



hp storage solutions for Exchange 2000

table of contents

executive summary	2
business needs	3
availability	3
scalability	3
manageability	3
solution summary	4
return on investment (ROI)	5
solution description	5
business continuity solutions for Exchange 2000	5
rapid restore for Exchange 2000	5
hp StorageWorks virtualized storage management for Exchange 2000	5
storage configuration solutions for Exchange 2000	6
DAS to SAN Exchange 2000 migration solution	6
entry-level Exchange solution	6
mid-market Exchange solution	6
enterprise Exchange solution	6
value proposition	6
services	7
why hp	7
for more information	8

executive summary

Messaging is no longer a synonym for email. Today's enterprise depends on messaging to complete a broad range of business-critical activities successfully—from collaborating on strategic initiatives, to integrating voice and video into workflow processes, transferring business-critical documents, sharing group calendars, and streamlining communication among employees, partners, and customers.

Microsoft Exchange 2000 is an increasingly popular enterprise collaboration platform. The soaring volume of data transmitted by Exchange 2000 can create critical storage and storage management challenges. Enterprises must cope with the high cost of expanding network storage capacity to meet escalating user demands.

HP enterprise storage solutions for Exchange 2000 provide proven and integrated solutions based on industry best practices and pretested configurations. These solutions provide enterprises with a single, centralized storage platform and the management tools needed to successfully manage even the largest Exchange 2000 environments. By simplifying information sharing and ensuring the availability of key data, HP enables enterprises to reap even greater benefits than they previously thought possible.

- **Resilient**—Provides best practices to maximize Exchange 2000 availability.
- **Available**—Provides ultra-fast recovery to quickly restore business to operational mode.
- **Manageable**—Delivers simplified implementation and management leveraging the HP OpenView family of management tools.
- **Reliable**—Engineered within Microsoft support guidelines.
- **Comprehensive**—Takes the guesswork out of deployment by including all necessary components (both HP and third-party) to ensure predictability and control.
- **Optimized**—Includes scripted examples, performance data, and best practices to provide an automated, problem-free deployment.
- **Serviceable**—Deploys characterized, pretested components, resulting in simplified installation and support.

By providing tested solutions that include all the critical elements you need—server, storage, tape backup, management software, services, and more—HP helps you configure and implement a desired Exchange solution quickly, with reduced risk and investment. Each solution represents a fully tested, supported, and scalable Exchange solution that provides a clearly defined service level.

“By partnering with companies like HP, the Worldwide Prime Integrator for Exchange 2000, we are able to deliver highly beneficial storage solutions to our customers. The HP StorageWorks Rapid Restore for Exchange 2000 and HP StorageWorks Virtualized Storage Management for Exchange 2000 solutions take advantage of HP's highly scalable and easy-to-manage storage systems and management software, in addition to their expertise designing, deploying and managing Exchange 2000 infrastructures. These HP StorageWorks solutions provide a great way for customers to maximize the availability of their Exchange 2000 environment.”

Kevin McCuiston, Microsoft Corporation
Director, Exchange Marketing

business needs

availability

The typical organization running Exchange experiences an average of 84 minutes of unplanned downtime a month,¹ and the losses resulting from Exchange downtime average between \$1,000 and \$27,000 per minute.² The availability of this mission-critical application directly impacts companies' bottom line, and business continuity has come to the forefront of IT infrastructure planning and implementation. HP Exchange solutions address the availability issues from hardware, software, and recovery.

- **Hardware**—The striping and mirroring capabilities of HP storage arrays can prevent data loss caused by hard drive failure. And the redundancies built into the arrays eliminate the downtime resulting from any possible component failure. By adding a Storage Area Network (SAN), redundancies can be built in the configuration to keep availability at the highest level possible.
- **Software**—Microsoft Cluster Server (MSCS) setup allows application failover to help prevent server downtime. HP StorageWorks Secure Path software provides path failover if the connection to storage is lost as a result of hardware failure.
- **Backup and recovery**—HP solutions provide backup with minimum impact to availability, and recovery within minutes, not hours. The HP storage arrays also have a disaster recovery capability that enables geographically dispersed sites to fail over the Exchange application.

scalability

In 1999, the daily volume of email was 3.5 billion; by 2003, it is forecasted that email volume will be over 9 billion.³ As messaging content becomes richer (attachments and enclosures) and more varied (voice and video integration), volume is exploding. With this tremendous growth rate of 36 percent per annum,⁴ performance and capacity must scale to support Exchange growth and not affect availability. Such growth requires an extremely scalable storage infrastructure. The HP storage solutions address the scalability issues by providing capabilities to:

- Show you how to move from a direct-attached environment to a SAN-based infrastructure.
- Increase storage capacity online without downtime.
- Add servers online in a SAN environment.
- Virtualize storage across the SAN to allow for uninterrupted growth as your Exchange user base expands.

manageability

Many organizations have come to realize that they are not utilizing their resources effectively because of the proliferation and distributed deployment of Exchange servers and infrastructure throughout their organization. This leads to the inability to scale neither their server nor storage without experiencing downtime. Additionally, this ineffective use of resources can result in lower performance, under-utilized storage capacity, higher management resources required, and an overall higher cost of ownership.

