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### Course Name: Microsoft Certified Systems Engineer

**Duration:** 39 days

**Training Location:** Nota Asia (M) Sdn Bhd, Subang Jaya / KL Plaza

### Microsoft Certified Systems Engineer

#### Modules Details / Curriculum

- Implementing and Supporting Microsoft Windows XP Professional
- Managing and Maintaining a Microsoft Windows Server 2003 Environment
- Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts
- Implementing, Managing and Maintaining a Microsoft Windows Server 2003 Network Infrastructure: Network Services
- Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
- Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory
- Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
- Designing Security for Microsoft Networks  
*(Course outline as enclosed)*



MSC Malaysia via its K-Workers Development Initiatives (KDI) is driving the provision of last mile skills training to potential knowledge workers (k-workers) for the ICT industry. Trainings are currently done through partnership with training providers appointed by Multimedia Development Corporation (MDeC).

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In Collaboration

# Microsoft Certified System Engineer (MCSE) 2003

Duration: 39 days

## Course 1: Implementing and Supporting Microsoft Windows XP Professional (2272)

### Introduction

The purpose of this course is to address the implementation and desktop support needs of customers that are planning to deploy and support Microsoft Windows® XP Professional in a variety of stand-alone and network operating system environments. Customers have indicated that they require an in-depth training solution for implementing and supporting Windows XP Professional. Therefore, this course will address customers' needs for knowledgeable personnel that can support desktops running Windows XP Professional.

This course is based on an interim build of Windows XP Professional.

### Audience

The target audience consists of IT support professionals who:

- Are new to the Windows XP Professional environment.
- Provide help desk support for Windows XP Professional desktops.
- Provide support for the Whistler Server family of products, or support for a Microsoft Windows XP solution environment.
- Support Windows XP Professional in non-Microsoft network operating systems.

### At Course Completion

At the end of the course, students will be able to:

- Plan and install Windows XP Professional.
- Automate an installation of Windows XP Professional.
- Configure and manage hardware on a computer running Windows XP Professional.
- Manage disks.
- Configure and manage file systems.
- Troubleshoot the boot process and other system issues.
- Configure and support Transmission Control Protocol/Internet Protocol (TCP/IP).
- Configure the desktop environment, and use profiles to control desktop customization.
- Configure security, privacy, and connection settings for Internet Explorer.
- Configure Windows XP Professional to operate on Microsoft networks.
- Support remote users.
- Configure Windows XP Professional for mobile computing.
- Monitor resources and performance.

### Microsoft Certified Professional Exams

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

- 70-270, [Installing, Configuring, and Administering Microsoft Windows XP Professional](#).

### Prerequisites

Before attending this course, students must have:

- A+ certification, or equivalent knowledge.
- Net+ certification, or equivalent knowledge.
- Completed Course 2028, [Basic Administration of Microsoft Windows 2000](#), or have equivalent knowledge of administrative tasks.

## Course Outline

### Module 1: Installing Microsoft Windows XP Professional

The following topics are covered in this module:

#### Lessons

- Planning an Installation of Microsoft Windows XP Professional
- Installing Windows XP Professional
- Upgrading to Microsoft Windows XP
- Transferring User Settings and Files by Using the USMT
- Performing Post-Installation Tasks

At the end of this module, you will be able to install Windows XP Professional and upgrade from Microsoft Windows 98 to Windows XP Professional. This includes:

- Planning a Microsoft Windows XP Professional Installation.
- Installing Windows XP Professional.
- Transferring User Settings by Using the USMT.

### Module 2: Automating an Installation of Microsoft Windows XP Professional

The following topics are covered in this module:

#### Lessons

- Introduction to Automating an Installation of Windows XP Professional
- Creating Answer Files
- Creating a Uniqueness Database File
- Performing an Automated Installation of Windows XP Professional
- Introduction to Creating and Deploying an Image
- Preparing a Reference Computer
- Creating, Testing, and Deploying an Image
- Remote Installation Services
- Managing Security Settings by Using Security Center

At the end of this module, you will be able to automate the Setup program to install Windows XP Professional without user intervention by using answer files and Uniqueness Database Files (UDFs). This includes:

- Creating an answer file by using the Setup Manager Wizard.
- Running Sysprep.
- Performing a Windows Welcome Installation.

### Module 3: Configuring Hardware on a Computer Running Microsoft Windows XP Professional

The following topics are covered in this module:

#### Lessons

- Installing and Configuring Hardware Devices
- Working with Drivers
- Troubleshooting Hardware Devices

At the end of this module, you will be able to configure hardware devices and drivers on a computer running Windows XP Professional. This includes:

- Adding and removing devices by using the Hardware Wizard.
- Using Driver Rollback to restore a device driver.

### Module 4: Managing Disks

The following topics are covered in this module:

#### Lessons

- Working with Disk Management
- Working with Basic Disks
- Working with Dynamic Disks
- Preparing Disks When Upgrading to Windows XP Professional
- Managing Disks
- Defragmenting Volumes

At the end of this module, you will be able to configure disk drives and perform common disk management tasks. This includes working with dynamic disks.

### **Module 5: Configuring and Managing File Systems**

The following topics are covered in this module:

#### **Lessons**

- Working with File Systems
- Managing Data Compression
- Securing Data by Using EFS

At the end of this module, you will be able to configure and manage file systems. This includes:

- Configuring disk compression.
- Securing files by using EFS.

### **Module 6: Troubleshooting the Boot Process and Other System Issues**

The following topics are covered in this module:

#### **Lessons**

- Examining the Windows XP Professional Boot Process
- Controlling System Settings During the Boot Process
- Changing Startup Behavior Using the Boot.ini File
- Using Advanced Boot Options to Troubleshoot Startup Problems
- Using the Recovery Console to Start the Computer
- Restoring a Computer to a Previous State

At the end of this module, you will be able to troubleshoot the boot process and other system issues.

