Random reads	13k I/O/sec	26k I/O/sec	54k I/O/sec
Sequential reads	350 MB/sec	650 MB/sec	1300 MB/sec
Sequential writes	290 MB/sec	500 MB/sec	500 MB/sec
Host ports	4	4	8
Device ports	4	4	8
Loop switches	0	2	4
Drives supported	10k rpm 72/146/300 GB, 15k rpm 72/146 GB, 250 GB FATA	10k rpm 72/146/300 GB, 15k rpm 72/146 GB, 250 GB FATA	10k rpm 72/146/300 GB, 15k rpm 72/146 GB, 250 GB FATA
Operating systems supported	Windows 2000, Windows 2003, HP-UX, Linux, Tru64, Open VMS, Solaris, AIX	Windows 2000, Windows 2003, HP-UX, Linux, Tru64, Open VMS, Solaris, AIX	Windows 2000, Windows 2003, HP-UX, Linux, Tru64, Open VMS, Solaris, AIX

Highlights of the EVA4000/6000/8000 family include:

- New controllers providing higher performance, so you get a more robust system for your investment
- New mid-range model allowing you to select a model that more specifically fits your organization's needs
- Larger disk capacities so you can store more data on fewer disk drives
- Large selection of disk drives so that you can use the type and size of drive that best meets your needs and you can grow easily at any time

HP StorageWorks EVA software solutions

HP StorageWorks Command View EVA Software Suite

HP StorageWorks Enterprise Virtual Array combined with HP StorageWorks Command View EVA software provides a storage solution that is significantly easier to manage than traditional array approaches. The Command View EVA software suite is a comprehensive, yet powerfully simple, software solution to manage EVA units at the lowest

management cost. With one set of software, you can easily and quickly configure and provision storage when you need it, connect to proactive remote monitoring services for 24x7 availability, replicate data, secure LUNs, create scripts and monitor a variety of performance metrics. Command View EVA software replaces HP OpenView Storage Operations Manager (SOM).

For additional data replication functionality, HP StorageWorks Command View EVA provides support for Replica Resync. This allows for quick recovery of a source volume from a Snapclone. A Snapclone is a complete duplication (or clone) of the data existing on a specific disk drive at a specific point in time, allowing you to have two complete copies of any given data set.

Included with the Command View EVA software suite is a new software module called HP StorageWorks Command View EVAPerf. This powerful performance monitoring tool provides you with the ability to analyze EVA array performance metrics quickly. It takes advantage of the standard Microsoft Windows Performance Monitoring Tool (PerfMon) to graphically display EVA performance data and allows you to create your own scripts via a command prompt. Command View EVAPerf helps you more quickly identify performance bottlenecks with the ability to easily monitor EVA performance in real-time, as well as display and view historical EVA performance.



HP StorageWorks Business Copy and Continuous Access Software Suite

HP StorageWorks Business Copy EVA software delivers the advanced snapshot capability for the EVA software array family. HP StorageWorks Continuous Access EVA software delivers unparalleled array-based remote data replication—protecting your data and ensuring continued operation from a disaster. It keeps your enterprise up and running while making the most of your data by supporting crucial business continuance activities such as:

- Keeping applications on line while backing up data
- Testing applications against real data before deploying
- Restore a volume after a corruption or data mine to improve business processes or customer marketing

HP StorageWorks Business Copy and Continuous Access software offers simplicity without compromise while ensuring your valuable business data is protected. Combining Replication Solutions Manager with both Business Copy and Continuous Access allows you to enjoy the benefits of having a single, easy-to-use, unified GUI, so your investment in training is maximized, and resources can be deployed more efficiently resulting in reduced IT costs. Furthermore the automation provided through the job engine and integrated wizards reduce user workload and errors. As a result, Replication Solutions Manager improves revenue generation and drives cost savings through enhanced data availability.

HP StorageWorks solutions for the EVA

Advanced snapshot technology

With HP Vsnap (or space efficient snapshot) technology you can take an instant point-in-time virtual image of a source volume that allocates storage space as needed, offering the most efficient use of storage resources. A standard snapshot is an instant point-in-time virtual copy of the data, created in seconds and usable immediately, providing maximum flexibility for user applications. With a fully allocated snapshot, disk capacity is reserved to accommodate the original size of the source volume. Snapshots are used to ensure business continuance should a source volume need to be non-disruptively restored from disk or to move production data to tape.

High availability

In your business, you cannot afford to experience any instances where you cannot communicate with your stored data. HP path failover solutions help ensure that you always have access to your data while:

- Reducing cost associated with high availability
- Eliminating proprietary failover solutions
- Reducing the complexity of adding failover capabilities

HP is changing the economics of management in the data center. By combining server and storage management, we are enabling customers to dramatically simplify their environments and significantly reduce operational costs, not just acquisition costs.