¹ Creative Networks, The Impact of Effective Storage Technology on Exchange TCO, 1/20/00

² The Standish Group, Dennis, Massachusetts

³ CFO magazine, "The Phantom Menace," June 1999

⁴ Michael Overly's E=Policy: How to Develop Computer, Email, and Internet Guidelines to Protect Your Company and its Assets, American Management Association, 1998

HP storage solutions address manageability issues by providing a common management tool for all applications, storage, and devices on the network. All the device management tools are integrated into the HP OpenView platform, so you can manage your storage or any other device on the network easily.

With a common SAN infrastructure and associated management tools, it is no longer necessary to segregate and deploy storage by operating system environment or by application. The total cost of ownership for storage can be dramatically reduced.

“The relationship between Microsoft and HP is historical, broad and deep. The HP DAS-to-SAN Exchange 2000 migration solution expands the scope of that relationship again by offering the strengths of both companies to enable simplified migration from older Exchange platforms. Our customers will benefit both from reduced operational and management costs, as well as the exceptional features available in Microsoft's current products.

By building the solution around standardized Microsoft guidelines, the customer can easily migrate to an Exchange 2000 environment with minimal effort and investment. These guidelines will also facilitate the introduction of a SAN storage environment to consolidate Exchange computing infrastructure. HP, as a prime integrator for Microsoft Exchange 2000, has the most experience of any company in the industry with planning, deploying, and supporting Exchange environments, and this expertise is apparent with the introduction of this customer-focused solution and its supporting Exchange services portfolio. **Microsoft enthusiastically endorses this solution for our customers.**”

Kevin McCuiston, Microsoft Corporation
Director, Exchange Marketing

**solution
summary**

HP offers storage solutions that overcome the five major challenges of a successful Exchange 2000 implementation. These storage solutions help:

- **maximize availability**

HP designs backup and recovery solutions that maximize data availability by completing recovery operations within minutes, rather than the hours typically required using conventional restore methods. HP storage hardware dramatically reduces the risks of unplanned downtime with mirroring technology and redundancies built into storage arrays.

For example, the testing HP performed on the HP StorageWorks Rapid Restore for Exchange 2000 demonstrates how you can substantially reduce your outage time in the event that a restoration is required.

	restoring from tape	restoration using solution
HP StorageWorks HSG80 Controller (MA8000/EMA1200)	1 hour 45 minutes	6 minutes
HP StorageWorks HSV110 Controller (Enterprise Virtual Array)	1 hour 19 minutes	4 minutes

3000 user load generated with Loadsim MMB2; one storage group, two databases, and one public folder store; log files not rolled forward.

- **ensure scalability**

With online capacity additions and support for a SAN environment, HP storage solutions for Exchange 2000 can be quickly scaled to meet the most demanding environments.

- **enhance manageability**

By integrating the HP OpenView Storage Area Manager toolset with Exchange 2000 and enterprise storage applications, HP delivers operational efficiencies that allow businesses to manage more data without increasing resources.

- **enable consolidation**

HP enables both storage and server consolidation by providing enterprises with the tools they need to move from a direct-attached infrastructure to a SAN. Businesses realize significant economies of scale by consolidating multiple servers into a small set of high-performance systems. HP also provides centralized management tools and processes to simplify administration of heterogeneous consolidated SAN-based storage environments.

- **achieve rapid deployment**

HP storage solutions are designed to be easily expanded and are customized to satisfy the unique Exchange 2000 demands of any enterprise.

return on investment (ROI)

HP storage solutions for Exchange 2000 help enterprises of all sizes provide messaging infrastructures that can cost-effectively expand as needed to support the unique communication and collaboration requirements of each organization. By implementing robust, scalable, manageable, and available storage solutions for Exchange 2000, HP helps its customers to stay agile and competitive in the midst of economic uncertainty and to thrive in today's rapidly evolving global markets.

solution description

HP offers a comprehensive range of storage solutions for Exchange 2000 to meet the needs of any enterprise. These solutions include business continuity and storage consolidation.

business continuity solutions for Exchange 2000

rapid restore for Exchange 2000

Rapid Restore for Exchange 2000 is a flexible solution that enables near-instantaneous restoration of data by leveraging cloning technology. Rapid Restore for Exchange 2000 also provides customizable scripts to optimize flexibility. This solution supports StorageWorks EVA and HP StorageWorks modular arrays.

hp StorageWorks virtualized storage management for Exchange 2000

A solution based on HP OpenView Storage Virtual Replicator, virtualized storage management uses host-based snapshot technology and enables online volume growth through virtualization. This solution supports any storage viewable to the Exchange server.