### **Module 7: Configuring TCP/IP Addressing and Name Resolution**

The following topics are covered in this module:

#### **Lessons**

- Configuring IP Addresses
- Configuring Windows Firewall
- Troubleshooting IP Addresses
- Determining TCP/IP Name Resolution Methods
- Configuring a DNS and WINS Client

At the end of this module, you will be able to configure TCP/IP addressing and name resolution. This includes:

- Configuring IP addresses for Windows XP Professional.
- Configuring Windows Firewall for Windows XP Professional.
- Troubleshooting IP Addresses for Windows XP Professional.
- Configuring the DNS Client for Windows XP Professional.

### **Module 8: Configuring the Desktop Environment**

The following topics are covered in this module:

#### **Lessons**

- Configuring User Desktop Settings
- Customizing the Desktop Environment
- Configuring System Settings
- Understanding How User Profiles and Group Policy Affect Desktop Customization
- Using Remote Assistance

At the end of this module, you will be able to configure desktop settings and understand how user profiles and Group Policy affect desktop customization. This includes:

- Customizing the desktop.
- Using Remote Assistance.

### **Module 9: Configuring Internet Explorer**

The following topics are covered in this module:

## Lessons

- Configuring Security for Internet Explorer
- Configuring Privacy for Internet Explorer
- Configuring Connection Settings for Internet Explorer

At the end of this module, you will be able to configure Internet Explorer.

## Module 10: Configuring Microsoft Windows XP Professional to Operate in Microsoft Networks

The following topics are covered in this module:

### Lessons

- Examining Workgroups and User Accounts
- Creating and Authenticating Local User Accounts
- Configuring Local Security
- Configuring Logon Options in a Workgroup
- Configuring Networking Options in a Workgroup
- Operating in a Domain

At the end of this module, you will be able to configure local user accounts to configure Windows XP Professional to operate in an Active Directory directory service domain or in a workgroup. This includes:

- Operating in a workgroup.
- Operating in a domain.

## Module 11: Supporting Remote Users

The following topics are covered in this module:

### Lessons

- Establishing Remote Access Connections
- Connecting to Virtual Private Networks
- Configuring Authentication Protocols and Encryption
- Using Remote Desktop
- Storing User Names and Passwords to Facilitate Remote Connections

At the end of this module, you will be able to configure access to remote computers. This includes:

- Configuring a VPN connection.
- Configuring and using Remote Desktop.
- Storing user names and passwords.

## Module 12: Configuring Microsoft Windows XP for Mobile Computing

The following topics are covered in this module:

### Lessons

- Configuring Power Management Options for Mobile Computing
- Making Files, Folders, and Web Pages Available for Offline Use

At the end of this module, you will be able to configure Windows XP Professional for mobile computing. This includes configuring offline files.

## Module 13: Monitoring Resources and Performance

The following topics are covered in this module:

### Lessons

- Using Task Manager to Monitor System Performance
- Using Performance and Maintenance Tools to Improve Performance
- Monitoring Event Logs
- Configuring Application Compatibility

At the end of this module, you will be able to monitor and interpret system and performance information on computers running Windows XP Professional. This includes:

- Using Task Manager and Event Viewer.
- Setting Application Compatibility.



## Course 2: Managing and Maintaining a Microsoft Windows Server 2003 Environment (2273)

This course combines five days of instructor-led training with additional e-Learning content to provide students with the knowledge and skills that are required to manage accounts and resources, maintain server resources, monitor server performance, and safeguard data in a Microsoft Windows Server 2003 environment.

This is the first course in the Systems Administrator and Systems Engineer tracks for Windows Server 2003 and serves as the entry point for other courses in the Windows Server 2003 curriculum.

After completing this course, students will be able to:

- Create and populate organizational units with user and computer accounts.
- Manage user and computer accounts.
- Create and manage groups.
- Manage access to resources.
- Implement printing.
- Manage printing.
- Manage access to objects in using organizational units.
- Implement Group Policy.
- Manage the user and computer environment by using Group Policy.
- Audit accounts and resources.
- 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 Windows Server Update Services.
- Maintain Windows Server 2003 security.

### Prerequisites

Before attending this course, students must have:

- CompTIA A+ certification, or equivalent knowledge and skills.
- CompTIA Network+ certification, or equivalent knowledge and skills.

### Course Outline

#### Module 1: Introduction to Administering Accounts and Resources

This module explains how to administer accounts and resources on computers running Microsoft Windows Server 2003 software in a networked environment.

#### Lessons

- Multimedia: Introduction to Administering Accounts and Resources
- The Windows Server 2003 Environment
- Logging on to Windows Server 2003
- Using the Run As Feature for Administration
- Installing and Configuring Administrative Tools
- Creating an Organizational Unit

#### Lab: Creating Organizational Units

- Creating an Organizational Unit

**After completing this module, students will be able to:**

- Describe the Windows Server 2003 environment.
- Log on to a computer running Windows Server 2003.
- Use the Run as feature to perform administrative tasks.
- Install and configure the administrative tools.
- Create an organizational unit.

## **Module 2: Managing User and Computer Accounts**

This module explains how to modify user and computer accounts on computers running Microsoft Windows Server 2003 in a networked environment.

### **Lessons**

- Creating User Accounts
- Creating Computer Accounts
- Modifying User and Computer Account Properties
- Creating a User Account Template
- Managing User and Computer Accounts
- Using Queries to Locate User and Computer Accounts in Active Directory

### **Lab: Managing User and Computer Accounts**

- Creating User Accounts
- Creating Computer Accounts
- Using Queries to Locate Objects
- Modifying User and Computer Properties

**After completing this module, students will be able to**

- Create user accounts.
- Create computer accounts.
- Modify user and computer account properties.
- Create a user account template.
- Manage user and computer accounts.
- Use queries to locate user and computer accounts in Active Directory directory service..

## **Module 3: Managing Groups**

This module explains how to perform various administrative functions using groups.

### **Lessons**

- Creating groups.
- Managing group membership.
- Strategies for using groups.
- Using default groups.

### **Lab: Creating and Managing Groups**

- Creating Global and Domain Local Groups
- Managing Group Membership
- Managing Default Groups

**After completing this module, students will be able to:**

- Create groups.
- Manage group membership
- Apply strategies for using groups
- Manage default groups.

## **Module 4: Managing Access to Resources**

This module explains how to enable resource access with permissions, manage access to files and folders using permissions, and manage permission inheritance.

