

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.