HP StorageWorks Executive Overview

Enterprise Segment

Speaker
Title

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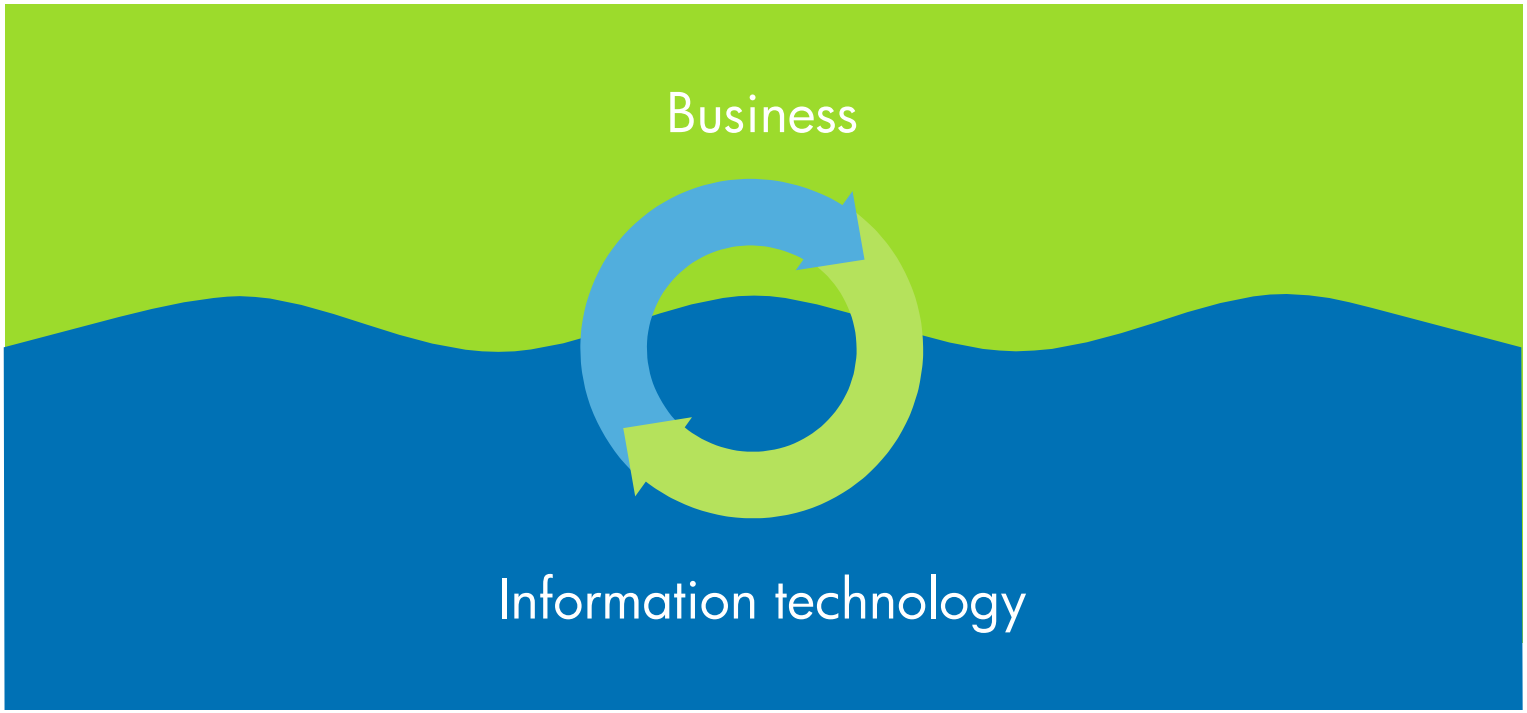
Agenda

- HP Adaptive Enterprise
- Today's challenge
- HP StorageWorks solutions
- HP StorageWorks portfolio
- The HP StorageWorks Grid
- StorageWorks +hp

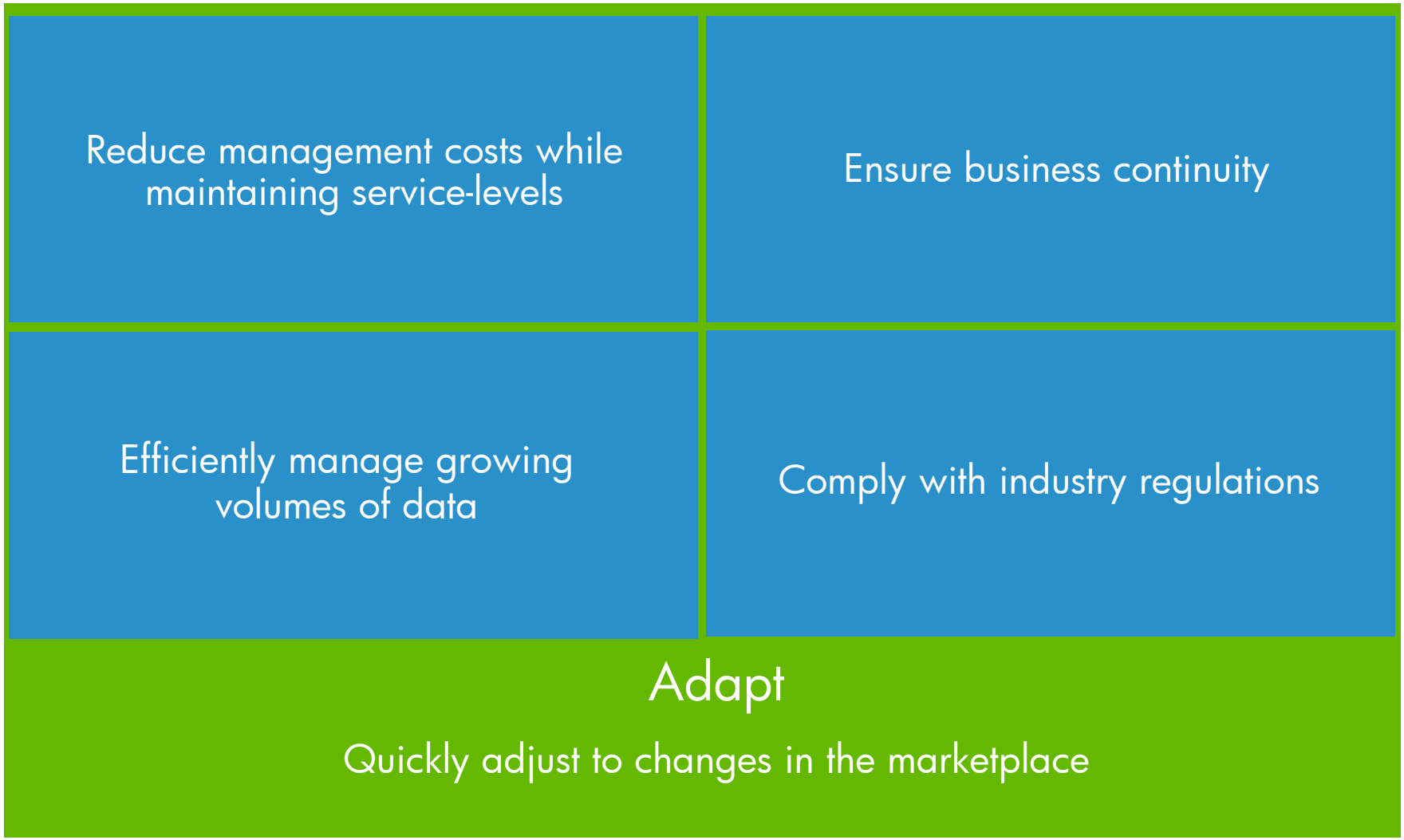
The Adaptive Enterprise

Business and IT synchronized to capitalize on change



Business benefits: simplicity, agility, value

Business & IT concerns merge:
Continuity, Control, Consolidation, Compliance



Broadest portfolio of storage & end to end IT solutions: HP + StorageWorks

Consolidation

- Consolidation solutions & services
- High capacity/high performance arrays
- WAN Accelerator & Clustered Gateway
- SAN infrastructure