## Lessons

- Overview of Managing Access to Resources
- Managing Access to Shared Folders
- Managing Access to Files and Folders Using NTFS Permissions
- Determining Effective Permissions
- Managing Access to Shared Files Using Offline Caching

## Lab: Managing Access to Resources

- Creating and Sharing Folders
- Configuring NTFS Permissions
- Publishing Shared Folders
- Testing Permissions
- Configuring Automatic Caching

## After completing this module, students will be able to

- Manage access to resources.
- Manage access to shared folders.
- Manage access to files and folders by using NTFS permissions.
- Determine effective permissions.
- Manage access to shared files by using offline caching.

## Module 5: Managing Access to Objects in Organizational Units

This module explains the permissions available for managing access to Active Directory objects, how to move objects between organizational units in the same domain, and how to delegate control of an organizational unit.

## Lessons

- Modifying Permissions for Active Directory Objects
- Delegating Control of Organizational Units

## Lab: Managing Access to Objects in Organizational Units

- Modifying the Delegation of Control Wizard and Delegating Permissions
- Testing the Delegated Permissions
- Granting Permissions to the Legal Organizational Unit and Creating a Taskpad
- Testing the Delegated Permissions

## After completing this module, students will be able to

- Modify permissions for Active Directory objects.
- Delegate control of organizational units.

## Module 6: Implementing Group Policy

This module explains the purpose and function of Group Policy in a Microsoft Windows Server 2003 environment. It also explains how to implement Group Policy objects (GPOs) and manage GPOs.

## Lessons

- Implementing Group Policy Objects
- Implementing GPOs on a Domain
- Managing the Deployment of Group Policy

## Lab: Implementing a GPO

- Disabling and Deleting a GPO
- Creating and Linking Multiple GPOs
- Filtering the GPOs to Exempt Selected Users
- Backing Up and Importing GPO Settings

## After completing this module, students will be able to

- Implement GPOs.
- Implement GPOs in a domain.

- Manage the deployment of Group Policy.

### **Module 7: Managing the User Environment by Using Group Policy**

This module explains how to use Group Policy to assign scripts, restrict group membership and access to software and configure folder redirection. As well, this module explains how to determine which GPOs are being applied on a computer.

#### **Lessons**

- Configuring Group Policy Settings
- Assigning Scripts with Group Policy
- Restricting Group Membership and Access to Software
- Configuring Folder Redirection
- Determining Applied GPOs

#### **Lab: Managing the User Environment by Using Group Policy**

- Creating and Applying a GPO to the Graphics Organizational Unit
- Assigning a Logon Script to Connect to a Printer
- Using a GPO to Configure the Members of the Backup Operators Group
- Using the Group Policy Results Wizard to Verify the Policy Settings

#### **After completing this module, students will be able to**

- Configure Group Policy settings.
- Assign scripts with Group Policy.
- Restrict group membership and access to software.
- Configure Folder Redirection.
- Determine Applied Group Policy objects (GPOs).

### **Module 8: Implementing Administrative Templates and Audit Policy**

This module provides a broad overview of security in Microsoft Windows Server 2003. It also explains how to deploy security templates and test computer security policy and how to configure auditing and manage security logs.

#### **Lessons**

- Overview of Security in Windows Server 2003
- Using Security Templates to Secure Computers
- Testing Computer Security Policy
- Configuring Auditing
- Managing Security Logs

#### **Lab: Managing Security Settings**

- Creating a Custom Security Template
- Importing and Deploying the Custom Template

#### **After completing this module, students will be able to**

- Explain user rights and audit policies in Windows Server 2003.
- Use security templates to secure computers.
- Test computer security policy.
- Configure auditing.
- Manage security logs.

### **Module 9: 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 10: 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 11: 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 12: 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 13: 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 14: Securing Windows Server 2003

This module describes how to secure Microsoft Windows ServerT 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: Securing Windows Server 2003

- 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.



## Course 3: Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts (2276)

### 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.

### At Course Completion

At the end of the 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.

### Microsoft Certified Professional 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

### 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.](#)

## 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.

#### Topics

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

#### Students will be able to:

- Describe the architecture of the OSI reference model and the function of each layer.
- 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.

#### Topics

- Configuring IP Addresses for Simple Networks
- Configuring IP Addresses 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

#### Students will be able to:

- Configure IP addressing for Simple TCP/IP networks
- Configure IP addressing for Complex TCP/IP networks
- 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.

#### Topics

- Configuring a Client to Use a Static IP Address
- Configuring a Host 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

**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

**Topics**

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

#### **Lab: Configuring a Client for Name Resolution**

- Exercise 1: Viewing DNS Packets

**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.

**Topics**

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

#### **Lab : Isolating Common Connectivity Issues**

**Exercise 1: Documenting Your Current Environment**

**Exercise 2: Resolving Connectivity Issues**

**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.

**Course 4: Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure: Network Services (2277)**

## Introduction

This five-day, instructor-led course provides students with the knowledge and skills to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. The course is intended for systems administrator and systems engineer candidates who are responsible for implementing, managing, and maintaining server networking technologies. These tasks include implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients; and managing and monitoring network access.

This is the fourth course in the Systems Administrator and Systems Engineer track for Windows Server 2003, and it is the final course in the Systems Administrator track.

## At Course Completion

After completing this course, students will be able to:

- Allocate IP addressing by using DHCP.
- Manage and monitor DHCP.
- Resolve names.
- Resolve host names by using DNS.
- Manage the integration of Active Directory and DNS.
- Manage and monitor DNS.
- Resolve network basic input/output system (NetBIOS) names by using WINS.
- Secure network traffic by using IPSec and certificates.
- Configure routing by using the Routing and Remote Access service.
- Configure network access.
- Manage and monitor network access.

## Prerequisites

Before attending this course, students must have completed Course 2276, Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts, or have equivalent knowledge and skills.

## Microsoft Certified Professional Exams

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

- [Exam 70-291: Implementing: Managing](#)
- [Exam and Maintaining a Microsoft Windows Server 2003 Network Infrastructure:](#)

## Course Outline

### Module 1: Allocating IP Addressing by Using Dynamic Host Configuration Protocol (DHCP)

This module provides you with the knowledge and skills to allocate IP addressing in a network environment.