- Eliminating the need for different solutions for different arrays
- Simplifying deployment of EVA arrays into new and existing environments
- Where possible, preserving your investment in HP StorageWorks Secure Path software

HP path failover solutions provide simplicity without compromise. They help ensure that your data and systems will be accessible at all times, even when you have different types of arrays or there is an issue and one of the paths goes down. Path failover is a critical component for high availability of Storage Area Networks. Failover capabilities reside on host systems and allow for automatic switching of I/O to another available path if an existing path becomes unavailable. Path failover solutions prevent lost data or system downtime due to a failed I/O path on your network.

Infrastructure management— HP Storage Essentials

HP is changing the economics of management in the data center. By combining server and storage management, we are enabling customers to dramatically simplify their environments and significantly reduce operational costs, not just acquisition costs.

HP Storage Essentials is the first open, standards-based suite of storage products designed to integrate into HP's unified server-storage management platform, HP Systems Insight Manager. HP Storage Essentials suite is an open, integrated family of Storage Area Network (SAN) management and storage resource management solutions that enable you to visualize, monitor, report on, provision, and configure your multi-vendor storage environment through a single, web-based enterprise console.

Explore the capabilities of HP Storage Essentials Suite to learn how you can reduce the operational costs of managing your enterprise storage network, get more out of your existing storage investments, and accelerate your business advantage.

- HP Storage Essentials Enterprise Edition serves as the base management console for the suite. It is architected using the latest in industry standards such as SMI-S, WBEM, WMI, JBOS and J2EE.
- HP Storage Essentials Provisioning Manager consists of a centralized wizard for allocating and managing the pools, volumes, LUNs, zones, and zone sets in your SAN. Packaged templates escort you step-by-step through provisioning operations. Using the built-in job queue and scheduler, you can quickly create and schedule provisioning jobs.
- HP Storage Essentials Oracle Viewer allows you to manage the utilization and availability of your Oracle infrastructure. The Oracle Viewer automatically discovers the database, tablespace and files and graphically depicts their infrastructure dependencies.
- HP Storage Essentials Exchange Viewer automatically discovers Microsoft Exchange Server instances, storage groups and message stores, and graphically depicts their dependencies on the SAN. It also assists you manage the utilization and availability of your Exchange infrastructure.
- HP Storage Essentials Sybase Viewer graphically depicts the path that each Sybase element takes through mount points, host servers, volume management software, HBAs, fabric switches, and storage systems.
- Storage Essentials File System Viewer automatically discovers your file systems, logical volumes, and user shares. Conducts high performance scans to collect age, size, and type statistics on every file.
- HP Storage Essentials Chargeback Manager offers two options for managing the costs of storage services. Asset-Based Chargeback calculates costs based on a department's ownership percentage and depreciated value of its assigned storage assets. Storage-Based Chargeback calculates costs based on the actual amount of storage used by each business application.
- HP Storage Essentials Global Reporter extends base Enterprise Edition report features with powerful rollup reporting capabilities that provide aggregated views of distributed data center storage.
- HP Storage Essentials Report Designer extends base Enterprise Edition reports with powerful custom reporting capabilities that satisfy your unique audit, service level management, planning, and communications needs.



The benefits of implementing HP EVA storage

HP StorageWorks EVA solutions offer a number of advantages to your organization. HP StorageWorks EVA products offer you unparalleled simplicity. They are simple to configure, use, provision, manage and protect. You can manage your HP StorageWorks EVA storage simply and respond more quickly to business requirements for additional capacity or reconfigured storage faster and with much less complexity than with traditional array approaches. They provide you with the ability to easily provision basic snapshots and create remote mirrors via an intuitive, easy-to-use graphical user interface (GUI) and powerful common language infrastructure (CLI). You can also:

- Quickly pinpoint performance bottlenecks so applications run at optimized performance
- Greatly reduce the user workload and errors in configuring and managing both local and remote replication environments with an easy-to-use common user interface that utilizes job engines, wizards and host integration
- Manage EVA high performance disk and EVA low cost/high capacity (FATA) drives as one

HP StorageWorks EVA storage solutions provide unmatched optimization of capacity, thus providing better ROI and data protection with immediate access to replicas using unique

Snapclone and Vsnap local replication technologies. This allows the user to select a new RAID type for Snapshots, Vsnapshots and Snapclones. You also have the unique ability to mix and match your storage needs with enterprise-class FC drives and lower cost FATA drives.

You receive industry-leading total cost of ownership value by implementing HP StorageWorks EVA solutions. These solutions use virtualization technology to automatically manage and optimize the storage array and save time. You can save disk space and money when using the HP StorageWorks Business Copy EVA software suite with your HP StorageWorks EVA devices. This solution helps you:

- Maximize capacity utilization based on virtualization technology
- Enable storage consolidation for mid-range and enterprise organizations, scaling up to 72 TB
- Minimize training and costly errors with powerfully simple management and replication features

The HP StorageWorks EVA4000/6000/8000 family of products has increased performance and greater flexibility. They meet the performance needs of the most demanding mission-critical applications with state-of-the-art technology and design. You have a choice of three models to custom fit storage requirements to budget. This will help you to quickly expand your storage to meet changing needs without major reconfigurations, and at the same time improving availability with proactive support through HP Instant Support Enterprise Edition. You will also be able to reduce IT downtime, cost and complexity while increasing productivity

HP is a complete IT solution provider. HP has an industry-leading portfolio including servers, storage and services. By purchasing an HP storage solution you will realize:

- More accountability
- More agility
- A better return on your IT investment

HP is a complete IT solution provider, with an industry-leading portfolio including servers, storage and services.

