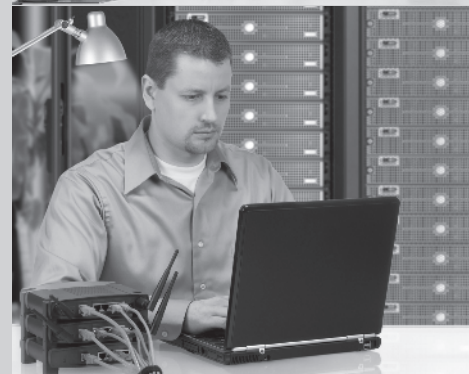


# Introduction to Exchange Server 2010

## PART

# I

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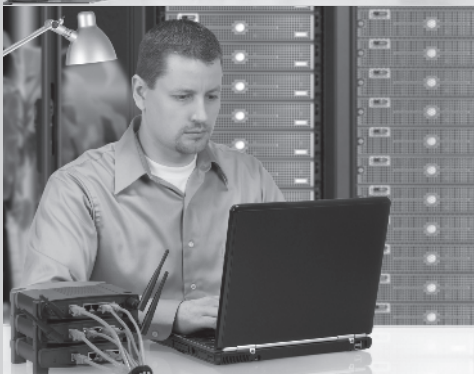
# Chapter 1

## Introduction to Exchange Server 2010

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### THE FOLLOWING TOPICS ARE DISCUSSED IN THIS CHAPTER:

- ✓ Brief history
- ✓ New features
- ✓ Improvements
- ✓ Discontinued features
- ✓ Comparison between 2007 and 2010
- ✓ Client benefits





Ninety trillion. That is the estimated number of emails that were sent in 2009. Staggering isn't it? While many of those emails were used to send jokes or argue sports, a large portion of them were used in business and deemed vital for the success of an organization.

It is no wonder, then, that Exchange Server administrators and messaging professionals are in high demand, and it is our goal, in this book, to get you comfortable with Exchange 2010. This chapter's aim is to bring you up to speed on the latest versions of the Exchange administrator tools as well as help you understand the important changes since—and even the smallest improvements over—Exchange Server 2007.

## Brief History of Exchange Servers

Exchange Server 2010 is a calendaring and email solution that runs on Windows Server, and like Exchange Server 2007, it can also integrate with your phone system. This is the seventh major release of the product, and the Exchange teams continue to make improvements and add features with every version.

Exchange started out as an upgrade to Microsoft Mail in 1996. Over the next several years, releases 5.0 and 5.5 introduced Lightweight Directory Access Protocol (LDAP), which was a precursor to what would become Active Directory (AD) in Windows 2000. To take advantage of AD in Windows 2000, Microsoft also included Exchange Server 2000, which was a robust platform that included chat and instant messaging (IM) services. In 2003, another version of Exchange was released, aptly named Exchange Server 2003. Features such as chat and IM were removed and they were marketed as separate services in Live Communications Server. The release of Exchange Server 2007 continued the tradition of adding more features and expanded the storage of this email server even more than its predecessors. Let's look briefly at some of the historical milestones:

- 1996 Exchange 4.0
  - Client/server architecture
  - X.400 based
- 1997 Exchange 5.0 and 5.5
  - Clustering introduced
  - LDAP introduced

- Standard and expression versions introduced
- Connectors to allow Exchange to talk to any email server provided
- Administrative console added
- Support for stand-alone SMTP
- Outlook introduced as the preferred client
- Outlook Web Access introduced
- 2000 Exchange 2000
  - Designed to work with AD
  - Scheme management services for sending and receiving secure email
  - Enhanced storage and administrative tools
  - Chat and IM services introduced
- 2003 Exchange 2003
  - Exchange ActiveSync introduced support for blacklisting addresses
  - Enhanced Outlook Web Access module added
  - Enhanced spam control introduced
  - Management console enhanced
- 2006 Exchange 2007
  - 64-bit performance
  - Exchange Management Shell (EMS) added
  - Maximum database size increased to 16 TB
  - Maximum number of storage groups increased to 50 per server

Why use Exchange Server? Exchange is certainly not the only email server on the market. In fact, there are dozens of email servers available, and each one would have a group of individuals who would argue strongly in their favor. There are many of small and medium-sized businesses that want an in-house email system. These businesses want to be up and running in only a few steps and with only a little maintenance.

Simplicity and ease of use are the major contributors to the success of Exchange. Exchange installs and configures simply, and anyone can be trained in a relatively short period of time to use it effectively. Because it also sets up Web access automatically for all mailboxes, it makes it easy for users to check email from home or even while on vacation. Features like these have made Exchange the choice of many organizations. This rich feature set and the ability to scale has led to its dominance in the enterprise market.

While the first version of Exchange, code-named Mercury, was just a Microsoft internal release and could not scale past 25 users, Exchange 2010 has become the mode of transport for a major chunk of the 9 billion emails sent each day.

# New Features in Exchange Server 2010

Exchange Server 2010 is available in three editions, Trial, Standard, and Enterprise. The same installation media is used to install each edition. If no license key is supplied, the Trial edition features are enabled. To enable Standard or Enterprise features, an appropriate license key must be provided. Exchange Server 2010 is 64-bit only, therefore you will need 64-bit capable hardware for your production, test, and management systems.

In addition to server licenses, client address licenses (CALs) are also required. The two different types of CALs are as follows:

- Standard CAL will provide access to ActiveSync, email, Outlook Web App, and calendaring.
- Enterprise CAL provides unified messaging and compliance functions, functionality for Exchange hosted filtering for antispam and antivirus, and Forefront Security for Exchange Server.

