

Enterprise and Midrange Storage

Application Optimized Storage™ Solutions from Hitachi Data Systems for Microsoft Exchange

An Application Brief

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Introduction

To succeed in today's business environment, companies need to respond to customer demands faster and more effectively than the competition—harnessing all their resources to maximize productivity and minimize costs. However, as e-mail has emerged as a primary communication method in virtually every organization, few companies actually extract maximum value from their messaging systems. To optimize messaging performance, data protection, and resilience in case of an outage, comply with regulations, and reduce costs, organizations must take a closer look at the storage infrastructure supporting their systems based on Microsoft Exchange.

The sheer volume of data generated by Exchange can present significant storage challenges. IDC projected that total worldwide daily e-mail traffic will soar to more than 35 billion messages in 2005, with a concurrent increase in the average size of e-mail attachments. As companies accumulate large volumes of data, they may have trouble maintaining rapid access to important and frequently used information. If Exchange is slow, business productivity drops. If the application is unavailable, operations can grind to a halt, causing an organization to lose revenue and customer confidence. Repeated outages can even put IT under heavy management scrutiny.

Application Optimized Storage™ Solutions for Microsoft Exchange

Explosive e-mail growth can cause productivity losses when employees are required to spend a portion of their time grooming individual e-mail boxes and administering e-mail inbox size limits. If, instead, policy-driven software automated the archiving process, they would have more time available for revenue-generating work. In addition, companies often store key intellectual property as e-mail attachments in Exchange. Ferris Research estimates that as much as 60 percent of business-critical information is stored in messaging systems.

These saved messages and attachments are often left unprotected and scattered on individual PCs rather than protected centrally, as is the case with other business-critical assets. For this reason, centralizing e-mail storage and protecting e-mail systems from outages or corruption can be key factors in ensuring a company's success.

Unplanned downtime is not the only threat to the productivity of employees using Exchange. While disaster recovery planning deserves a prominent position in any storage strategy, legal discovery demands can also pull heavily on storage resources. Legal discovery processes can drain administrator productivity by requiring searches of large volumes of archived content. This content is often stored on

slow tape backup systems, which means that extensive inquiries can take weeks or months—incurring enormous unbudgeted costs in the process.

Regulatory compliance issues also play a pivotal role in driving companies toward optimized storage solutions for Exchange. Governments now recognize that e-mail and attached documents have largely replaced paper-based communications as records of business transactions and corporate behavior. In response, lawmakers and regulatory agencies have imposed new regulations that require the retention and protection of electronic messages and data, and organizations are scrambling to understand and comply with these new and evolving rules.

Optimize Exchange Environments

Hitachi Data Systems integrates the improvements developed by Microsoft—within the Windows Server 2003 Platform and the Exchange 2003 Server—into Application Optimized Storage™ solutions of hardware, software, and services that allow businesses to match their application requirements to their application ecosystem. Application Optimized Storage solutions help improve price-performance, availability, and functionality to align corporate business and IT objectives more closely. In a Microsoft Exchange environment, Application Optimized Storage solutions can help a company achieve high performance, a high quality of service (QoS), reduced downtime, quick recovery, and complete regulatory compliance. Hitachi Data Systems Global Solution Services provides planning, implementation, and education services to assist with this process.

Plan Ahead—Protect Critical Data

Because messaging systems house a significant portion of business-critical intellectual property at most companies, reducing operational risk by enhancing the resilience of Exchange is a top priority for both IT professionals and company executives. Heavy reliance on communication technology can concentrate and magnify exposures—creating a ripple effect throughout the supply chain if an outage occurs.

The software framework developed by Microsoft, and included in the Application Optimized Storage solutions developed for Exchange, is designed to help protect against outages by reducing recovery time from hours to minutes. For example, using the Microsoft Volume Shadow Copy Service (VSS) framework, Hitachi HiCommand® Protection Manager software helps shorten backup windows and minimize the potential costs of unplanned downtime.