Continuity

- Business continuity solutions & services
- NonStop with XP
- Multi-level data protection
- Metro & Continental Cluster & Cluster Extension
- Instant Support Enterprise Edition (ISEE)

Control

- Storage Management Solutions & Services
- Systems Insight Manager & Storage Essentials
- Tiered storage and Data migration tools

Compliance

- ILM solutions & services
- Reference Information Storage System (RISS)
- Medical Archiving Solutions (MAS)

HP StorageWorks: putting information to work

Simplicity | Agility | Value

Solutions make it simple

Protect, optimize, and preserve your information

Concern: Managing data to meet regulatory, legal discovery, liability and end-user needs

Solution: HP ILM solutions

- Application aware and policy based solutions
- Aligned with the needs of specific industries
- Supported by a full range of innovative technologies and services

Value: Capture, manage, retain, and deliver information according to its relevance to your business

Free resources to drive business innovation

Concern: Unmanageable, distributed storage

Solution: HP IT Consolidation Solutions

- A single, sustaining, open platform
- Comprehensive IT Consolidation (Server, Storage and Network) projects
- Proven technology
- Complimentary collaborative services
- Strong partnerships

Value: Reduce complexity, cost, and risks, increase business agility, and improve service levels

Guard critical business processes from disruption

Concern: Data not available where and when you need it

Solution: HP Business Continuity Solutions

- Tight integration between application and data availability
- Certified personnel
- Services that mitigate the business impact

Value: A secure, highly available IT environment

HP StorageWorks product portfolio

Designed for your future

Simplification

- Easy to install & deploy
- Easy to use
- Easy to own

+

Standardization

- Use standard technologies + interfaces
- Common look and feel
- Brings together server & storage admin

+

Modularity

- Extensible architecture
- Customizable to your needs
- Non-disruptive innovation

+

Integration

- Link into current processes
- Link into enterprise management tools
- Link into current infrastructure

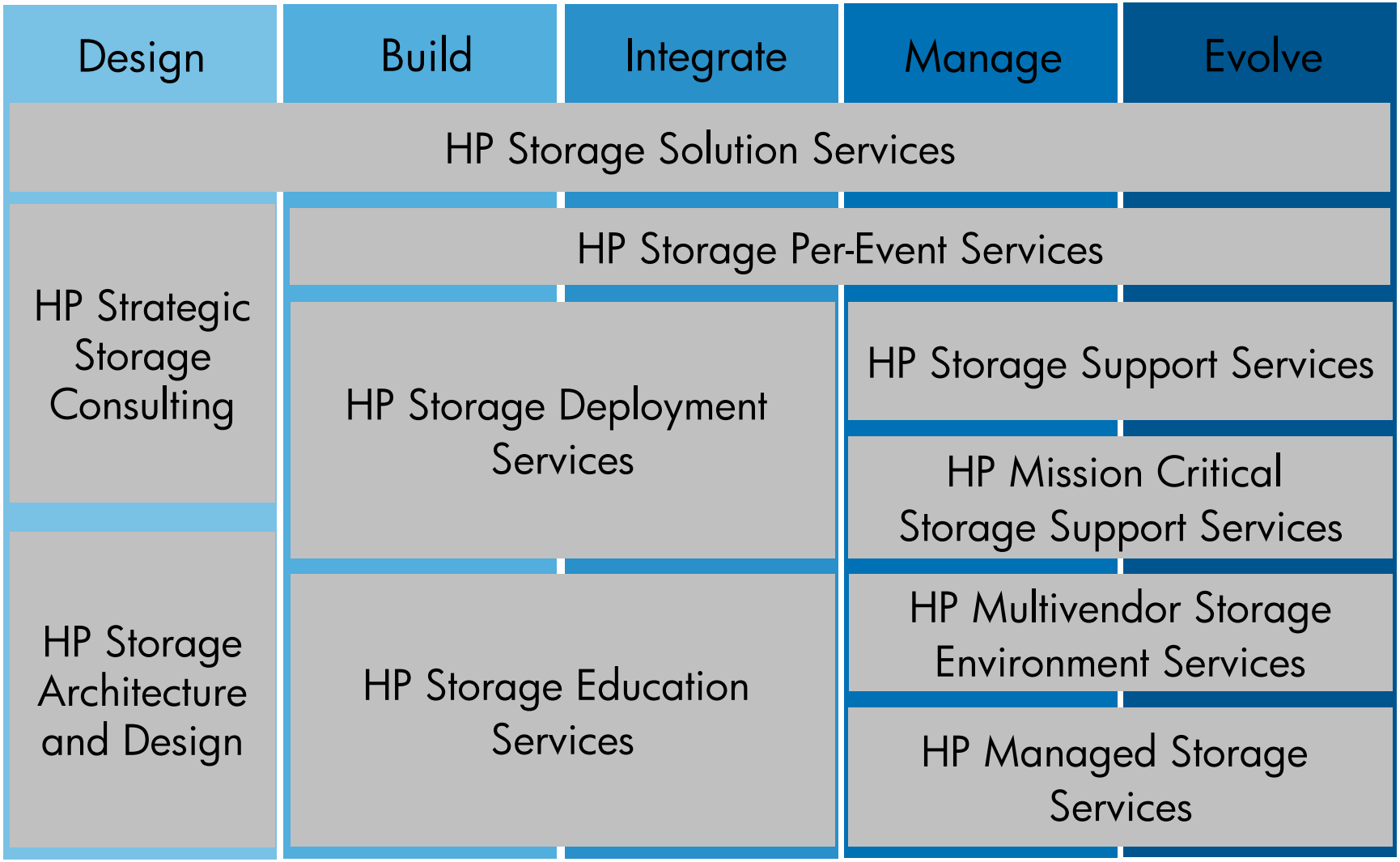
Applied Consistently Across:

- Servers
- Storage
- IT Infrastructure

Results:

- Greater stability and efficiency
- More control and flexibility
- Enables IT alignment

Assess, architect, integrate, and manage your storage infrastructure with HP services



Unified infrastructure management with HP Storage Essentials & Systems Insight Manager

Enterprise Edition: Main console for open, heterogeneous SAN management

Provisioning Manager: Heterogeneous host to array path provisioning wizard

Oracle Viewer: Oracle database availability and performance views

Exchange Viewer: Exchange database availability and performance views

Sybase Viewer: Sybase database availability and performance views

SQL Viewer: SQL database availability and performance views

File System Viewer: File system scanning – reclaim wasted space

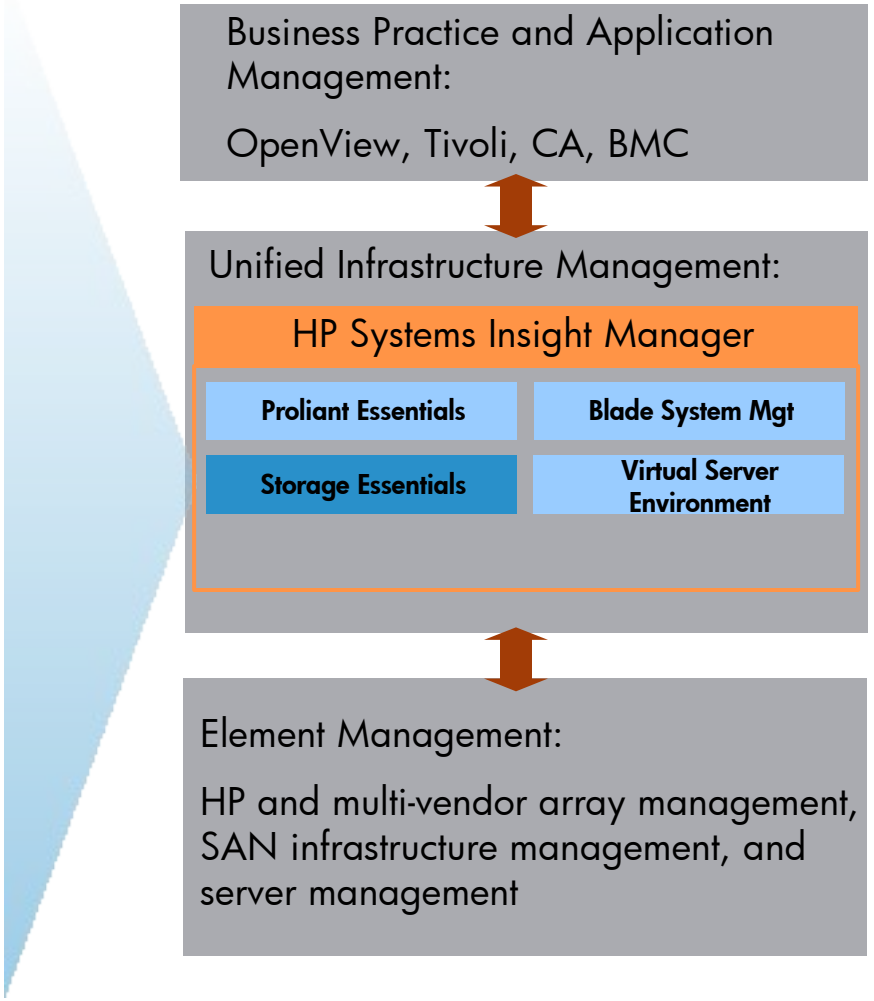
Chargeback Manager: Asset based chargeback management. Assign tiers