Whenever new versions of software such as Exchange are released, we want to know what's new! Exchange 2010 includes some very nice changes and additions that will make an Exchange administrator's job a little bit easier, as the following list shows:

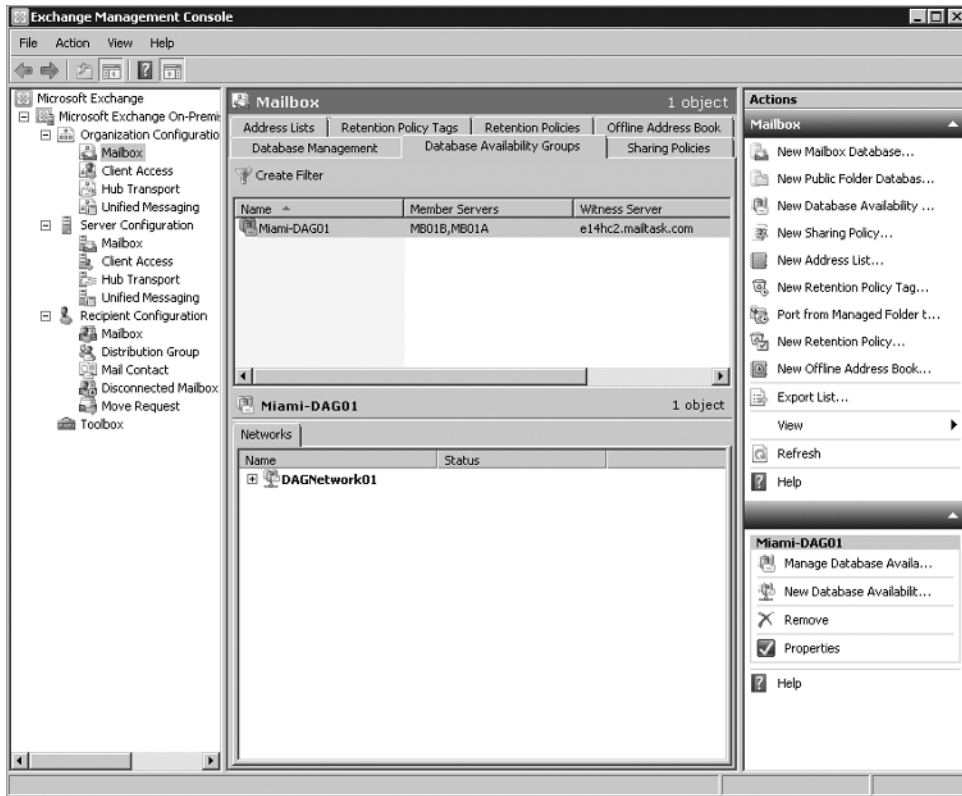
**Storage improvements** In an effort to provide greater flexibility and higher performance, Microsoft has made some big adjustments in storage architecture. Estimates indicate that you will see an additional 50 to 70 percent reduction in *database storage I/O* over Exchange 2007. The benefit of this to you is that it will reduce the need for additional or more costly storage to retain performance levels. Also, the new high availability (HA) options may reduce the need for RAID in some deployments.

In Exchange 2007, high availability (HA) solutions used continuous replication to copy the transaction logs to another disk or server. You might be familiar with them; these features were called local continuous replication, cluster continuous replication, and standby continuous replication (LCR, CCR, and SCR). These required you to put a single database within a single storage group because multiple databases within a storage group.

LCR, CCR, SCR, and single copy cluster (SCC) have been removed in Exchange 2010 in favor of database availability groups (DAGs). DAGs is an evolution of the Exchange 2007 continuous replication features.

With DAGs, as seen in Figure 1.1, you can create up to 16 different replicas of the database across multiple servers or even sites. This will give you the additional option of not having a RAID solution in place. You will learn more about DAGs in Chapter 7, Configuring High Availability Solutions for Exchange Server.

**Unified messaging** Unified messaging (UM) has also matured in Exchange 2010. For example, you now can create up to nine calls or answer rules. This provides a personal auto attendant for the user's mailbox, which will then transfer the call to another user, another number, or voicemail. Figure 1.2 shows the UM interface.

**FIGURE 1.1** Exchange 2010 Database Availability Groups

UM also has more language-support features, and the name lookup from a caller ID has been enhanced. Third-party solutions were needed to provide a message waiting indicator in Exchange 2007, but in Exchange 2010 the feature has been added.

Another new UM feature is a voicemail preview. Using Automatic Speech Recognition technology, voicemail messages are transcribed and the text is attached to the voicemail in your inbox. This allows you to be able to respond to voicemail messages, often without having to listening to them on your phone or your computer's speakers.

**Role-based permissions** Large organizations will see an immediate value in the new permissions structure with a variety of administrators that handle different administrative roles. This new model gives you granular control over who does what, which gives you better control over a person or group.

