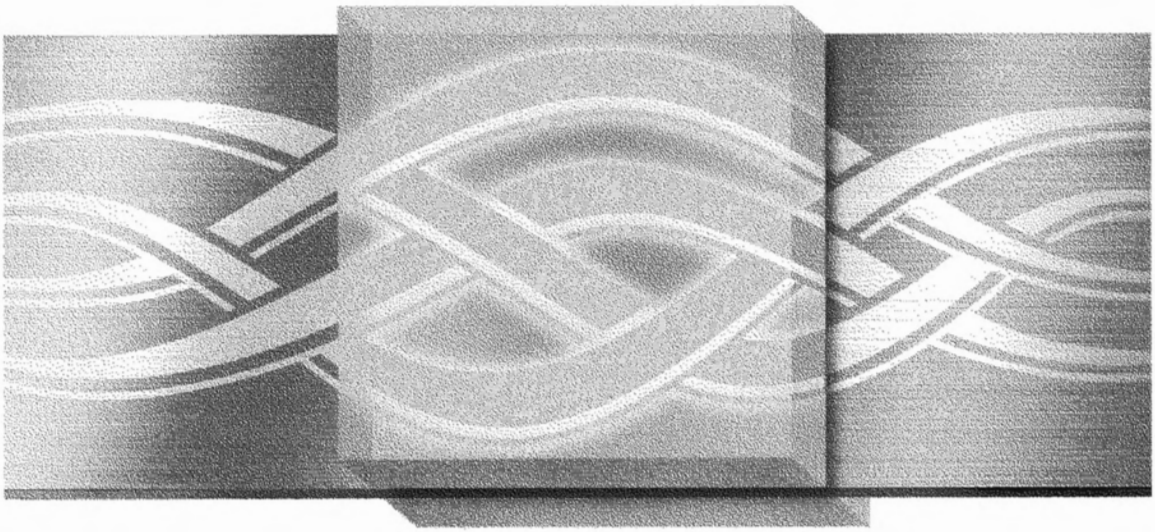
Microsoft®

Getting Started

The Business - Critical Messaging and Collaboration Server



Exchange Server

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Getting Started

Microsoft Exchange Server

Version 5.5

Microsoft Corporation

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Document No. X03-40125
Printed in the United States of America

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Before You Begin

Microsoft® Exchange Server is a powerful messaging system that enables members of your organization to exchange information with users on the Internet and other systems. Users can send documents, spreadsheets, graphics, and other items in e-mail to other users; view items that are available in public folders; or post items in public folders so that other users can access them. The high level of performance and advanced security features of Microsoft Exchange Server ensure that your company's communication needs are met. In addition, Microsoft Exchange Server is easy to manage. It provides a set of tools, such as the Administrator program, to help you manage your system efficiently.

This book presents the basic information needed to get a Microsoft Exchange Server system running in a typical organization. It provides a brief overview of the product and instructions for installing the server component of Microsoft Exchange Server. This book also describes how to perform basic Microsoft Exchange Server tasks, such as creating mailboxes and using public folders, and provides product support information.

Microsoft Exchange Server Getting Started is provided with Microsoft Exchange Server as a printed document. It is also accessible from the **Help** menu in the Microsoft Exchange Server Administrator program.

How Microsoft Exchange Server Works

Microsoft Exchange Server uses clients and servers to accomplish tasks across the network. Exchanging e-mail is similar to using the postal service to send a letter. For example, when a client application sends a message, the server acts as a central post office and routes the message to its destination. Users access messages in their mailbox by using their client e-mail application. When sending mail, the sender only needs to know the address of the recipient, not the details of how the message reaches its destination.

The main components of Microsoft Exchange Server work together in a similar way. When you use Microsoft Exchange Server to send a message, the message is first delivered to a central postoffice called the *information store*. The information store then determines where the message should be delivered by searching in the *directory*, which is similar to an address book. Finally, the mail carrier, or *message transfer agent* (MTA), delivers the message. Meanwhile, the *system attendant*, which is a background process, makes sure that the system runs smoothly and mail is routed correctly.

The following components provide essential services for Microsoft Exchange Server.

Directory Contains information about all objects in the system, such as servers, and recipients, such as users' mailboxes, public folders, and distribution lists. Recipients in the directory are also available in the Address Book so that users can look up addresses or information about other users quickly and easily.

Information store Contains the messages in users' mailboxes and public folders.

Internet Mail Service Routes messages between Microsoft Exchange Server and Simple Mail Transfer Protocol (SMTP)-based systems, including Internet mail servers and Post Office Protocol version 3 (POP3) and Internet Message Access Protocol, Version 4rev1 (IMAP4rev1) clients. For information about connecting to other systems, see *Microsoft Exchange Server Concepts and Planning*.

Message transfer agent (MTA) Routes messages to their destination.

System attendant A maintenance service that must be running for other services to run. It assists with tasks such as generating e-mail addresses and monitoring.

Organizations and Sites

To make it easier for you to manage your servers and clients, Microsoft Exchange Server is a scalable system based on the concept of *organizations* and *sites*. An organization is the largest administrative unit in Microsoft Exchange Server, and consists of one or more sites. A site contains one or more Microsoft Exchange Server computers that share the same directory information and are connected by a high-bandwidth permanent network. A small organization may have only one or two sites, whereas a large organization may have many.

Within a site, directory replication is automatic. However, you must configure directory replication between two sites in order for directory information to be replicated between sites.

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What's New in Microsoft Exchange Server Version 5.5

Microsoft Exchange Server version 5.5 includes the following enhancements and new features.

Updated database structure for the information store and directory
Microsoft Exchange Server uses an updated database that provides more robust data storage capabilities. Because of the new database structure, the information store is limited only by your system's hardware capacity.

