



Lesson Plans

Managing Exchange Server 2003

(Exam 70-284)

Version 2.0

Table of Contents

Table of Contents	1
Course Overview	2
Section 1.1: Introduction.....	4
Section 1.2: Exchange Server 2003	5
Section 2.1: Preparing for Exchange	6
Section 2.2: Installation Requirements	7
Section 2.3: Installing Exchange.....	8
Section 3.1: Exchange Components	9
Section 3.2: Exchange Modes.....	10
Section 3.3: Administrative Groups and Permissions.....	11
Section 4.1: Recipient Concepts	12
Section 4.2: Mailbox-enabled Recipients	13
Section 4.3: Mail-enabled Recipients	14
Section 4.4: Recipient Policies	15
Section 4.5: Managing Groups	16
Section 4.6: Address Lists.....	17
Section 4.7: Recipient Bulk Creation.....	18
Section 5.1: Storage Concepts	19
Section 5.2: Stores and Storage Groups.....	20
Section 6.1: SMTP Virtual Servers.....	21
Section 6.2: Routing Groups and Connectors.....	22
Section 6.3: Managing Server Communication	23
Section 6.4: Troubleshooting Communications.....	24
Section 7.1: Exchange Clients	25
Section 7.2: Front-end Servers.....	26
Section 8.1: Public Folders	27
Section 8.2: Public Folder Permissions	28
Section 8.3: Public Folder Replication	29
Section 9.1: Securing Servers	30
Section 9.2: Securing Client Communications	31
Section 9.3: Message Filtering.....	32
Section 9.4: Security Auditing.....	33
Section 10.1: Management Tools	34
Section 10.2: Optimization	35
Section 10.3: Clustering.....	36
Section 10.4: Network Infrastructure.....	37
Section 11.1: Exchange Server Backup	38
Section 11.2: Exchange Data Restore.....	39
Section 11.3: Restoring Exchange Servers	40
Section 12.1: Migration from Other Systems	41
Section 12.2: Interoperability with Previous Exchange Versions	42
Section 12.3: Coexistence.....	43

Course Overview

This course prepares students for the Microsoft Implementing and Managing Microsoft Exchange Server 2003 Certification Exam 70-284. It focuses on how to configure, implement, manage and troubleshoot the Exchange 2003 messaging environment.

You should have the following skills before studying for the Implementing and Managing Microsoft Exchange Server 2003 certification:

- Detailed knowledge of TCP/IP and TCP/IP protocols such as HTTP, SMTP, POP3
- Knowledge of Active Directory and Active Directory management tools
- Knowledge of DNS
- Knowledge of network infrastructure design and configuration
- Knowledge of IIS and IIS management tools

You can gain these skills through the required courses in the MCSE certification track.

Module 1

Module 1 introduces the student to the Exchange certification and covers the prerequisites for the course. Also included is an introduction to Microsoft messaging products. This is all basic foundational knowledge the students must know to complete the course.

Module 2

Module 2 focuses on installing Exchange. Included are facts about the components and services required, hardware requirements, and the methods to install Exchange Server 2003.

Module 3

Module 3 discusses how to manage Exchange Server 2003. Included are discussions on the core components of Exchange Server 2003, modes of operation, and how to use administrative groups to manage permissions of Exchange Servers.

Module 4

Module 4 covers the details of recipients. Recipients are Active Directory objects that have mail capabilities. Students will learn how to create and manage two classifications of recipients, mailbox-enabled recipient and mail-enabled recipient. Also they will learn how to manage recipient policies, mail-enabled groups, and address lists.

Module 5

Module 5 describes how Exchange databases are organized within Exchange servers and how to use Exchange System Manager to manage stores and storage groups.

Module 6

Module 6 discusses server communications. It discusses how to optimize, manage, and troubleshoot communications between servers in a multiple Exchange Server 2003 environment.

Module 7

Module 7 discusses the most common types of clients supported by Exchange 2003. Topics include selecting the client connection and improving security by creating front-end/back-end server configurations.

Module 8

Module 8 discusses how to manage and troubleshoot public folders. Topics include using client permissions and roles to manage client permissions, and increasing fault tolerance through the use of public folder replication.