**FIGURE 1.2** Unified messaging interface

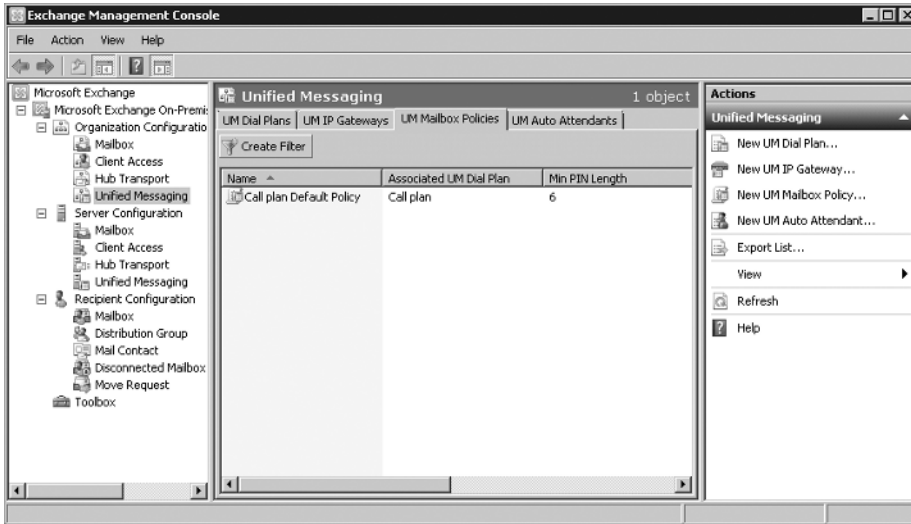
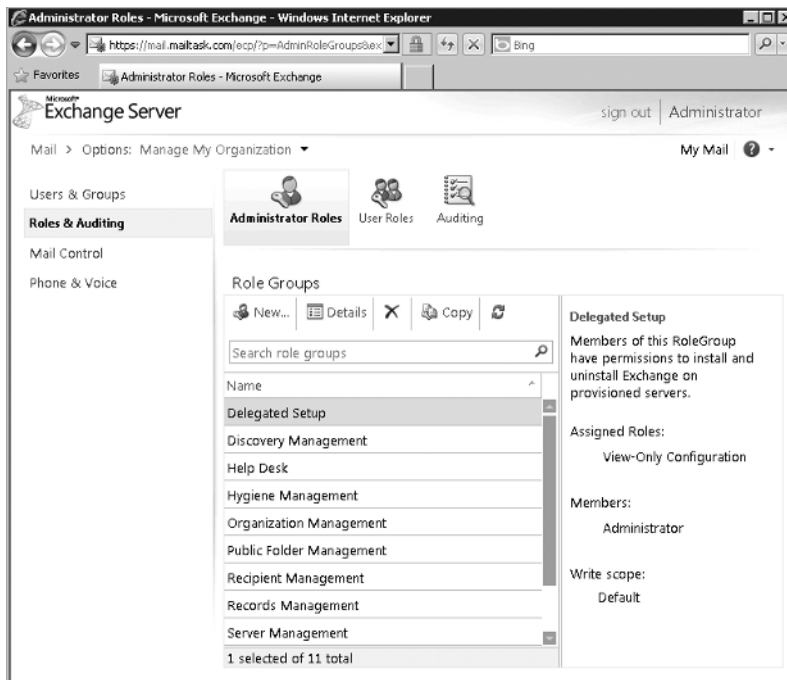


Figure 1.3 shows the Administrator Roles control panel.

**FIGURE 1.3** Roles and auditing interface





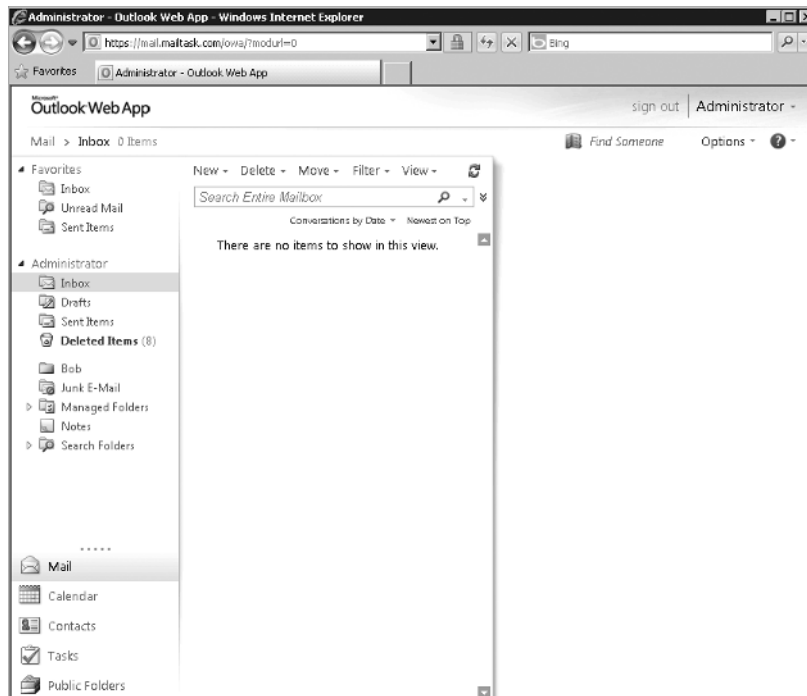
There are also new management-role assignment policies that will define what users can configure within their own mailboxes, and every mailbox has one of these policies. This is a welcome addition because it allows the administrator to control how much a user can change personal information, contact information, and distribution group membership. The goal of these changes is to give detailed control while also reducing the number of small changes that users need to make.

## Improvements in Exchange Server 2010

With any new release of an established product like Exchange Server, Microsoft includes new (and improved) features that benefit both the administrative side of the product and the end-user experience. We briefly highlight some of the key features that are new or improved in Exchange Server 2010 (this list is certainly not all-inclusive):

**Outlook Web App** A major change or upgrade for end users is Outlook Web App (OWA), previously known as Outlook Web Access. It now has a seamless flow across browsers, so an OWA user running Safari should have the same experience as one running Internet Explorer. See Figure 1.4 to see what the new interface looks like.

**FIGURE 1.4** Outlook Web App



One of the complaints against OWA, especially in the earlier versions, was about the differences between the Outlook client and OWA. Users would complain that OWA was missing features that they needed. In an effort to provide a rich client experience and reduce the gap between the client and OWA, new features have been introduced, including favorites, attaching messages to a message, search folders, integration with Office Communicator and Lync, a new conversation view, and integration with Short Message Service (SMS) messages.

**Microsoft Online Services** Many providers of services are moving “into the cloud,” and Microsoft is no exception. With Exchange 2010, it is now possible to host mailboxes in a datacenter or host them with your own ISP or even host them with Microsoft Online Services.

