

Designing a High Availability Messaging Solution using Microsoft Exchange Server 2007

Course 5054A: Two days; Instructor-Led

Introduction

Elements of this syllabus are subject to change.

This 2-day course teaches messaging engineers to design a high availability messaging solution using Microsoft Exchange Server 2007. Students will create a high availability design to meet service level agreement requirements and learn strategies for gaining approval for the design. They will learn how to identify risks and create mitigation plans to maintain the business continuity of the messaging system. Students will also learn how to design a backup strategy, disaster recovery procedures, and test plans for those procedures.

Audience

This course is intended for people with 3 or more years experience working with previous versions of Exchange Server and experience implementing Exchange Server 2007. Most students will have managed enterprise-level Exchange Server organizations. Students are expected to be new to participating in designing high availability solutions for Exchange Server 2007 or be planning to design high availability solutions for Exchange Server 2007 in the near future. Students may have done some design for Exchange 2000 Server or Exchange Server 2003 deployments but want to learn how to design Exchange Server 2007 environments. Students may have experience in designing and managing high availability solutions for other network services.

At Course Completion

After completing this course, students will be able to:

- Describe foundational high availability concepts for messaging.
- Evaluate high availability messaging technologies for Exchange Server 2007
- Create a high availability messaging strategy.
- Design the messaging portion of a business continuity plan.
- Design backup for a high availability messaging environment.
- Ensure recovery readiness of a high availability messaging environment.

AVANTUS TRAINING PTE LTD

79 Robinson Road #15-04 CPF Building Singapore 068897

Sales Hotline: (65)64163078

Email: enquiries@AvantusTraining.com

www.AvantusTraining.com

Prerequisites

Before attending this course, students:

- Must have a basic understanding of high availability concepts. For example, how clustering works at the operating system level (Windows clustering) and how network load balancing works.
- Must have a basic familiarity with deriving business requirements. For example, gathering business requirements and understanding that business needs come from a variety of sources (direct personnel needs, regulatory, business operations requirements).
- Must have a basic understanding of backup systems. For example, types of backups (disk to tape, disk to disk, Storage Area Networks (SAN) snapshot, imaging, etc.), backup rotation schemes, and offsite backup procedures.
- Must already know how to use:
 - Microsoft Exchange Server 2007 Management tools
 - Exchange Best Practice Analyzer (ExBPA)
 - WinNT backup (ntbackup.exe)
 - Microsoft Visio or Microsoft Office PowerPoint 2003 (to create infrastructure diagrams)
- Must understand hardware concepts. For example, what redundant array of independent disks (RAID) is, what a storage area network (SAN) is, processor options, memory requirements, how disk I/O functions and the limitations of disk I/O, and storage options for Exchange server. The differences in addressable memory spaces between 32 and 64 bit architectures.
- Must have extensive detailed knowledge of Active Directory concepts and design principles. For example, site replication, integrated authentication, schema extension, Domain Name Systems (DNS), group and organization unit structure and inheritance, etc.
- Must have working experience with designing and implementing Active Directory directory services in Microsoft Windows Server™ 2003.
- Must understand Exchange architecture. For example, the purpose of server roles, functions of specific server roles, how message routing and queuing works in Exchange, standard messaging protocols (Simple Mail Transfer Protocol [SMTP], Internet Message Access Protocol version 4rev1 [IMAP4], Post Office Protocol version 3 [POP3]), how Exchange replicates data stores, client access methods, etc.
- Must have working experience with Exchange 2000 Server or Exchange Server 2003 and Exchange Server 2007. For example, must have installed, maintained, and supported a production Exchange environment.
- Must already know how to use:
 - Exchange Server 2007 management tools
 - Exchange Best Practice Analyzer (ExBPA)
 - Microsoft Visio (to create infrastructure diagrams)
- Must have familiarity and experience with a Windows scripting or command line scripting

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Course Outline

Module 1: Foundational High Availability Concepts for Messaging

This module explains the concept of service level management and how it relates the maintenance of Exchange Server 2007. As well, an overview of the high availability technologies for various network and data center components.

Lessons

- Introduction to Service Level Management
- Overview of High Availability Technologies

Lab: Foundational High Availability Concepts for Messaging

- Exercise 1: Discussion: Refining the Scope of SLA Requirements

After completing this module, students will be able to:

- Explain service level management.
- Describe high availability technologies.

Module 2: Evaluating High Availability Technologies for Exchange Server 2007

This module explains how to evaluate the high availability technologies for Exchange Server 2007. Options for Mailbox and non-Mailbox servers are covered.

Lessons

- Evaluating High Availability Options for Mailbox Servers
- Evaluating High Availability Options for Non-Mailbox Servers

Lab A: Evaluating High Availability Messaging Technologies

- Exercise 1: Configuring LCR
- Exercise 2: Configuring CCR

Lab B: Evaluating High Availability Messaging Technologies

- Exercise 1: Testing CCR
- Exercise 2: Discussion: Recommendations for Using the High Availability Solutions

After completing this module, students will be able to:

- Evaluate high availability options for Mailbox servers.
- Evaluate high availability options for non-Mailbox servers

Module 3: Creating a High Availability Messaging Strategy

This module explains how to create a high availability messaging strategy. This includes creating solutions for Mailbox and non-mailbox servers.

Lessons

- Designing a High Availability Strategy for Mailbox Servers
- Designing a High Availability Solution for Non-Mailbox Servers

Lab: Creating a High Availability Messaging Strategy

- Exercise 1: Designing High-Availability Improvements for a Messaging Infrastructure
- Exercise 2: Justifying Messaging Infrastructure Design Decisions

After completing this module, students will be able to:

- Design a high availability strategy for Mailbox servers.
- Design a high availability solution for non-Mailbox servers.

Module 4: Designing the Messaging Portion of a Business Continuity Plan

This module explains how to design the messaging portion of a business continuity plan. As well, information about identifying threats to the messaging organization and mitigating those threats is covered.

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Lessons

- Overview of Business Continuity Planning
- Identifying Threats to the Messaging Organization
- Mitigating Threats to the Messaging Organization
- Designing the Business Continuity Plan

Lab: Designing the Messaging Portion of a Business Continuity Plan

- Exercise 1: Identifying Risks to a Messaging Environment
- Exercise 2: Discussion: Mitigating Risks to a Messaging Environment

After completing this module, students will be able to:

- Describe business continuity planning.
- Identify threats to the messaging organization.
- Mitigate threats to the messaging organization.
- Design the business continuity plan.

Module 5: Designing Backup for a High Availability Messaging Environment

This module explains how to identify the backup requirements and design the backup procedures for a high availability messaging environment.

Lessons

- Identifying Backup Requirements
- Designing Backup Procedures

Lab: Designing Backup for a High Availability Messaging Environment

- Exercise 1: Identifying Backup Requirements
- Exercise 2: Discussion: Creating Backup Procedures

After completing this module, students will be able to:

- Identify backup requirements.
- Design backup procedures.

Module 6: Ensuring Recovery Readiness of a High Availability Messaging Environment

This module explains how to ensure recovery readiness of a high availability messaging environment by designing recovery strategies and evaluating disaster recovery readiness.

Lessons

- Designing Recovery Strategies
- Evaluating Disaster Recovery Readiness

Lab: Ensuring Recovery Readiness of a High Availability Messaging Environment

- Exercise 1: Defining Recovery Procedures
- Exercise 2: Evaluating Disaster Recovery Readiness

After completing this module, students will be able to:

- Design recovery strategies.
- Evaluate disaster recovery readiness.