Protection Manager software automates nondisruptive backups while providing rapid recovery from database corruption or other outages. Microsoft has worked with both Hitachi, Ltd., and Hitachi Data Systems to ensure the compatibility of this Application Optimized Storage solution for Exchange with Microsoft environments and joins Hitachi and Hitachi Data Systems in fully supporting it.

A further Application Optimized Storage solution for Exchange uses the point-in-time (PiT) copy capability of Hitachi ShadowImage™ In-System Replication software and Command Control Interface (CCI) to help safeguard key data and dramatically reduce recovery time in the case of an Exchange outage. Complementary support offerings such as Hitachi SplitSecond™ Solutions for Microsoft Exchange facilitate integration with Hitachi storage systems for ultra-rapid, reliable, highly scalable backup and recovery.

Microsoft has also introduced highly resilient technology into Microsoft Cluster Server (MSCS), which exploits the inherent capabilities of Hitachi storage systems. Geographically dispersed clusters enable businesses to replicate their data to remote sites, delivering superior business continuity. Delivered by

Hitachi Data Systems as a turnkey solution incorporating hardware, software, and professional services, the Hitachi Storage Cluster for Microsoft Environments Services help deliver unprecedented levels of reliability and availability from Exchange.

By clustering Microsoft environments over any distance, administrators can improve mission-critical availability and reliability in Microsoft Windows Server 2003 and Windows 2000 environments. The Hitachi Storage Cluster services provide process-based automation of Hitachi TrueCopy™ Remote Replication software, production implementation assistance, and Microsoft host configuration, testing, and knowledge transfer.

Enhance Productivity, Ease Administration, and Boost Resilience

Exchange supports a wide range of business-critical functions and data. Companies face tremendous pressure to achieve top productivity, simplify complex systems, protect against disasters, and meet legal and governmental regulations—all while cutting costs. By optimizing the messaging system with Application Optimized Storage solutions for Exchange from Hitachi Data Systems, a company can reduce e-mail server and storage costs, improve e-mail server performance and employee productivity, satisfy regulations, protect valuable intellectual property, and mitigate the potentially enormous unbudgeted costs of legal discovery involving e-mail that is available only on backup tape.

Tiered Storage for Simple, Cost-effective E-mail Management

Businesses typically access new data more frequently than older reference data. Because fast, repeated data access costs more than less time-sensitive retrieval, organizations can maximize storage cost-efficiency for Exchange by creating policies that match each type of data to storage devices that offer appropriate levels of performance. In this scenario, valuable high-end storage houses operational data that requires scalable, high-performance, reliable, nonstop availability, while other devices handle storage of reference data that requires low-cost, long-term, reliable storage. This tiered strategy enables companies to reduce overall cost of ownership through improved management, resource optimization, and process automation.

With a multitiered pool of storage to match data requirements, Application Optimized Storage solutions for Exchange allow e-mail data to be placed on a highly capable, fast-responding Hitachi storage system and then automatically migrated to low-cost SATA storage as it moves through the data lifecycle. Whether it is a tiered storage infrastructure based on the Hitachi TagmaStore® Universal Storage Platform or Network Storage Controller, or the "tiered storage in a box" capability of TagmaStore Adaptable Modular Storage or Workgroup Modular Storage systems with the SATA Intermix Option, Hitachi offers the industry's leading platforms for data lifecycle management, all administered via a common set of management tools.

Of course, implementing a tiered storage infrastructure is just the first step. Reducing e-mail management costs also requires e-mail management software that can exploit those storage tiers. The Hitachi Message Archive for E-mail solution enables automatic, rule-based archiving of e-mail messages and attachments to deliver the limitless mailbox, increase user productivity, unburden e-mail servers, and reduce IT costs. Archiving also lowers e-mail server loads and greatly reduces the number of servers and software licenses required to support a given e-mail user population, thereby improving efficiency and performance and lowering total cost of ownership.