storage configuration solutions for Exchange 2000

DAS to SAN Exchange 2000 migration solution

The HP StorageWorks DAS-to-SAN Exchange 2000 Migration Solution delivers a documented strategy for migrating an entry-to-midrange Exchange 5.5 environment to a SAN-based Exchange 2000 environment. Through a Microsoft Project Guide and HP technical and implementation blueprints that provide technical configuration information and best practices, customers can easily migrate based on the HP msa1000 storage array. This solution demonstrates the ease and value proposition for migration, including how recovery processes can be greatly streamlined within a SAN environment. The benefits of this solution, supported by test results, include faster and more efficient backups, storage consolidation, and server consolidation with comparable performance. Additionally, best practices show how during the migration process itself, application downtime is virtually transparent to the users.

entry-level Exchange solution

This configuration can support up to 1,000 users with 50-MB mailboxes in a Standard Windows 2000 Advanced Server (non-MSCS) environment using the HP virtual array 7100. It details all the necessary components including hardware, software, and support services. This provides an entry point for customers to configure and implement a complete Exchange solution at a lower cost.

mid-market Exchange solution

If higher availability is a requirement, Exchange should be deployed in a clustered environment. The mid-market Exchange solution can support up to 5,000 users in a Windows 2000 Advanced Server (MSCS) multi-cluster environment using the HP virtual array 7400.

enterprise Exchange solution

If 24 x 7 availability is required in a large Exchange environment, then the Enterprise Exchange solution should be considered. The Enterprise Exchange solution can support up to 10,000 users in an MSCS multi-cluster environment using the XP arrays.

Other business continuity storage solutions available to support Exchange 2000 are:

zero downtime backup—A staged backup solution in which data is copied first to disk and then to tape according to customer preference.

instant recovery—A data protection recovery solution that recovers data in minutes by restoring to a selected point-in-time copy.

value proposition

HP and Microsoft have a proven partnership, a strong alliance built on nearly two decades of working together on multiple generations of key technologies and products. HP has years of extensive experience from implementing over 10 million Exchange seats worldwide and has been named as a Microsoft Prime Integrator for Exchange 2000. In fact, Microsoft chose HP as the vendor for its own Exchange infrastructure.

Only HP can:

- Offer a full spectrum of storage solutions for Exchange 2000 to meet the needs of any size business and deliver all required hardware, software, support, and services through a single point of contact.
- Provide pretested, fully configured solutions that match specific business requirements by integrating HP hardware, software, services, and support with best-in-class partner offerings.

- Provide boundless capacity by virtualizing resource sharing through SANs, including almost unlimited expansion of Exchange 2000 mailbox capacities.
- Ensure data protection by integrating software, tape, library, and storage and by supporting optical libraries for long-term archiving.
- Deploy common interfaces for all storage management solutions regardless of device or infrastructure, including HP OpenView Storage Area Manager, to provide centralized tools for uniformly managing disparate devices and allocating unused capacity on demand. Third-party enterprise management solutions are also supported.
- Deliver Microsoft-certified premier support, backed by extensive Exchange 2000 experience and expertise.

services

HP provides a comprehensive range of services to help you plan, design, and build an always-on Exchange Server messaging and collaboration infrastructure.

- **Exchange consulting services**—HP provides a smooth migration path to Exchange Server 5.5 and Exchange 2000 server. Helps you assess your current and future messaging and collaboration solution requirements and designs a solution that leverages the full power of Microsoft Exchange to meet those needs enterprise-wide.
- **Microsoft education services**—HP has fully certified and integrated education solutions that get your IT professionals and users up-to-speed quickly on your Exchange server system.
- **Microsoft software licensing services**—HP can help you manage Microsoft licensing on a worldwide basis, optimizing software procurement and deployment for your entire organization.
- **global deployment services**—HP on-site installation services are fully coordinated with the HP integration services to get your Microsoft Exchange solution up and running quickly and reliably.
- **support services**—After HP has helped you build the messaging and collaboration solution, HP helps keep it running with industry-leading software, hardware, and network support services. These comprehensive services provide a single point of contact for both HP and multi-vendor products.

For more information, visit:

<http://h18005.www1.hp.com/services/messaging/>

why hp

- HP provides tested and supported Exchange solutions built with world-class servers and storage, supported by a single point of contact—HP.
- HP is a Prime Integrator of Exchange 2000 designated by Microsoft and has over 3.7 million Exchange 2000 seats deployed or under contract.
- HP has the largest number of Microsoft Certified Professionals in the industry delivering a full portfolio of services.
- HP servers and storage arrays are Microsoft-certified platforms.
- HP storage is being used to support the Microsoft corporate Exchange infrastructure as well as development platforms for Exchange.
- HP Services is the largest integrator of Microsoft technologies.

**for more
information**

For more information about Exchange storage solutions, visit:

<http://h18006.www1.hp.com/storage/solutions/application.html>

Also available:

- Technical blueprints, which provide a high-level technical overview, configuration, and standard bill of materials (refer to the HP Web site).
- Comprehensive implementation blueprints, which describe best practices, test procedures and results, and necessary scripts and tools for full solution implementation (see your HP sales representative or authorized reseller).

The information in this document is subject to change without notice.

Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation.

© 2003 Hewlett-Packard Company

05/03