Ability to retrieve deleted items from mailboxes and public folders
Users can now retrieve deleted items in mailboxes and public folders if you set a deleted item retention period for the information store, mailbox, or public folder. Users can recover deleted items by using the **Recover Deleted Items** command in Microsoft Outlook™ version 8.03 or later. Recovered items are copied to the Deleted Items folder using mailboxes, or to the selected folder using public folders. For more information about retrieving deleted items, see Chapter 5, "Setting Up Mailboxes," Chapter 6, "Configuring Public Folders," and Chapter 8, "Setting Up Server Core Components and Properties."

IMAP4 Microsoft Exchange Server supports Internet Message Access Protocol Version 4rev1 (IMAP4rev1). For information, see *Microsoft Exchange Server Operations*.

Writeable LDAP Microsoft Exchange Server enables users to make changes to the directory by using Lightweight Directory Access Protocol (LDAP). For information, see *Microsoft Exchange Server Operations*.

Enhanced protocol support for the Internet Mail Service The Internet Mail Service supports the following protocols: ETRN, Secure Multipurpose Internet Mail Extensions (S/MIME), Secure Sockets Layer (SSL), and Simple Authentication and Security Layer (SASL). For information about how to configure these protocols for the Internet Mail Service, see *Microsoft Exchange Server Operations*.

Support for MHTML Microsoft Exchange Server supports MIME Hypertext Markup Language (MHTML), which is the MIME encapsulation of aggregate documents, such as an HTML document with inline pictures.

Microsoft Exchange Scripting You can install the Microsoft Exchange Event Service to support customized public folder workflow applications that you develop. For example, you can develop an application that performs an action when a specified event occurs in a public folder. For more information, see Chapter 6, "Configuring Public Folders."

Container level search control You can restrict users' access to Address Book views. For example, if you are hosting multiple companies on a single Microsoft Exchange Server computer, you can prevent users of one company from viewing the Address Book views of another company. For more information, see *Microsoft Exchange Server Operations*.

Support for multiple and differential offline Address Books Users can also download differential entries in offline Address Books, so that only changes that occurred since the last download are downloaded. For more information, see Chapter 7, "Setting Up Your Site."

Advanced security You can set multiple password policies that prevent administrators from making changes to the Key Management (KM) server without authorization from one or more other administrators. Microsoft Exchange Server also supports trusted messages sent between organizations so that users can verify the source of messages sent from another organization. For more information, see *Microsoft Exchange Server Operations*.

Microsoft Cluster Server Microsoft Exchange Server supports Microsoft Cluster Server, which is included with Windows NT® Server. Microsoft Cluster Server provides fault tolerance in the event of hardware and software malfunctions. It ensures that if a Microsoft Exchange Server computer fails, another is available so mail delivery is never interrupted. Microsoft Cluster Server must be installed on the Microsoft Exchange Server computer to enable support for clustering.

Microsoft Exchange Chat Service Microsoft Exchange Server now includes chat services that enable users to interact with each other online, in real time. For more information, see *What's New: Microsoft Exchange Chat Service* and *Microsoft Exchange Chat Service Operations*.

SNMP Madman MIB Microsoft Exchange Server supports the Mail and Directory Management Management Information Base (MADMAN MIB) for use with Simple Network Management Protocol (SNMP) monitoring agents. For more information, see *Microsoft Exchange Server Maintenance and Troubleshooting*.

Lotus cc:Mail DB8 migration The Lotus cc:Mail source extractor supports Lotus cc:Mail version 5.*x* (DB6), and version 6.0 and version 8.0 (DB8). For more information, see *Microsoft Exchange Server Migration*.

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Address space and routing enhancements Microsoft Exchange Server gives you more control over message routing. The **Address Space** property page on connectors has been enhanced to enable scoping restrictions on each address space specified. Each address space can be configured so that the connector routes messages that originate from anyone in the organization, routes only messages that originate from within the home site, or routes only messages that originate within the home server location. In addition, each MTA can be configured to use only the least-cost routes to deliver mail, so that if the least-cost route is not accessible, messages are returned with a non-delivery report (NDR). For more information, see *Microsoft Exchange Server Operations*.

Microsoft Exchange Server Documentation

Microsoft Exchange Server provides comprehensive print and online product documentation. You can install the online books described in this section from the Microsoft Exchange Server compact disc during Setup. You can also order printed versions of many of the books by using the coupon provided in the back of this book. The following documentation is available for Microsoft Exchange Server.

Microsoft Exchange Server Concepts and Planning Presents an overview of the product features and concepts needed for planning a Microsoft Exchange Server organization. Administrators should read this book before setting up Microsoft Exchange Server.

This book is accessible from the **Help** menu in the Administrator program. It is also available separately as a printed book from Microsoft.

Microsoft Exchange Server Operations Provides step-by-step instructions for administering Microsoft Exchange Server, including how to set up and configure Microsoft Exchange Server sites, servers, mailboxes, and connectors. It also provides comprehensive information about using the Microsoft Exchange Server Administrator program.

This book is accessible from the **Help** menu in the Administrator program. It is also available separately as a printed book from Microsoft.

Microsoft Exchange Server Maintenance and Troubleshooting Provides comprehensive information about monitoring and troubleshooting Microsoft Exchange Server. It includes instructions for using Microsoft Exchange Server tools and Windows NT tools, as well as those from other sources that you can use to resolve problems with Microsoft Exchange Server.

This book is accessible from the **Help** menu in the Administrator program. It is also available separately as a printed book from Microsoft.

Microsoft Exchange Server Migration Describes concepts for migrating from foreign systems to Microsoft Exchange Server. It also provides instructions for using migration tools to move users from systems such as Microsoft Mail for PC Networks and Microsoft Mail for AppleTalk Networks (also known as Quarterdeck Mail) to Microsoft Exchange Server.

This book is accessible from the **Help** menu in the Administrator program.

What's New: Microsoft Exchange Chat Service Describes the new features available with Microsoft Exchange Chat Service. These new features include new administrative commands, extensions to the Internet Relay Chat (IRC) protocol, security enhancements, and improved server performance and scalability.

This book is accessible from the **Help** menu in the Administrator program.

