

Microsoft Certification

Introduction

Microsoft certification is a leading credential that validates your experience and skills to keep you competitive in today's changing business environment.

Microsoft certification provides professionals with a credential that acknowledges their skills with Microsoft products. If you represent a business seeking technology leaders or you are an IT professional who wants to be that kind of leader, the Microsoft Certified Professional program has a solution for you.

Microsoft certifications that offered by GNT Network solutions group are:

Systems Engineering

- Microsoft Certified Systems Engineer (MCSE)
- Microsoft Certified Systems Administrator (MCSA)

Database Administration

- Microsoft Certified Database Administrator (MCDBA)

MCSE Certification Track

The Microsoft Certified Systems Engineer (MCSE) credential is the premier certification for professionals who analyze the business requirements and design and implement the infrastructure for business solutions based on the

Microsoft Windows® 2000 platform and Microsoft .NET Enterprise Servers. Implementation responsibilities include installing, configuring, and troubleshooting network systems.

The MCSE credential is one of the most widely recognized technical certifications in the industry. By earning the premier MCSE credential, individuals are demonstrating that they have the skills necessary to lead organizations in the successful design, implementation, and administration of the most advanced Windows operating system and Microsoft .NET Enterprise Servers.

The Microsoft Certified Systems Engineer (MCSE) on Microsoft Windows® 2000 credential is appropriate for information technology (IT) professionals working in the typically complex computing environment of medium to large organizations. We recommend that an MCSE on Windows 2000 have at least one year of experience implementing and administering a network operating system.

Choose the MCSE credential if you:

- Plan, design, and implement Microsoft Windows server solutions and architectures.
- Have at least one year of experience analyzing business and technical requirements, and planning, designing, and implementing solutions with Microsoft products and technologies.

The MCSE Certification is Appropriate for

- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants

Microsoft Certified Systems Engineer (MCSE) candidates on the Microsoft Windows® 2000 track are required to pass seven exams or the equivalent, CPI Network Solutions group offers the courses given in the figure below:

MCSE Windows 2000 Tracks: 70-210

Note: A student can choose the course titled: *Implementing and Managing Microsoft Exchange 2000 as one of the electives for MCSE and MCSA*

Course: Installing, Configuring and Administering Microsoft Windows 2000 Professional

MCP Exam: 70-210

Associated Certification: MCP, MCSE, MCSA

Duration: 5 days

Introduction

This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows 2000 Professional on stand-alone and client computers that are part of a workgroup or domain.

Target Audience

The target audience for this course is as follows:

- Those who need the knowledge and skills necessary to perform post-installation and day-to-day administration tasks in single-domain and multiple-domain Windows 2000-based networks.
- This course is intended for personnel who administer Windows 2000 Workstation, Including management of accounts, account policies, disk resources, printers,

- backups, configurations, and troubleshooting.
- Systems engineers
 - Technical support engineers
 - Systems analysts
 - Technical consultants

Prerequisites

This course requires that students meet the following prerequisite:

- Operating System Essentials, or equivalent knowledge.
- Knowledge of the fundamentals of current networking technology is also required.

This includes the ability to:

- Describe the principal features of the Windows 2000 operating system and the basics of networking in a Windows 2000 environment.
- Identify the tools used to perform common administrative tasks.
- Describe the types of user accounts and the principal security features of a Windows 2000 environment.
- Describe the features of the common network protocols used in Windows 2000.
- Describe the fundamentals of Transmission Control Protocol/Internet Protocol (TCP/IP).
- Describe the communication process in a Windows 2000 network.
- Differentiate between the various types of network architectures.
- Describe the common hardware components used in network communication.
- Describe the requirements for Internet access and Web security.

At Course Completion

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

- Install or upgrade to Windows 2000 professional.
- Configure the Windows 2000 environment.
- Connect clients running Windows 2000 to networks.
- Create and manage user accounts.
- Manage access to resources by using groups.
- Manage data by using the NTFS file system.
- Provide network access to file resources.
- Monitor and optimize performance in Windows 2000.
- Implement security in Windows 2000.
- Configure printing.
- Configure Windows 2000 for mobile computing.
- Configure and manage disks.
- Implement disaster protection.
- Implement Windows 2000 clients.

