

6435 – Designing a Windows Server 2008 Network Infrastructure

Vendor Course Code: MS6435

Course Length: 5 days

Overview: This five-day course will provide students with an understanding of how to design a Windows Server 2008 Network Infrastructure that meets business and technical requirements for network services.

Skills Gained: After completing this course, students will be able to:

- Describe key components of network infrastructure design.
- Describe how to design a secure network.
- Design a plan for allocating IP addresses to workstations and servers.
- Design a network topology.
- Describe the internal considerations for network security and how they can be addressed.
- Design an appropriate name resolution system that incorporates Domain Name System (DNS).
- Optimise a name resolution system that incorporates DNS and Windows Internet Name Service (WINS).
- Design a solution for network access.
- Design a Network Access Protection (NAP) solution.
- Design a solution for operating system deployment and maintenance.
- Design the deployment of file services.
- Design print services in Windows Server 2008.
- Design high availability for applications and services.

Key Topics:

Module 1: Overview of Network Infrastructure Design

This module describes the key components of network infrastructure design.

Lessons

- Preparing for Network Infrastructure Design
- Designing the Network Topology
- Designing Network Infrastructure for Virtualisation
- Designing a Change Management Structure for a Network

Lab: Designing Network Infrastructure in Windows Server 2008

- Exercise 1: Preparing for the Network Infrastructure Design
- Exercise 2: Designing the Network Topology
- Exercise 3: Designing Network Infrastructure for Virtualisation
- Exercise 4: Designing a Change Management plan
- Exercise 5: Lab Discussion

After completing this module, students will be able to:

- Describe the network infrastructure design.
- Design the network topology.
- Design network infrastructure for virtualisation.
- Design a change management structure for a network.

Module 2: Designing Network Security

This module explains how to design a secure network.

Lessons

- Overview of Network Security Design
- Creating a Network Security Plan
- Identifying Threats to Network Security
- Analysing Security Risks
- Defence-in-Depth Model Overview

Lab: Designing a Network Security Plan
Exercise 1: Identifying a Team for the Security Plan Scenario
Exercise 2: Identifying Threats
Exercise 3: Analysing Risk
Exercise 4: Discussion of Designing a Network Security Plan

After completing this module, students will be able to:

- Describe the security design process.
- Describe the components of a security plan.
- Describe how to identify threats.
- Describe how to assess risk.
- Describe the defence-in-depth model.

Module 3: Designing IP Addressing

This module describes how to design a plan for allocating IP addresses to workstations and servers.

Lessons

Designing an IPv4 Addressing Scheme
Designing an IPv6 Addressing Scheme
Designing DHCP Implementation
Designing DHCP Configuration Options

Lab: Designing IP Addressing in Windows Server 2008
Exercise 1: Designing an IPv4 Addressing
Exercise 2: Designing an IPv6 Addressing Scheme
Exercise 3: Designing a DHCP Implementation
Exercise 4: Discussion of IP Address Allocation

After completing this module, students will be able to:

- Describe how to integrate IPv4 and IPv6.
- Describe how to allocate IPv4 and IPv6 addresses.
- Describe how to implement DHCP placement.
- Describe how to determine DHCP options

Module 4: Designing Routing and Switching

This module explains how to design a network topology.

Lessons

Preparing for Designing a Network Routing Topology
Selecting Network Devices
Designing Internet Connectivity and Perimeter Networks
Designing Routing Communications
Evaluating Network Performance

Lab: Designing a Network Routing Topology
Exercise 1: Designing the Placement of Routers
Exercise 2: Designing a Perimeter Network
Exercise 3: Evaluating Network Performance
Exercise 4: Discussion of Designing a Network Routing Topology

After completing this module, students will be able to:

- Prepare for designing a network routing topology.
- Design the placement of routers.
- Design a perimeter network.
- Design routing communications.
- Evaluate network performance.

Module 5: Designing Security for Internal Networks

This module explains the internal considerations for network security and how they can be addressed.

Lessons

Designing Windows Firewall Implementation

Overview of IPSec
Designing IPSec Implementation

Lab: Designing a Secure Internal Network
Exercise 1: Designing a Windows Firewall Implementation
Exercise 2: Designing an IPSec Implementation

After completing this module, students will be able to:

- Describe how Windows Firewall can be used to secure networks
- Describe how IPSec can be used to secure networks.
- Design an IPSEC implementation

Module 6: Designing Name Resolution

This module explains how to design an appropriate name resolution system that incorporates DNS.

Lessons
Collecting Information for a Name Resolution Design
Designing a DNS Server Strategy
Designing a DNS Namespace
Designing DNS Zone Implementation
Designing Zone Replication and Delegation

Lab: Designing a Name Resolution Strategy in Windows Server 2008
Exercise 1: Designing a DNS Server Strategy
Exercise 2: Designing a DNS Namespace
Exercise 3: Designing a DNS Zone and Replication Strategy
Exercise 4: Discuss the Design of Name Resolution
Exercise 5: Implement a DNS Zone and Replication Strategy

After completing this module, students will be able to:

- Determine the information required to plan name resolution.
- Describe how to design a DNS server strategy.
- Describe how to design a DNS namespace
- Describe how to design a DNS zone strategy.
- Describe how to design a DNS zone replication strategy.

Module 7: Designing Advanced Name Resolution

This module explains an appropriate name resolution system that incorporates DNS and WINS.

