

Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts

Course 2276—Two days—Instructor-led
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Introduction

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 organizations (M/LORG). 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 equivalent knowledge and skills.
- Network+ certification or equivalent knowledge and skills.
- [Course 2274](#): Managing a Microsoft Windows Server 2003 Environment, or equivalent knowledge and skills.

Microsoft Certified Professional Exams

[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 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

- Assigning IP Addresses
- Creating a Subnet
- Using IP Routing Tables
- Overcoming Limitations of the IP Addressing Scheme

After completing this module, students will be able to:

- Convert IP Addresses from decimal to binary.
- Create a subnet.
- Calculate a subnet mask.
- Use an IP routing table.
- Create subnets using VLSM and CIDR.
- Reduce the number of wasted IP addresses.

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 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

- Resolving Client Names
- Managing the 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 Address Resolution Protocol (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

- Determining the Causes of Connectivity Issues
- Network Utilities That You Can Use 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 common connectivity issues.
- Use a flow chart to isolate a problem.
- Use utilities to isolate a problem.