Module 9

Module 9 explains how to secure mail servers and client-to-server communications. Additional topics include firewalls, connectors, message filtering, Safe and Blocked lists, and Security Auditing.

Module 10

Module 10 covers the details of how to manage, optimize and increase the availability and fault tolerance of Exchange 2003 servers. Topics include management tools, creating a baseline, hardware components, load testing, clustering, and troubleshooting the network infrastructure.

Module 11

Module 11 discusses backing up and restoring an Exchange server. Topics include developing a backup strategy, selecting online and offline backups, retrieving lost data, and recovering from a failed Exchange server.

Module 12

Module 12 covers moving from other messaging systems to Exchange Server 2003. Migration, upgrading and coexistence are discussed. Other topics include selecting multi or single-phase migration, selecting intra-organization migration versus inter-organization migration, connection agreements, export and import tools, and permissions needed to uninstall Exchange.

Section 1.1: Introduction

Preparation

This section introduces the video instructor, the exam, and the prerequisites to this course.

Before beginning this course, students should have experience with:

- TCP/IP
- Active Directory
- DNS
- Network infrastructure
- IIS

Time

About 5 minutes

Section 1.2: Exchange Server 2003

Preparation

This section is an overview of messaging systems, the two versions available for Exchange 2003 and the options available with each version.

Lecture Focus Questions:

- What are the advantages of a client/server messaging system?
- What are the differences between shared folder and client/server messaging systems?
- How does Active Directory affect the deployment of Exchange?
- What advantages does clustering offer?
- What are the differences between the Standard and Enterprise editions of Exchange 2003?

Time

About 10 minutes

Section 2.1: Preparing for Exchange

Preparation

This section discusses the components and services that are required for the deployment of Exchange Server 2003. It also discusses how to prepare the forest and Active Directory domains before installing Exchange Server 2003.

Exchange 2003 Objectives:

101. Prepare the environment for deployment of Exchange Server 2003.

Lecture Focus Questions:

- Why are Active Directory, DNS, and TCP/IP required to install Exchange Server 2003?
- How does Exchange use the Active Directory schema?
- When should you run the **Setup.exe /forestprep** command? What permissions do you need to run the command?
- When should you run the **Setup.exe /domainprep** command? What permissions do you need to run the command?
- What is the advantage of doing a /forestprep and /domainprep prior to an Exchange Server 2003 installation?

Time

About 20 minutes

Section 2.2: Installation Requirements

Preparation

This section covers the hardware requirements to install Exchange Server 2003. Both minimum and recommended requirements are discussed. It also presents the features that are supported by the two versions of Exchange Server 2003 to help in selecting the correct version to meet an organization's needs.

Exchange 2003 Objectives:

102. Install, configure, and troubleshoot Exchange Server 2003.

Lecture Focus Questions:

- What factors would you consider when choosing the Exchange Server 2003 Standard Edition over Enterprise Edition?
- What advantages do you gain by following the recommended hardware requirements rather than the minimum hardware standards?
- Which services does Exchange require that are not included in a normal Windows 2003 Server installation?

Time

About 20 minutes

Lab/Activity

- Enable Services for Installation

Section 2.3: Installing Exchange

Preparation

This section focuses on the basic facts of how to install Exchange Server 2003. Two different methods are available. Setup.exe is the manual method to install Exchange and the Exdeploy (Exchange Deployment Tools) is the automatic method of installing Exchange with a predefined process. Also discussed, are post installation steps to verify Exchange was installed correctly.

Exchange 2003 Objectives:

102. Install, configure, and troubleshoot Exchange Server 2003.

Lecture Focus Questions:

- What is the Exchange Administrator account?
- What resources are available to you when troubleshooting installation problems?
- What methods can you use to verify the Exchange setup?

Time

About 30 minutes

Section 3.1: Exchange Components

Preparation

This section explains the role of the core components of the Exchange Server 2003. Understanding these components is necessary for the management and optimization of Exchange. Also discussed are the management tools to monitor Exchange.

