

BY CHRIS AUGER

The Business of IT: Planning a Strategic Framework for Anywhere Data Access

As communication technologies converge in the workplace, IT decision makers must find new approaches to messaging infrastructure design, security, and compliance. By keeping the needs of highly mobile clients in mind during the Microsoft® Exchange Server 2007 planning process, organizations can simplify operations, optimize solutions, and sustain value across the overall IT infrastructure.



Nearly every enterprise faces difficulties when its technology fails, even momentarily. No cell coverage? Phone lines down? These situations can be bothersome and inconvenient—but nothing interrupts business as usual quite like an e-mail outage.

Unlike the telephone, which is simply a tool for communication, e-mail typically contains a significant amount of intellectual capital—and according to the Radicati Group, corporate users send and receive an average of 133 e-mail messages per day.¹ Business usually grinds to a halt without access to this data, so e-mail systems and content must be protected just like other mission-critical infrastructures.

In addition, the proliferation of mobile devices such as wireless computers, PDAs, and cell phones is catalyzing a major change in the way IT administrators think about enterprise communication infrastructures. Because e-mail messages can be created and stored in a wide variety of locations both inside and outside the enterprise, the IT department must coordinate with telephony administrators to anticipate the needs of mobile workers. Security and compliance must be approached differently. Most importantly, organizations must begin to look at the messaging environment as a cohesive whole.

Intertwined client and data center decisions

By looking at the messaging infrastructure as a single system, administrators are quickly realizing that client and data center decisions and deployments cannot be made in a vacuum. Desktop systems such as the Microsoft Windows Vista™ OS, Microsoft Office Outlook® and other Microsoft Office software, and thin clients affect data center elements such as Microsoft Exchange Server, Microsoft Office SharePoint® Server, systems management, storage, and file and print services. Conversely, data center decisions determine which client systems the organization can use. Because these decisions are inextricably linked, it is crucial that IT decision makers consider client systems and data center elements together.

For example, the method employees use to access their e-mail can significantly affect the number of servers and the amount of storage required to support the e-mail application. Cached Outlook access demands far fewer database spindles and servers than remote PDA access. Figure 1 provides a basic example designed to highlight the impact client choices can have on Exchange Server 2007 enterprise designs—specifically, differences in the number of database spindles and servers required to support 5,000 users and a 500 MB mailbox size limit with different types of clients.

Related Categories:

2007 Microsoft Office

Data center technology

Microsoft Exchange Server 2007

Microsoft Windows Vista

Storage

Unified communications

Visit www.dell.com/powersolutions for the complete category index.

¹"Taming the Growth of Email—An ROI Analysis," by the Radicati Group, March 2005, www.radicati.com/publication.asp?id=302.

As the workforce becomes increasingly mobile, IT departments no longer have the option of offering only one type of e-mail access. Growing e-mail volumes and new types of media attachments require a data center infrastructure that can provide not only anywhere access, but also the scalability and control needed to help ensure outstanding performance as well as built-in protection to mitigate risk.

Microsoft Exchange, Windows Vista, and Office: Better together

Microsoft Exchange Server 2007, Microsoft Windows Vista, and 2007 Microsoft Office are designed to build on each other's strengths and provide a platform that is optimized to meet the needs of a mobile workforce. Implemented together, Exchange Server 2007, Windows Vista, and 2007 Microsoft Office can enhance messaging from the user to the data center.

For example, the Exchange Server 2007 Calendar Concierge feature and Outlook 2007 streamline scheduling meetings at the client level by automatically recommending the best days and times for a meeting. The Out of Office Assistant in Outlook can send customized internal and external out-of-office messages. Windows Vista Instant Search allows users to search their entire PC for files and e-mail messages.

In the data center, Exchange Server 2007 supports Windows Vista and 2007 Microsoft Office with its Unified Messaging capabilities. Exchange Server 2007 is designed to deliver all types of Outlook items—e-mail, voice mail, instant messages, and faxes—to user in-boxes. Users can tag and organize messages with customized classifications (such as “Do Not Forward” or “Attorney-Client Privileged”), while built-in e-mail retention policies through managed folders or SharePoint Server help ensure that compliance requirements are met.