Microsoft Exchange Chat Service Operations Provides instructions for installing, configuring, and administering Microsoft Exchange Chat Service. It explains how Chat Service works and offers guidelines for automating server operation and improving performance. This guide also describes the administrative tools available in Chat Service and includes a comprehensive command reference for the **chatcmd** utility.

This book is accessible from the **Help** menu in the Administrator program.

Online Help Provides online information for the Microsoft Exchange Server Administrator program. You can access Help from the **Help** menu or by pressing F1.

Online Documentation Set Provides Microsoft Exchange Server books online as a Hypertext Markup Language (HTML) file. They are automatically installed during Microsoft Exchange Server Setup and can be accessed from the **Help** menu in the Microsoft Exchange Server Administrator program. You can also access these books from the **Start** menu by choosing **Programs**, **Microsoft Exchange**, and **Books Online**.

Technical Support Information For technical support information, see "Your Guide to Microsoft Technical Support" in this book.

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About This Guide

This book is organized into four parts to provide you with the basic information you need to get a Microsoft Exchange Server system running in your organization.

Part 1 "Installation" Provides basic planning guidelines for installing Microsoft Exchange Server and step-by-step installation instructions.

Part 2 "Fundamentals" Explains how Microsoft Exchange Server is administered, how to perform common tasks (such as setting up mailboxes and public folders, and restricting access to Microsoft Exchange Server), and how to configure Microsoft Exchange Server core components.

Part 3 "Replication" Describes how to set up directory and public folder replication between sites.

Part 4 "Appendixes" Describes how to set up Microsoft Exchange Server in different environments and summarizes e-mail addressing conventions. Information about accessibility is also included.

Document Conventions

To help you locate and interpret information easily, *Microsoft Exchange Server Getting Started* uses the following conventions.

Convention	Description
ALL CAPITALS	Acronyms and names of certain commands.
bold	Menus and menu commands, command buttons, property page and dialog box titles and options, command-line commands, options, and portions of syntax that must be typed exactly as shown.
Initial Capitals	Names of applications, programs, files, servers, and named windows; and directory names and paths.
italic	Information you provide, terms that are being introduced, and book titles.
`monospace`	Examples, sample command lines, program code, and program output.
SMALL CAPITALS	Names of keys on the keyboard.

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Your Guide to Microsoft Technical Support

If you have a technical question about Microsoft Exchange Server, see your Microsoft Exchange Server documentation or consult Help. You can also find late-breaking updates and technical information in the Readme file provided with your product disks or compact disc. If you still have a question, Microsoft offers technical support and services ranging from an innovative online support site to direct assistance with a Microsoft technical engineer. Following is a brief description of these services to help you decide which option is right for you.

Note The services and prices listed here are available in the United States and Canada only.

Self-Help Tools to Find Answers

Online Support: http://www.microsoft.com/support/ Microsoft Technical Support Online uses the cutting-edge technology of Microsoft to help you access the most relevant technical information and resources to answer your support questions. Use the troubleshooting wizards to easily diagnose and answer technical questions. You can also select technical articles, programming aids, or commonly asked questions from the Microsoft Knowledge Base that contains more than 75,000 articles. Online support helps you find the answers you need, quickly and easily.

Direct Assistance with a Microsoft Technical Engineer

Pay-Per-Incident Support In the U.S. and Canada, for a fee of $195US per incident, call (800) 936-5900, 24 hours a day, 7 days a week, including holidays. In the U.S. and Canada, you can also submit your support question over the Internet with Web Response. For more information, visit Microsoft Technical Support Online at http://www.microsoft.com/support/.

Note Support fees will be billed to your VISA, MasterCard, or American Express credit card.

Priority Annual Support If you anticipate a higher volume of support incidents, or need priority access to Microsoft Technical Support engineers, you can purchase a Priority Annual Comprehensive Account. In the U.S. and Canada, for $1,695US per 10 incidents, call (800) 936-3500, Monday through Friday, excluding holidays, 6:00 A.M. to 6:00 P.M. Pacific time.

Priority Plus Microsoft Technical Support also offers special accounts for medium-sized businesses that require priority access for incident resolutions, including business-critical support, and access to targeted information used by IT and Help desk professionals to help plan a smoother product deployment. For more information, call (800) 936-3500, Monday through Friday, excluding holidays, 6:00 A.M. to 6:00 P.M. Pacific time.

Priority Consult Line Priority Consult Line provides hourly consulting for support questions that fall outside of the traditional technical support realm. Such issues include designing or planning for deployment, software development, code review, and implementation planning. The Consult Line covers all Microsoft products, including those used for developing Internet and intranet solutions. For more information, or to purchase hourly consulting services, at $195US/hour (minimum of one hour), call (800) 936-5200, Monday through Friday, excluding holidays, 6:00 A.M. through 6:00 P.M. Pacific time.

Additional Information

Text Telephone Microsoft text telephone (TT/TTY) services are available for the deaf or hard of hearing. In the U.S., using a TT/TTY modem, dial (425) 635-4948. In Canada, using a TT/TTY modem, dial (905) 568-9641.