Lecture Focus Questions:

- What is the purpose of an administrative group?
- What factors determine the types of virtual servers you will deploy in your Exchange environment?
- What types of objects can be recipients?
- What is the relationship between a mailbox and a recipient?
- What tasks do you perform in Exchange System Manager?
- What Exchange tasks do you perform in Active Directory Users and Computers?

Time

About 30 minutes

Section 3.2: Exchange Modes

Preparation

This section defines the two modes of operation for Exchange Server 2003. The students are then given an opportunity to change an Exchange system from Mixed Mode to Native Mode.

Lecture Focus Questions:

- What advantages does native mode offer over mixed mode?
- What are the requirements for changing to Exchange native mode?

Time

About 10 minutes

Lab/Activity

- Change to Native Mode

Section 3.3: Administrative Groups and Permissions

Preparation

This section discusses administrative groups, which are logical administrative structures used to manage and delegate permissions to Exchange servers. Also discussed are permissions that are used to delegate Exchange server administrative tasks to others.

Exchange 2003 Objectives:

403. Manage and troubleshoot permissions.

Lecture Focus Questions:

- What factors should you consider when planning administrative groups?
- What is ADSIEdit?
- Why should you create administrative groups before installing additional servers in your organization?
- What types of tasks warrant an Exchange View Only permissions assignment?
- Who should receive Exchange Full Administrator permissions?
- What is the relationship between local administrative permissions and Exchange permissions?
- When would you assign permissions to the organization instead of to an administrative group?

Time

About 40 minutes

Lab/Activity

- Manage Administrative Groups
- Delegate Administrative Permissions
- Assign Administrative Permissions to a User

Section 4.1: Recipient Concepts

Preparation

This section explains that a recipient is an Active Directory object that can send or receive email. Exchange recipients are created and managed from Active Directory Users and Computers. It is important to understand the different types of recipients in order to select the appropriate recipient for various users in an organization.

Exchange 2003 Objectives:

- 502. Manage user objects
- 503. Manage distribution and security groups
- 504. Manage contacts

Lecture Focus Questions:

- What is an Exchange recipient?
- What administrative tasks can you perform using the Exchange Tasks wizard?
- How do you determine when to mailbox-enable or mail-enable a user?
- What types of recipient objects can be mailbox-enabled?
- How does a query-based distribution group alleviate administrative overhead?

Time

About 15 minutes

Section 4.2: Mailbox-enabled Recipients

Preparation

This section provides an opportunity for the student to practice working with mailbox-enabled recipients. They will learn how to create mailbox-enabled users, move mailboxes and manage mailbox properties. No *Lecture Focus Questions* have been assigned to this section.

Exchange 2003 Objectives:

- 502. Manage user objects.

Time

About 60 minutes

Lab/Activity

- Mailbox-enable User Accounts
- Move a Mailbox
- Delete a Mailbox
- Create a Mailbox-enabled User
- Delete a User and the Mailbox
- Set Size Limits on a Mailbox
- Set Send Mail on Behalf of Recipients

Section 4.3: Mail-enabled Recipients

Preparation

This section provides an opportunity for the student to practice working with mail-enabled recipients. They will learn how to create mail-enabled users and how to modify properties for mail-enabled objects. No *Lecture Focus Questions* have been assigned to this section.

Exchange 2003 Objectives:

- 502. Manage user objects
- 504. Manage contacts

Time

About 15 minutes

Lab/Activity

- Mail-enable a User
- Create a Mail-enabled Contact

Section 4.4: Recipient Policies

Preparation

This section discusses recipient policies (configuration settings that apply to Exchange recipients) that can be used to specify the way in which e-mail addresses are generated for recipients. The student will learn how to modify the default recipient policy, create and modify recipient policies, and configure filter rules to customize how recipient policies are applied.

Exchange 2003 Objectives:

501. Manage recipient policies.

Lecture Focus Questions:

- What does a recipient policy do?
- When you have multiple recipient policies, when is the default recipient policy applied?
- How do you determine which address is a user's return address when the user has multiple addresses?
- Which variables (and variable combinations) allow you to display a user's whole name in an e-mail address?
- What is the relationship between the Recipient Update Service (RUS) and Active Directory?