#### Lessons

- Multimedia: The Role of DHCP in the Network Infrastructure
- Adding and Authorizing a DHCP Server Service
- Configuring a DHCP Scope
- Configuring DHCP Reservations and Options
- Configuring a DHCP Relay Agent

### Lab A: Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP

- Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP

After completing this module, students will be able to:

- Describe the role of DHCP in the network infrastructure.
- Add and authorize a DHCP Server service.
- Configure a DHCP scope.
- Configure DHCP reservations and options.
- Configure a DHCP relay agent.

### Module 2: Managing and Monitoring Dynamic Host Configuration Protocol (DHCP)

This module provides you with the knowledge and skills to manage the DHCP service to reflect changing client IP addressing needs. It also provides you with the knowledge and skills to monitor DHCP server performance, because the DHCP environment is dynamic.

#### Lessons

- Managing a DHCP Database
- Monitoring DHCP
- Applying Security Guidelines for DHCP

#### Lab A: Managing and Monitoring DHCP

- Managing and Monitoring DHCP

After completing this module, students will be able to:

- Manage a DHCP database.
- Monitor DHCP.
- Apply security guidelines for DHCP.

#### Module 3: Resolving Names

This module provides you with the knowledge and skills to assign computer names to the IP addresses of the source and destination hosts, and then use the computer name to contact the hosts.

#### Lessons

- Multimedia: Introduction to the Name Resolution Process
- Viewing Names on a Client
- Configuring Host Name Resolution
- Configuring NetBIOS Name Resolution

#### Lab A: Resolving Names

- Troubleshooting Name Resolution

After completing this module, students will be able to:

- Describe the name resolution process.
- View names on a client.
- Configure host name resolution.
- Configure NetBIOS name resolution.

#### Module 4: Resolving Host Names by Using Domain Name System (DNS)

This module provides you with the knowledge and skills to resolve host names by using Domain Name System.

#### Lessons

- Multimedia: The Role of DNS in the Network Infrastructure
- Installing the DNS Server Service
- Configuring the DNS Server Service
- Configuring the DNS Zones
- Configuring DNS Zone Transfers
- Configuring a DNS Client

#### Lab A: Resolving Host Names by Using Domain Name System

- Implementing a DNS Infrastructure

After completing this module, students will be able to:

- Describe the role of DNS in the network infrastructure.
- Install the DNS Server service.
- Configure the DNS Server service.

- Configure the DNS zones.
- Configure DNS zone transfers.
- Configure a DNS client.

### **Module 5: Integrating Domain Name System and Active Directory**

This module provides you with the ability to manage integration between Active Directory directory service and Domain Name System (DNS).

#### **Lessons**

- Configuring Active Directory Integrated Zones
- Configuring DNS Dynamic Updates
- Understanding How Active Directory Uses DNS

#### **Lab A: Integrating DNS and Active Directory**

- Configuring Active Directory Integrated DNS Zones

**After completing this module, students will be able to:**

- Describe how Active Directory integrated zones function.
- Configure DNS to support dynamic updates.
- Explain how Active Directory uses DNS.

### **Module 6: Managing and Monitoring Domain Name System (DNS)**

This module provides you with the knowledge and skills to manage and monitor DNS servers to ensure that they are functioning properly and to optimize network performance.

#### **Lessons**

- Managing DNS Records
- Testing the DNS Server Configuration
- Monitoring DNS Server Performance

#### **Lab A: Managing and Monitoring DNS**

- Managing and Monitoring DNS

**After completing this module, students will be able to:**

- Manage the properties of DNS records.
- Test DNS server configuration.
- Monitor DNS server performance.

### **Module 7: Resolving NetBIOS Names by Using Windows Internet Name Service (WINS)**

This module provides you with the knowledge and skills to use WINS to register NetBIOS names and resolve them to IP addresses.

#### **Lessons**

- Multimedia: The Role of WINS in the Network Infrastructure
- Installing and Configuring a WINS Server
- Managing Records in WINS
- Configuring WINS Replication
- Managing the WINS database

**After completing this module, students will be able to:**

- Describe the role of WINS in the network infrastructure.
- Install and configure a WINS server.
- Manage records in WINS.
- Configure WINS replication.
- Manage a WINS database.

### **Module 8: Configuring Routing by Using Routing and Remote Access**

This module provides you with the knowledge and skills to configure a routing solution for your network environment.

## Lessons

- Multimedia: The Role of Routing in the Network Infrastructure
- Enabling and Configuring the Routing and Remote Access Service
- Configuring Packet Filters

## Lab A: Configuring Routing by Using Routing and Remote Access

- Configure Routing and Remote Access
- Plan a Routing Topology

After completing this module, students will be able to:

- Describe the role of routing in the network infrastructure.
- Enable and configure the Routing and Remote Access service.
- Configure packet filters.

## Module 9: Securing Network Traffic by Using IPSec and Certificates

This module provides you with the knowledge and skills to secure network traffic and to use certificates with IPSec for increased security.

## Lessons

- Implementing IPSec
- Understanding IPSec Deployment Scenarios
- Monitoring IPSec

After completing this module, students will be able to:

- Implement IPSec.
- Understand IPSec deployment scenarios.
- Monitor IPSec.

## Module 10: Configuring Network Access

This module provides you with the knowledge and skills to configure a server with the Routing and Remote Access service, create appropriate remote access connections on a network access server, and configure users' access rights.

## Lessons

- Introduction to a Network Access Infrastructure
- Configuring VPN Access
- Configuring Dial-up Access
- Configuring Wireless Access
- Controlling User Access to a Network
- Centralizing Network Access Authentication by Using IAS
- Protecting Remote Access by Using Network Access Quarantine

After completing this module, students will be able to:

- Describe a network access infrastructure.
- Configure a virtual private network (VPN) connection.
- Configure a dial-up connection.
- Configure a wireless connection.
- Control remote user access to a network.
- Centralize authentication and policy management for network access by using IAS.
- Control remote access to your network by using Network Access Quarantine.