Global Reporter: Rollup reporting of multiple Storage Essentials Server instances

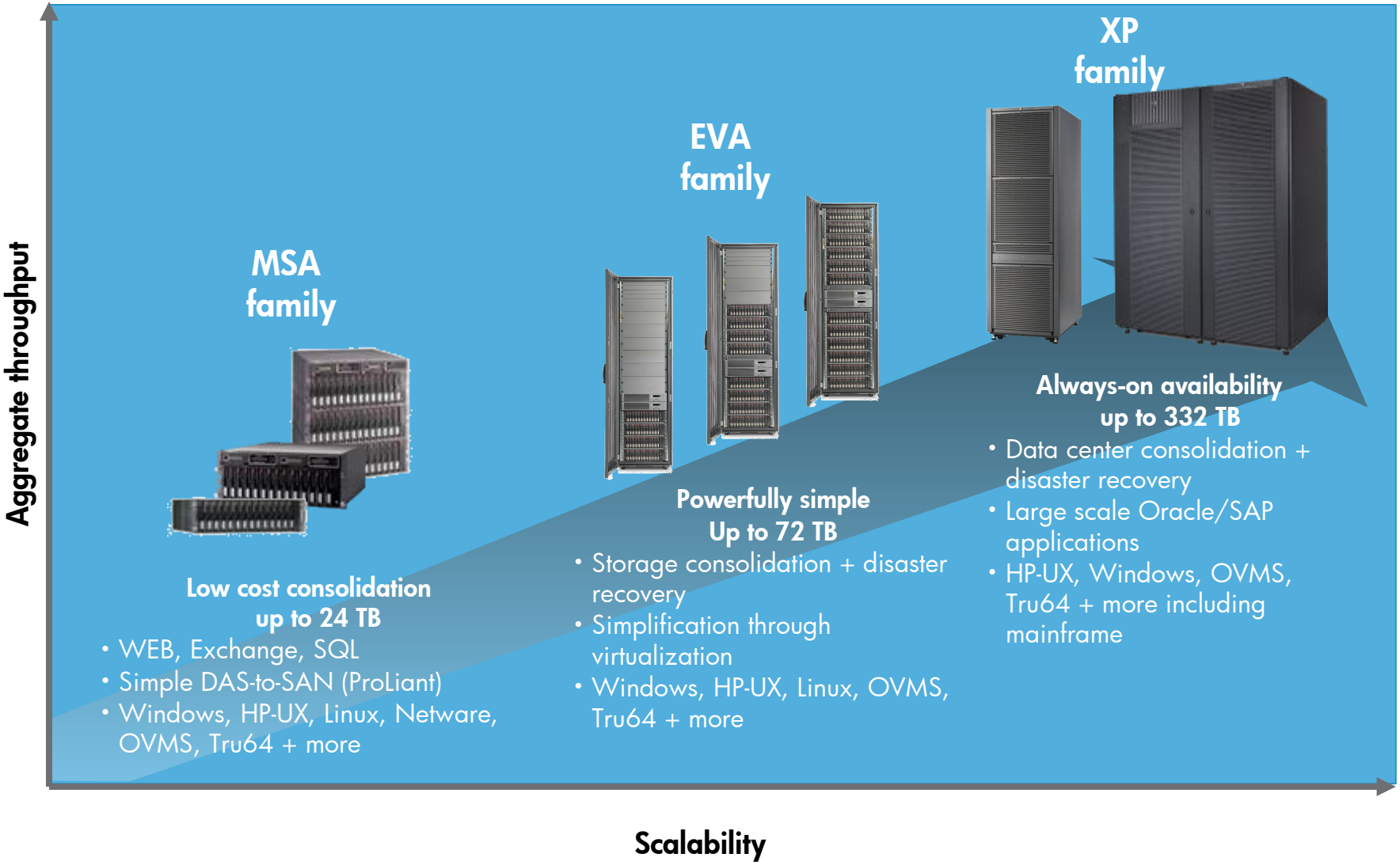
Report Designer: Develop custom reports for storage infrastructure

NAS Manager: Reporting (disc, topology, cap, perf, etc.) and event management of NAS

Backup Manager: Visualization of backup elements, dependency mgmt, and reports



Modular, flexible and scaleable storage with HP StorageWorks arrays



Clean Harbors

- Video: Watch the video

Simple, affordable, scalable HP StorageWorks NAS

Enterprise File Services

Small and Medium Business	Branch Office	Enterprise

ProLiant Storage Servers
- Affordable, easy-to-use Windows powered NAS solutions with optional iSCSI connectivity

EFS WAN Accelerator
- Up to a 100-fold increase in wide-area network (WAN) throughput for file, email, and web traffic

EFS Clustered Gateway
- Superior NFS file serving performance, scalability, and consolidation

Manageable, open storage networks with HP SAN infrastructure

Infrastructure solutions that span the enterprise

Enterprise-class

SAN Director 2/128

Director 2/140

MDS 9506

MDS 9509

Mid-range

SAN Switch 4/32

Edge Switch 2/32

MDS 9216i

MDS 9216A

MDS 9140

Entry level

SAN switch 2/16

Blade 2/8

Edge Switch 2/24

SAN switch 2/8V

4GB SAN switch

Edge Switch 2/12

MDS 9120

B-Series **M-Series** **C-Series**

HP StorageWorks data protection solutions for businesses of all sizes

Disk-Based Solutions

NEW

ProLiant Data Protection Storage Server

- Rapid and reliable LAN backup for Windows file servers
- Hourly snapshots
- End-user control over restore

HP VLS 6000

- Dramatically improves backup and restore performance in your SAN
- Integrates seamlessly into the existing backup environment

Tape Solutions

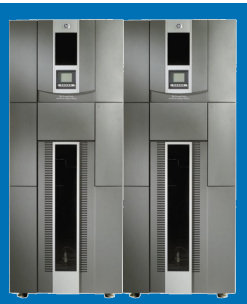
- Wide range of capacities and performance
- From direct-attach to large-scale SANs
- Cost-effective removable media

Tape Drives

Autoloaders

MSL Series

EML E-series



ESL E-series

Storage Media

Optical Solutions

- Long-term archival storage
- Removable UDO media
- Scalable capacity

30ux Drive

700ux Jukebox

1900ux Jukebox

7100ux Jukebox

Entry-Level **Midrange** **Enterprise**

Effective information management with HP Advanced ILM portfolio

Data Discovery & Classification

- AutoStore
- Output server
- Surveillance & Monitoring
- HP Services & Consulting