Time

About 45 minutes

Lab/Activity

- Modify the Default Recipient Policy
- Create a New Recipient Policy
- Delete and Modify Recipient Policies

Section 4.5: Managing Groups

Preparation

This section discusses the management of mail-enabled groups. Students will learn how to mail-enable security and distribution groups, create mail-enabled groups and modify group properties, and create query-based distribution groups.

Exchange 2003 Objectives:

503. Manage distribution and security groups.

Lecture Focus Questions:

- What factors should you consider when choosing whether to create security, distribution, or query-based groups?
- How does the group scope affect your choice of the type of group to create?
- What requirements must your system meet to allow you to use query-based distribution groups?

Time

About 30 minutes

Lab/Activity

- Mail-enable a Security Group
- Create a Distribution Group
- Modify Distribution Group Properties
- Create a Query-based Distribution Group

Section 4.6: Address Lists

Preparation

This section discusses how to manage address lists which are used to display a list of recipients with similar characteristics. Address lists let users easily list and find recipients. Students will learn how to create and modify address lists and how to hide contacts from global address lists.

Exchange 2003 Objectives:

505. Manage address lists.

Lecture Focus Questions:

- What methods can you use to create an easily navigable address list?
- How can you determine which users to include in an offline address list?
- What are the advantages of creating address lists in addition to the global address list?

Time

About 25 minutes

Lab/Activity

- Create an Address List
- Modify an Address List
- Create and Hide a Contact

Section 4.7: Recipient Bulk Creation

Preparation

This section discusses the recipient bulk creation tools used to create and modify a large number of recipients in Active Directory.

Exchange 2003 Objectives:

502. Manage user objects

Lecture Focus Questions:

- How do **Csvde.exe** and **Ldifde.exe** differ in terms of features supported and file format?
- Which command would you choose if you need to modify existing user accounts?

Time

About 10 minutes

Section 5.1: Storage Concepts

Preparation

This section describes how Exchange databases are organized within the Exchange servers. Both stores and storage groups are defined and two types of Exchange stores are discussed. Also discussed are the two database files that make up a store and what determines which database file will be used to hold the message.

Exchange 2003 Objectives:

202. Manage, monitor, and troubleshoot data storage.

Lecture Focus Questions:

- In which database would you look to find messages from an Internet client?
- What types of backups should you use if circular logging is enabled?
- When does the system delete log files (both when circular logging is used and when it is not used)?
- What are the storage group and store limitations with Exchange Standard edition? What are the limitations with Exchange Enterprise edition?

Time

About 25 minutes

Section 5.2: Stores and Storage Groups

Preparation

In this section, students will learn how to manage stores and storage groups using the Exchange System Manager. Students will have an opportunity to practice using Exchange System Manager to create a storage group and store, and how to modify storage group properties. No *Lecture Focus Questions* have been assigned to this section.

Exchange 2003 Objectives:

202. Manage, monitor, and troubleshoot data storage.

Time

About 45 minutes

Lab/Activity

- Change Transaction Log and System Path Locations
- Change Mailbox Store Database Files Location
- Enable Circular Logging
- Set Mailbox Store Limits
- Create a Storage Group and Store

Section 6.1: SMTP Virtual Servers

Preparation

This section discusses the facts about Simple Mail Transfer Protocol (SMTP) Virtual Servers. SMTP is the default protocol for Exchange Server 2003 and is used to send and transfer mail.

Exchange 2003 Objectives:

302. Manage and troubleshoot virtual servers.

Lecture Focus Questions:

- What is a *virtual server*?
- How does Exchange use DNS to identify the destination mail server for each message?
- What is the purpose of a *smart host*?
- What is a *masquerade domain*?

Time

About 45 minutes

Lab/Activity

- Configure Message Limits

Section 6.2: Routing Groups and Connectors

Preparation

This section explains how to optimize communication in an environment consisting of multiple Exchange Server 2003 computers by creating routing groups and connectors.

Exchange 2003 Objectives:

304. Manage and troubleshoot connectivity.

Lecture Focus Questions:

- Why do you configure routing groups?
- What do *connectors* do?
- What is contained in the Exchange link state information?
- When would you choose a routing group connector over an SMTP connector?
- What are the limitations on X.400 connectors?