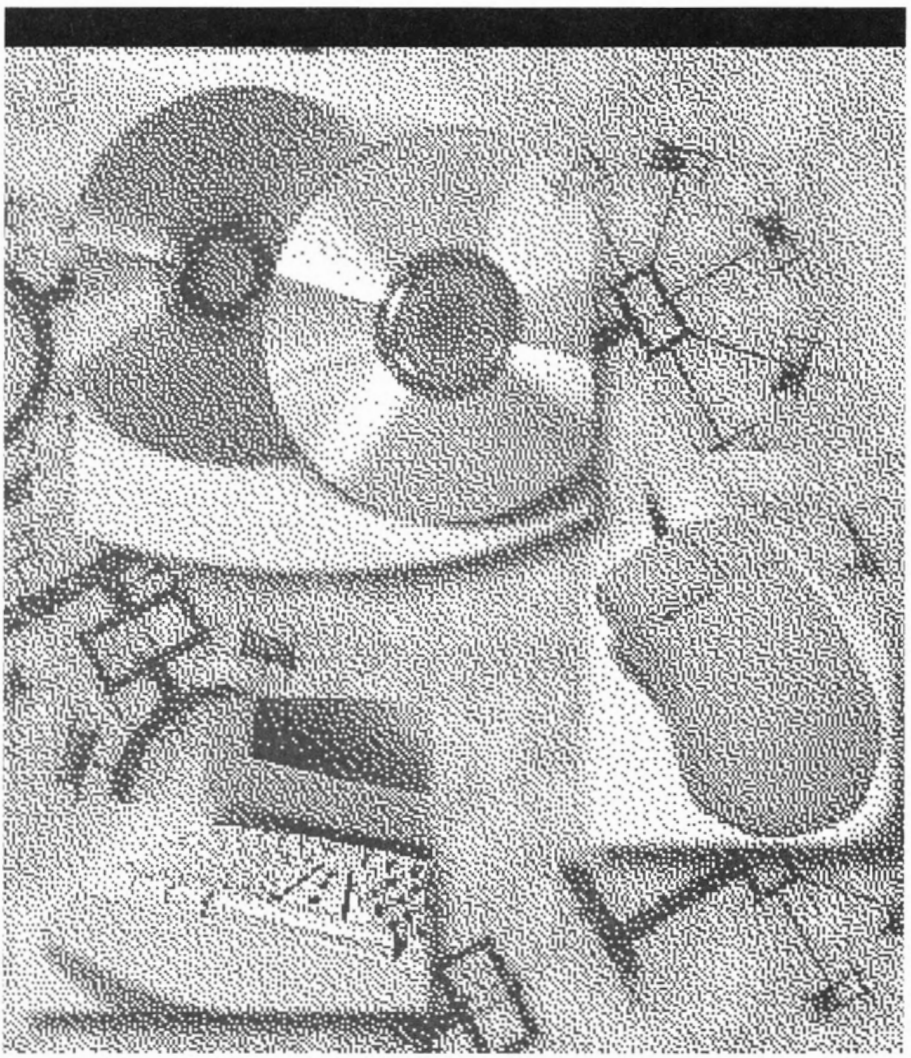
Support Offerings Worldwide Services and prices may vary outside the U.S. and Canada. For support offerings outside these countries, contact the local Microsoft subsidiary in your area. For a listing of worldwide Microsoft subsidiaries, see the Help file that came with this product or go to Microsoft Technical Support Online.

Microsoft's support services are subject to Microsoft's then-current prices, terms, and conditions, which are subject to change without notice.

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PART 1

Installation



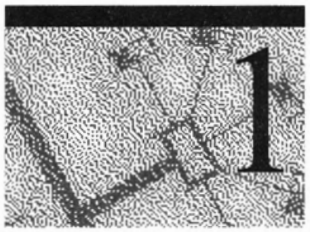
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CHAPTER 1

Planning Considerations



The first and most important step in the installation process is planning your organization. How much planning you do before installing Microsoft Exchange Server depends on your organization's requirements and resources. For example, a smaller organization with only one server and a few users requires less planning than a larger organization with many servers. Regardless of how large your organization is, thorough planning will make your rollout of Microsoft Exchange Server more efficient. For more information about how to plan a rollout of Microsoft Exchange Server, see *Microsoft Exchange Server Concepts and Planning*.

Planning Guidelines

Use the following guidelines to plan a Microsoft Exchange Server installation.

Assess your needs and resources Collect information about your current installation and determine what services your users require. For example, do users need to send e-mail and exchange information by using public folders? Do you need to upgrade server or client software or hardware?

Determine your network topology Make sure that there is basic network connectivity between your servers and clients. Before Microsoft Outlook can connect to a Microsoft Exchange Server computer, network connectivity must already be established. For example, clients and servers must use the same network protocols.

Consider your Windows NT domain structure Microsoft Exchange Server relies on Windows NT domains to provide security such as user logon authentication. In your plan, make sure that user accounts are located in the same domain as your Microsoft Exchange Server computer or in a trusted domain. Otherwise, users and services will not be properly validated.

Consider network bandwidth requirements You should ensure that there is sufficient network bandwidth between servers to support the services you want to provide. For example, if you expect message traffic between servers to be low and public folder use to be light, you may not need as much bandwidth as another organization with heavy mail and public folder usage.

Determine the number of sites If your organization has many servers or is distributed across a wide geographic area, consider dividing your organization into multiple sites. You should organize sites so that servers connected using connections of similar bandwidth are placed in the same site. In general, make your sites as large as possible.

Establish naming conventions Decide on naming conventions for objects in your organization such as sites, servers, and mailboxes. Consider how your naming conventions will affect e-mail addresses generated for foreign systems (such as the Internet). You should also choose names that won't be affected by organizational changes.

Develop a migration strategy If you have an existing e-mail system, you must have a strategy for migrating users and data from the existing system to Microsoft Exchange Server. Consider how users use the existing system and determine how that functionality will be migrated to Microsoft Exchange Server or replaced by Microsoft Exchange Server tools. For more information, see *Microsoft Exchange Server Migration*.

Schedule the rollout Schedule the phases of your rollout. Consider including the following in your schedule:

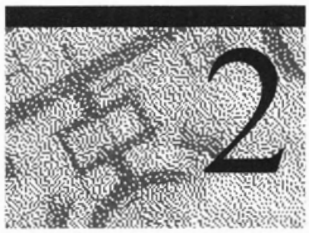
- Hardware and software upgrades
- Microsoft Exchange Server computer installation
- Server administrator training
- Client user training and support
- Migration from other systems

Design and test a prototype When you finish planning your rollout, test your plan before implementing it. Design a prototype installation that incorporates all the functions and coexistence that you plan to have in your organization. Use the prototype to test implementation issues, such as server and client installation procedures, hardware and network compatibility, network bandwidth, and coexistence with or migration from other mail systems.

