

# Course 6435B: Designing Windows Server 2008 Network and Applications Infrastructure



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|------------------|----------------------------|
| Length:          | 5 Days                     |
| Audience(s):     | IT Professionals           |
| Level:           | 300                        |
| Technology:      | Windows Server 2008        |
| Type:            | Course                     |
| Delivery Method: | Instructor-led (classroom) |

## About this Course

This five-day course will provide students with the knowledge and skills to be able to design Network and Application Infrastructure with Windows Server 2008 and Windows Server 2008 R2. The course will allow students to design such infrastructure to meet varying business and technical requirements and will prepare IT Professionals for the role of Enterprise Administrator.

## Audience Profile

This course is intended for IT Professionals who typically work as Enterprise Administrators and that wish to obtain or enhance existing skills that enable them to design a Windows Server 2008 and Windows Server 2008 R2 network and application Infrastructure.

This course is also for Enterprise Administrators or for IT Professionals who have been working on a previous version of Windows Server and want to update their skills to a Windows Server 2008 and Windows Server 2008 R2 environment.

The course will also benefit students that may have existing experience working as server administrators involved in planning and design decisions at a server level and who wish to gain skills and knowledge that enable them to transition to enterprise level design decisions.

Also, Application architects who want to know more about how to integrate Windows Server 2008 and Windows Server 2008 R2 technologies into enterprise applications will also benefit from attending this course.



## At Course Completion

After completing this course, students will be able to:

- Design a plan for allocating IP addresses to workstations and servers
- Design an appropriate name resolution system that incorporates DNS.
- Design an appropriate name resolution system that incorporates DNS and NetBIOS name resolution
- Design a solution for network access.
- Design a secure network.
- Design an appropriate application deployment solution for a given scenario.
- Identify how Remote Desktop Services can be implemented and select an appropriate method for a given scenario
- Design IIS for Web-based applications.
- Design file and print service specific to the needs of a given scenario
- Design file replication and caching to support branch office and mobile users.
- Identify different ways that applications and data can be configured to support business continuity and select an appropriate method for a given scenario
- Design and implement a WSUS solution.
- Design a virtualization infrastructure.

## Pre-Requisites

Before attending this course, students must have:

- Experience configuring Windows 7.
- Experience configuring Active Directory Domain Services, such as domains, forests, sites, trusts, certificates, user and computer accounts.
- Experience configuring Windows Server 2008 Network Infrastructure, such as IP addressing, name resolution, network access, file and print services, and Windows Server Update Services (WSUS).
- Experience configuring applications infrastructure such as server deployment, remote desktop services, and web services infrastructure.

**Students who attend this training can meet the prerequisites by attending the following courses, or obtaining equivalent knowledge and skills:**

- 6421B: Configuring and Troubleshooting a Windows Server 2008 Network Infrastructure
- 6425C: Configuring and Troubleshooting Windows Server 2008 Active Directory Domain Services
- 6426C: Configuring and Troubleshooting Identity and Access Solutions with Windows Server 2008 Active Directory
- 6427A: Configuring and Troubleshooting Internet Information Services in Windows Server 2008
- 6428A: Configuring and Troubleshooting Windows Server 2008 Terminal Services



## Course Outline

### Module 1: Designing IP Addressing and Configuration

This module describes how to design a strategy for allocating IP addresses to workstations and servers in Windows Server 2008. The module also describes how to design DHCP implementation and the configuration options that are available.

#### Lessons

- Designing an IPv4 Addressing Scheme
- Designing an IPv6 Addressing Scheme
- Designing an IPv6 Transition Strategy
- Designing a DHCP Implementation
- Planning DHCP Configuration Options

#### Lab : Designing and Implementing IP Addressing in Windows Server 2008

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- Designing an IPv4 Addressing Scheme
- Designing an IPv6 Addressing Scheme
- Designing a DHCP Implementation
- Discuss IP Address Allocation
- Implementing an IPv4 Addressing Scheme

#### After completing this module, students will be able to:

- Design an IPv4 addressing scheme.
- Design an IPv6 addressing scheme.
- Design an IPv4 to IPv6 transition strategy.
- Design a DHCP implementation.
- Determine DHCP options.

### Module 2: Designing Name Resolution

This module explains how to design an appropriate name resolution strategy that incorporates DNS. The module also covers DNS namespaces, DNS zone implementation, replication, and delegation.