Time

About 20 minutes

Section 6.3: Managing Server Communication

Preparation

This section explains how to manage server communication by customizing the routing group configurations. Students will have an opportunity to practice what they have learned about managing communication. No *Lecture Focus Questions* have been assigned to this section.

Exchange 2003 Objectives:

304. Manage and troubleshoot connectivity.

Time

About 45 minutes

Lab/Activity

- Create Routing Group Connectors
- Designate a Bridgehead Server
- Create a Routing Group and Connector
- Customize Message Delivery
- Create an SMTP Connector

Section 6.4: Troubleshooting Communications

Preparation

This section helps students to understand how an Exchange server selects one route over another when multiple routes are available. This information is important when troubleshooting Exchange 2003. Also discussed, are two important troubleshooting tools, Message Tracking and WinRoute.

Exchange 2003 Objectives:

304. Manage and troubleshoot connectivity.

Lecture Focus Questions:

- What factors affect the selection of a route?
- Given the factors for route selection, how is one route selected over another?
- What is the function of the Message Tracking Center?
- When using message tracking, how does the information change based on the servers on which message tracking is enabled?
- What is the function of the *link state table*?

Time

About 25 minutes

Lab/Activity

- Configure Message Tracking

Section 7.1: Exchange Clients

Preparation

This section discusses the most common types of email client connections supported by Exchange 2003. The students will learn which client connection to select for the appropriate technology.

Exchange 2003 Objectives:

302. Manage and troubleshoot virtual servers.

Lecture Focus Questions:

- Which clients allow users to create public folders?
- What protocols does Outlook Express support?
- Which virtual servers should you configure for non-Outlook clients?
- What are the benefits of *cache* mode?

Time

About 25 minutes

Lab/Activity

- Start POP3 and IMAP Virtual Servers

Section 7.2: Front-end Servers

Preparation

This section discusses how to improve security and scalability of Exchange 2003 by creating front-end/back-end server configurations.

Exchange 2003 Objectives:

303. Manage and troubleshoot front-end and back-end servers.

Lecture Focus Questions:

- What is the primary benefit you receive from configuring a front-end server?
- What security benefits do you get from configuring a front-end server?
- What changes must you make to a server to make it a front-end server?
How do you designate a back-end server?

Time

About 20 minutes

Lab/Activity

- Establish a Front-End Server

Section 8.1: Public Folders

Preparation

This section discusses the basic facts about public folders. Public folders are a shared stored location for any type of electronic document such as email messages, tasks, calendars, etc.

Exchange 2003 Objectives:

301. Manage and troubleshoot public folders.

Lecture Focus Questions:

- What types of data do public folders hold?
- How do users access public folder data?
- What is a *public folder tree*?
- What is the difference between public folders in mixed mode and native mode?

Time

About 30 minutes

Lab/Activity

- Create a Public Folder Tree and Store
- Create Public Folders

Section 8.2: Public Folder Permissions

Preparation

This section explains how public folder permissions control what users can do to the public folder and its contents. Students will learn different types of client permissions and how to use roles to manage client permissions.

Exchange 2003 Objectives:

301. Manage and troubleshoot public folders.

Lecture Focus Questions:

- What permissions does the publishing author role allow?
- What permissions does the reviewer role allow?
- What are administrative rights?
- When are directory rights not available on a public folder?

Time

About 45 minutes

Lab/Activity

- Assign Public Folder Permissions 1
- Assign Public Folder Permissions 2

Section 8.3: Public Folder Replication

Preparation

This section discusses how public folder replication can be used to increase the fault tolerance of the public folder data and can improve access time by placing a copy of the public folder data on local servers.

Exchange 2003 Objectives:

301. Manage and troubleshoot public folders.

Lecture Focus Questions:

- How does public folder replication differ from Active Directory replication?
- How does *content replication* occur?
- What is *replication latency*?
- What is a public folder *referral*?
- When is a client given access to data through a public folder referral?

Time

About 25 minutes

Lab/Activity

- Replicate Public Folders

Section 9.1: Securing Servers

Preparation

This section discusses the security issues involved in multiple Exchange servers in an organization. Also discussed is how to provide availability and stability of the Exchange servers through proper security practices. Several methods for configuring and securing mail servers are discussed.