Anywhere access for enhanced productivity and collaboration

The basic requirement for a mobile workforce is the ability to access multiple types of messages and content from a variety of devices. Without restrictions on where and when they can access key data, employees can accomplish tasks in the manner that best suits them—helping increase productivity and providing opportunities for collaboration.

However, anywhere access is not as simple as delivering e-mail to several types of devices. Truly efficient messaging systems provide not only mobile access but also a consistent interface across devices. They integrate messaging as well as calendaring, document management, and search functions.

Used together, Exchange Server 2007, Windows Vista, and 2007 Microsoft Office offer a range of complementary features designed to enhance productivity and encourage collaboration through anywhere access. Public folders are de-emphasized in Exchange Server 2007 to enhance focus on Microsoft Windows® SharePoint Services. A single mailbox for e-mail, voice mail, instant messages, and faxes provides a streamlined center for communication, and the Calendar Concierge feature helps improve scheduling, resource booking, and assistance.

Windows Vista extends the benefits of Exchange Server 2007 to client systems by enabling users to easily organize and search large volumes of information. The Instant Search feature provides integrated search functionality for the Internet, multimedia, and e-mail, helping individual users access important content quickly. Desktop search capabilities also make it easy for users to find files regardless of location by providing quick access to Microsoft Office documents, e-mail messages, programs, and media files throughout the computer. Microsoft Enterprise Search facilitates finding the right information regardless of where it resides—from redirected folders, offline folders, and SharePoint Server documents to removable hard drives and other PCs running Windows Vista.

Windows Vista helps users organize files with metadata tags indicating that information pertains to a particular project or category. Users can then search, filter, and organize files based on certain criteria, no matter where the files reside on the hard drive. Search folders allow users to save frequent search queries. Saved searches can be executed when clicked, automatically organizing information for easy and fast access.

In addition, roaming capabilities enable the files of mobile Windows Vista users to sync with enterprise servers once the end point reconnects to the network—helping minimize data loss, maintain organization of key intellectual property, and maximize productivity of remote workers.

Scalability and control for operational efficiency

To support anywhere access, organizations must build messaging infrastructures that provide outstanding performance, scalability, and control at every level. Exchange Server 2007, Windows Vista, and 2007 Microsoft Office offer complementary hardware and software functionality designed not only to boost performance and capacity but also to simplify messaging management.

Access mode	Database spindle requirements		Server requirements
	Exchange Server 2003	Exchange Server 2007	
Microsoft Outlook cached	38	22	One Exchange Mailbox server
Microsoft Outlook online	52	42	One Exchange Mailbox server
Microsoft Outlook Web Access	52	42	<ul style="list-style-type: none"> One Exchange Mailbox server Two Exchange Client Access servers
BlackBerry mobile device	71	71	<ul style="list-style-type: none"> Two Exchange Mailbox servers Two Exchange Client Access servers Two BlackBerry Enterprise Server systems

Figure 1. Example enterprise requirements for Microsoft Exchange Server supporting 5,000 heavy users and a 500 MB mailbox size limit

In the data center, Exchange Server 2007 enables several improvements over Exchange Server 2003 that help lay the foundation for optimal messaging performance. By supporting only 64-bit servers in production, such as Dell™ PowerEdge™ 2950 and PowerEdge 2970 servers, Exchange Server 2007 allows increased memory and caching capabilities compared with 32-bit servers, which can significantly reduce storage performance requirements. The maximum number of storage groups or databases has been increased to 50, which means administrators can provide employees with larger mailboxes than in Exchange Server 2003 while retaining the same backup and restore sizes. In addition, an increase to an I/O size of 8 KB means fewer I/Os per second and more flexible storage options in Exchange Server 2007 compared with Exchange Server 2003.