#### 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 and Implementing a Name Resolution Strategy in Windows Server 2008

- Designing a DNS Namespace
- Designing a DNS Server Strategy
- Designing a DNS Zone and Replication Strategy
- Implementing Name Resolution

### After completing this module, students will be able to:

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

## Module 3: Designing Advanced Name Resolution

This module explains how to design an advanced name resolution strategy by optimizing DNS queries, designing DNS for high availability, and designing a NetBios name resolution plan.

### Lessons

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

## Lab : Designing Advanced Name Resolution in Windows Server 2008

- Optimizing DNS Servers
- Designing High Availability for Name Resolution
- Designing NetBIOS Name Resolution
- Optimizing DNS

### After completing this module, students will be able to:

- Optimize DNS resolution.
- Design DNS for high availability.
- Design a NetBIOS name resolution strategy.



## Module 4: Designing Network Access

This module explains how to design a network access solution. The module also describes how to secure network access, design a strategy for RADIUS authentication with NPS, design wireless access, and Internet connectivity.

### 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
- Designing Internet Connectivity and Perimeter Networks

### Lab : Designing and Implementing a Network Access Solution

- Designing a Remote Access Solution
- Designing Network Policy Services
- Designing a Wireless Connection Solution
- Implementing Network Access
- Discussing the Network Access Design

### Lab : Designing a Network Access Solution

- Designing a Perimeter Network
- Designing Windows 7 DirectAccess

### After completing this module, students will be able to:

- Describe how to gather data for designing network access solutions.
- Secure and control network access.
- Design remote access services.
- Design a RADIUS solution.
- Design wireless access.
- Design a perimeter network.
- Describe how to design network infrastructure to support Windows 7 DirectAccess



## Module 5: Designing Network Security

This module explains how to design a network security plan. The module describes the defense-in-depth model for network security and explains how to implement Windows Firewall and NAP policies.

### Lessons

- Defense-in-Depth Model Overview
- Overview of Network Security Design
- Creating a Network Security Plan
- Identifying Threats to Network Security
- Analyzing Security Risks
- Designing Windows Firewall Implementation
- Designing NAP Policy
- Designing NAP Enforcement and Remediation

### Lab : Designing a Network Security Plan

- Identifying Team Members for the Security Plan
- Identifying Threats
- Analyzing Risk
- Discussing Designing a Network Security Plan

### Lab : Designing and Implementing a Windows Firewall Solution

- Designing a Windows Firewall Implementation
- Designing an IPsec Implementation
- Implementing Windows Firewall

### Lab : Designing a Network Security Plan

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- Designing VPN NAP Enforcement
- Designing VPN NAP Enforcement

### After completing this module, students will be able to:

- Describe the defense-in-depth model.
- Describe the security design process.
- Describe the components of a security plan.
- Describe how to identify threats.
- Describe how to assess risk.
- Describe how you can use Windows Firewall to secure networks.
- Design a NAP policy.
- Design NAP enforcement and remediation strategies.



## Module 6: Designing Application Deployment

This explains how to design application deployment. This includes deployment of local applications, virtual applications, and virtual desktop.

### Lessons

- Overview of Application Deployment
- Designing Deployment of Local Applications
- Designing Deployment of Virtual Applications
- Designing Deployment of Virtual Desktop

### Lab : Designing Application Deployment

- Selecting an Application Deployment Method
- Deploying a Desktop Application

### After completing this module, students will be able to:

- Describe the different ways that you can deploy applications to users.
- Select an appropriate way to deploy desktop applications.
- Describe how to use App-V for application deployment.
- Describe how to use Virtual Desktop for application deployment.

## Module 7: Designing Remote Desktop Services

This module explains how to design remote desktop services. This includes designing RemoteApp, remote connectivity for RDS, and planning a monitoring and management strategy for RDS.

### Lessons

- Designing Remote Desktop Services Connectivity
- Designing RemoteApp
- Designing Remote Connectivity for RDS
- Designing Monitoring and Management for Remote Desktop Services

### Lab : Designing Remote Desktop Services

- Designing Deployment for a Line of Business Application
- Deploying an Application by Using RemoteApp

### After completing this module, students will be able to:

- Select appropriate Remote Desktop Services connection properties for a given scenario.
- Design a remote application deployment.
- Design a Remote Desktop Services Gateway and Session Broker deployment.
- Design Remote Desktop Services monitoring and management.