Exchange 2010 provides the flexibility to be mixed between hosted and on premises, it can also be 100 percent hosted or 100 percent on site. The users may not notice any difference, however you will be able to manage mailboxes across both the on premises deployment and the hosted environment. In this way you will be able to take advantage of the cloud for a portion of your mailboxes, while maintaining control of other mailboxes by hosting them on premises.

**Administration** The Exchange Management Console (EMC) has changed to keep up with the changes to the major features, like HA. Due to the new replication functions, the mailbox database object is now tied to the Exchange Server 2010 organization and is no longer tied to the Exchange Server object.

Because storage groups are no longer used, their administration has been removed from both the EMC and the EMS. Cmdlets you might have been familiar with, such as `New-StorageGroup`, `Get-StorageGroup`, and so on, have been removed.

Exchange Server 2010 now runs on top of Windows PowerShell version 2. This version not only has a command-line interface (CLI), it also has an interactive development environment (IDE). This change allows you to easily create scripts and use variables. An output window has been added where you can quickly view the results of your cmdlet or script.

Another new feature is Send Mail, shown in Figure 1.5, which allows you to send mail directly from the EMC, which is great for testing.

**Exchange Control Panel** A new options page in OWA now makes it possible to perform some basic Exchange management tasks, not just with the user’s own properties, but also at an organizational level. Using this new control panel makes it possible to create users, mailboxes, distribution groups, mail-enabled contacts, management email addresses, and so forth. Figure 1.6 shows the OWA Control Panel.

**Active Directory Rights Management** Active Directory Rights Management Services (AD RMS) lets you have greater control with what users can do with emails messages. For example, you can disable the “Forward” options to prevent your messages from being sent to other recipients.

FIGURE 1.5 Send Mail

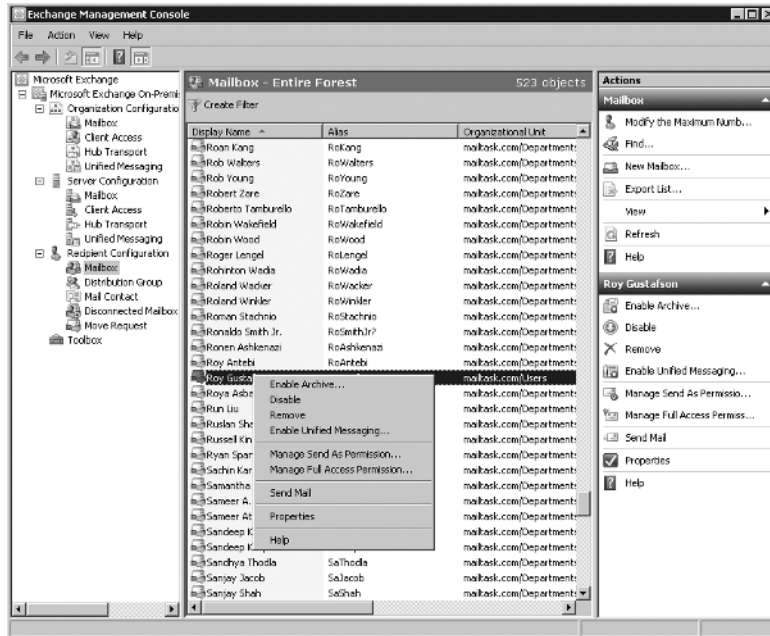
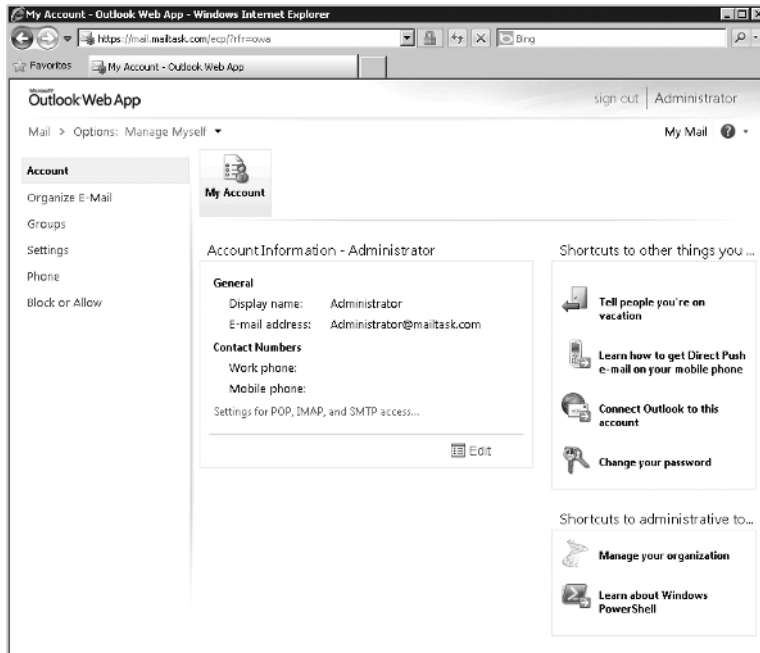


FIGURE 1.6 OWA Exchange Control Panel



With Exchange Server 2010, new features have been added to the AD RMS:

- Integration with transport rules, which is a template for using AD RMS to protect messages over the Internet
- AD RMS protection for voicemail messages coming from the UM server role

**Transport and routing** With Exchange Server 2010 it is possible to implement cross-premises message routing. If you use a mixed hosting environment, Exchange Server 2010 can route messages from a datacenter to an on-premise environment.

In Exchange Server 2010, you can create enhanced email disclaimers, making it possible to add HTML content to disclaimers. It is even possible to use AD attributes (from the user's private property set) to create a personal disclaimer.

A new feature in Exchange 2010 is shadow redundancy. This feature protects messages in transit from being lost due to a server or network failure. Instead of deleting a message immediately after sending it to the next hop server, the message is maintained in a shadow redundancy queue until the next hop server reports that it was successful in delivering the message. If the next hop server does not report a successful delivery, the first server will resubmit the message in the shadow redundancy queue to another transport server in the organization for delivery. More information about shadow redundancy can be found in Chapter 3, Configuring Client Access for Exchange 2010.