Exchange 2003 Objectives:

- 401. Manage and troubleshoot connectivity across firewalls.
- 405. Detect and respond to security threats.

Lecture Focus Questions:

- Why are LDAP and Kerberos used in an Exchange environment?
- What is the difference between using an SMTP virtual server and an SMTP connector for Internet access?
- Which firewall port must you open to enable server-to-server for Exchange and Internet mail servers?
- Which firewall port do you open to allow DNS traffic?

Time

About 30 minutes

Section 9.2: Securing Client Communications

Preparation

This section discusses how to provide secure client-to-server communications using a front-end/back-end Exchange server configuration. Included are the steps to take to ensure secure connections when enabling client connections through the Internet.

Exchange 2003 Objectives:

- 303. Manage and troubleshoot front-end and back-end servers.
- 401. Manage and troubleshoot connectivity across firewalls.
- 404. Manage and troubleshoot encryption and digital signatures.
- 405. Detect and respond to security threats.

Lecture Focus Questions:

- How can you secure the client connection for the Outlook 2003 client over the Internet?
- What advantages do you get when running RPC over HTTP instead of using a VPN?
- What are the system requirements for using RPC over HTTP?
- What is the advantage of using SSL accelerator cards?
- How do you secure client communications with the front-end server? How do you secure front-end server communications with back-end servers?
- Which firewall ports must you open in the inner and outer firewalls if the front-end server is inside the DMZ?
- What does S/MIME protect?
- When sending an encrypted e-mail, which key is used to encrypt the message? Which key is used to digitally sign the message?

Time

About 50 minutes

Section 9.3: Message Filtering

Preparation

In this section students will learn how to use message filtering to reduce the amount of SPAM by stopping the flow of messages at the mail server. In addition to the filtering done at the server level, recipients can establish Safe Senders, Safe Recipients, and Blocked Senders lists.

Exchange 2003 Objectives:

405. Detect and respond to security threats

Lecture Focus Questions:

- How does a connection filter use IP addresses to block messages?
- How does using an RBL (*real-time block list*) increase server overhead?
- Why would you configure a recipient filter?
- What is the difference between a sender filter and a connection filter?
- After configuring filter settings in the Global Settings, what else must you do to enable filtering?
- How does *Intelligent Message Filtering* work?

Time

About 45 minutes

Lab/Activity

- Configure Connection Filtering
- Configure Recipient Filtering
- Configure Sender Filtering

Section 9.4: Security Auditing

Preparation

This section gives a brief overview of how to use auditing in Active Directory for Exchange. Auditing categories, trigger events and the different levels you can set auditing to occur at are all discussed.

Exchange 2003 Objectives:

402. Manage audit settings and audit logs.

Lecture Focus Questions:

- What audit categories are available to Exchange Server 2003 through Active Directory?
- When accessed, which Exchange objects cause a trigger event in directory service access?
- What should the settings be for Audit account logon events and Audit logon events? Why?
- How do you make the Security tab available for administrative groups and storage groups?
- At what levels can you enable auditing in Exchange System Manager?

Time

About 15 minutes

Section 10.1: Management Tools

Preparation

This section examines the management tools available in Exchange Server 2003 and Windows Server 2003 used to monitor and troubleshoot the Exchange server. Management tools discussed include Event Finder, Performance Monitor, Exchange System Manager, WinRoute, Isinteg.exe, Eseutil.exe, and Microsoft Baseline Security Analyzer (MBSA). Creating a baseline helps the administrator to identify unusual value ranges and isolate the source of the problem.

Exchange 2003 Objectives:

201. Manage, monitor, and troubleshoot server health.

Lecture Focus Questions:

- With diagnostic logging enabled on an Exchange server, where is logging information written?
- What is a *queues* folder?
- What is the difference between an object and a counter in Performance Monitor?
- What is the difference between an alert and a log entry?
- What are the advantages of using a SQL database format for protocol logging?
- On which servers must you enable message tracking to see the path mail takes through the Exchange system?
- Under what conditions would you choose *Isinteg* over *Eseutil*?
- Which maintenance tasks should you perform on a regular basis?