## Module 11: Managing and Monitoring Network Access

This module provides you with the knowledge and skills to manage and monitor network access.

## Lessons

- Managing the Network Access Services
- Configuring Logging on a Network Access Server
- Collecting and Monitoring Network Access Data

## Lab A: Managing and Monitoring Remote Access

- Monitoring a Remote Access Server

**After completing this module, students will be able to:**

- Manage the network access services.
- Configure logging on the network access server.
- Collect and monitor network access data.

# Course 5: Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure (2278)

## Introduction

The goal of this five-day course is to provide students with the knowledge and skills necessary to plan and maintain a Windows® Server 2003 network infrastructure.

This is the fifth course in the Windows Server 2003 Systems Engineer curriculum.

## At Course Completion

At the end of the course, students will be able to:

- Plan a TCP/IP physical and logical network.
- Plan and troubleshoot a routing strategy.
- Plan a Dynamic Host Configuration Protocol (DHCP) strategy.
- Optimize and troubleshoot DHCP.
- Plan a Domain Name System (DNS) strategy.
- Optimize and troubleshoot DNS.
- Plan and optimize Windows Internet Naming Service (WINS).
- Plan, optimize, and troubleshoot IPsec network access.
- Troubleshoot network access.

## Microsoft Certified Professional 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](#)

## Prerequisites

Before attending this course, students must have completed:

- Course 2277: [Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure: Network Services, or have equivalent knowledge and skills.](#)

## Course Outline

### Module 1: Introducing Windows Server 2003 Network Infrastructure Planning, Tools, and Documentation

#### Topics

- Introducing the Network Design
- Planning a Windows Server 2003 Network Infrastructure Project

#### Skills

- Explain the concepts of a network design process.
- Explain the components of a network planning project.

## Module 2: Planning and Optimizing a TCP/IP Physical and Logical Network

### Topics

- Planning a Functional TCP/IP Solution
- Evaluating Network Performance

### Labs

- Planning and Optimizing a TCP/IP Physical and Logical Network

### Skills

- Plan a TCP/IP addressing scheme.
- Optimize network performance.

## Module 3: Planning and Troubleshooting Routing and Switching

### Topics

- Selecting Intermediate Devices
- Planning an Internet Connectivity Strategy
- Planning Routing Communications
- Troubleshooting TCP/IP Routing

### Skills

- Create a secure routing and switching plan.
- Identify TCP/IP routing troubleshooting tools.
- Troubleshoot TCP/IP routing and switching

## Module 4: Planning, Optimizing, and Troubleshooting DHCP

### Topics

- Planning a DHCP Strategy
- Securing a DHCP Solution
- Optimizing DHCP
- Troubleshooting DHCP

### Labs

- Planning a DHCP Strategy
- Troubleshooting DHCP Issues

### Skills

- Plan a secure DHCP strategy.
- Optimize DHCP.
- Troubleshoot DHCP.

## Module 5: Planning a DNS Strategy

### Topics

- Planning DNS Servers
- Planning a Namespace
- Planning Zones
- Planning Zone Replication and Delegation
- Integrating DNS and WINS

### Labs

- Planning a DNS Strategy

## Skills

- Plan a DNS server implementation.
- Plan a namespace strategy.
- Plan zones.
- Plan zone replication and deletion.
- Integrate DNS and WINS.

## Module 6: Optimizing and Troubleshooting DNS

### Topics

- Optimizing DNS Servers
- Troubleshooting Host Name Resolution

### Labs

- Troubleshooting DNS

## Skills

- Optimize a DNS server.
- Optimize DNS server-to-server communications.
- Optimize DNS client support traffic.
- Troubleshoot host name resolution.

## Module 7: Planning and Optimizing WINS

### Topics

- Planning a WINS Solution
- Identifying WINS Optimization Requirements
- Optimizing WINS Traffic

### Labs

- Planning and Optimizing WINS

## Skills

- Plan a WINS solution.
- Identify WINS optimization requirements.
- Optimize WINS traffic.

## Module 8: Planning and Troubleshooting IPSec

### Topics

- Understanding Default Policy Rules
- Planning an IPSec Deployment
- Troubleshooting IPSec Communications

## Labs

- Troubleshooting IPsec

## Skills

- Discuss IPsec.
- Understand IPsec default policies, rules, and settings.
- Plan IPsec deployment.
- Troubleshoot IPsec.

## Module 9: Planning Network Access

### Topics

- Introducing Network Access
- Selecting Network Access Connection Methods
- Selecting a Remote Access Policy Strategy
- Selecting a Network Access Authentication Method
- Planning a Network Access Strategy

### Labs

- Planning Network Access

### Skills

- Explain the requirements and authentication protocols for a network access strategy.
- Apply the guidelines for selecting a network access connection strategy.
- Apply the guidelines for selecting a remote access policy strategy.
- Select a network access authentication method.
- Plan a network access strategy.

## Module 10: Troubleshooting Network Access

### Topics

- Troubleshooting Network Access Resources
- Troubleshooting LAN Authentication
- Troubleshooting Remote Access

### Labs

- Troubleshooting Network Access

### Skills

- Identify network access troubleshooting resources.
- Explain how to troubleshoot local area network (LAN) authentication.
- Explain how to troubleshoot remote access.

## Module 11: Planning a Windows Server 2003 Network Infrastructure

### Topics

- Introducing Planning Documentation
- Preparing Development and Test Environments
- Managing and Maintaining the Environment

### Labs

- Planning a Windows Server 2003 Network
- Planning and Maintaining a Windows Server 2003 Network

### Skills

- Identify the components of the master project plan.
- Explain the process for preparing development and test environments.
- Explain how to manage and maintain the network infrastructure.

## Course 6: Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory (2279)

### Introduction

This five-day instructor-led course includes self-paced and instructor-facilitated components. It provides students with the knowledge and skills to successfully plan, implement, and troubleshoot a Microsoft Windows Server™ 2003 Active Directory® directory service infrastructure. The course focuses on a Windows Server 2003 directory service environment, including forest and domain structure, Domain Name System (DNS), site topology and replication, organizational unit structure and delegation of administration, Group Policy, and user, group, and computer account strategies.