When you have HA messaging support, the messages stay in the transport dumpster on a Hub Transport server and will be deleted only if they are successfully replicated to all database copies.

**Messaging policy and compliance** As email continues to grow and evolve as the number one means of business-critical communication, the need to manage and enforce certain policies on email content and usage also grows.

As part of a general compliance regulation, Microsoft introduced the concept of managed folders in Exchange Server 2007. This has been enhanced in Exchange Server 2010, with new features such as the option of tagging messages, cross-mailbox searches, new transport rules and actions, and the new retention policies.

**Mailbox archive** Exchange Server 2010 also introduces personal archive; this is a secondary mailbox associated to a user's mailbox. Because Exchange Server 2010 now supports lower cost storage configurations, the personal archive is a great replacement for locally stored, easily stolen, and damaged PST files. This allows administrators to keep control of messaging data on the corporate servers.

# Discontinued Features

In any new release of a software product, discontinued or de-emphasized features are inevitable. The items that follow in no way represent every change that has occurred in Exchange Server 2010, but it does represent some of the most prominent changes.

## Features That Have Been Removed

The following key features and functionality have been removed from Exchange Server 2010:

- Storage groups are no longer a feature in Exchange Server 2010. The concepts of a database, log files, and a checkpoint file are still valid, but they are now just referred to as a database. You can think of an Exchange 2010 mailbox database as being a single database in a single storage group.
- Exchange Server 2007 had LCR, CCR, and SCR—three different forms of replication. All three of these features are no longer available in Exchange Server 2010.
- Mailbox databases no longer save storage space by storing the same item in multiple mailboxes using single instance storage. This means that when you send a 1 MB message to 100 recipients, the database could potentially grow by 100 MB. This may have an impact on storage space, however the performance improvements made to the database schema that caused this feature to no longer be feasible are an excellent trade off.

Table 1.1 shows the discontinued Exchange Server protocols.

**TABLE 1.1** Discontinued Exchange Server 2003 protocols

Feature	Replacement
X.400 and Network News Transfer Protocol (NNTP)	No migration plan. If this functionality is required, you will need to keep Exchange Server 2003 in your environment.
SMTP virtual server instances	Has been replaced with Exchange Server 2010 SMTP connectors.

In addition, some of the Exchange 2003 connector features have been discontinued. Table 1.2 lists them.

**TABLE 1.2** Discontinued Exchange Server 2003 connectors

<b>Feature</b>	<b>Replacement</b>
Microsoft Exchange Connector for Lotus Notes	No migration plan. If this functionality is required, you will need to keep Exchange Server 2003 in your environment.
Microsoft Exchange Connector for GroupWise	No migration plan. If this functionality is required, you will need to keep Exchange Server 2003 in your environment.

Management features and tools that have been discontinued are listed in Table 1.3.

**TABLE 1.3** Discontinued Exchange Server 2003 management tools and features

<b>Feature</b>	<b>Replacement</b>
Migration Wizard	Move Request Wizard
Clean Mailbox tool	Export-Mailbox and New-MailboxExportRequest cmdlets (SP1)
Message Tracking Center node	Tracking Log Explorer and Message Tracking tools
AD Users and Computers snap-in	Recipient management included in the EMC
ExMerge	Export-Mailbox and New-MailboxExportRequest cmdlets (SP1)
Recipient Update Service (RUS)	Update-EmailAddressPolicy cmdlets that perform some of the RUS functions
Mailbox Recovery Center	Restore-Mailbox cmdlet
Mailbox Management Service	Messaging records management (MRM)
Exchange Profile Redirector tool (ExProfRe)	AutoDiscover service

Discontinued Exchange OWA features are listed in Table 1.4.

**TABLE 1.4** Discontinued OWA features

Feature	Replacement
Web Parts	SP1 of Exchange Server 2010 adds Web Parts back. They were removed with Exchange Server 2010 RTM.
Reading pane at the bottom	No replacement. This is no longer possible.
SharePoint document libraries and Windows file share	No replacement. This is no longer possible.

## A De-emphasized Feature

Public folders, a key feature, continues to be de-emphasized in Exchange Server 2010. Starting with Exchange 2003, Microsoft has started to steer away from public folders.

If your organization requires features such as non-MAPI top-level hierarchies in public folder stores, public folder access with NNTP, or IMAP4, you will need to retain Exchange Server 2003 in your organization.

# Comparison between Exchange Server 2007 and Exchange Server 2010

Table 1.5 compares Exchange 2007 and Exchange 2010.

**TABLE 1.5** Exchange 2007 and 2010 comparison

	Exchange 2007	Exchange 2010
Release date	December 2006	November 2009
Supported operating system	Windows Server 2003 SP2 64-bit and newer	Windows Server 2008 64-bit SP1 and newer
Management tools in client operating system	Windows XP Professional and newer	Windows Vista 64-bit and newer
Supported domain controllers	Windows 2003 and higher	Windows 2003 SP2 and higher

**TABLE 1.5** Exchange 2007 and 2010 comparison (*continued*)

	<b>Exchange 2007</b>	<b>Exchange 2010</b>
Domain and forest functional level	Windows 2000 Native or higher	Windows 2003 Native or higher
Enterprise Edition	50 storage groups or databases	No storage groups  100 databases per server
Standard Edition	5 storage groups or databases  No clustering support	No storage groups  5 databases
Hardware requirements	Processor: 64-bit processor Intel EM64T and AMD64  RAM: 2 GB + 5 MB per mailbox  Disk space: At least 1.2 GB on the drive to install Exchange and 200 MB for system drive; 450 MB if Hub Transport server	Processor: 64-bit processor, Intel EM64T and AMD64  RAM: 4 GB + 5 MB per mailbox  Disk space: At least 1.2 GB on the drive on which you install Exchange and 200 MB of available disk space on the system drive; 500 MB if Hub Transport server
Software prerequisites	ASP .NET Framework 2.0  IIS  WWW  MMC 3.0  Windows PowerShell	.NET Framework 3.5  IIS  Windows Remote Management  Windows PowerShell v2
Options that are de-emphasized	CDOEx  WebDAV	