## Module 8: Designing IIS for Web-Based Applications

This module explains how to design IIS for web-based applications. The module describes how to design a plan to optimize IIS performance, security, and maintenance.

### Lessons

- Designing Web-based Application Infrastructure
- Optimizing IIS Performance and Stability
- Designing IIS Security
- Designing IIS Maintenance

### Lab : Designing IIS for Web-Based Applications

- Designing the Infrastructure for a Web-Based Application
- Configuring IIS for a Web-Based Application

### After completing this module, students will be able to:

- Design an appropriate IIS infrastructure for hosting web-based applications.
- Determine the appropriate IIS configuration options to increase performance and stability of web-based applications.
- Determine the appropriate IIS configuration options to secure web-based applications.
- Design a strategy to maintain IIS for web-based applications.

## Module 9: Designing File and Print Services

The module explains how to design file and print services.

### Lessons

- Designing File Services
- Designing File Server Resource Management
- Designing File Encryption
- Designing Print Services

### Lab : Designing File and Print Services

- Designing File Services
- Designing Print Services for a Department
- Implementing a Consolidated File Share

### After completing this module, students will be able to:

- Design a file share configuration.
- Determine the appropriate way to deploy File Server Resource Manager (FSRM).
- Identify when to use encryption to secure data, and the appropriate configuration.
- Design Print Services.



## Module 10: Designing File Replication and Caching

This module explains how to design a file replication and caching strategy. The module describes how to use DFS to implement file replication and caching.

### Lessons

- Branch Office Data Access
- Designing a Distributed File System
- Designing File Caching

### Lab : Designing File Replication and Caching

- Designing Data Access for Branch Offices
- Designing Data Access for Mobile Users
- Implementing DFS for a Branch Office

### After completing this module, students will be able to:

- Describe data access for branch offices, and how it can be improved.
- Design a distributed file system.
- Design file caching for branch offices and mobile users.

## Module 11: Designing for Business Continuity

This module explains how to design for business continuity by planning for disaster recovery. The module also describes how to design network load balancing, failover clustering, and geographically dispersed clusters.

### Lessons

- Disaster Recovery Planning
- Designing Windows Network Load Balancing
- Designing Failover Clustering
- Designing Geographically Dispersed Clusters

### Lab : Designing for Business Continuity

- Creating a Disaster Recovery Plan
- Creating a High Availability Plan for a Stateful Application
- Implementing NLB

### After completing this module, students will be able to:

- Design a disaster recovery plan.
- Design Windows Network Load Balancing.
- Deploy an application using App-V.
- Design geographically dispersed clusters.



## Module 12: Designing an Update Deployment Strategy

This module explains how to design an update deployment strategy. This includes designing a WSUS topology and an update management strategy.

### Lessons

- Designing a WSUS Topology
- Designing an Update Management Strategy

### Lab : Designing and Implementing an Update Deployment Strategy

- Designing an Update Deployment Strategy
- Implementing the Update Deployment Strategy
- After completing this module, students will be able to:
- Design a WSUS topology.
- Design an update management strategy.

## Module 13: Designing a Virtualization Infrastructure

This module explains how to design a virtualization infrastructure.

### Lessons

- Virtualization of a Test Server Environment
- Virtualization and Migration of Legacy Applications
- Branch Office Servicing Through Virtualization
- Designing and Testing a Virtualized Development Environment
- Designing a Virtual Server Provisioning Workflow Model
- Evaluating Appropriateness for Virtualization
- Evaluating Customization to a Standard Configuration

### Lab : Designing and Implementing a Virtualization Infrastructure

- Designing a Test Server Consolidation Strategy
- Designing and Testing Virtualization and Migration of a Legacy Server
- Designing Development Environment Isolation
- Design Virtual Server Host Configuration

### After completing this module, students will be able to:

- Create a design document for server consolidation and virtualization.
- Create a design document for legacy server hosting.
- Create a design document for branch office domain controller hosting.
- Identify and document key business and technical requirements for creating an isolated development environment.
- Design virtual server provisioning workflow model.
- Evaluate appropriateness for virtualization.
- Evaluate customization to standard configuration.