Storage Tiers

Operational
- MSA, EVA, XP
- NAS

Reference
- Reference Information Storage System

Removable
- MLS, ESL, EML libraries
- Optical
- Virtual Library System

Data Movement

Migration
- File System Extender
- ILM Migration Agent

Replication
- Continuous Access
- Business Copy
- Storage Mirroring

Replication
- Virtual Replicator
- Flex Copy

Continuous information availability

- D2D
- Traditional backup – Data Protector
- Virtual Library System
- Search/retrieve
- LTO-3 Worm
- UDO Worm
- Information Management Platform

Application Aware ILM

- Email archiving – RIM for Messaging
- Database archiving
- Imaging & print to digital
- SAP
- Manufacturing apps
- Medical Archive Solution

SERIVCES & SOLUTIONS

NASDAQ

- Video: Watch the video

StorageWorks
winning accolades

ProLiant DL585
Enterprise File Svcs Clusterd Gateway
Storage Essentials 4.0
"Best Products of 2005"
InfoWorld , Jan '06

StorageWorks EVA
Finalist – Most Valuable Product (MVP) Awards
May 9, 2005

InfoWorld

Reference Information
Storage System
"a solid platform to aid in compliance"
InfoWorld, March 3, 2006

Network Computing

ProLiant DL380 G4 Storage Server
"a good fit with low-cost &
ease-of-management goals."
Network Computing, January 20, 2005

StorageWorks Ultrium 960 Tape Drive
"RECOMMENDED"
"ALIST"
PC Pro, May 2005

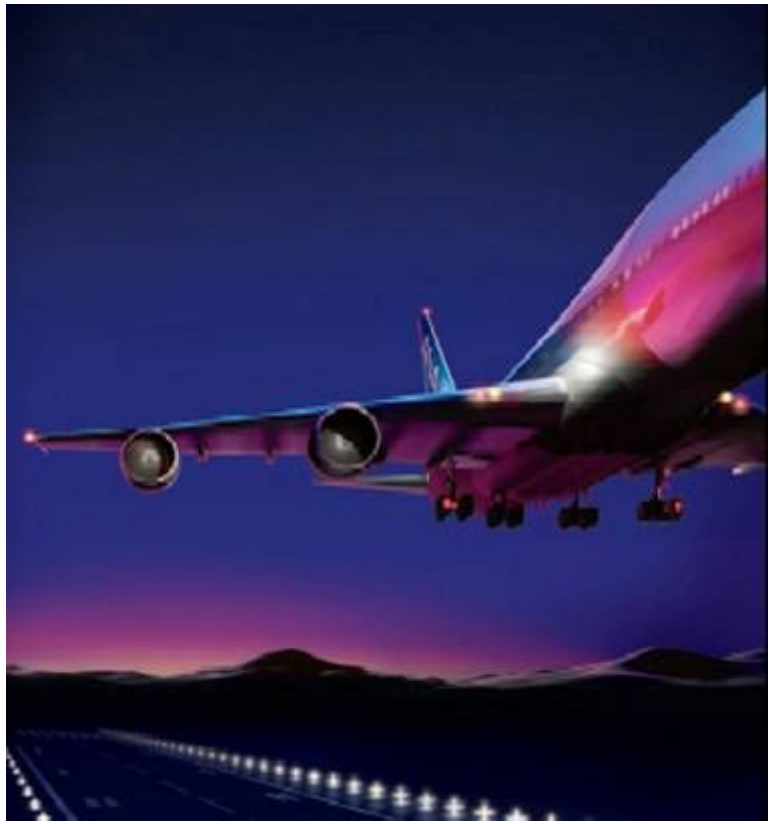
STORAGE

StorageWorks MSA1000 Small
Business SAN Kit
"Product of the Year"
February 2006

hp
Solving tomorrow's
challenges

HP StorageWorks

SAN:	Leader
Software:	Growing
Services:	Leader
Tape:	Leader
NAS:	Outpacing market



HP StorageWorks Grid

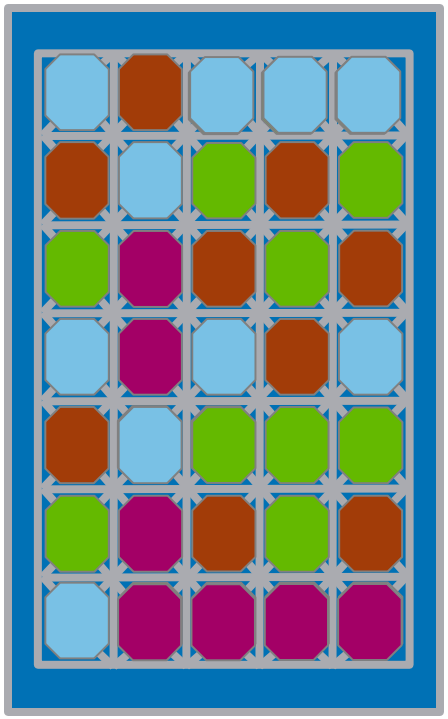
Architecting a future that will help you put information to work

- Simplify management without compromising control
- Adapt storage capabilities when business demands
- Grow capacity without limiting performance
- Today's technology investments are protected in tomorrow's StorageWorks Grid