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CHAPTER 2

Setting Up Your Organization



Use the Setup program to install Microsoft Exchange Server on your Microsoft Windows NT Server computer. Before you set up your servers and sites, you should have a plan for deploying Microsoft Exchange Server. For example, you should determine your organization, site, and server names before installing Microsoft Exchange Server. You should also be familiar with Windows NT Server.

Important Before running Setup, you should perform a complete backup on the computer where you will install Microsoft Exchange Server.

You start Microsoft Exchange Server Setup from the Microsoft Exchange Server Setup page, a Web page that runs automatically when the Microsoft Exchange Server compact disc is inserted into your CD-ROM drive. The page includes:

- A shortcut to Microsoft Exchange Server Setup.
- A shortcut to Microsoft Exchange Chat Service Setup. (Microsoft Exchange Chat Service enables users to communicate with each other online, in real time. For more information, see *What's New: Microsoft Exchange Chat Service* and *Microsoft Exchange Chat Service Operations*.)
- A download point to Service Pack 3 for Windows NT Server version 4.0.

System Requirements

The following software must be installed and running on each computer that will run Microsoft Exchange Server software.

- Windows NT Server version 4.0 or later and Service Pack 3.
- Transport Control Protocol/Internet Protocol (TCP/IP) for Windows NT if you plan to use any Internet protocols.

- Microsoft Internet Information Server (IIS) version 3.0 with Active Server pages and a Web browser if you plan to install Microsoft Outlook Web Access.
- Microsoft Certificate Server if you plan to install Key Management (KM) server advanced security.
- Microsoft Cluster Server software if you plan to install Microsoft Exchange Server on a pair of clustered servers.
- Windows NT Services for Macintosh if you plan to install the Microsoft Mail Connector to exchange mail with MS Mail for AppleTalk Networks (also known as Quarterdeck Mail).

For improved performance, you should plan your server's hardware to meet the expected load. The hardware requirements for each computer that will be running Microsoft Exchange Server software are described in the following table. Note that Microsoft Exchange Server can take advantage of advanced hardware, such as multiprocessor computers and caching disk array controllers.

If you install Microsoft Exchange Server on a pair of clustered servers, the processors and amount of RAM must be the same on each server.

Processor	Disk space	RAM
Minimum		
Intel® Pentium 90 MHz or faster or Digital Alpha 4/275	At least 250 MB of available disk space for Microsoft Exchange Server after Windows NT Server has been installed Sufficient disk space for the Windows NT Server page file (50 MB plus the amount of physical RAM)	At least 24 MB
Recommended		
Intel Pentium 166 MHz or faster, or Digital Alpha 5/500	Sufficient disk space for your users' e-mail and public folder information Multiple physical drives At least one striped drive set Sufficient disk space for the Windows NT Server page file (100 MB plus the amount of physical RAM)	At least 32 MB (48 MB for RISC-based systems)

Note If you are adding a server to an existing site, verify that there is enough space on the server's hard disk to import the site's directory. To do so, verify the size of the Dir.edb file in the Exchsrvr\Dsadata directory on another server in the site.

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Recommended Disk Configuration

Before you install Microsoft Exchange Server and run the Performance Optimizer, optimize your disk subsystem. The following is the recommended disk configuration for a Microsoft Exchange Server computer:

- A physical disk containing the operating system and the page file.
- A physical disk for the transaction log files so that they can be written to sequentially. To increase fault tolerance, you can mirror the disk containing the transaction log files.
- A stripe set consisting of multiple physical disks for all other Microsoft Exchange Server components so that the Microsoft Exchange Server databases can be accessed most efficiently.

Permissions

When Microsoft Exchange Server is installed, Setup grants the logged-on user account with Administrator permissions on the Microsoft Exchange Server computer. This enables you to grant other users permission to administer Microsoft Exchange Server. For more information, see Chapter 4, "Setting Permissions."

Server Setup

It is important to establish the naming conventions for your organization before you install and configure the system. The directory names for the organization, sites, and servers cannot be changed without reinstalling the software. You can change the display names at any time. For more information, see *Microsoft Exchange Server Concepts and Planning*.

Creating the Service Account

Before running Microsoft Exchange Server Setup, you must create a Windows NT *service account*. A service account is a user account that Microsoft Exchange Server services (such as the system attendant and the directory) use to run. You should use the same service account for all Microsoft Exchange Server computers in a site.

To perform the following procedure, you must be logged on as a domain administrator.

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1. In the **Administrative Tools** group, choose **User Manager For Domains**.
2. From the **User** menu, choose **New User**.
3. Type the name of the service account and the password.
4. Select **User Cannot Change Password** and **Password Never Expires**.
5. Clear the **User Must Change Password at Next Logon** and **Account Disabled** check boxes.
6. Choose **Add**, and then choose **Close**.

Software Installation

Before installing the server software, you must:

- Verify that the Windows NT Server primary domain controller (PDC) is running.
- Ensure that messaging-aware applications are not running.
- Back up your existing installation if you are upgrading Microsoft Exchange Server, in case you need to restore your system later. You can use the Windows NT Server Backup utility to save directory and information store files to a tape drive while the server is online. For more information about performing backups and restoring data from tape backup, see *Microsoft Exchange Server Maintenance and Troubleshooting*.
- Use the Cluster Administrator program to verify that an appropriate cluster group has been created if you are installing Microsoft Exchange Server on a pair of clustered servers. The group must contain a network name, an Internet Protocol (IP) address, and a shared disk that is part of an external disk array. For more information, see "Installing Microsoft Exchange Server on Clustered Servers" later in this chapter.

Note Microsoft Exchange Server Setup installs the latest National Language Support (NLS) files available for Windows NT Server. To load the newest NLS files, you must restart Windows NT Server. These files load the ISO-8859 code page series, which provides improved mapping between Internet character sets and code pages.

Starting Setup

Before you can start Setup, you must log on to the Windows NT Server computer using a domain account that is in the local administrators group.