**TABLE 1.5** Exchange 2007 and 2010 comparison (*continued*)

	Exchange 2007	Exchange 2010
Removed options	ExOLEDB	
	Store events	
	IMF	
	Outlook Mobile Access	
	Administrative groups	
	Coexistence with Exchange Server 5.5	Storage groups
	Routing groups	Clustered mailbox server
	Outlook Web Access to public folders	
Coexistence and upgrade paths	Mailbox Recovery Center	CDOEx
		WebDAV
		ExOLEDB
		Store events
		Streaming backups
	No Exchange Server 5.5. No in-place upgrade	No Exchange Server 2000 Must upgrade to Exchange Server 2003 or 2007 before transition to Exchange 2010
	Coexistence with Exchange Server 2000 and Exchange Server 2003	Coexistence with Exchange Server 2003 and Exchange Server 2007
	No in-place upgrade	Upgrade Exchange Server 2003 to 2007 and to Exchange Server 2010
	Migration options for Lotus Notes and GroupWise	

**TABLE 1.5** Exchange 2007 and 2010 comparison (*continued*)

	<b>Exchange 2007</b>	<b>Exchange 2010</b>
Management and monitoring tools	EMC	Exchange Control Panel
	EMS	Role Based Access Control (RBAC)
	ExBPA	Remote PowerShell
	Database Recovery Management	
	Database Troubleshooter	
	Mail Flow Troubleshooter	
	Message tracking	
	Queue Viewer	
	Performance Monitor	
Administrative roles	Exchange Organization Administrators	Exchange Organization Administrators
	Exchange Recipient Administrators	Exchange Recipient Administrators
	Exchange Server Administrators	Exchange Server Administrators
	Exchange View-Only Administrators	Exchange View-Only Administrators
		RBAC

**TABLE 1.5** Exchange 2007 and 2010 comparison (*continued*)

	<b>Exchange 2007</b>	<b>Exchange 2010</b>
Clustering with high availability	Cluster continuous replication	
	Single copy cluster	
	Standby continuous replication	Database availability group
		Mailbox database copy
		Database mobility
Recovery options	Deleted item retention	Deleted item retention
	Mailbox retention	Mailbox retention
	Dial tone recovery	Single Item Recovery
	Recover CMS (CAS)	Dial tone recovery
	Recovery storage group	Recovery database
Compliance	Journaling	Journaling
	Disclaimer	Disclaimer
		MailTips
		Legal Hold
	SSL certificate automatically installed	SSL certificate automatically installed
	Secure RPC for Outlook	Secure RPC for Outlook
	HTTPS access for Outlook Anywhere	HTTPS access for Outlook Anywhere



You can look at the entire list of new and discontinued features in Exchange Server 2010 by visiting the Microsoft Exchange product site at <http://www.microsoft.com/exchange/2010/en/us/whats-new.aspx>.

## Client Benefits to Exchange Server 2010

Microsoft spent much time listening to its customers, consultants, and messaging professionals to find out what features were missing or needed to be enhanced from earlier version of Exchange. The benefits of this feedback are shown in the many new features and enhancements. While we will not cover every modification, we will review some of the major changes.

### Large Mailbox Support

Previous versions of Exchange required a significant investment in memory and a robust storage infrastructure to make large mailbox support a reality. Even if organizations had enough memory and storage to support large mailboxes, performance degradation typically started when mailboxes grew beyond 2 GB in size or when the individual folders contained more than 5,000 items. Outlook 2007 SP2 included some changes in how the software handled large mailboxes, making it more efficient to support mailboxes that grew larger than 10 GB. These improvements were helpful but still didn't solve all the issues or specific errors that might be encountered as mailboxes approached 20 GB in size.

Exchange 2010 reduces the I/O requirements of the underlying storage by some 70 percent over Exchange 2007. This results in optimization for mailboxes over 10 GB in size and folders with 100,000 items. Microsoft now supports, and even recommends, deploying Exchange on a properly sized, low-cost SATA-based storage. This can represent a significant cost savings and allow organizations to size Exchange for capacity instead of performance.