Single System Image

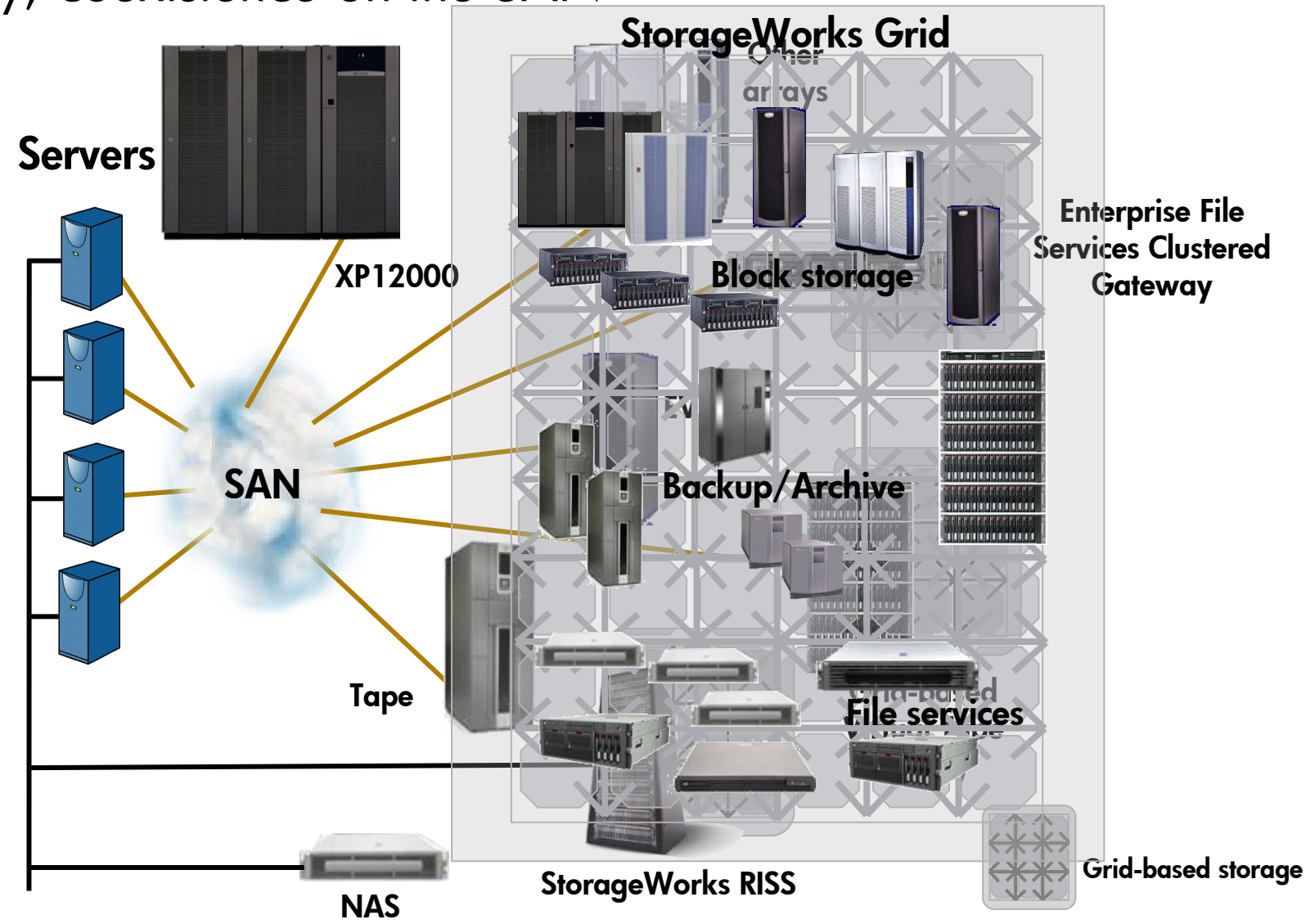
Scale out

Standard Technologies

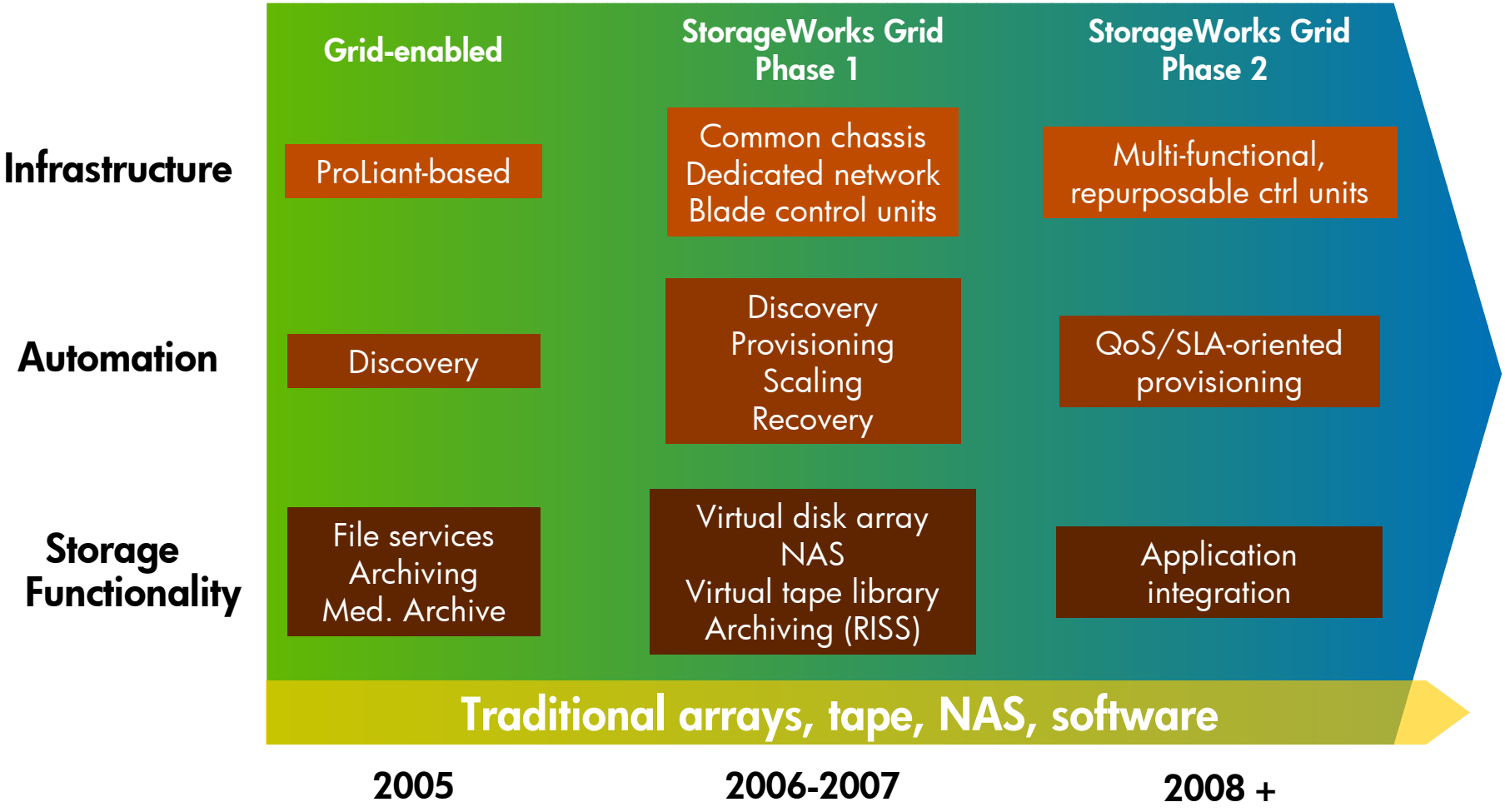


StorageWorks Grid

Initially, coexistence on the SAN

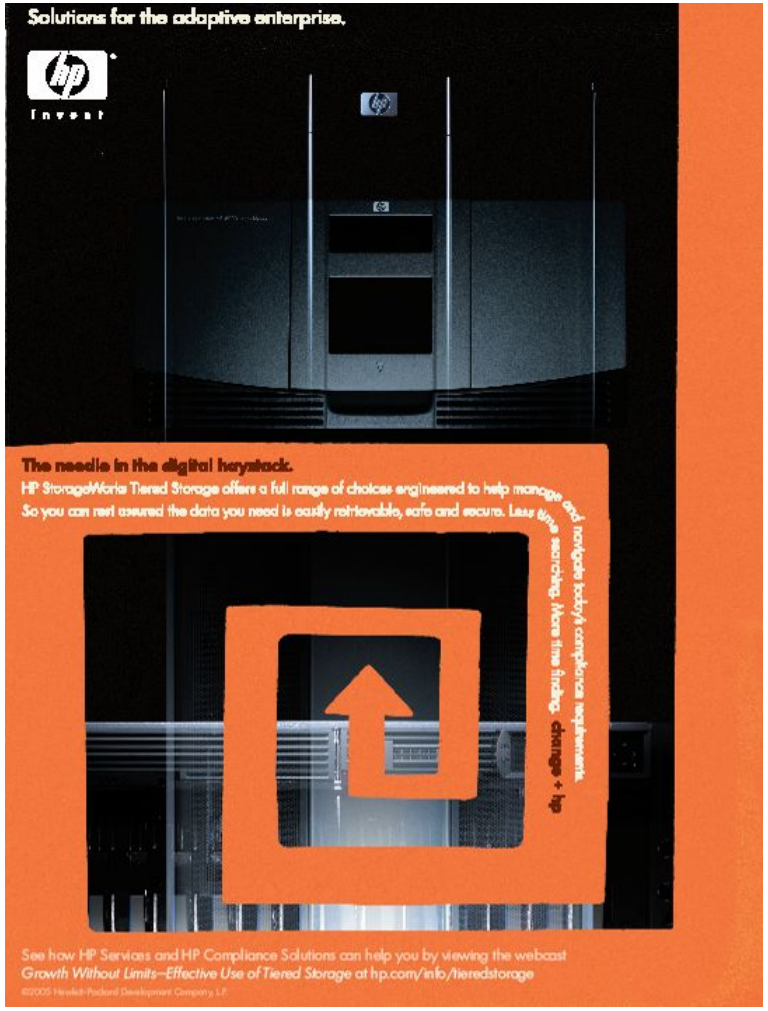


HP StorageWorks Grid Roadmap



HP StorageWorks
+hp: total solutions for the Adaptive Enterprise

- Delivering value, simplicity, and agility for the Adaptive Enterprise
- Enabling enterprises to put information to work
- Proven, industry leading storage portfolio addressing enterprise needs
- Designing the future with the visionary StorageWorks grid architecture
- For more information, visit: www.hp.com/go/storageworks



invent

Customer Success Stories, Videos, & Quotes Library:

HP StorageWorks
Reference Information Storage System

NASDAQ

Business needs

- Compliance with SEC regulation (17a-4) for e-mail retention
- Automated retrieval process. Currently very manually intensive

