



## Fundamentals of Windows Server 2008 Network and Applications Infrastructure (MS6420)

**Duration: 5 days**

### Description

This course introduces students to network and applications infrastructure concepts and configurations provided by Windows Server 2008. Students will be able to acquire a fundamental understanding in order to pursue advanced topics available for certification in the network and applications infrastructure areas.

### Audience

This course is intended for new IT employees or Desktop Support workers moving into server support. The information in this course provides them with a fundamental understanding of Windows networks to pursue advanced topics. This course is also useful for those migrating from competitive platforms to Windows Server 2008.

### Prerequisites

Before attending this course, students must have A+, Server+, hardware portion of Net+, familiarity with Windows (client side) and a working knowledge of networking technologies.

### Topics

#### MODULE 1: FUNDAMENTALS OF NETWORK INFRASTRUCTURE

This module describes the fundamentals of an enterprise networking environment, which consists of Windows Infrastructure Services, Windows Application Platform Services, and Active Directory.

- Network Communication Standards
- Physical Network Infrastructure
- Logical Network Organization
- Overview of Active Directory
- Server Roles

*Lab: Identifying Network Components*

- Exercise 1: Creating a Network Diagram
- Exercise 2: Expanding the Network Diagram

#### MODULE 2: IT PROFESSIONALS IN THE ENTERPRISE

This module describes the IT Professional

roles (and their respective responsibilities) that may exist in a typical enterprise environment.

- IT Professional Roles
- IT Management and Processes
- Professional Development for IT Professionals

*Lab: Developing a Training Plan*

- Exercise 1: Reviewing Information about Microsoft Learning Resources
- Exercise 2: Creating a Training Plan

#### MODULE 3: CONFIGURING BASIC TCP/IPV4

This module describes the TCP/IPV4 configuration, protocols and the tools used to validate configurations.

- Overview of the TCP/IP Protocol Suite
- Overview of TCP/IP Addressing
- Name Resolution
- Dynamic IP Addressing



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- TCP/IPv4 Tools

*Lab: Configuring Basic TCP/IPv4 Settings and Validating TCP/IPv4 Connectivity*

- Exercise 1: Configuring a Dynamic IP Address
- Exercise 2: Configuring a Static IP Address
- Exercise 3: Testing DNS Configuration
- Exercise 4: Connecting to a Web Application

### MODULE 4: FUNDAMENTALS OF COMMUNICATION TECHNOLOGIES

This module describes static and dynamic HTTP content, how to differentiate between the two, and the various mechanisms used by TCP/IPv4 to send and receive data traffic.

- Network Content Types
- Packet Delivery Methods

### MODULE 5: CREATING IPV4 ADDRESS SPACES

This module explains how to define and create an IPv4 address range and subnetting for a network.

- Overview of IP Communication
- Subnetting Overview
- Subnetting for Complex Networks

*Lab: Creating IPv4 Address Spaces*

- Exercise 1: Defining the Subnet Mask for a WAN
- Exercise 2: Defining the Hosts for a Network

### MODULE 6: IPV6 FUNDAMENTALS

This module introduces IPv6, describes the differences between IPV4 and IPv6, and explains how to configure IPv6 addresses. Introduction to IPv6

- Unicast IPv6 Addresses
- Configuring IPv6

*Lab: Configuring IPv6*

- Exercise 1: Defining IPv6 Networks for Internal Use
- Exercise 2: Configuring a Static IPv6 Address on a Server

### MODULE 7: FUNDAMENTALS OF ADMINISTERING WINDOWS SERVER 2008

This module explains how to use the administrative tools available in Windows 2008 server to monitor system performance, monitor system status, and manage a server from a remote computer rather than the server console.