Exchange Server 2007 can also help simplify messaging management. Expanded role-based deployment allows administrators to assign predefined roles to specific servers easily and flexibly. These roles, which can be predefined and chosen during installation, enable administrators to control e-mail flow, increase security, and distribute services. The Exchange Management Console also helps administrators increase productivity through four independent work centers, which facilitate effective management of Exchange roles and permissions without having to drill down several layers to get to the managed object.

Windows Vista builds on the management capabilities of Exchange Server 2007 with Group Policy Objects, which provide hundreds of policy settings for flexibly managing new and existing features. XML-based policies support multilingual environments and use a common syntax across policy settings to help simplify messaging management.

Furthermore, significant improvements in the event logging infrastructure in Windows Vista Event Viewer make it easy for administrators to perform troubleshooting tasks. New power management features promote power conservation and maximize battery life for mobile users, and enhanced system diagnostics and remote assistance tools empower employees to troubleshoot while helping increase the efficiency of IT staff. In addition, image management features enable simplified OS migrations and image updates across multiple hardware systems.

Built-in protection for risk mitigation

Security and compliance requirements are major concerns for enterprise IT departments. As electronic transaction processing and real-time communication become fixtures of global commerce, governments around the world are introducing strict, detailed regulations designed to ensure that critical messaging systems stay up and running and that enterprise data is traceable throughout its life cycle.

Exchange Server 2007 is designed with several types of built-in protection, helping mitigate risk with two related replication technologies. Cluster continuous replication (CCR) provides virtual servers and failover capabilities, and allows organizations to implement a variety of storage options such as direct attach storage, Serial Attached SCSI (SAS)–based

storage, and storage area networks (SANs). Local continuous replication (LCR) helps promote high availability by using the same database replication technology as CCR but within a stand-alone Exchange Server 2007 server. This method of replication can provide a cost-effective way for enterprises to increase availability for key applications.


Other Exchange Server 2007 features designed for recovery and high availability include single-mailbox restores using the Restore-Mailbox feature and a multi-mailbox search function. This enhanced search functionality across multiple file types and thumbnails of documents makes it easy to find important files.

A range of features designed for security and compliance help protect enterprises against risk. In the data center, Exchange Server 2007 provides antivirus and antispam protection through the Edge Transport server role. Administrators can use built-in e-mail retention policies through managed folders or SharePoint Server, and Exchange Hosted Services can deliver outsourced antivirus and antispam protection.

At the client level, Windows Vista helps mitigate risk through User Account Control (UAC) features. By default, UAC limits privileges to install applications or make configuration changes that could compromise the integrity of the client system. When a task requires administrator-level access, UAC asks the user to accept the elevation and then bonds the administrator token to the standard user account to provide enhanced protection against malware. Built-in features such as an enhanced firewall and spyware detection are designed to protect organizations by blocking harmful Web sites and hackers from accessing the system.

The 2007 Microsoft Office system also helps counter risk through enhancements to the Microsoft Internet Explorer® 7 Web browser. Protected Mode options help guard against malware, while the built-in Windows Firewall supports bidirectional filters and includes rules designed to protect services and ports. Windows Resource Protection features block write access to system files and registry keys. In addition, Microsoft BitLocker™ Drive Encryption in Windows Vista provides a native disk encryption tool to mitigate risk when hardware is lost or stolen.

Effective game plan for an enterprise-wide messaging infrastructure

As employees become increasingly mobile, IT decision makers must consider new approaches to messaging access, infrastructure performance, security, and compliance. This shifting paradigm demands that businesses make executive decisions with both the front-end user interface and the data center in mind. By facilitating anywhere access, operational efficiency, and risk mitigation, the combination of Microsoft Exchange Server 2007, Microsoft Windows Vista, and 2007 Microsoft Office can help optimize enterprise messaging and sustain the value of the overall IT infrastructure from the user to the data center. 

Chris Auger is an enterprise technologist for Dell-focused Microsoft products. He has a B.S. in Mathematics from the University of Texas at Austin.