### At Course Completion

At the end of the course, students will be able to:

- Describe the logical and physical components of Active Directory.
- Create and configure a forest and domain structure by using an Active Directory infrastructure design.
- Plan and implement an organizational unit structure.
- Plan and implement Active Directory user, group, and computer accounts.
- Plan and implement a Group Policy strategy to centrally manage users and computers in an enterprise.
- Deploy, manage, and troubleshoot software that is deployed using Group Policy.
- Implement sites to manage and monitor Active Directory replication.
- Plan and implement the placement of domain controllers, global catalog servers, and DNS servers that are integrated with Active Directory.
- Plan and manage operations masters.
- Back up, restore, and maintain Active Directory.
- Plan and implement an Active Directory infrastructure that is based on a directory service design that an enterprise architect provides.

### Microsoft Certified Professional Exams:

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

- **Exam 70-294: *Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure***

### Prerequisites

Before attending this course, students must have completed:

- **Course 2278: *Planning and Maintaining a Windows Server 2003 Network Infrastructure, or have the equivalent knowledge and skills.***

## Course Outline

### Module 1: Introduction to Active Directory Infrastructure

#### Topics

- The Architecture of Active Directory
- How Active Directory Works
- Examining Active Directory
- The Active Directory Design, Planning, and Implementation Processes

#### Skills

- Describe the architecture of Active Directory.
- Describe the working of Active Directory.
- Use administrative tools to examine the components of Active Directory.
- Describe the Active Directory design, planning, and implementation processes.

### Module 2: Implementing an Active Directory Forest and Domain Structure

#### Topics

- Creating a Forest and Domain Structure
- Examining and Configuring Active Directory Integrated DNS
- Raising Forest and Domain Functional Levels
- Creating Trust Relationships
- Securing Trusts Using SID Filtering

#### Labs

- Implementing Active Directory

#### Skills

- Students will be able to:
- Create a forest and domain structure.
- Configure DNS in an Active Directory environment.
- Raise the functional level of a forest and a domain.
- Create trust relationships between domains.
- Secure trusts by using SID filtering.

### Module 3: Implementing an Organizational Unit Structure

#### Topics

- Managing Organizational Units
- Delegating Administrative Control for Organizational Units
- Planning an Organizational Unit Strategy

#### Labs

- Implementing an Organizational Unit Structure

#### Skills

- Create an organizational unit.
- Delegate control for an organizational unit.
- Plan an organizational unit strategy.

## Module 4: Implementing User, Group, and Computer Accounts

### Topics

- Introduction to Accounts
- Creating and Managing Multiple Accounts
- Implementing User Principal Name Suffixes
- Moving Objects in Active Directory
- Planning an Account Strategy
- Planning an Active Directory Audit Strategy

### Labs

- Implementing an Account Strategy

### Skills

- Describe the types of Active Directory accounts and groups.
- Create multiple user and computer accounts.
- Implement UPN suffixes.
- Move objects within a domain and across domains in a forest.
- Plan a strategy for user computer and group accounts.
- Plan an Active Directory audit strategy.

## Module 5: Implementing Group Policy.

### Topics

- Creating and Configuring Group Policy objects (GPOs)
- Configuring When Group Policy Is Applied
- Managing GPOs
- Verifying and Troubleshooting Group Policy
- Delegating Administrative Control of Group Policy
- Planning a Group Policy Strategy for the Enterprise

### Labs

- Implementing Group Policy

### Skills

- Create and configure GPOs.
- Configure when Group Policy is applied.
- Manage GPOs.
- Verify and troubleshoot Group Policy.
- Delegate administrative control of Group Policy.
- Plan a Group Policy strategy for the enterprise.

## Module 6: Deploying and Managing Software by Using Group Policy

### Topics

- Introduction to Managing Software Deployment
- Deploying Software
- Configuring Software Deployment
- Maintaining Deployed Software
- Troubleshooting Software Deployment
- Planning a Software Deployment Strategy

### Labs

- Deploying and Managing Software by Using Group Policy

### Skills

- Explain the basic concepts of software deployment by using Group Policy.
- Deploy software by using Group Policy.
- Configure software deployment by using Group Policy.
- Maintain deployed software by using Group Policy.
- Troubleshoot some common problems with software deployment.
- Plan a software deployment strategy.

## **Module 7: Implementing Sites to Manage Active Directory Replication**

### **Topics**

- Introduction to Active Directory Replication
- Creating and Configuring Sites
- Managing Site Topology
- Troubleshooting Replication Failures
- Planning a Site

### **Labs**

- Implementing Sites to Manage Active Directory Replication

### **Skills**

- Explain the components and the process of replication.
- Create and configure sites.
- Manage an Active Directory site topology.
- Monitor and troubleshoot Active Directory replication failures.
- Plan a site strategy.

## **Module 8: Implementing Placement of Domain Controllers**

### **Topics**

- Implementing the Global Catalog in Active Directory
- Determining the Placement of Domain Controllers in Active Directory
- Planning the Placement of Domain Controllers

### **Labs**

- Implementing Placement of Domain Controllers

### **Skills**

- Implement the global catalog in Active Directory.
- Determine the placement of domain controllers in Active Directory.
- Plan for placing domain controllers in Active Directory.

## **Module 9: Managing Operations Masters**

### **Topics**

- Introduction to Operation Master Roles
- Transferring and Seizing Operations Master Roles
- Planning the Placement of Operations Masters

### **Labs**

- Managing Operations Masters

### **Skills**

- Explain the purpose of each of the five operations master roles in Active Directory.
- Transfer and seize operations master roles in Active Directory.
- Plan for placing operations masters in Active Directory.

## **Module 10: Maintaining Active Directory Availability**

### **Topics**

- Introduction to Maintaining Active Directory
- Moving and Defragmenting the Active Directory Database
- Backing Up Active Directory
- Restoring Active Directory
- Planning for Monitoring Active Directory

### **Labs**

- Maintaining Active Directory

### **Skills**

- Describe the relationship between data modification and maintenance of the Active Directory database.
- Move and defragment the Active Directory database.
- Back up Active Directory.
- Restore Active Directory by using the authoritative restore and the normal, or nonauthoritative, restore methods.
- Apply guidelines for monitoring Active Directory.