- Using Windows Server 2008 Administrative Tools
- Monitoring Performance
- Monitoring Events
- Using Remote Desktop for Administration
- Configuring Security for Server Administration

*Lab: Administering Windows Server 2008*

- Exercise 1: Joining a Server to the Domain
- Exercise 2: Configuring Remote Desktop for Administration
- Exercise 3: Centralizing Event Logging
- Exercise 4: Resolving a Performance Issue by Using Reliability and Performance Monitor

### MODULE 8: SECURITY FUNDAMENTALS

This module introduces basic industry standard security concepts for server roles.

- Defense-in-Depth



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- Securing Access to Web Content
- Securing Access to Files
- Data Encryption

### *Lab: Configuring Data Security*

- Exercise 1: Creating a Simple Share
- Exercise 2: Creating an Advanced Share
- Exercise 3: Configuring Web Content for Anonymous Access
- Exercise 4: Securing Web Content

### **MODULE 9: FUNDAMENTALS OF SECURING NETWORK COMMUNICATION**

This module describes how to secure network traffic by using certificates.

- Public Key Infrastructure
- Using Certificates

### *Lab: Securing a Web Site by using SSL*

- Exercise 1: Verifying the Trusted Root CA
- Exercise 2: Securing a Web site by using SSL

### **MODULE 10: WINDOWS FIREWALL AND CACHING FUNDAMENTALS**

This module describes proxy and caching services; how to configure Windows Firewall by creating exceptions and modifying firewall rules; how to configure auditing and monitoring; and how to troubleshoot Windows Firewall.

- Overview of Perimeter Security
- Windows Firewall Overview
- Creating Windows Firewall Rules
- Monitoring and Troubleshooting Windows Firewall

### *Lab: Using Windows Firewall*

- Exercise 1: Limiting Access to a Web Application
- Exercise 2: Distributing Windows Firewall Rules by Using Group Policy

### **MODULE 11: REMOTE ACCESS FUNDAMENTALS**

This module explains how to configure network policies, configure a radius proxy, and how to troubleshoot NPS as a radius proxy.

- Remote Access Overview
- RADIUS Overview
- Network Policy Server
- Troubleshooting Remote Access

### *Lab: Implementing Remote Access*

- Exercise 1: Implementing a VPN server
- Exercise 2: Implementing a RADIUS server
- Exercise 3: Implementing a RADIUS proxy

### **MODULE 12: ROUTING FUNDAMENTALS**

This module describes routing concepts and protocols, and explains how quality of service can be used within a network environment.

- Routing Overview
- Configuring Routing and Remote Access as a Router
- Quality of Service

### *Lab: Configuring Routing*

- Exercise 1: Configuring a LAN Router
- Exercise 2: Implementing RIPv2
- Exercise 3: Configuring a Demand-dial Router
- Exercise 4: Configuring QoS

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### MODULE 13: NETWORK LOAD BALANCING FUNDAMENTALS

This module explains how to configure and test network load balancing.

- Server Availability and Scalability Overview
- Network Load Balancing
- Configuring Windows NLB

#### *Lab: Implementing Network Load Balancing*

- Exercise 1: Preparing Web Servers for NLB
- Exercise 2: Creating an NLB Cluster for Failover
- Exercise 3: Configuring an NLB Cluster for Load Balancing

### MODULE 14: CONFIGURING PRINT RESOURCES AND PRINTING POOLS

This module explains how to configure network print resources and printing pools.

- Printing Overview
- Configuring Network Printers
- Using Print Management
- Managing Printers
- Troubleshooting Network Printing

#### *Lab: Implementing Printing*

- Exercise 1: Creating an XPS document
- Exercise 2: Adding a Printer by Using Control Panel
- Exercise 3: Using Print Management
- Exercise 4: Deploying Printers by Using Group Policy
- Exercise 5: Migrating a Printer to a New Server

### MODULE 15: SERVER VIRTUALIZATION OVERVIEW

This module describes the fundamental

functions included with Windows Server Virtualization (WSV).

- Overview of Server Virtualization
- Overview of Windows Server Virtualization
- Creating a Virtual Environment