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

- RISS for email archiving
- 2 locations with replication, ensuring disaster tolerance and compliance with SEC "offsite" copy requirements

Customer benefits

Simplicity

- Automated -- easy to install, use, manage
- Breakeven in one search. Additional searches yield additional ROI

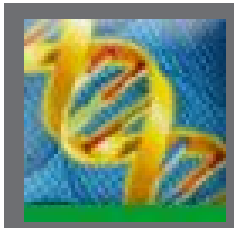
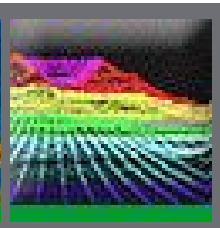
Growth

- Scale capacity and performance

Change

- HP expertise, knowledge and relationship

HP StorageWorks
Scalable File Share

Pacific Northwest National Labs (PNNL)

National supercomputing laboratory addressing environmental, energy, health and national security issues

TOP 5 SUPERCOMPUTER SITES (November 2003)

Business needs

- Faster answers from complex long-running simulations
- Higher scalability from faster interprocessor communication and balanced I/O
- High capacity and high bandwidth sharable file systems

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

- One of the "Top 5" fastest supercomputers (11+ TFLOPS, 1800+ Itanium 2 processors)
- High throughput from 2.5 GB/s of scalable-shared bandwidth to 53TB Lustre server
- HP design, installation, integration, and support

Customer benefits

Simplicity
- Centralized, easy to use, manage, and expand

Agility
- Faster more accurate analysis in research to understand impacts to US environment
- Leverage existing IT investments

Value
- Cost-effective scalability leading to faster times to solution and better science

HP StorageWorks
Delivering Scalable, highly available solutions

Fleurop-Interflora

Fleurop-Interflora is the world market leader and best known flower ordering service in Europe, supported by over 55,000 carefully selected affiliated flower shops in over 160 countries.

Business needs

- Scalable, high availability local environment for data management

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

- SAN with MSA1000 and Microsoft cluster
- OpenView Storage Virtual Replicator
- ProLiant DL 580 G2
- ProLiant DL 380 G2
- 2 external 2Gb SAN switches
- Installation Service
- Service contract

Customer benefits

"…The systems are faster, more flexible, and we can use the language module we want for each country as well as take care of special requirements. New features can be added quickly without any problem. And last but not least, the infrastructure as good as pays for itself…This is all the more important because the flower market is not expanding: in this business, you can only hold your ground through efficiency."

HP StorageWorks
Consolidating File-Print services & storage

Meijer

In 70 years, Meijer Inc. has grown from a corner grocery store in the midst of the Depression to one of the largest privately held companies today.

Business needs

- Build an IT foundation for utility-based computing
- Reduce infrastructure operating and support expenses
- Consolidate and centralize file-print services and storage

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

- 2 NAS B3000 (now ProLiant DL380 G4 Storage Server)
- EVA3000 for file serving
- EVA3000 for MS Exchange
- SAN Switches 2/8 EL
- 100s of ProLiant servers (DL360, DL380, DL580)
- 1000s HP desktop & notebook computers
- OVO, MS Windows Storage Server, Exchange Server
- Services

Customer benefits

- Enables Meijer's IT staff to construct a utility-based infrastructure based on standards
- Consolidates servers and storage
- Save the human resources expense of 2.5 FTE supporting the file serving environment

HP StorageWorks
Helping customer comply with regulations

Aurora Health Care (www.aurorahealthcare.org) is a leader in improving access to health care for the people of eastern Wisconsin. From Illinois' southern border to Michigan's upper peninsula, Aurora provides care at sites in more than 80 communities.

Business needs

- Streamline cumbersome backup processes for patient records
- Ensure compliance with federal and state guidelines
- Improve IL M strategies
- Reduce manual labor, freeing IT staff for more valuable tasks
- Deploy technology that can scale to match rapid corporate growth

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

Hardware
- 3 HP StorageWorks Enterprise Virtual Array 5000 (EVA5000) systems
- 4 HP AlphaServer GS1280 computers
- HP StorageWorks ESL model 712e Tape Library
- HP StorageWorks E-Series LTO Ultrium cartridges

Software
- HP StorageWorks Command View ESL
- HP OpenVMS V7.3-2
- HP OpenVMS volume shadowing
- Cerner Millennium Health Information Management Solution
- Oracle Database 8.1.7.4
- Consulting and integration

Services
- Implementation
- HP Care Pack services – 24x7, 4-hour response (Proactive 24)

Customer benefits

- Helps Aurora comply with regulations concerning patient records – including HIPAA
- Provid es scalability, superior business-continuity capabilities, improved utilization, and solid security
- Reduces time required to perform database backups from 15 to 4 hours.
- Faster backups help free IT personnel to focus on other tasks.

HP StorageWorks
Helping automate storage management

The High Performance Computing Center (HLRS) at the University of Stuttgart was founded in 1995 as the first federal high-performance computing centre in Germany. It provides supercomputing power for technical and scientific applications to research institutions as well as external and industrial partners.

Business needs

- Provide high-capacity, economical storage to meet current and future needs
- Give users fast, reliable access to very large data files
- Provide easy-to-use, tiered storage management tools

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

HP solution

Hardware

- GRAU Data Storage INFINISTORE XL tape library

Software

- HP StorageWorks File System Extender (FSE) tiered storage management software
- Red Hat Linux

Customer benefits

- Cost-effective, tiered storage management
- Scales up to 1.5 PB of data
- Transparent file access for users
- Automated file management for reduced administrative time
- Low power and space requirements
- Facilitates data recovery in case of a disaster

Customer Success Story Videos

- Visit this website for the latest storage success story videos: http://h18006.www1.hp.com/storage/highlights/videos.html
- You can integrate video:

1. If you will have internet access when giving the presentation, you can simply copy the "watch the video" link for the presentation that you want to include from the presentation website. Highlight "watch the video", right click, select "copy", and paste the link into a slide in the PowerPoint deck. To run the video, click on the link in presentation mode and PowerPoint will launch the video from the presentation website.

   Or

2. You can save the file to your hard drive by right clicking on the "watch the video" link. Then insert the video into the power point using: Insert > Movies and Sounds > Movie from File > Navigate to where you saved the video file. The presentation is not embedded in the PowerPoint file, and will only work if the pointer to the video file is not broken.

"There are so many advantages to having one, powerful vendor like HP that can integrate all our solutions into a cohesive, flexible infrastructure."

Nader Karimi

Chief Information Officer, SAG
Producers Pension and HealthPlans

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

"We chose HP storage virtualization solutions because they enable us to derive more profitability from our services. We established a highly reliable ISP platform at half the annual cost of comparable storage systems."

Peter Claerhoudt

Infrastructures Manager, KPN Internet Solutions

For full story see:
http://h18006.www1.hp.com/storage/casestudies/index.html

Awards library

CRN Channel Champions Technical Winner: SAN & NAS

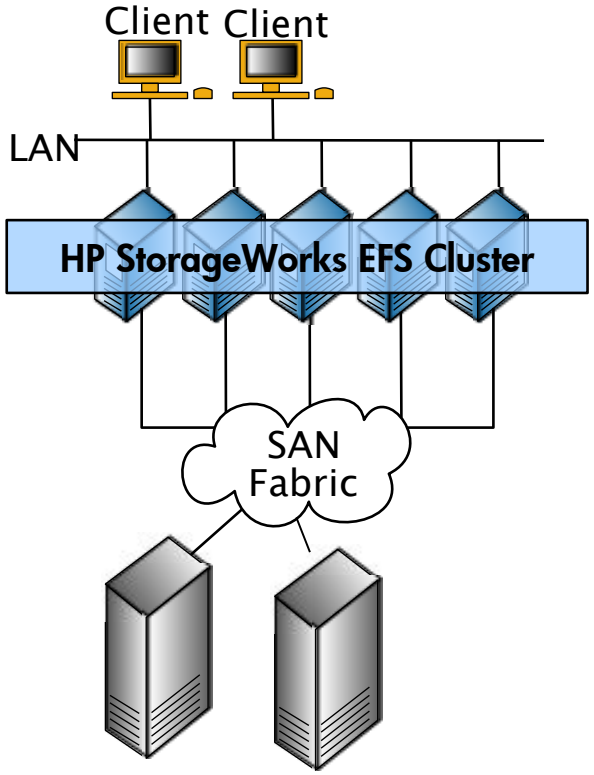
- HP #1 in SAN and NAS technical category
  - Product Reliability, Price/Performance, Scalability, Interoperability, and Management Features
    - Leader in partner collaboration and driving industry standards
    - Largest global team of SAN-certified engineers (3400+)
    - Proven expertise with more than 2500 successful SAN implementations worldwide
    - HP has installed 3 times more SANs than EMC and almost 3 times as many Open SANs as IBM!
    - HP NAS Portfolio is based on open industry standards; modular, scalable, flexible architecture