## **Module 11: Planning and Implementing an Active Directory Infrastructure**

### **Topics**

- Creating the Active Directory Implementation Plan for Tailspin Toys
- Implementing the Active Directory Infrastructure for Tailspin Toys

### **Labs**

- Creating the Active Directory Implementation Plan for Tailspin Toys
- Implementing the Active Directory Infrastructure for Tailspin Toys

### **Skills**

- Review the Active Directory design and create an Active Directory implementation plan for Tailspin Toys.
- Implement the Active Directory infrastructure for Tailspin Toys.

# Course 7: Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure (2282)

## Introduction

This five-day instructor-led course provides students with the knowledge and skills to design a Microsoft Active Directory® directory service and network infrastructure for a Microsoft Windows Server™ 2003 environment. The course is intended for systems engineers who are responsible for designing directory service and/or network infrastructures.

## Audience

This course is intended for individuals who are employed as or seeking employment as a systems engineer in a Windows Server 2003-based environment.

## At Course Completion

After completing this course, students will be able to:

- Describe the process of designing an Active Directory infrastructure and a network infrastructure that supports Active Directory.
- Design a forest and domain infrastructure that meets the needs of an organization.
- Design a site infrastructure that meets the needs of an organization.
- Design a Group Policy structure that meets the needs of an organization.
- Design an administrative structure that meets the needs of an organization.
- Design a physical network structure that supports Active Directory and meets the needs of an organization.
- Design a Dynamic Host Configuration Protocol (DHCP) structure that supports Active Directory and meets the needs of an organization.
- Create a design for network connectivity that supports Active Directory and meets the needs of an organization.
- Design a name resolution strategy that supports Active Directory and meets the needs of an organization.
- Design a network access infrastructure that supports Active Directory and meets the needs of an organization.

## Prerequisites

This course requires that students meet the following prerequisites:

- They have taken Course 2278, Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure and Course 2279, Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure
- They have equivalent knowledge and experience

## Course Outline

Module 1: Introduction to Designing an Active Directory and Network Infrastructure

This module introduces general design principles and the process of designing a Windows Server 2003 Active Directory infrastructure.

#### Module Objectives

- After completing this module, students will be able to:
- Explain basic design principles.
- Describe the process of and the tasks involved in designing an Active Directory infrastructure.

#### Module 2: Designing a Forest and Domain Infrastructure

This module covers the first major design decisions when creating an Active Directory and network infrastructure. The Active Directory logical structure and the design of forests and domains. Key elements of the forest and domain design are naming and, in the case of a multiple-forest design, trusts. These decisions must take into account any existing structure and provide a migration solution from the existing structure to the new design.

#### Module Objectives

- After completing this module, students will be able to:
- Gather and analyze the information that you need to design a forest and domain infrastructure.
- Create a logical forest design.
- Create a domain design.
- Design a DNS namespace strategy for forests and domains.
- Create a trust strategy for forests.
- Determine a migration plan for the existing infrastructure.
- Design a schema management policy.

#### Module 3: Designing a Site Infrastructure

This module explains how to design a site topology to organize the Windows Server 2003 network in your organization and optimize the exchange of data and directory information.

#### Module Objectives

- After completing this module, students will be able to:
- Determine the information needed to design a site infrastructure.
- Create a site design.
- Modify the site design for replication.
- Determine the placement of domain controllers in the site design.
- Determine the placement of global catalog servers in the site design.
- Determine the placement of single operations masters in the site design.

#### Module 4: Designing the Administrative Structure

This module explains how to design your administrative structure to delegate authority and simplify administrative overhead and design an organizational unit structure in a Windows Server 2003 environment.

## Module Objectives

- After completing this module, students will be able to:
- Determine the information needed to design an administrative structure.
- Design a network administration model.
- Design an organizational unit structure.
- Design an account strategy.

## Module 5: Designing for Group Policy

This module describes how to gather and analyze business requirements and other data and then use that data to design a Group Policy structure and integrate the structure into an organizational unit design. It describes the role of Group Policy in the Active Directory infrastructure and factors in choosing particular implementations, such as security, software deployment, and administrative requirements. The module also covers why and how to design a change management structure.

## Module Objectives

- After completing this module, students will be able to:
- Determine the information needed to design for Group Policy.
- Design a Group Policy structure.
- Create an organization unit (OU) structure for Group Policy.
- Create a Group Policy management design.

## Module 6: Designing the Physical Network

This module describes how to gather business requirements and other data and then analyze and use that data to design the physical network. It explains how to design a connectivity infrastructure, with considerations for intrasite and intersite connectivity, router placement, connection types, and virtual private networks (VPNs). It also describes how to design a domain controller structure and how to use the Active Directory Sizer tool.

The module also covers why and how to design a change management structure for networking, including monitoring. Finally, the students will create a physical network according to a scenario.

## Module Objectives

- After completing this module, students will be able to:
- Explain the preparation necessary to design a network infrastructure.
- Create an IP addressing scheme.
- Design a DHCP infrastructure.
- Design a change management structure for networking.

## Module 7: Designing for Network Connectivity

This module describes how to design networking services for connectivity and protocol requirements for organizations. Also, this module describes networking solutions that establish a network foundation, provide access to public networks, and support network-based applications and authentication methods.

#### Module Objectives

- After completing this module, students will be able to:
- Determine the information that you need to design for network connectivity.
- Evaluate connection types.
- Design a connectivity infrastructure.
- Create a design for Internet connectivity.

#### Module 8: Designing a Name Resolution Strategy

This module describes the relationship between Active Directory and DNS domain names, Windows Internet Name Service (WINS), and other name-resolution strategies.

#### Module Objectives

- After completing this module, students will be able to:
- Determine the information needed to design a name-resolution strategy.
- Design a strategy for interoperability with Active Directory, BIND, WINS, and DHCP.
- Design a WINS replication strategy.
- Design a name resolution strategy for clients.

#### Module 9: Designing the Network Access Infrastructure

This module describes how to design a network access infrastructure by gathering relevant data, and then analyzing and using that data to design for network access security, remote access, and wireless access. The module includes strategies for authentication, administration, access monitoring, interoperability, and user education.

