

## Course 6435A: Designing a Windows Server 2008 Network Infrastructure

Length:	5 Day(s)
Published:	August 20, 2008
Language(s):	English
Audience(s):	IT Professionals
Level:	400
Technology:	Windows Server 2008
Type:	Course
Delivery Method:	Instructor-led (classroom)

---

**About this Course** 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.

**Audience Profile** The primary audience for this course is IT professionals, including Windows 2000 Server and Windows Server 2003 enterprise administrators interested in becoming a Windows Server 2008 Enterprise Administrator who focuses on network solutions.

### At Course Completion

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).
- Optimize 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.

**Course Outline**  
**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 Virtualization
- Designing a Change Management Structure for a Network

#### **Lab : Designing Network Infrastructure in Windows Server 2008**

- Preparing for the Network Infrastructure Design
- Designing the Network Topology
- Designing Network Infrastructure for Virtualization
- Designing a Change Management plan
- Lab Discussion

After completing this module, students will be able to:

- Describe the network infrastructure design.
- Design the network topology.
- Design network infrastructure for virtualization.
- 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
- Analyzing Security Risks
- Defense-in-Depth Model Overview

#### **Lab : Designing a Network Security Plan**

- Identifying a Team for the Security Plan Scenario
- Identifying Threats
- Analyzing Risk
- 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 defense-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**

- Designing an IPv4 Addressing Scheme
- Designing an IPv6 Addressing Scheme
- Designing a DHCP Implementation
- 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**

- Designing the Placement of Routers
- Designing a Perimeter Network
- Evaluating Network Performance
- 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**

- Designing a Windows Firewall Implementation
- 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**

- Designing a DNS Server Strategy
- Designing a DNS Namespace
- Designing a DNS Zone and Replication Strategy
- Discuss the Design of Name Resolution
- 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**

- Optimizing DNS Queries
- Designing DNS for High Availability
- Designing a WINS Name Resolution Strategy

**Lab : Designing a Name Resolution Strategy in Windows Server 2008**

- Optimize DNS Resolution
- Designing and Configuring WINS Name Resolution
- Integrating DNS and WINS Name Resolution

After completing this module, students will be able to:

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

**Module 8: Planning and Deploying the Application Virtualization 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**

- Designing a Remote Access Solution
- Designing Network Policy Services
- Designing a Wireless Connection Solution
- Discuss the Design of Network Access
- 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**

- Analyzing Enforcement Methods
- Designing DHCP Enforcement
- Designing IPSec Enforcement
- 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**

- Designing an Operating System Deployment Solution

- Designing WDS Deployment
- Designing WDS Images
- Designing a WSUS Deployment
- 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**

- Selecting File Services Components
- Designing DFS
- Designing FSRM
- Implementing DFS
- 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**

- Designing High Availability
- Implementing an NLB Design
- 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**

- Analyzing the Components of a Print Services Design
- 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.

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 level of knowledge and experience.
- 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.