Lessons
Optimising DNS Queries
Designing DNS for High Availability
Designing a WINS Name Resolution Strategy

Lab: Designing a Name Resolution Strategy in Windows Server 2008
Exercise 1: Optimise DNS Resolution
Exercise 2: Designing and Configuring WINS Name Resolution
Exercise 3: Integrating DNS and WINS Name Resolution

After completing this module, students will be able to:

- Optimise DNS resolution.
- Design DNS for high availability.
- Design a WINS Name resolution strategy.

Module 8: Planning and Deploying the Application Virtualisation Management System

This module explains how to design a solution for network access.

Lessons
Gathering Data for Designing Network Access Solutions
Securing and Controlling Network Access
Designing Remote Access Services
Designing RADIUS Authentication with Network Policy Services
Designing Wireless Access

Lab: Designing a Network Access Solution
Exercise 1: Designing a Remote Access Solution
Exercise 2: Designing Network Policy Services
Exercise 3: Designing a Wireless Connection Solution
Exercise 4: Discuss the Design of Network Access
Exercise 5: Deploying an SSTP VPN Solution

After completing this module, students will be able to:

- Describe how to gather data for designing network access solutions.
- Describe how to secure and control network access.
- Describe how to design remote access services.
- Describe how to design a RADIUS solution.
- Describe how to design wireless access.

Module 9: Designing Network Access Protection

This module explains how to design a NAP solution.

Lessons

Designing the NAP Platform Architecture
NAP Architecture
NAP Enforcement
Designing NAP Policy
Designing NAP Enforcement and Remediation

Lab: Designing Network Access Protection
Exercise 1: Analysing Enforcement Methods
Exercise 2: Designing DHCP Enforcement
Exercise 3: Designing IPSec Enforcement
Exercise 4: Implementing DHCP Enforcement

After completing this module, students will be able to:

- Describe how to design the NAP platform architecture.
- Describe NPS design for NAP.
- Describe how to design NAP enforcement point and client component requirements.
- Describe IPSec based NAP.

Module 10: Designing Operating System Deployment and Maintenance

This module explains how to design a solution for operating system deployment and maintenance.

Lessons

Determining Operating System Deployment Requirements
Deploying an Operating System by Using WDS
Planning for the Creation and Modification of Images
Designing Multicast Transmission of Images

Lab: Designing Operating System Deployment and Maintenance
Exercise 1: Designing an Operating System Deployment Solution
Exercise 2: Designing WDS Deployment
Exercise 3: Designing WDS Images
Exercise 4: Designing a WSUS Deployment
Exercise 5: Discussing Operating System Deployment and Maintenance

After completing this module, students will be able to:

- Determine operating system deployment requirements
- Describe operating system deployment using Windows Deployment Services.
- Plan the creation and modification of images.
- Design multicast transmission of images.

Module 11: Designing File Services and DFS in Windows Server 2008

This module explains how to design the deployment of file services and DFS.

Lessons

Designing File Services
Designing DFS
Designing the FSRM Configuration

Lab: Designing File Services and DFS in Windows Server 2008
Exercise 1: Selecting File Services Components
Exercise 2: Designing DFS
Exercise 3: Designing FSRM
Exercise 4: Implementing DFS
Exercise 5: Implementing FSRM

After completing this module, students will be able to:

- Describe the design of file services.
- Describe the design of Distributed File System (DFS).
- Describe the design of File Server Resource Manager (FSRM).

Module 12: Designing High Availability in Windows Server 2008

This module explains how to design high availability for applications and services.

Lessons
Overview of High Availability
Designing Network Load Balancing for High Availability
Designing Failover Clustering for High Availability
Designing Geographically Dispersed Failover Clusters

Lab: Designing High Availability in Windows Server 2008
Exercise 1: Designing High Availability
Exercise 2: Implementing an NLB Design
Exercise 3: Implementing a Failover Cluster Design

After completing this module, students will be able to:

- Describe the need for high availability.
- Describe how to design Network Load Balancing for high availability
- Describe how to design Failover Clustering for high availability
- Describe how to design geographically dispersed failover clustering.

Module 13: Designing Print Services in Windows Server 2008

This module explains how to design print services in Windows Server 2008.

Lessons
Overview of a Print Services Design
Windows Server 2008 Printing Features
Designing Print Services

Lab: Designing Shared Resources in Windows Server 2008
Exercise 1: Analysing the Components of a Print Services Design
Exercise 2: Designing a Shared Printer Deployment

After completing this module, students will be able to:

- Describe the print services design.
- Describe Windows Server 2008 printing features.
- Design print services.

Target Audience:

The primary audience for this course is IT professionals (including Windows 2000, Windows Server 2003 enterprise administrators) interested in becoming a Longhorn Enterprise Administrator (who focuses on network solutions).

Prerequisites:

Before attending this course, students must have:
Active Directory Technology Specialist level knowledge and concepts.
Network Infrastructure Technology Specialist level knowledge and experience.
Applications Infrastructure Technology Specialist level knowledge and experience.
Windows Vista TS or D
Experience with Windows operating systems such as Windows XP, Windows Server 2003, and Windows Vista

Intermediate understanding of networking concepts such as TCP/IP, name resolution, and connection methods.

Intermediate understanding of security best practices for authentication and file permissions.

Intermediate understanding of server and network hardware