#### Module Objectives

- After completing this module, students will be able to:
- Gather data for network access design.
- Design network access security.
- Choose remote access methods.
- Design a remote access infrastructure.
- Design a wireless access infrastructure.

## Course 8: Designing Security for Microsoft Networks (2830)

### Introduction

This three-day, instructor-led course provides you with the knowledge and skills to design a secure network infrastructure. Topics include assembling the design team, modeling threats, and analyzing security risks in order to meet business requirements for securing computers in a networked environment. The course encourages decision-making skills through an interactive tool that simulates real-life scenarios that the target audience may encounter. You are given the task of collecting the information and sorting through the details to resolve the given security requirement.

### At Course Completion

At the end of the course, students will be able to:

- Plan a framework for network security.
- Identify threats to network security.
- Analyze security risks.
- Design security for physical resources.
- Design security for computers.
- Design security for accounts.
- Design security for authentication.
- Design security for data.
- Design security for data transmission.
- Design security for network perimeters.
- Design an incident response procedure.

### Microsoft Certified Professional Exams:

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

- Exam 70-220: [Designing Security for a Microsoft Windows 2000 Network](#)

### Prerequisites

Before attending this course, students must have completed:

- A strong familiarity with Microsoft Windows® 2000 core technologies, such as those covered in Microsoft Official Curriculum (MOC) Course 2152: Implementing Microsoft Windows 2000 Professional and Server.
- A strong familiarity with Windows 2000 networking technologies and implementation, such as those covered in MOC Course 2153: Implementing a Microsoft Windows 2000 Network Infrastructure.
- A strong familiarity with Windows 2000 directory services technologies and implementation, such as those covered in MOC Course 2154: Implementing and Administering Microsoft Windows 2000 Directory Services.

### Course Outline

#### Module 1: Introduction to Designing Security

##### Topics

- Introduction to Designing Security for Microsoft Networks
- Contoso Pharmaceuticals: A Case Study

## Module 2: Creating a Plan for Network Security

### Topics

- Introduction to Security Policies
- Defining a Process for Designing Network Security
- Creating a Security Design Team

### Labs

- Planning a Security Framework

### Skills

- Describe common elements of security policies and procedures.
- Create a security design framework by using the Microsoft Solutions Framework (MSF) process model.
- Create a security design team.

## Module 3: Identifying Threats to Network Security

### Topics

- Introduction to Security Threats
- Predicting Threats to Security

### Labs

- Identifying Threats to Network Security

### Skills

- Explain common network vulnerabilities and how attackers can exploit them.
- Predict threats to security by using the STRIDE (Spoofing, Tampering, Repudiation, Information disclosure, Denial of service, and Elevation of privilege) threat model.

## Module 4: Analyzing Security Risks

### Topics

- Introduction to Risk Management
- Creating a Risk Management Plan

### Labs

- Analyzing Security Threats

### Skills

- Explain the purpose and operation of risk management.
- Draft the elements of a risk management plan.

## Module 5: Creating a Security Design for Physical Resources

### Topics

- Determining Threats and Analyzing Risks to Physical Resources
- Designing Security for Physical Resources

### Labs

- Designing Security for Physical Resources

### Skills

- Determine threats and analyze risks to physical resources.
- Design security for physical resources.

## Module 6: Creating a Security Design for Computers

### Topics

- Determining Threats and Analyzing Risks to Computers
- Designing Security for Computers

### Labs

- Designing Security for Computers

#### **Skills**

- Determine threats and analyze risks to computers.
- Design security for computers.

### **Module 7: Creating a Security Design for Accounts**

#### **Topics**

- Determining Threats and Analyzing Risks to Accounts
- Designing Security for Accounts

#### **Labs**

- Designing Security for Accounts

#### **Skills**

- Determine threats and analyze risks to accounts.
- Design security for accounts.

### **Module 8: Creating a Security Design for Authentication**

#### **Topics**

- Determining Threats and Analyzing Risks to Authentication
- Designing Security for Authentication

#### **Labs**

- Designing Authentication Security

#### **Skills**

- Determine threats and analyze risks to authentication.
- Design security for authentication.

### **Module 9: Creating a Security Design for Data**

#### **Topics**

- Determining Threats and Analyzing Risks to Data
- Designing Security for Data

#### **Labs**

- Designing Security for Data

#### **Skills**

- Determine threats and analyze risks to data.
- Design security for data.

## **Module 10: Creating a Security Design for Data Transmission**

### **Topics**

- Determining Threats and Analyzing Risks to Data Transmission
- Designing Security for Data Transmission

### **Labs**

- Designing Security for Data Transmission

### **Skills**

- Determine threats and analyze risks to data transmission.
- Design security for data transmission.

## **Module 11: Creating a Security Design for Network Perimeters**

### **Topics**

- Determining Threats and Analyzing Risks to Network Perimeters
- Designing Security for Network Perimeters

### **Labs**

- Designing Security for Network Perimeters

### **Skills**

- Determine threats and analyze risks to network perimeters.
- Design security for network perimeters.

## **Module 12: Designing Responses to Security Incidents**

### **Topics**

- Introduction to Auditing and Incident Response
- Designing an Audit Policy
- Designing an Incident Response Procedure

### **Labs**

- Designing an Incident Response Procedure

### **Skills**

- 
- Explain the importance of auditing and incident response.
- Design an auditing policy.
- Design an incident response procedure.

## Course Structure

Duration	Module
5 days	Course 1: Implementing and Supporting Microsoft Windows XP Professional (2272)
5 days	Course 2: Managing and Maintaining a Microsoft Windows Server 2003 Environment (2273)
2 days	Course 3: Implementing a Microsoft Windows Server 2003 Network Infrastructure: Network Hosts (2276)
5 days	Course 4: Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure: Network Services (2277)
5 days	Course 5: Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure (2278)
5 days	Course 6: Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory (2279)
5 days	Course 7: Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure (2282)
3 days	Course 8: Designing Security for Microsoft Networks (2830)
4 days	Revision and Exam Preparation for MCSE 2003, 7 exams.