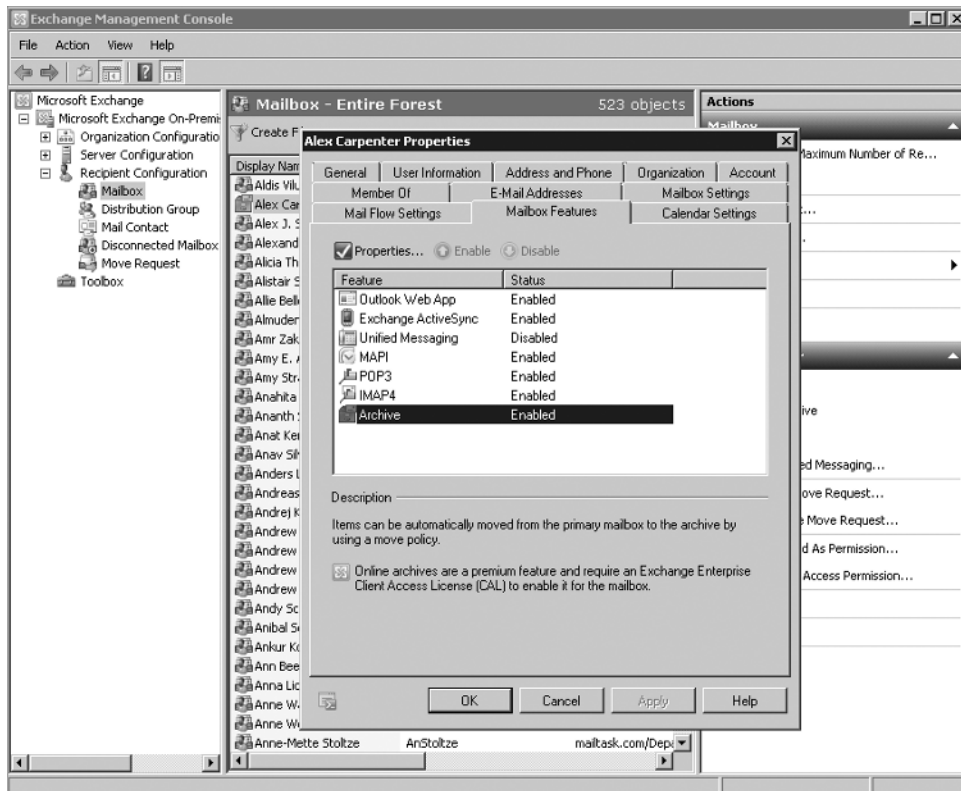
## Native Archiving Features

With Exchange 2010, Microsoft introduced basic archiving features natively. Figure 1.7 shows the archiving feature enabled.

The native *archiving* feature of Exchange 2010 allows an administrator to create an archive mailbox for each user; content can be moved automatically via policies or manually by end users. Here are a few caveats about Microsoft's native archiving features:

- Access to the archive is online only, there is no support for synchronizing the archive data for offline use.
- No automated PST ingestion tools are currently available.
- The initial release of Exchange 2010 had no ability to store archive data in a different database or on different storage than the primary mailbox. Exchange 2010 Service Pack 1 introduced the ability to store the archive on a separate database or even host the archive in the cloud.
- Archiving policies may not be as granular as some third-party solutions.
- Removing attachments and storing them elsewhere (“stubbing”) is not available.

**FIGURE 1.7** Archiving feature enabled

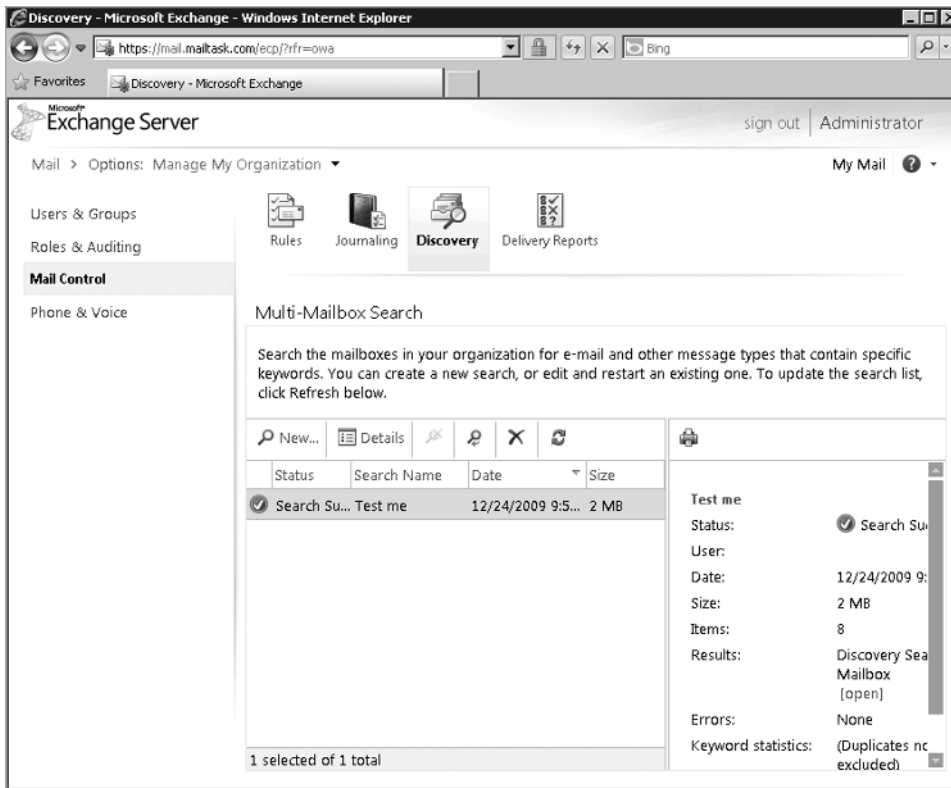


Microsoft's native archiving feature provides basic archiving functionality along with a unified search that will query both the primary, live mailbox and the archive mailbox simultaneously.

## eDiscovery Features

In previous versions of Exchange, external tools are required for basic multi-mailbox searching. With Exchange 2010, this is provided by default, as seen in Figure 1.8.

**FIGURE 1.8** Multi-Mailbox Search



This allows for users—like a user in the Legal department, for example—to search across specific mailboxes or even across all mailboxes based on criteria such as sender, recipient, expiration policy, message size, send and receive date, and information rights management protected items. These searches can be applied across both the primary and archive mailboxes and can also be applied to email, contacts, calendars, and instant messaging conversations.

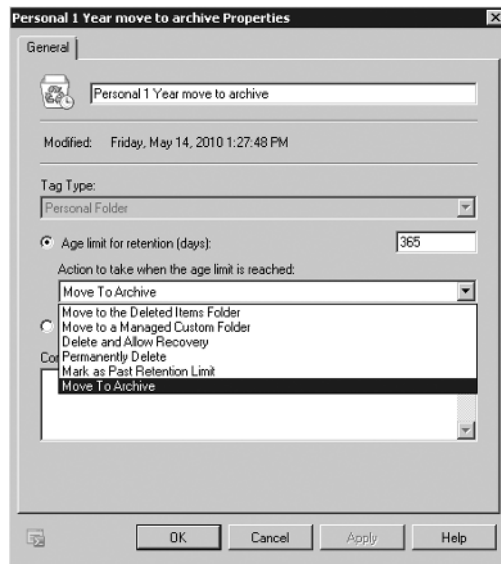
The results of the specific query, once obtained, may be sent to either a mailbox or a specific SMTP address. Because these functions are also exposed with the API, third parties are able to create tools that integrate with the native features.