Course Outline

Module 1: Installing or Upgrading to Windows 2000

- Preparing for Installation
- Installing Windows 2000 Professional from a Compact Disc
- Upgrading to Windows 2000 Professional
- Identifying Setup Errors

Module 2: Configuring the Windows 2000 Environment

- Configuring and Managing Hardware
- Configuring Display Options
- Configuring System Settings
- Configuring the Desktop Environment

- Configuring Internet Options for Client Computers

Module 3: Connecting Windows 2000-based Clients to Networks

- Windows 2000 Connectivity
- Connecting to a Microsoft Network
- Connecting to a Novell NetWare Network

Module 4: Creating and Managing User Accounts

- Introduction to User Accounts
- Guidelines for New User Accounts
- Creating Local User Accounts
- Creating and Configuring Domain User Accounts
- Setting Properties for Domain User Accounts
- Customizing User Settings with User Profiles
- Best Practices

Module 5: Managing Access to Resources by Using Groups

- Introduction to Windows 2000 Groups
- Implementing Groups in a Workgroup
- Implementing Groups in a Domain
- Best Practices

Module 6: Managing Data by Using NTFS

- Introduction to NTFS Permissions
- How Windows 2000 Applies NTFS Permissions
- Using NTFS Permissions
- Using Special NTFS Permissions
- Compressing Data on an NTFS Partition
- Configuring Disk Quotas on NTFS Partitions

- Securing Data by Using EFS

Module 7: Providing Network Access to File Resources

- Introduction to Shared Folders
- Creating Shared Folders
- Combining NTFS and Shared Folders Permissions
- Using Administrative Shared Folders
- Publishing a Shared Folder in Active Directory
- Configuring Shared Folders by Using Dfs

Module 8: Monitoring and Optimizing Performance in Windows 2000

- Monitoring Event Logs
- Using Task Manager to Monitor System Resources
- Using System Monitor to Monitor System Performance
- Using Alerts
- Optimizing Performance

Module 9: Implementing Security in Windows 2000

- Securing Desktops and Services by Using Security Policies
- Auditing Access to System Resources

Module 10: Configuring Printing

- Introduction to Windows 2000 Printing
- Adding a Printer
- Configuring a Network Printer
- Configuring Internet Printing

Module 11: Configuring Windows 2000 for Mobile Computing

- Configuring Hardware for Mobile Computing
- Configuring Power Management Options for Mobile Computing
- Making Files Available for Offline Use
- Connecting to Networks and Computers
- Identifying Solutions to Mobile Computing Problems

Module 12: Configuring and Managing Disks

- Windows 2000 Disk Types
- Creating Partitions on a Basic Disk
- Creating Volumes on a Dynamic Disk
- Performing Common Disk Management Tasks
- Best Practices

Module 13: Implementing Disaster Protection

- Introduction to Disaster Protection
- Configuring an Uninterruptible Power Supply
- Implementing Fault Tolerance by Using RAID
- Backing Up and Restoring Data
- Using Disaster Recovery Tools

Module 14: Implementing Windows 2000 Clients

- Deploying Windows 2000
- Performing a Manual Network Installation
- Customizing Installations and Upgrades by Using Switches
- Installing Windows 2000 Using the Setup Manager Wizard
- Using Disk Duplication
- Installing Windows 2000 Using RIS
- Troubleshooting Windows 2000 Setup

MCSE Windows 2000 Tracks: 70-215

Course: Installing, Configuring and Administering Microsoft Windows 2000 Server

MCP Exam: 70-215

Associated Certification: MCP, MCSE, MCSA, MCDBA

Duration: 5 days

Introduction

This course provides participants with the knowledge and skills necessary to install and configure Windows 2000 Server to create file, print, Web, and Terminal servers. It also provides students with the prerequisite knowledge and skills required for the course, *Implementing a Microsoft Windows 2000 Network Infrastructure*.

Target Audience

The target audience for this course is as follows: Participants for this course operate in medium to very large computing environments that use the Windows 2000 Server operating system. They have a minimum of one year's experience implementing and administering network operating systems in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.

- Systems engineers
- Technical support engineers
- Systems analysts
- Technical consultants
- Network analysts/ Engineers

Prerequisites

This course requires that students meet the following prerequisite:

- Operating System Essentials, or equivalent knowledge.
- Knowledge of the fundamentals of current networking technology is also required.

This includes the ability to:

- Describe the principal features of the Windows 2000 operating system and the basics of networking in a Windows 2000 environment.
- Identify the tools used to perform common administrative tasks.
- Describe the types of user accounts and the principal security features of a Windows 2000 environment.
- Describe the features of the common network protocols used in Windows 2000.
- Describe the fundamentals of Transmission Control Protocol/Internet Protocol (TCP/IP).
- Describe the communication process in a Windows 2000 network.
- Differentiate between the various types of network architectures.
- Describe the common hardware components used in network communication.
- Describe the requirements for Internet access and Web security.