Centralize to Ease E-mail Administration

Leverage all of an organization's resources and make optimum use of data for cross-selling, up-selling, unlocking value isolated in individual business units, and increasing agility in addressing new markets. It's a process made easier with a unified view of the many components of a storage infrastructure, from each application's point of view. This single point of management can help improve troubleshooting and simplify satisfaction of service level agreements for particular application users, as well as enable administrators to plan for zero downtime backups.

Hitachi HiCommand® QoS for Microsoft Exchange software helps ensure application availability and eliminate downtime caused by storage infrastructure maintenance. Traditionally, managing Exchange performance and availability has been labor-intensive and inefficient because no single tool monitored the entire path from the Exchange databases to the storage systems. To address this need, QoS for Exchange software offers a suite of real-time monitoring and management tools to help boost application uptime and satisfy service level agreements.

By drilling down from Exchange performance and availability issues to the underlying causes, and by issuing alerts when storage infrastructure changes affect Exchange, QoS for Microsoft software helps administrators plan effectively for disaster recovery. The software can quickly determine the cause of unplanned downtime using real-time monitoring of the entire Exchange infrastructure and messaging system and then automatically resolve problems before an outage occurs. In addition, centralizing e-mail management through archiving facilitates high employee productivity by helping to minimize time spent deleting and archiving e-mails. Through policy-driven automation and QoS, this solution can allow employees to spend more time focusing on work—and less time pruning their e-mail inboxes.

Rapid Content Search Minimizes Disruption

In recent years, several high-profile legal cases have revealed the vulnerability and potential liability that businesses face as a consequence of the information stored on their storage systems—especially on e-mail systems. When a corporation faces lawsuits or regulatory challenges, lawyers often must mine e-mail archives to obtain evidence for the case. In decentralized messaging systems such as Exchange, these searches can take weeks or months—a process that quickly becomes expensive and disruptive to business productivity. Application Optimized Storage solutions for Exchange can help minimize the inconvenience and cost of legal discovery procedures by centralizing messages, allowing rapid nondisruptive search retrieval operations. Administrators can employ Application Optimized Storage solutions to:

- :: Document the design and create a detailed implementation and test plan
- :: Manage the implementation and execution phase of the plan

Policy-based Data Storage Facilitates Compliance

Legislative mandates such as the Sarbanes-Oxley Act require retention of business records, including e-mail, as well as timely and accurate financial reporting. Because corporate officers and auditors can personally be held legally responsible for noncompliance, executives in every industry now face more stringent oversight by their boards of directors. Each of these trends contributes to rapid storage growth by compelling businesses to store increasingly large volumes of data for longer periods.

Several components of Application Optimized Storage solutions for Exchange can help companies achieve compliance while maintaining high productivity at a reasonable cost. Hitachi Message Archive for E-mail solution enables organizations to retain an archive of e-mail for the fixed period required by key regulations. By providing a fully searchable index of messages, Message Archive for E-mail enables a more efficient response to audits, discovery requests, or other situations where prompt delivery of e-mail messages is critical.

Hitachi Message Archive for Compliance solution goes a step further, assisting companies that are subject to even more stringent regulations, which require that e-mail messages be archived to immutable storage. Message Archive for Compliance employs the “write once, read many” (WORM) functionality of Hitachi Data Retention Utility software—a key component of Application Optimized Storage solutions for Exchange—to facilitate immutable, tamperproof record retention and the creation of compliant storage environments. Once data has been written, it can be retrieved and read only by authorized applications or users, and it cannot be altered or deleted during the specified retention period. This feature allows administrators to eliminate dedicated storage units for compliance by creating secure storage systems and applications.

Consulting Services Assist with Optimal Configuration

Hitachi Data Systems Global Solution Services consultants help organizations assess, deploy, integrate, manage, and optimize storage systems. With deep expertise in helping clients enhance their productivity, protect critical data, reduce cost, boost efficiency, and manage risk, these consultants can also help organizations to extract maximum value from their implementations of the Application Optimized Storage solutions for Exchange. Global Solution Services can work with organizations to complete the following:

- :: Identify and analyze business goals in terms of business application and storage infrastructure needs.
- :: Pinpoint technical goals based on business and storage environment and storage management processes and procedures.
- :: Document storage throughput requirements and business continuity needs in terms of risk management, recovery-point objectives, and recovery-time objectives.
- :: Determine what existing storage should be retired and what should be retained as a supporting tier of storage.