More detailed product slides

HP StorageWorks EFS Clustered Gateway

HP enters high-end NAS market at 50% or more savings over NetApp and EMC

- This fully-symmetrical clustered file system helps customers put information to work by delivering:
  - standards-based alternative to proprietary offerings by leveraging the ProLiant platform
  - aggressive pricing at one-half to one-third the cost of existing leading solutions
  - global namespace across the cluster
  - the first product focused specifically on high-performance NFS file serving needs
  - mission-critical availability and full data integrity with single or multiple server failures
  - scalability with infrastructure simplification (up to 16 nodes)

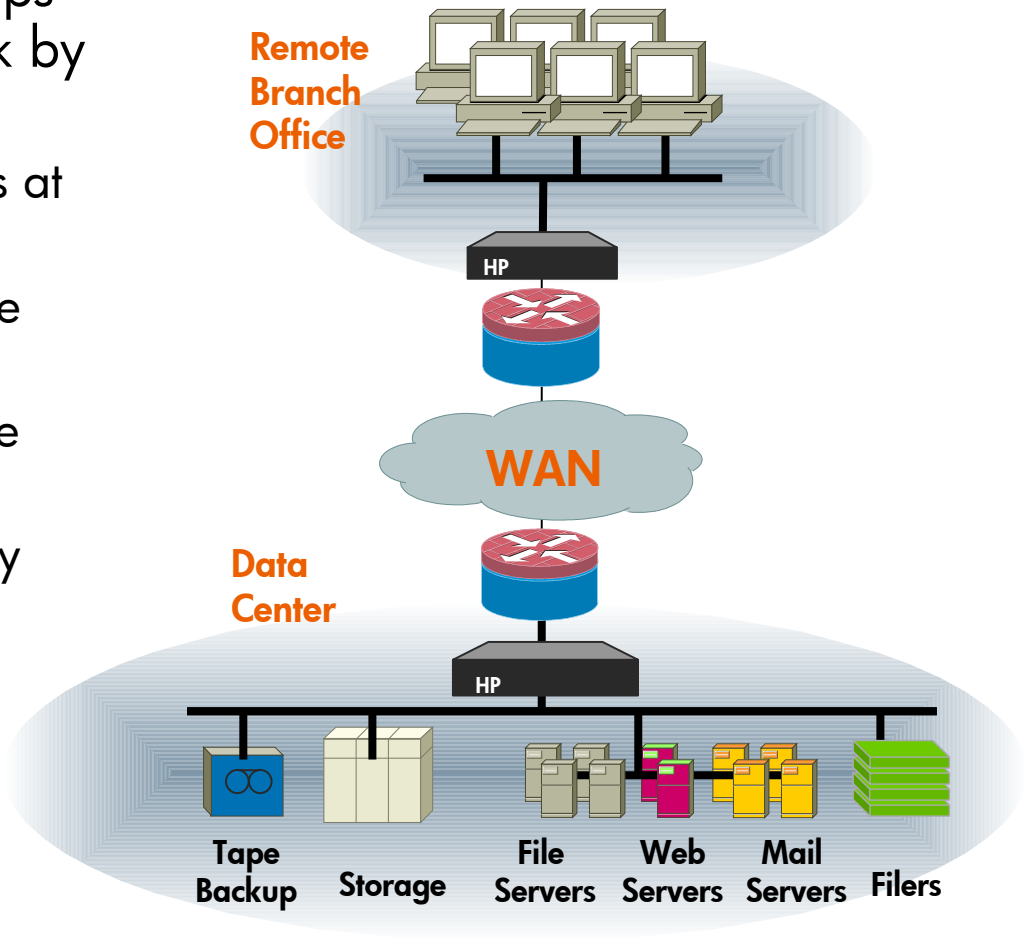


HP StorageWorks EFS WAN Accelerator

Speeds up branch office applications by up to 100x

This ProLiant-based appliance helps customers put information to work by delivering:

- LAN-like performance for end-users at remote sites and branch offices
- a 40% reduction in TCO for remote office infrastructures
- up to a 20-fold increase of effective bandwidth of existing WAN links
- improved regulatory compliance by centralized management of data
- seamless integration into existing ProLiant environments
- more reliable data protection



HP StorageWorks 6000 Virtual Library System

Dramatically improves backup and recovery performance

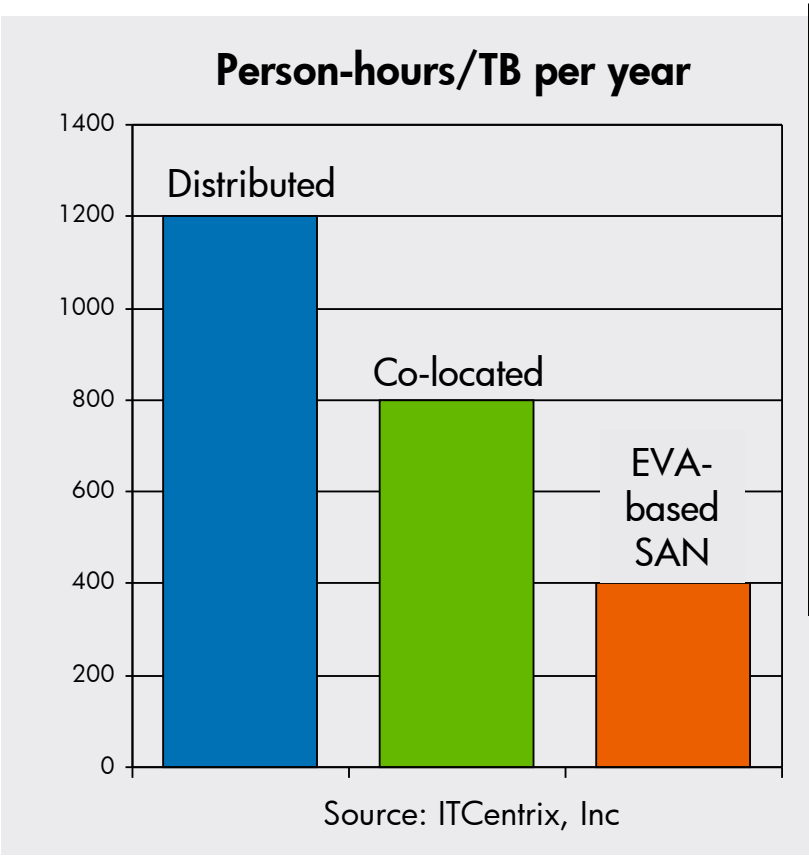
- Integrating seamlessly into the existing data protection environment and helping customers put information to work by delivering:
  - Improved performance
    - Backup multiple slow SAN hosts in parallel, reducing backup times by up to10x
    - Single-file restore and recovery in seconds
  - Simplicity
    - Provision backup resources in under 10 minutes
    - Emulates popular HP tape drives and libraries
  - Scalability: Increase capacity and performance as your requirements change
  - Reliability: Protects backup and recovery from disruptive SAN events

HP StorageWorks 4000/6000/8000 EVA

Enhanced and expanded EVA family maintains industry's lowest disk array TCO

This powerfully simple disk storage solution helps customers put information to work by delivering:

