



Key Data

Course #: 2276

Number of Days: 2

Format: Instructor-Led

Certification Exams:

This course along with course 2277, *Implementing, Managing, and Maintaining a Microsoft® Windows® Server 2003 Network Infrastructure: Network Services*, helps you prepare for the following Microsoft Certified Professional exam:

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

Certification Track: MCSA, MCSE

This course is based on the Release Candidate 2 version of Microsoft® Windows® Server 2003.

All labs in the course are to be completed with the Release Candidate 2 version of Windows Server 2003.

The components of this course are still in development. Content in the final release of the course may be different from the content included in this prerelease version.

This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.

Course content, prices, and availability are subject to change without notice.

Preliminary Course Syllabus

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

Elements of this syllabus are subject to change.

The goal of this two-day course is to provide students with the skills and knowledge necessary to configure a Windows-based computer to operate in a Microsoft® Windows® Server 2003 networking infrastructure.

This is the third course in the Systems Administrator and Systems Engineer tracks for Windows Server 2003.

Audience

The target audience for this course includes individuals who are either employed by, or who are seeking employment as, a Systems Administrator in Medium and Large (M/LORG) organizations. The entry criterion for this course includes individuals who are:

- Entry-level IT professionals, new to hands-on Windows server and network administration.
- Preparing for exam 70-291, *Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure*, a core requirement for the MCSA and MCSE certification credentials.

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 have equivalent knowledge and skills.
- Network+ certification or have equivalent knowledge and skills.
- Course 2274, *Managing a Microsoft® Windows® Server 2003 Environment*, or have equivalent knowledge and skills.

Student Materials

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

For a referral to a Microsoft Certified Technical Education Center in your area, see the Microsoft Training and Certification Web site at <http://www.microsoft.com/traincert>. Call your local Microsoft Certified Technical Education Center for more information and to register for classes.

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
<ul style="list-style-type: none">▪ 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 TCP/IP protocol layers.
- Associate the protocols of the TCP/IP suite with those of the OSI model.
- Describe the function of the protocols at each layer of the TCP/IP model.
- Describe how a frame moves through the TCP/IP layers and what happens at each layer.

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
<ul style="list-style-type: none">▪ Assigning IP Addresses▪ Creating a Subnet▪ Creating Subnets Using VLSM▪ Creating Subnets Using CIDR▪ Using IP Routing Tables
Lab A: Viewing and Modifying the Routing Table
<ul style="list-style-type: none">▪ Exercise 1: Viewing the Routing Table▪ Exercise 2: Adding a Route to the Routing table▪ Exercise 3: Removing a Route from the Routing table

After completing this module, students will be able to:

- Convert IP Addresses from decimal to binary.
- Calculate a subnet mask.
- Create subnets using VLSM and CIDR.
- Isolate addressing issues associated with the IP routing process.

Module 3: Configuring a Client IP Address

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

Lessons
<ul style="list-style-type: none">▪ Configuring a Client to Use a Static IP Address▪ Configuring a Host to Obtain an IP Address Automatically▪ Using Alternate Configuration

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
<ul style="list-style-type: none">▪ Resolving Client Names▪ Managing the Address Resolution Protocol (ARP) Cache▪ Overview of NetBIOS▪ Using Static Naming Methods▪ Using Dynamic Naming Methods▪ Summarizing the Name Resolution Process

After completing this module, students will be able to:

- Describe how client names are resolved.
- Use ARP to identify client media access control (MAC) addresses.
- Describe the function of Network Basic Input/Output System (NetBIOS).
- Configure a client to use a static IP address.
- Configure a client to use name resolution servers.

Module 5: Isolating Common Connectivity Issues

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

Lessons
<ul style="list-style-type: none">▪ Isolating Common Connectivity Issues▪ Using Utilities and Tools to Isolate Connectivity Issues
Lab A: Isolating Common Connectivity Issues
<ul style="list-style-type: none">▪ Exercise 1: Isolating Connectivity Issues▪ Exercise 2: Resolving Common Connectivity Issues

After completing this module, students will be able to:

- Isolate common connectivity issues.
- Use a flow chart to isolate a problem.
- Use utilities and tools to isolate a problem