1. Insert the Microsoft Exchange Server compact disc into the CD-ROM drive.
2. Choose **Setup** from the Microsoft Exchange Server Setup page.

Choosing an Installation Type

Use the **Installation Options** dialog box to specify the type of installation (**Typical**, **Complete/Custom**, or **Minimum**) and the location of files.

Installation Type	Components Installed
Typical	The Microsoft Exchange Server software and Administrator program. No connectors are installed.
Complete/Custom	As selected. You can install any and all available components, including certain connectors.
Minimum	Just the Microsoft Exchange Server software. No connectors are installed.

Tip To remove items that you've previously installed, select the **Add/Remove** option and clear the check box for that item.

You can install any or all of the following components if you choose the **Complete/Custom** installation:

Microsoft Outlook Web Access Outlook Web Access is a Microsoft Exchange Active Server application that enables users to access mailboxes, public folders, and the Address Book from any Web browser.

Outlook Web Access must be installed on a computer running IIS with Active Server pages installed. This enables all available user authentication options. If Setup detects IIS during a **Typical** installation, Outlook Web Access is automatically installed. Clear the check boxes in the **Complete/Custom** installation to disable any options you don't want.

Outlook Web Access and Microsoft Exchange Server do not have to be installed on the same computer. If you install Microsoft Exchange Server on a separate computer from the IIS or have multiple computers running IIS connected to another computer running Outlook Web Access, your user authentication options are limited.

Outlook Web Access requires the name of a Microsoft Exchange Server computer. If Setup is installing Outlook Web Access with Microsoft Exchange Server, it uses the name of the local Microsoft Exchange Server computer. If you are installing only Outlook Web Access, a dialog box opens, prompting you to type the name of the Microsoft Exchange Server computer.

Microsoft Mail Connector and X.400 Connector During Setup, you can install the Microsoft Mail Connector and the X.400 Connector. For more information about these two connectors (and connectors that you can configure after installing Microsoft Exchange Server), see "Setting Up Connections to Other Sites and Systems" later in this chapter.

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Microsoft Exchange Connector for Lotus cc:Mail Setup installs the Lotus cc:Mail address generator and one-off template, even when the connector is not selected in the Setup program. If the Microsoft Exchange Connector for Lotus cc:Mail is selected, the address generator and template are enabled; otherwise, they are disabled.

Microsoft Server Scripting Agent Microsoft Server Scripting Agent supports folders with customized workflow applications. For more information, see Chapter 6, "Configuring Public Folders."

KM Server The KM server enables users to encrypt and digitally sign messages. For more information about installing KM server, see "Advanced Security Installation" later in this chapter.

Installing Microsoft Exchange Server on Clustered Servers

Microsoft Exchange Server runs on clustered servers to provide greater reliability in the event of hardware failure.

Microsoft Cluster Server uses cluster groups to organize system resources. A cluster group is a logical collection of interdependent resources that are used by various Windows NT services. A cluster comprises an active node and a secondary node. For Microsoft Exchange Server, the active node is the primary mail server that processes and routes messages on your network. If the active node goes down, or if a critical service on the active node fails, the secondary node takes its place without interrupting mail service or dropping client connections. This is called a *failover*.

Important The clustered servers on which you install Microsoft Exchange Server must have identical processors and the same amount of RAM.

You install Microsoft Exchange Server first on the active node, and then on the secondary node. After Setup determines that the active node is a member of a cluster, select the cluster group that contains the necessary resources. Microsoft Exchange Server requires a group that contains a network name, an IP address, and a shared disk. Setup adds Microsoft Exchange Server *resources* (such as the system attendant, information store, and so on) to the group you select.

When you install Microsoft Exchange Server on the secondary node, Setup detects that Microsoft Exchange Server is installed on the active node. By updating the secondary node, you enable the active node to failover to the secondary node.

After you install Microsoft Exchange Server on each node, use Cluster Administrator to define the failover rules for Microsoft Exchange Server services. The failover rules define the events or conditions that trigger a failover to the secondary node.

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For more information, see the Microsoft Cluster Server documentation.

Specifying the Compact Disc Key Number

The compact disc key is part of the longer Product Identification Number (PID). It uniquely identifies your copy of Microsoft Exchange Server and enables you to receive technical support. The compact disc key number is located on the back of the Microsoft Exchange Server jewel case.

- Type the compact disc key number provided with the product.

Specifying the Organization and Site

Setup prompts you to specify the site for the new Microsoft Exchange Server computer.

If you are installing the first server in a site:

1. In the **Organization and Site** dialog box, select **Create a New Site**.
2. Type the name of the organization and site.

If you are adding a server to an existing site:

1. In the **Organization and Site** dialog box, select **Join An Existing Site**.
2. In the **Existing Server** box, type the name of a Microsoft Exchange Server computer in the site you are joining.

Specifying the Site Services Account

Before you started Setup, you should have created a service account. If you are adding a server to an existing site, Setup uses the service account for that site by default.

Note Do not use an administrator account as the service account. The service account should be used only to validate services.

- In the **Site Service Account** dialog box, type the service account name and password. Use the format *domain\account*.

Completing the Setup Process and Running the Performance Optimizer

During the final phase of Setup, you are notified of the rights that you have been granted to access the system. Then Setup prompts you to run the Performance Optimizer, which analyzes your hardware configuration and tunes the server for optimum performance.

Important The Performance Optimizer is critical to the efficient operation of Microsoft Exchange Server. If you skip this step during installation, make sure you complete it before using the server.

- Choose **Run Optimizer**. Skip this step if you want to run the Performance Optimizer later.

Advanced Security Installation

Advanced security provides data integrity, proof of origin, and confidentiality. To use advanced security features, you must install the KM server on your organization's Microsoft Certificate Server computer. You can select the KM server component during Microsoft Exchange Server Setup. If you have already installed the KM server, you can upgrade your existing installation.