- unparalleled simplicity and lowest TCO
- refreshed EVA family with three models to satisfy a broad range of budgets, capacities and performance
- new controllers with improved performance, higher capacity support, larger cache, and more Fibre Channel ports
- functionally robust and competitively-priced local and remote replication offerings
- extended cluster support solutions that provide an integrated application and storage failover
- integrated disaster recovery solution services, backup and restore solutions

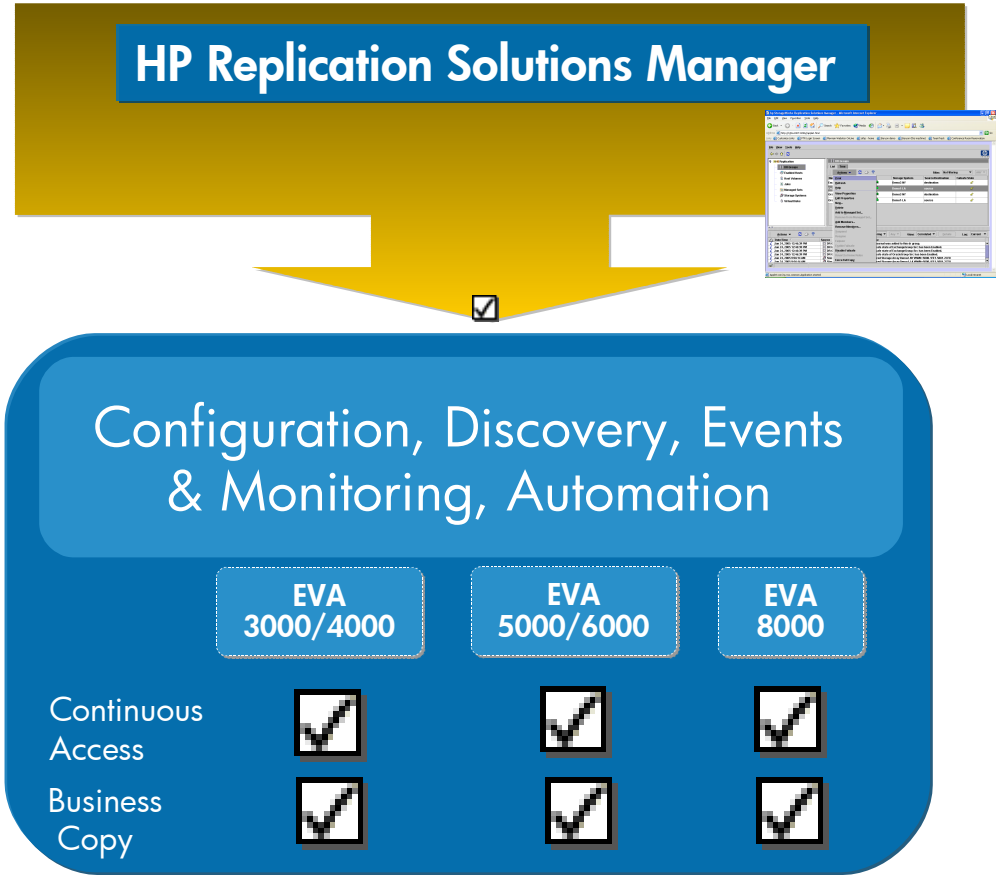


HP StorageWorks Replication Solutions Manager

Intuitive, easy to use, integrated GUI across EVA family

This powerfully simple, mid-range disk storage solution helps customers put information to work by delivering:

- powerfully simple management with easy provisioning
- instant data replication for immediate application use
- integration with HP OpenView and HP Storage Essentials management software
- comprehensive replication solutions

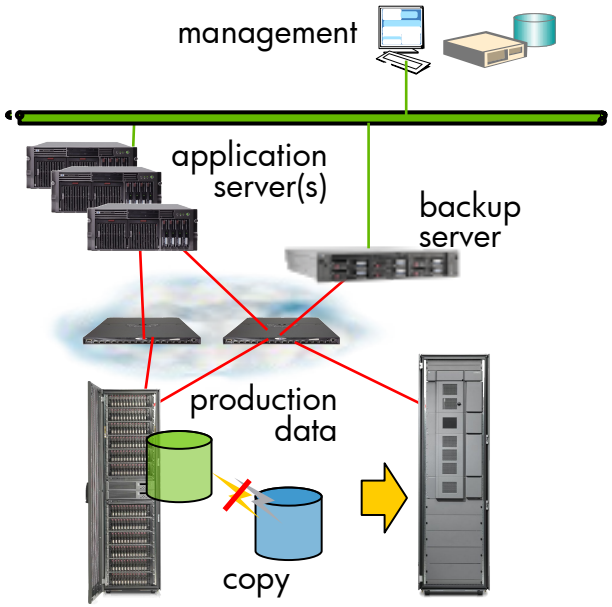


HP StorageWorks EML Tape Library

Expands HP's enterprise library family and ideal pairing with EVA

This scalable, entry-level enterprise tape library helps customers put information to work by delivering:

- robust backup solutions for the EVA (Instant Recovery and Zero Downtime Backup) for tightly integrated EVA data protection
- high density and cost-effective scalability (103 slots to over 440 slots and up to 16 Ultrium tape drives)
- HP certified backup solutions (including third-party products) that customers can deploy rapidly and confidently
- ETLA's Secure Manager to protect backups from SAN disruptions



Zero Downtime Backup for the EVA using the EML E-Series and HP OpenView Data Protector

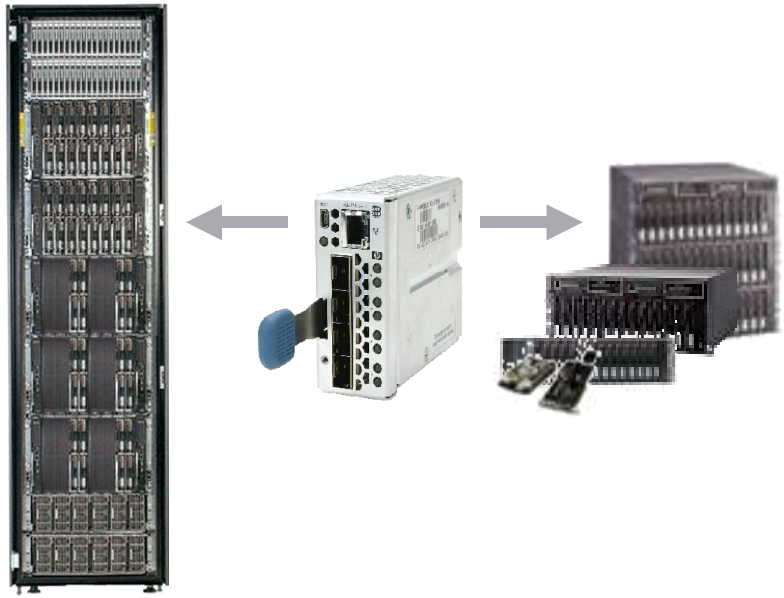
HP StorageWorks ILM Services

Leveraging HP's deep knowledge of business, technical and industry requirements

This expanded portfolio of 5 new ILM services help customers put information to work by delivering an:

- ILM Discovery Workshop to determine the potential business value of ILM solutions
- ILM Business Value Analysis to develop a TCO/ROI analysis on an end-to-end approach
- ILM Business Requirements Analysis to align business needs with possible technical solutions using best practices
- ILM Data and Information Discovery Service to identify data types and create data service levels and business requirements based on usage patterns
- ILM Policy Definition Service to develop a set of data archival and retrieval policies to meet regulatory, litigation, liability and end-user needs

New Brocade FC switch for HP BladeSystem

Extends consolidation across the infrastructure

- Consolidation of storage, server and Fibre Channel infrastructure as well as storage and server management silos
- Reduction in cables and reduces SFP components
- Extension of significant cost savings from blade FC HBAs
- “Zero-foot print connectivity” for savings in rack space for more solution components
- Factory Express services to build fully integrated rack solution
- HP SAN Solution Service encompasses all the activities for a successful implementation