Time

About 60 minutes

Lab/Activity

- Enable Protocol Logging

Section 10.2: Optimization

Preparation

In this section students will learn how to utilize resources to optimize the performance of the Exchange server. Discussed are the facts to consider about hardware components, tools to load test your current system to determine if they can handle projected loads, and how to design the storage system to optimize the system and protect the data.

Exchange 2003 Objectives:

201. Manage, monitor, and troubleshoot server health.
202. Manage, monitor, and troubleshoot data storage.

Lecture Focus Questions:

- What is the maximum amount of memory Exchange uses?
- How do you ensure that Exchange uses the maximum amount of memory?
- Why are disks often performance bottlenecks?
- What are reasons for creating multiple stores?
- What advantages do you get from multiple stores? a single store?
- What performance benefits do you get from creating a storage group for each store?
- What type of disk should you use for storing the Exchange log files?

Time

About 30 minutes

Section 10.3: Clustering

Preparation

In this section discusses how clustering can be used to increase the availability and fault tolerance of network servers. Included is a discussion on the steps required to set up a clustered configuration.

Exchange 2003 Objectives:

103. Install, configure, and troubleshoot Exchange Server 2003 in a clustered environment.
203. Manage, monitor, and troubleshoot Exchange Server clusters.

Lecture Focus Questions:

- What makes a clustered environment advantageous despite the additional administrative overhead?
- What is the difference between a *cluster*, a *cluster group*, and a *resource*?
- What steps must you complete prior to installing Exchange in a clustered environment?
- What resources must you configure to create an Exchange Virtual Server (EVS)?
- What is the function of the Exchange System Attendant resource?
- What factors would lead you to deploy an active/active configuration over an active/passive configuration?
- What is the difference between *failover* and *failback*?

Time

About 35 minutes

Section 10.4: Network Infrastructure

Preparation

In this section students will learn how to diagnose and troubleshoot connectivity problems. Discussed are the tools used to verify network connectivity, the methods used to verify name resolution, and issues to consider when verifying Active Directory.

Exchange 2003 Objectives:

201. Manage, monitor, and troubleshoot server health.
305. Monitor, manage, and troubleshoot infrastructure performance.
601. Diagnose problems arising from host resolution protocols.
602. Diagnose problems arising from Active Directory issues.
603. Diagnose network connectivity problems.

Lecture Focus Questions:

- What is indicated by a successful Telnet session to port 25?
- What is the function of the following DNS records: A, CNAME, MX?
- What is the difference between the **NetDiag** and the **DcDiag** tools?
- What is the difference between Active Directory replication and the other types of replication used with Exchange?
- How can you tell if a problem is related to the Recipient Update Service or Active Directory replication?

Time

About 40 minutes

Section 11.1: Exchange Server Backup

Preparation

This section discusses the points that must be considered when planning a backup strategy to protect the system. Included is information about types of backup, types of data to back up, and types of backup tools.

Exchange 2003 Objectives:

204. Perform and troubleshoot backups and recovery.

Lecture Focus Questions:

- What factors should you consider when designing a backup strategy?
- What is the difference between an online and offline backup? What are the advantages of each?
- What data do you back up if you create a Windows Backup Set?
- Why should you back up Exchange data separately from system data?
- Which backup strategy would you perform if you had circular logging enabled?

Time

About 30 minutes

Section 11.2: Exchange Data Restore

Preparation

In this section students will learn different operations that can be used to retrieve lost data in Exchange Server 2003. These include discussions about Deleted Item Retention, Mailbox Retention, Restore the Mailbox Store, Recovery Storage Group, and Recovery Forest and Server.

Exchange 2003 Objectives:

204. Perform and troubleshoot backups and recovery.

Lecture Focus Questions:

- What type of operation should you perform first if a message or mailbox has been deleted?
- What is the default retention period for deleted items?
- What is the danger of restoring the entire Exchange database?
- What is a *recovery storage group*?
- How do log files increase the amount of data that might be recovered when disks containing Exchange databases fail?
- How do you replay log files when restoring from a backup set? What can you use to manually replay the log files if you forget?
- What must you do before restoring a mailbox store to its original location?