HP Services

HP offers a variety of services in conjunction with our HP StorageWorks EVA offering. Among these are:

SAN Solution Service

Provides for the implementation of Fibre Channel switches in a Storage Area Network (SAN) environment. The tier and level of SAN Solution Service is determined by the size and complexity of the SAN environment.

HP Data Replication Solution Service for Continuous Access EVA Implementation

Provides implementation and verification of the Continuous Access feature of the EVA storage array. The service is offered at three service levels, ranging from basic installation to more comprehensive implementation that can be tailored to meet the specific needs of your storage environment.

Availability Assessment Services for SAN

Designed to help a customer understand and enhance the high availability characteristics of a new SAN. The customer's SAN infrastructure will be reviewed at a high level and a report produced identifying key issues affecting the availability of the SAN to end-users. Areas of risk will be identified and recommendations made to start addressing those risks.

Availability Management Services for SAN

Applies an established proactive and best practice approach to assist customers in the ongoing maintenance of availability levels in their SAN infrastructure. This service complements the standard remedial and added value software and hardware services by providing a focus on the key areas of IT Management best practices to sustain and align the availability of the customer's business critical systems requirements.

HP Data Migration Service

For open systems, mainframe and mixed environments, you can safely transport your information from your retired storage hardware to a new EVA. Move your mission-critical data without the concern of disrupting your day-to-day operations. Help eliminate unexpected surprises and complexities with the total solution, the HP Data Migration Service. Speed up the process and increase the efficiency of migrating your information across a data center or around the globe, using LAN, WAN or SAN connectivity, with the assistance of HP's highly trained storage experts.

HP Storage Optimization Service

HP storage specialists and technical site assessors will collaborate with your designated IT storage administration staff to gain a thorough understanding of your business needs and heterogeneous storage environment. Focusing specifically on areas of exposure in your EVA storage/SAN



environment, HP will document in detail the architecture of the storage/SAN configuration, including hosts, SAN interconnect devices and any application-critical storage devices.

HP Oracle9i RAC Express Service (US and Canada only)

HP and Oracle address the customer need for highly integrated solutions by providing a solution, which minimizes unplanned and planned downtime to the levels required by the most demanding business applications, such as SAP and PeopleSoft. HP Oracle9i RAC express service should be purchased in lieu of SAN Solution Service.



HP warranty and support services

HP warranty services offer you peace of mind. You can rest easy knowing that HP is there to help you 24x7—via phone or on-site. There is an HP warranty service that fits your unique needs. For more information on HP warranty services, visit www.hp.com/support.

HP Standard Warranty Service

- The HP standard warranty: EVA4000/6000/8000 standard warranty provides 24x7 support, with a 4 hour on-site response. It also includes installation and start-up services. The standard warranty period is two years. This can be extended to three, four or even five years by upgrading your warranty.

HP Proactive 24 Service

- You have the option of adding HP Proactive 24 service, where an assigned HP account manager serves as the primary contact for proactive service. The account manager works closely with your IT staff to understand your environment and goals, document all the components of your infrastructure, recommend changes to improve performance and stability, and monitor ongoing operations through state-of-the-art tools. And, when problems occur, the HP Proactive 24 service delivers comprehensive assistance around the clock. It offers a 2-hour response time for software issues and a 4-hour onsite response commitment for hardware issue resolution.

HP Critical Service

- HP Critical Service is another optional warranty service that can be added to the HP standard warranty. It provides an even greater level of service. Your assigned support team of HP-certified experts first conducts an assessment of where you are today, and then designs a strategy to bring your IT commitments in line with your business goals. If a critical problem occurs, HP Services helps you address it quickly via accelerated recovery and restoration processes. You're immediately connected with experienced support specialists for prompt troubleshooting and resolution. HP Services commits to not just respond to, but actually resolve your hardware problems in 6 hours, although most problems are resolved even more quickly.

Why HP?

For more than 20 years, HP has been an innovator in modular storage and a leader in developing the most openly supported storage systems in the industry—including the HP StorageWorks product line.

HP is the world leader in non-outsourced network storage services with 65,000 service professionals in 160 countries. Included among these are 5,000 storage specialists and 4,500 Cisco specialists.

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage, and ultimately retire your HP solutions. For more information on these services, please contact your HP sales representative or find us on the web at: www.hp.com/go/hpfinancialservices.



For more information

To learn more about HP StorageWorks EVA please contact your HP representative or visit:
www.hp.com/go/storage.

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