## Retention Policies and Legal Holds

While basic retention functionality has existed for years in the form of mailbox management policies (Exchange 2003) and managed folder policies (Exchange 2007), granularity of application was restricted to just folders. With Exchange 2010, retention policies exist that can be applied per folder or per individual message. These policies can be applied and managed centrally, or users can be allowed to select an appropriate retention policy using a convenient drop-down menu. If a retention policy applies to a specific item, a notification will be sent to the user when the item is set to expire.

An administrator can configure these policies so that upon expiration, the items are either deleted or moved to the user's personal archive. You can use this functionality to provide a true life cycle of an item by moving it to the archive after a certain period of time and then deleting the item from the archive after a longer period of time. Figure 1.9 shows some of the options that are now available within retention policies.

**FIGURE 1.9** Retention policies



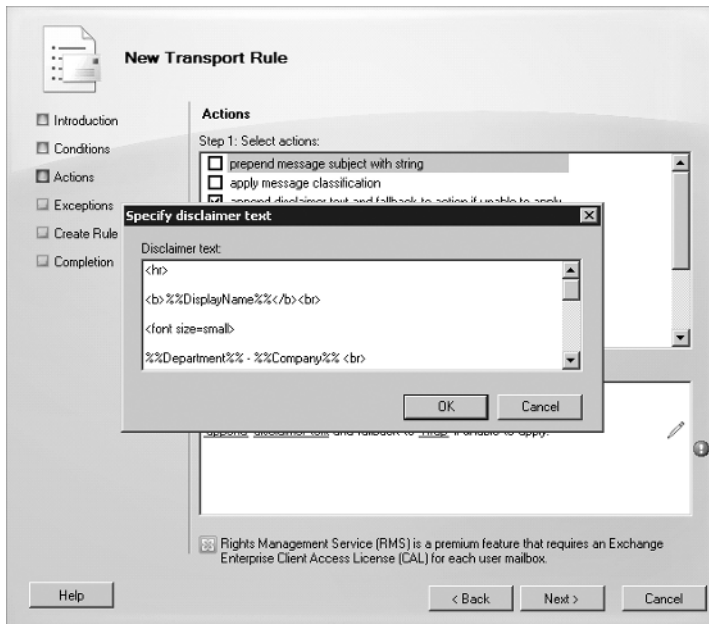
## User-Specific HTML Disclaimers

Exchange 2007 provided simple email disclaimer functionality with transport rules. Exchange 2007 disclaimers are limited to static text and could be difficult to manage. Besides email

disclaimers, many companies also want to have standardized email signatures. To accomplish this, many companies would turn to third-party software or email gateways to provide this functionality. Smaller organizations would just manually create Outlook signatures. This content had to be managed outside of Exchange and proved to be difficult to update.

Exchange 2010 can define dynamic signature text that leverages AD-defined attributes such as name, title, and phone number in addition to HTML formatting. As a result, organizations can define a standard format that includes dynamic information specific to each user. Figure 1.10 shows the Specify disclaimer text dialog box.

**FIGURE 1.10** Specify disclaimer text dialog box



## MailTips

MailTips are a new feature in Exchange 2010 that can help a user become more productive with email and can prevent Outlook and OWA policy infractions. MailTips provide suggestions to users about any potentially unanticipated results that will occur if a message was to be sent. In addition, it can prevent specific messages or even content from being sent entirely. There are a number of situations in which MailTips can prove to be useful:

- If a user is about to send a message to a distribution list that contains more than 1,000 recipients or to a distribution list that contains an external email address



- If a user is about to send a message to another user that has enabled their out-of-office auto-reply
- If a message exceeds the maximum configured sending/receiving size limits configured within Exchange
- If a recipient's mailbox is full due to a storage quota
- If a custom MailTip has been configured for a recipient or distribution group
- If a user replies to all but was Bcc'd on the original message
- If a user is attempting to send a message to a user or distribution list to which they are not allowed to send (ethical wall or defined client conflict)

## Summary

Exchange 2010 has many improvements focused made to provide better support for large-scale deployments. The much reduced storage I/O requirements and flexible storage options have increased the administrators' or messaging professionals' design options and have allowed them to plan based on both capacity and performance. There is also a much richer set of permissions, allowing work to be pushed down to user-level administrators or to the users themselves.

Many features have created a seamless coexistence between OWA and Outlook 2010. In addition, features such as the ability to define tags and control what items get archived, eDiscovery support, policy enforcement through user intervention and provide solutions for many companies looking to get a handle on email content..

## Chapter Essentials

**Know what administrative changes have been made in Exchange 2010.** Understanding the changes within Exchange 2010 will help administrators who are coming from an Exchange 2007 environment. Understanding how the management interface has been redesigned will make finding features and components a lot easier.

**Know the requirements for Exchange 2010.** A thorough knowledge of the requirements, both in server hardware and network configuration, will help in the planning stages of your Exchange 2010 rollout. These requirements are important because they will shape not only what hardware you will be able to utilize but also the amount of effort required to ensure that your organization's environment is ready for Exchange 2010.

**Understand the benefits of the new features in Exchange 2010.** The new features, and even the enhancements to features, provide many benefits to the end users and Exchange administrators. A deep understanding of these features and how to properly configure them will ensure that the deployment will be successful and that your users will be fully prepared to take advantage of them.

