

This class combines two courses into one 5-day class.  
2275 (3-day) & 2276 (2-day)

## **Maintaining a Microsoft Windows Server 2003 Environment**

*Course 2275: Three days; Instructor-led*

### ***Introduction***

This three-day instructor-led course provides students with the knowledge and skills that are needed to effectively maintain server resources, monitor server performance, and safeguard data on a computer running one of the operating systems in the Microsoft Windows Server 2003 family.

### ***Audience***

This course is intended for individuals who are employed as or seeking employment as a systems administrator or systems engineer.

### ***At Course Completion***

After completing this course, students will be able to:

- Prepare to administer server resources.
- Configure a server to monitor system performance.
- Monitor system performance.
- Manage device drivers by configuring device driver signing and restoring a device driver.
- Manage hard disks.
- Manage data storage.
- Manage disaster recovery.
- Maintain software by using Microsoft Software Update Services.
- Maintain Windows Server 2003 security.

### ***Prerequisites***

Before attending this course, students must have completed:

- Course 2274: Managing a Microsoft Windows Server 2003 Environment, or have equivalent knowledge and skills.

### ***Microsoft Certification exams***

This course will help the student prepare for the following Microsoft Certified Professional exam:

- Exam 70-290: Managing and Maintaining a Microsoft Windows Server 2003 Environment

### ***Course Materials***

The student kit includes a comprehensive workbook and other necessary materials for this class.

## Course Outline

### Module 1: Preparing to Administer a Server

This module explains how to administer a server. It describes how to manage servers remotely, what tools to use, and the rights and permissions that are needed to administer a server.

#### Lessons

- Introduction to Administering a Server
- Configuring Remote Desktop to Administer a Server
- Managing Remote Desktop Connections

#### Lab A: Preparing to Administer a Server

- Enabling Remote Desktop
- Creating a Shared Folder on a Remote Computer
- Connecting to a Remote Console Session
- Creating Runas Shortcuts to Administration Tools
- After completing this module, students will be able to:
- Explain the tasks, tools, and rights that are required to administer a server.
- Configure Remote Desktop for Administration and client preferences.
- Manage remote desktop connections.

### Module 2: Preparing to Monitor Server Performance

This module explains how to monitor server performance by using performance tools, configure and manage performance logs, configure and manage alerts, and manage system monitor views.

#### Lessons

- Introduction to Monitoring Server Performance
- Performing Real-Time and Logged Monitoring
- Configuring and Managing Counter Logs
- Configuring Alerts

#### Lab A: Preparing to Monitor Server Performance

- Selecting the Appropriate Monitoring Technique

After completing this module, students will be able to:

- Establish a performance baseline.
- Perform real-time and logged monitoring.
- Configure and manage counter logs.
- Configure alerts.

### Module 3: Monitoring Server Performance

This module explains how to collect performance data by monitoring primary server subsystems. It also covers how to identify system bottlenecks by using the Performance console and Task Manager in Microsoft Windows Server 2003.

#### Lessons

- Multimedia: The Primary Server Subsystems
- Monitoring Server Memory
- Monitoring Processor Usage
- Monitoring Disks
- Monitoring Network Usage
- Monitoring Best Practices

### Lab A: Monitoring Server Performance

- Create and Configure Alerts
- Configure the Messaging Service
- Finding a High CPU Usage Process
- Finding a High Memory Usage Process

After completing this module, students will be able to:

- Explain how the four primary server subsystems affect server performance.
- Monitor server memory.
- Monitor processor usage.
- Monitor disks.
- Monitor network usage.
- Use best practices for monitoring server performance.

### Module 4: Maintaining Device Drivers

This module explains how to maintain device drivers.

#### Lessons

- Configuring Device Driver Signing Options
- Using Device Driver Rollback
- After completing this module, students will be able to:
  - Configure device driver signing.
  - Restore the previous version of a device driver.