- :: Create a nondisruptive implementation plan, which includes test and verification components, for migration from or coexistence with current storage systems archives, and making storage systems easily searchable.
- :: With tools designed to deliver accurate, timely feedback on the content of stored e-mail, Application Optimized Storage solutions for Exchange can play a key role in allowing business to continue as usual during evidence-gathering activities.

Solution Features and Benefits

Hitachi HiCommand QoS for Microsoft Exchange Software

- :: Provides real-time monitoring of Exchange instances and storage
- :: Performs end-to-end provisioning required to install Exchange
- :: Offers Exchange store-to-storage topology view
- :: Correlates events across the system through intelligent event management
- :: Auto-discovers and manages all the storage infrastructure components required
- :: Accelerates time to deployment
- :: Improves availability
- :: Assists in preventing outages
- :: Helps maximize return on Exchange assets
- :: Increases ease of installation, deployment, and manageability

Hitachi HiCommand Protection Manager Software

- :: Helps provide zero-downtime backup
- :: Dramatically improves recovery time
- :: Improves uptime service level agreements
- :: Integrates Microsoft VSS with ShadowImage In-System Replication software and Hitachi Copy-on-Write Snapshot software
- :: Conducts resource discovery and mapping
- :: Performs backup catalog management
- :: Supports high-speed data replication
- :: Reduces customized script needs

Hitachi SplitSecond Solutions for Microsoft Exchange Service

- :: Dramatically reduces downtime caused by Exchange outages
- :: Uses Hitachi Protection Manager and ShadowImage In-System Replication software and provides installation and other services specific to Exchange

Hitachi Storage Cluster for Microsoft Environments Services

- :: Enables wide-area disaster recovery with integration services and product set
- :: Supports unprecedented levels of reliability and availability from Exchange
- :: Discovers and assesses existing Microsoft environments and replication environments
- :: Enables process-based automation of TrueCopy Remote Replication software

Hitachi Data Protection Suite Software

- :: Provides quick, reliable server-based backup and recovery, archiving, and hierarchical storage management solutions for heterogeneous storage environments
- :: Protects data against outages with a high-performance integrated solution

Hitachi Message Archive for E-mail Solution

- :: Helps reduce the number of servers and software licenses required to support a given e-mail user population
- :: Provides users with limitless mailboxes by seamlessly offloading messages and attachments to archival storage
- :: Intelligent single-copy archive of repeated attachments reduces storage requirements
- :: Allows selective archiving
- :: Enables access to archived messages and attachments through the e-mail client
- :: Eases management
- :: Helps facilitate regulatory compliance
- :: Reduces demand on e-mail server storage
- :: Improves backup and recovery performance
- :: Improves productivity

Hitachi Message Archive for Compliance Solution

- :: Facilitates compliance with regulatory requirements
- :: Provides message indexing and search-and-retrieval capabilities
- :: Centralizes policy management and audit trails for e-mail and instant messaging systems
- :: Offers WORM protection for content that should not be altered
- :: Combines Hitachi storage with Hitachi Data Retention Utility software

Hitachi Storage Infrastructure

- :: Supplies tiered storage for data lifecycle management and archiving
- :: Provides industry-leading performance, reliability, availability, and scalability
- :: Helps maximize cost efficiency of storing large data volumes
- :: Provides a superior platform for deployment of mission-critical applications, such as Microsoft Exchange

Summary

As a storage company focused on helping organizations address their business objectives by aligning IT and business, Hitachi Data Systems offers specialized products and expertise to help get the job done. To learn more about how Hitachi Data Systems can help you implement Application Optimized Storage solutions for Microsoft Exchange, please visit www.hds.com or call 888 234 5601.

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