At Course Completion

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

- Install or upgrade to Windows 2000.
- Configure the Windows 2000 environment.
- Connect clients running Windows 2000 to networks.
- Create and manage user accounts.
- Manage access to resources by using groups.
- Manage data by using the NTFS file system.
- Provide network access to file resources.
- Monitor and optimize performance in Windows 2000.
- Implement security in Windows 2000.
- Configure printing.
- Configure Windows 2000 for mobile computing.
- Configure and manage disks.
- Implement disaster protection.
- Install and configure Terminal Services.
- Implement Windows 2000 clients.
- Implement Windows 2000 servers.

Course Outline

Module 1: Installing or Upgrading to Windows 2000

- Preparing for Installation
- Installing Windows 2000 Professional from a Compact Disc
- Upgrading to Windows 2000 Professional
- Identifying Setup Errors

Module 2: Configuring the Windows 2000 Environment

- Configuring and Managing Hardware
- Configuring Display Options
- Configuring System Settings
- Configuring the Desktop Environment
- Configuring Internet Options for Client Computers

Module 3: Connecting Windows 2000-based Clients to Networks

- Windows 2000 Connectivity
- Connecting to a Microsoft Network
- Connecting to a Novell NetWare Network

Module 4: Creating and Managing User Accounts

- Introduction to User Accounts
- Guidelines for New User Accounts
- Creating Local User Accounts
- Creating and Configuring Domain User Accounts
- Setting Properties for Domain User Accounts
- Customizing User Settings with User Profiles
- Best Practices

Module 5: Managing Access to Resources by Using Groups

- Introduction to Windows 2000 Groups
- Implementing Groups in a Workgroup
- Implementing Groups in a Domain
- Best Practices

Module 6: Managing Data by Using NTFS

- Introduction to NTFS Permissions
- How Windows 2000 Applies NTFS Permissions
- Using NTFS Permissions
- Using Special NTFS Permissions
- Compressing Data on an NTFS Partition
- Configuring Disk Quotas on NTFS Partitions
- Securing Data by Using EFS

Module 7: Providing Network Access to File Resources

- Introduction to Shared Folders
- Creating Shared Folders
- Combining NTFS and Shared Folders Permissions
- Using Administrative Shared Folders
- Publishing a Shared Folder in Active Directory
- Configuring Shared Folders by Using Dfs

Module 8: Monitoring and Optimizing Performance in Windows 2000

- Monitoring Event Logs
- Using Task Manager to Monitor System Resources
- Using System Monitor to Monitor System Performance
- Using Alerts
- Optimizing Performance

Module 9: Implementing Security in Windows 2000

- Securing Desktops and Services by Using Security Policies
- Auditing Access to System Resources

Module 10: Configuring Printing

- Introduction to Windows 2000 Printing
- Adding a Printer
- Configuring a Network Printer
- Configuring Internet Printing

Module 11: Configuring Windows 2000 for Mobile Computing

- Configuring Hardware for Mobile Computing

- Configuring Power Management Options for Mobile Computing
- Making Files Available for Offline Use
- Connecting to Networks and Computers
- Identifying Solutions to Mobile Computing Problems

Module 12: Configuring and Managing Disks

- Windows 2000 Disk Types
- Creating Partitions on a Basic Disk
- Creating Volumes on a Dynamic Disk
- Performing Common Disk Management Tasks
- Best Practices

Module 13: Implementing Disaster Protection

- Introduction to Disaster Protection
- Configuring an Uninterruptible Power Supply
- Implementing Fault Tolerance by Using RAID
- Backing Up and Restoring Data
- Using Disaster Recovery Tools

Module 14: Installing and Configuring Terminal Services

- Introduction to Terminal Services
- Planning the Installation
- Installing Terminal Services
- Configuring Terminal Services
- Establishing a Terminal Session
- Configuring Session Settings
- Installing Applications on a Terminal Server

Module 15: Implementing Windows 2000 Clients

- Deploying Windows 2000

- Performing a Manual Network Installation
- Customizing Installations and Upgrades by Using Switches
- Installing Windows 2000 Using the Setup Manager Wizard
- Using Disk Duplication
- Installing Windows 2000 Using RIS
- Troubleshooting Windows 2000 Setup

Module 16: Implementing Windows 2000-based Servers

- Common Implementation Features
- Implementing a File Server
- Implementing a Print Server
- Implementing an Application Server
- Implementing a Web Server
- Routine Administration Tasks

MCSE Windows 2000 Tracks: 70-216

Course: Implementing and Administering Microsoft Windows 2000 Network Infrastructure

MCP Exam: 70-216

Associated Certifications: MCP, MCSE, MCSA, MCDBA

Duration: 5 days

Introduction

This course is for support professionals who are new to Microsoft Windows® 2000 and will be responsible for installing, configuring, managing, and supporting a network infrastructure that uses the Microsoft Windows 2000 Server products. It also provides students with the prerequisite knowledge and skills required for the Course,

Implementing and Administering Microsoft Windows 2000 Directory Services.