### Module 5: Managing Disks

This module explains how to manage disks and how to use the tools to manage and set up disks.

#### Lessons

- Preparing Disks
- Managing Disk Properties
- Managing Mounted Drives
- Converting Disks
- Creating Volumes
- Creating Fault-Tolerant Volumes
- Importing a Foreign Disk

### Lab A: Managing Disks

- Recovering from a Failed Mirrored Drive

After completing this module, students will be able to:

- Initialize and partition a disk.
- View and update disk properties.
- Manage mounted drives.
- Convert a disk from basic to dynamic and from dynamic to basic.
- Create volumes on a disk.
- Create fault-tolerant volumes.
- Import disks.

## Module 6: Managing Data Storage

This module explains the Encrypting File System (EFS), which contributes to the safe storage of data and helps to keep the network from harm. It also explains how to administer disk quotas.

### Lessons

- Managing File Compression
- Configuring File Encryption
- Configuring EFS Recovery Agents
- Implementing Disk Quotas

### Lab A: Managing Data Storage

- Troubleshooting Disk-Quota Entries
- Recovering an Encrypted File

After completing this module, students will be able to:

- Manage NTFS file compression.
- Configure file encryption.
- Configure an EFS recovery agent.
- Implement disk quotas.

## Module 7: Managing Disaster Recovery

This module explains how to plan for a computer disaster and how to use the features of Windows Server 2003 to prevent a disaster or recover when one occurs.

### Lessons

- Preparing for Disaster Recovery
- Backing Up Data
- Scheduling Backup Jobs
- Restoring Data
- Configuring Shadow Copies
- Recovering from Server Failure

### Lab A: Managing Disaster Recovery

- Backing Up the System State Data
- Recovering from a Corrupt Registry by Using Last Known Good Configuration
- Recovering from a Corrupt Registry by Restoring System State Data
- After completing this module, students will be able to:
  - Prepare for disaster recovery.
  - Back up data.
  - Schedule backup jobs.
  - Restore data.
  - Configure a shadow copy.
  - Recover from server failure.

## **Module 8: Software Maintenance Using Windows Server Update Services**

This module explains how to use Microsoft Windows Server Update Services to manage and distribute critical software updates that resolve known security vulnerabilities and other stability issues.

### **Lessons**

- Introduction to Windows Server Update Services
- Installing and Configuring Windows Server Update Services
- Managing Windows Server Update Services

### **Lab A: Software Maintenance Using Windows Server Update Services**

- Create a Test Computer Group
- View the Status of Updates and Computers
- Back up WSUS

After completing this module, students will be able to:

- Describe Microsoft WSUS.
- Install and configure servers to use WSUS.
- Manage WSUS.

## **Module 9: Software Maintenance Using Windows Server Update Services**

This module describes how to secure Microsoft Windows Server 2003. The module provides an overview of securing servers, core server security, hardening servers, and the Microsoft Baseline Security Analyzer tool.

### **Lessons**

- Introduction to Securing Servers
- Implementing Core Server Security
- Hardening Servers
- Microsoft Baseline Security Analyzer

### **Lab A: Software Maintenance Using Windows Server Update Services**

- Using the Security Configuration Wizard
- Configuring a Group Policy Object for Member Servers
- Scanning a Range of Computers by Using MBSA

After completing this module, students will be able to:

- Describe how servers are secured.
- Explain core server security.
- Harden servers in various roles.
- Use Microsoft Baseline Security Analyzer.

# Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts

*Course 2276: Two days; Instructor-Led*

## ***At Course Completion***

- After completing this course, students will be able to:
- Describe the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol architecture.
- Convert Internet Protocol (IP) addresses between decimal and binary.
- Calculate a subnet mask.
- Create subnets using Variable-Length Subnet Mask (VLSM) and Classless Inter-Domain Routing (CIDR).
- Configure a host to use a static IP address.
- Assign IP addresses in a multiple subnet network.
- Describe the IP routing process.
- Configure a host to obtain an IP address automatically.
- Configure a host so that automatic private IP address configuration is disabled.
- Configure a host to use name servers.
- Isolate common connectivity issues.