KM

The computer you select for the KM server should:

- Be in the domain where you plan to centralize administration.
- Be physically secure and backed up regularly.
- Use the Windows NT Server file system (NTFS) format.

For maximum security, configure your KM server as a dedicated server in a separate site. The load on the KM server is negligible because the server is primarily used for generating keys, which is done infrequently.

Note When setting up the KM server, you should have two blank, formatted floppy disks. You should save the KM server passwords on these disks for maximum security.

Microsoft Certificate Server

You can install Microsoft Exchange Server on a Microsoft Certificate Server computer that is configured as a server or a client to another Microsoft Certificate Server computer. The Microsoft Certificate Server computer must have the Microsoft Exchange Server policy module installed.

For more information about Microsoft Certificate Server, see your Microsoft IIS documentation.

Note If you install Microsoft Certificate Server as a client to another Microsoft Certificate Server, during IIS Setup you must install only the **Web Client** option under **Microsoft Certificate Server**. All other options must be cleared. The shared folder specified must be the actual shared folder that contains Microsoft Certificate Server.

Starting the Microsoft Certificate Server Computer

After you install and set up the Microsoft Certificate Server computer, you must start it. After the server is started, it acts as a Certification Authority (CA). The Microsoft Certificate Server must be running at all times.

1. In Control Panel, choose **Services**.
2. Select the **Certificate Authority** service.
3. Choose **Start**, and then choose **Close**.

KM Server Installation

You need two passwords to install your KM server. One is used by the Microsoft Exchange Key Manager service. The other is used by advanced security administrators to perform advanced security tasks. Administrators have their own passwords.

Microsoft Exchange Key Manager service password During Setup, you can copy the password for the Microsoft Exchange Key Manager service to a floppy disk. After the password is copied to the disk, Setup immediately backs up the disk containing the password to another disk. Back up the disk that is created during KM server Setup, and keep it in a secure place in case the original is lost or damaged. If you do not copy the password to the floppy disk, Setup displays the password so you can make a note of it. There is no default password.

Note If you chose not to create a Microsoft Exchange KM server floppy disk during Setup, you must type the password that Setup provides in the **Startup Parameters** box. The password is case-sensitive.

Advanced security administrator password The advanced security administrator password is set to *password* by default. For information about changing this password, see *Microsoft Exchange Server Operations.*

Upgrading an Existing KM Server Installation

If KM server is already installed, you can upgrade the existing installation by running Microsoft Exchange Server Setup and selecting the **KM Server** option.

Before upgrading your existing KM server, you must have:

- The original KM server startup floppy disk or Microsoft Exchange Key Manager service password.
- A blank, unformatted floppy disk, which will be used to back up the Microsoft Exchange Key Management Service password.

Installing Microsoft Exchange Server with KM Server Components

Before you install KM server, log on to Windows NT Server from the computer that will run KM server. Use a domain account that is in the local administrators group and that has Windows NT Domain Admin or Accounts Operator permissions.

1. Insert the Microsoft Exchange Server compact disc into the CD-ROM drive.
2. Run Setup.exe from the directory for your computer type.
3. Choose **Complete/Custom**.
4. Select Exchange Server, and then choose **Change Option.**
5. Choose **Key Management Server.**

Specifying the Microsoft Certificate Server Location

You must specify the location of the Certificate Server that the KM server will use as its CA.

Warning You cannot change the location of the Certificate Server after you specify it. If you attempt to change it, KM server no longer functions correctly.

- Type both the server name and the CA name used by the server.

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Starting the KM Server

After you install the KM server, you must start it to enable and configure security for individual users and the site. The KM server must be running at all times. Microsoft Key Management services, unlike others, do not start automatically.

1. In Control Panel, choose **Services** and double-click **Microsoft Exchange Key Management Server**.
2. Under **Log On As**, select **This Account** and the Microsoft Exchange Service account, and then choose **OK**.
3. Insert the disk that contains the password provided during Setup into the disk drive. If you did not copy the password to a disk during Setup, type the password in the **Startup Parameters** box.
4. Select **Microsoft Exchange Key Manager**.
5. Select **Certificate Authority**, and then choose **Start**.

Note If you are starting the KM server for the first time, you should change the default KM server password, which is *"password."* For information about changing the password, see *Microsoft Exchange Server Operations*.

Granting Permissions for the Site and Configuration Containers

You can grant permissions to individual user accounts or to Windows NT global groups to access the following areas in the Microsoft Exchange Server Administrator program. Before you grant permissions, you must start the Microsoft Exchange Server Administrator program, and if necessary, connect to the Microsoft Exchange Server computer that you are granting permissions to.

Site container Accounts and groups with site permissions can perform recipient administration tasks, such as adding recipients and new mailboxes.

Configuration container Accounts and groups with configuration permissions can perform configuration administration tasks, such as adding connectors and servers and changing site property pages.

Important For accounts or groups to have full administrative permissions, you must give them permissions to both the site and the configuration.

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1. Select the Site container to grant site permissions, or select the Configuration container under the site to grant configuration permissions.
2. From the **File** menu, choose **Properties**.
3. Select the **Permissions** tab, and then choose **Add**.

   The **Permissions** property page displays the list of user accounts with permissions for this site.
4. In the **Add Users And Groups** dialog box, select the appropriate options.
5. Choose **OK**.

Option	Description
List Names From	Select the Windows NT domain you want.
Names	Select the accounts or group that you want to add, and then choose **Add**. The selected user and group names appear in the **Add Names** box.

Upgrading Microsoft Exchange Server

Setup checks for any Microsoft Exchange Server components installed on your computer. You can determine the version of a Microsoft Exchange Server installation by viewing the properties on the server object in the Administrator window.

To upgrade an existing KM server installation, see "Upgrading an Existing KM Server Installation" earlier in this chapter.

Note Before upgrading a Microsoft Exchange Server computer, turn off all server monitors that include the computer on which Setup is being run. Alternatively, you can use the monitor's **Maintenance Status** property page to put the monitor into maintenance mode. For more information, *see Microsoft Exchange Server Maintenance and Troubleshooting*.