Time

About 50 minutes

Lab/Activity

- Delete a User and Reconnect the Mailbox
- Modify Mailbox Store Deletion Time
- Prepare for Mailbox Recovery
- Prepare to Restore a Store
- Run the Cleanup Agent and Purge a Mailbox

Section 11.3: Restoring Exchange Servers

Preparation

This section examines three methods to recover if the Exchange server fails and cannot be booted because of a hardware or configuration problem. Included in this section are the recommendations for working with failed Exchange servers.

Exchange 2003 Objectives:

204. Perform and troubleshoot backups and recovery.

Lecture Focus Questions:

- When you choose to restore a failed Exchange server, which components do you restore?
- What is the difference between restoring the Exchange system and rebuilding the Exchange system? What factors would lead you choose one method over the other?
- What advantage do you have if you install using the **/disasterrecovery** switch?

Time

About 10 minutes

Section 12.1: Migration from Other Systems

Preparation

This section covers the process of migrating mailboxes, public folder, and other contents from external messaging systems to Exchange. Both single-phase and multi-phase migration types are discussed.

Exchange 2003 Objectives:

105. Migrate from other messaging systems to Exchange Server 2003.
 - Use the Migration Wizard to migrate from other messaging systems.
 - Migrate from other Exchange organizations.
107. Configure and troubleshoot Exchange Server 2003 for coexistence with other messaging systems.
108. Configure and troubleshoot Exchange Server 2003 for interoperability with other SMTP messaging systems.

Lecture Focus Questions:

- When do you choose a multi-phase migration over a single-phase migration?
- Why would you choose long-term coexistence rather than a migration?
- What role do connectors play in migration and coexistence?

Time

About 15 minutes

Section 12.2: Interoperability with Previous Exchange Versions

Preparation

This section discusses how to upgrade to Exchange 2003 from previous Exchange versions. Also discussed are the types of migration used to upgrade from Exchange 5.5 to Exchange Server 2003 and the tools used during an Exchange 5.5 migration.

Exchange 2003 Objectives:

104. Upgrade from Exchange Server 5.5 to Exchange Server 2003.
105. Migrate from other messaging systems to Exchange Server 2003.
 - Use the Migration Wizard to migrate from other messaging systems.
 - Migrate from other Exchange organizations.
106. Configure and troubleshoot Exchange Server 2003 for coexistence with other Exchange organizations.

Lecture Focus Questions:

- What differences occur between installations when you perform an in-place upgrade as opposed to installing on new hardware and moving your mailboxes and public folders?
- What factors would lead you to choose intra-organization migration over inter-organization migration?
- Why do you have to make sure the identities of users are cloned over from NT 4.0 to Active Directory during an intra-organization migration?
- What is a *connection agreement*?
- What role does the SID *history* play in a migration?
- When decommissioning an Exchange server, what roles must you transfer before uninstalling Exchange?

Time

About 80 minutes

Section 12.3: Coexistence

Preparation

In this section the students will learn how to configure Exchange Server 2003 for coexistence with other messaging systems. With long-term coexistence the administrator will have to maintain multiple systems and possibly maintain multiple client applications. The processes to configure coexistence and the tools to accomplish the processes are outlined in the section.

Exchange 2003 Objectives:

106. Configure and troubleshoot Exchange Server 2003 for coexistence with other Exchange organizations.
107. Configure and troubleshoot Exchange Server 2003 for coexistence with other messaging systems.
108. Configure and troubleshoot Exchange Server 2003 for interoperability with other SMTP messaging systems.
205. Remove an Exchange Server computer from the organization.

Lecture Focus Questions:

- What is the difference between *coexistence* and *migration*?
- What type of connector would you use to establish connectivity with a POP3 server? With an Exchange 5.5 server?
- How does directory synchronization differ from calendar synchronization?
- Which tools can you use to export and import directory data manually?
- Why do you have the Exchange Server handle inbound mail when coexisting with Lotus Notes?
- When removing an Exchange Server that was the first server installed into a routing group, what extra step must you take?
- What permissions do you need to uninstall Exchange?

Time

About 35 minutes