## ***Prerequisites***

Before attending this course, students must have completed:

- A+ certification or equivalent knowledge and skills.
- Course 2274, Managing a Microsoft Windows Server 2003 Environment, or equivalent knowledge and skills.

## ***Microsoft Certification exams***

This course will help the student prepare for the following Microsoft Certified Professional exam:

- Exam 70-291: Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure

## ***Course Materials***

The student kit includes a comprehensive workbook and other necessary materials for this class.

## Course Outline

### Module 1: Reviewing the Suite of TCP/IP Protocols

This module reviews the suite of TCP/IP protocols. By understanding the function of each of the protocols and how the protocols relate to each other, you have the context for understanding network administration tasks and network troubleshooting.

#### Lessons

- Overview of the OSI Model
- Overview of the TCP/IP Protocol Suite
- Viewing Frames Using Network Monitor

After completing this module, students will be able to:

- Describe the architecture of the OSI reference model and the function of each layer.
- Describe the four layers of the TCP/IP protocol suite.
- Capture and view frames by using Network Monitor.

### Module 2: Assigning IP Addresses in a Multiple Subnet Network

This module explains how to construct and assign IP addresses and how to isolate addressing issues associated with the IP routing process.

#### Lessons

- Configuring IP Addressing for Simple Networks
- Configuring IP Addressing for Complex Networks
- Using IP Routing Tables
- Overcoming Limitations of the IP Addressing Scheme

#### Lab: Assigning IP Addresses in a Multiple Subnet Network

- Exercise 1: Defining the Subnet Mask for a WAN
- Exercise 2: Defining the Subnet Mask for Supernetting Four Class C Networks

After completing this module, students will be able to:

- Explain how to configure IP addressing for simple TCP/IP networks.
- Explain how to configure IP addressing for complex TCP/IP networks.
- Describe routing protocols and how they are used.
- Overcome limitations that are caused by class-based routing.

### Module 3: Configuring a Client IP Address

This module describes how to configure an IP address for a client computer running Microsoft Windows Server 2003.

#### Lessons

- Configuring a Client to Use a Static IP Address
- Configuring a Client to Obtain an IP Address Automatically
- Using Alternate Configuration

#### Lab: Configuring Hosts to Connect to a Network Running the TCP/IP Protocol Suite

- Exercise 1: Viewing DHCP Packets

After completing this module, students will be able to:

- Configure a client to use a static IP address.
- Configure a client to obtain an IP address automatically by using DHCP.
- Configure a client to obtain an IP address automatically by using Alternate Configuration

## Module 4: Configuring a Client for Name Resolution

This module describes the various types of name resolution mechanisms provided by the Windows operating systems and how to use and configure them for clients on your network.

### Lessons

- Overview of Name Resolution
- Resolving Host Names
- Resolving NetBIOS Names

### Lab: Configuring a Client for Name Resolution

- Exercise 1: Viewing DNS Packets

After completing this module, students will be able to:

- Describe how name resolution occurs.
- Describe how host names are used and resolved.
- Describe how NetBIOS names are used and resolved.

## Module 5: Isolating Common Connectivity Issues

This module explains how to isolate common connectivity issues and describes how to use utilities as part of this process.

### Lessons

- Analyzing Client Startup Communication
- Determining the Causes of Connectivity Issues
- Using Network Utilities and Tools to Isolate Connectivity Issues

### Lab A: Isolating Common Connectivity Issues

- Exercise 1: Documenting Your Current Environment
- Exercise 2: Resolving Connectivity Issues

After completing this module, students will be able to:

- Determine the causes of connectivity issues.
- Describe utilities and tools to resolve connectivity issues.
- Describe the client startup communication process.