Time Required to Upgrade

Setup estimates the time required to upgrade your existing information store. The upgrade process may take a long time, depending on the size of your information store. For very large information stores, this process can take more than a day. If the estimated time to upgrade is too long, you can quit Setup.

Database Backup Location

When you install Microsoft Exchange Server, you can choose either **Standard Database Upgrade** or **Fault-Tolerant Upgrade**. Neither option performs a complete backup of your existing databases. You should perform a full backup of your information store before running Setup.

Standard Upgrade Upgrades your databases in their current locations. If Setup fails during this operation, the databases must be restored before you can return to your previous installation or run Setup again.

Fault-Tolerant Upgrade Backs up each database to a different, temporary location before upgrading. If Setup fails, this upgrade significantly reduces the risk of having to restore your databases. Instead, you can reboot your computer and run Setup again. After all databases are successfully upgraded, the backup databases are removed and replaced by the upgraded databases. If Setup fails during this operation, you must restore your databases before you can return to your previous installation, or run Setup again. The alternate location for a fault-tolerant upgrade must have available space at least twice the size of your information store and cannot be a network drive.

Note If you are upgrading from Microsoft Exchange Server version 4.0, fault-tolerant upgrade is not available. To perform a fault-tolerant upgrade you must first upgrade to Microsoft Exchange Server version 5.0.

Upgrading from Microsoft Exchange Server Version 5.0

The Microsoft Exchange Server version 5.5 upgrade includes a more robust Outlook Web Access interface.

Backing Up Web Connector Files

Setup backs up your existing Web Connector files in case you have made significant changes to them after they were installed. The backup directory is Webdata\<*Lang*> <*5.5*>.tmp, where *Lang* is the language your server uses, and *5.5* is a number that increases each time you upgrade.

Upgrading from Microsoft Exchange Server Version 4.0

The procedure for upgrading from Microsoft Exchange Server version 4.0 varies depending on whether you can upgrade your servers to version 4.0 with Service Pack 2. To determine whether Service Pack 2 is installed on your server, verify that the version number specified for Microsoft Exchange Server in the **About Microsoft Exchange Administrator** dialog box is 4.0.993. To do so, choose **About Microsoft Exchange Server** from the **Help** menu.

Recommended Upgrade Procedure

Due to directory schema changes between Microsoft Exchange Server version 4.0 and later releases, you should first upgrade all Microsoft Exchange Server sites to version 4.0, Service Pack 2. After you do this, you can upgrade all servers in the sites to Microsoft Exchange Server version 5.5 in any order.

Note In a single-server site, you can upgrade to Microsoft Exchange Server version 5.5 directly from version 4.0. You do not have to upgrade to Service Pack 2 or restart the services after an upgrade.

You can download Microsoft Exchange Server Service Pack 2 from Microsoft by visiting http://www.microsoft.com, or you can transfer it from ftp.microsoft.com. You can also order Service Pack 2 on compact disc by contacting the Microsoft Order Desk at (800) 360-7561 from 6:30 A.M. to 5:30 P.M. Pacific time.

Alternative Upgrade Procedure

If you cannot upgrade your Microsoft Exchange Server computers to version 4.0 with Service Pack 2, you should upgrade any directory replication bridgehead servers in the site to Microsoft Exchange Server version 5.5. A *directory replication bridgehead server* is a server connected to another site using the directory replication connector. To determine which servers are directory replication bridgehead servers, view the **General** property page of each directory replication connector in the site. They are located in the Directory Replication container under the Site container in the Administrator window.

If you have more than one directory replication bridgehead server in your site, you should upgrade all of the servers to Microsoft Exchange Server version 5.5.

Important If you do not upgrade your directory replication bridgehead servers first, directory replication stops and won't restart until you upgrade them.

After you install Microsoft Exchange Server version 5.5 on the first server in the site, restart all computers running Microsoft Exchange Server version 4.0 in that site after the new directory is replicated. This can take from a few minutes to an hour, depending on the number of servers in your organization. After the new directory is replicated to all servers, you can upgrade the remaining servers to Microsoft Exchange Server version 5.5 in any order.

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Verifying Server and Site Setup

To verify that Microsoft Exchange Server is functioning correctly, do the following:

- In Control Panel, choose **Services** and verify that the Microsoft Exchange system attendant, directory, information store, and message transfer agent (MTA) services are started.
- In the organization hierarchy displayed in the Administrator program, verify that your site and server objects are set up correctly.

Setting Up Connections to Other Sites and Systems

As mentioned earlier, you can install three connectors (Microsoft Mail Connector, X.400 Connector, and the Microsoft Exchange Connector for Lotus cc:Mail) during Setup.

After you install Microsoft Exchange Server, you can configure additional connectors to connect sites within a Microsoft Exchange Server organization and connect Microsoft Exchange Server to foreign systems. The following table describes the connectors that you can use with Microsoft Exchange Server.

Connector	Description
Site Connector	Provides the simplest mechanism for connecting two Microsoft Exchange Server sites in an organization.
Dynamic RAS Connector	Can be configured to connect sites if a permanent network connection is unavailable.
Internet Mail Service	Can be configured to connect sites within an organization or route messages to the Internet.
X.400 Connector	Can be configured to connect sites within an organization or to route messages to foreign X.400 systems. The X.400 Connector conforms to the 1984 and 1988 International Telegraph and Telephone Consultative Committee (CCITT) X.400 standards. This connector is available only with the Enterprise Edition of Microsoft Exchange Server.
Microsoft Exchange Connector for Lotus cc:Mail	Provides message transfer and directory synchronization between Microsoft Exchange Server and Lotus cc:Mail systems.
Microsoft Mail Connector	Can be configured to connect to Microsoft Mail for PC Networks and Microsoft Mail for AppleTalk Networks.

For information about configuring connectors, see *Microsoft Exchange Server Operations*.

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