TARGET AUDIENCE

The target audience for this course is as follows: Participants for this course operate in medium to very large computing environments that use the Windows 2000 network operating system. They have a minimum of one year's experience implementing and administering network operating systems in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.
- Those who need the knowledge and skills necessary to design a Microsoft® Windows 2000 server in an enterprise network.
- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants
- Database Administrators

- Successful completion of the Course, *Supporting Windows 2000 Professional and Server*, or equivalent skills and knowledge, including the ability to:
 - Install or upgrade to Windows 2000
 - Configure the Windows 2000 environment
 - Connect Windows 2000-based client computers to networks
 - Create and manage user accounts
 - Manage access to resources by using groups
 - Manage data by configuring the NTFS file system
 - Provide network access to file resources
 - Configure and manage disks and partitions
 - Monitor and optimize Windows 2000
 - Implement Windows 2000 security
 - Configure printing
 - Configure Windows 2000 for mobile computing
 - Implement disaster protection
 - Install and configure Terminal Services
 - Implement Windows 2000-based client computers
 - Implement Windows 2000-based servers
- An understanding of Transmission Control Protocol/Internet Protocol (TCP/IP)

At Course Completion

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

- Configure the DHCP Server service.
- Configure the DNS Server service.
- Configure WINS.
- Configure network security protocols.

- Configure network security by using Public Key Infrastructure (PKI).
- Configure network security by using Internet Protocol Security (IPSec).
- Configure remote access to a network.
- Support remote access to a network.
- Extend remote access capabilities by using Internet Authentication Service (IAS).
- Configure Windows 2000 as a network router.
- Configure Internet access for a network.
- Configure a Web server.
- Deploy Windows 2000 Professional by using Remote Installation Services (RIS).
- Manage a Windows 2000 network.
- Identify and resolve network connectivity problems by using Windows 2000 troubleshooting tools and utilities.
- Enable network connectivity between NetWare, Macintosh, and UNIX networks.

Course Contents

Module 1: Introduction to Microsoft Windows 2000 Networking Infrastructure

- Overview of the Windows 2000 Network Infrastructure
- Introduction to Intranets
- Identifying Remote Access Methods
- Communicating with Remote Offices
- Providing Internet Access
- Introduction to Extranets

Module 2: Automating Internet Protocol (IP) Address Assignment

- Overview of DHCP
- Installing the DHCP Service
- Authorizing the DHCP Service
- Creating and Configuring a Scope
- Customizing DHCP Functionality
- Configuring DHCP in a Routed Network
- Supporting DHCP

Prerequisites

This course requires that students meet the following prerequisites:

Module 3: Implementing Name Resolution Using DNS

- Overview of the DNS Query Process
- Installing the DNS Server Service
- Configuring Name Resolution for Client Computers
- Creating Zones
- Configuring Zones
- Configuring DNS for Internal Use
- Integrating DNS and DHCP
- Maintaining and Troubleshooting DNS Servers

Module 4: Implementing Name Resolution by Using WINS

- Connecting to NetBIOS-Based Networks
- WINS Overview
- Configuring WINS Servers and Clients
- Configuring Support for Non-WINS Clients
- Enabling WINS Database Replication
- Maintaining the WINS Server Database

Module 5: Configuring Network Security by Using Public Key Infrastructure

- Introduction to Public Key Infrastructure (PKI)
- Deploying Certificate Services
- Using Certificates
- Managing Certificates
- Configuring Active Directory for Certificates
- Troubleshooting Certificate Services

Module 6: Configuring Network Security by Using IPSec

- Introduction to IPSec
- Implementing IPSec

- Configuring TCP/IP for Server Security
- Troubleshooting Network Protocol Security

Module 7: Configuring Remote Access

- Examining Remote Access in Windows 2000
- Configuring Inbound Connections
- Configuring Outbound Connections
- Configuring Multilink Connections
- Configuring Authentication Protocols
- Configuring Encryption Protocols
- Configuring Routing and Remote Access for DHCP Integration

Module 8: Supporting Remote Access to a Network

- Examining Remote Access Policies
- Examining Remote Access Policy Evaluation
- Creating a Remote Access Policy
- Troubleshooting Remote Access

Module 9: Extending Remote Access Capabilities by Using IAS

- Introduction to IAS
- Installing and Configuring IAS

Module 10: Configuring a Windows 2000-Based Server As a Router

- Overview of Routers and Routing Tables
- Configuring Network Connections
- Enabling Routing by Using Routing and Remote Access
- Configuring Static Routes
- Configuring a Routing Interface
- Implementing Demand-Dial Routing
- Configuring the Routing Information Protocol

Module 11: Configuring Internet Access for a Network

- Options for Connecting a Network to the Internet
- Configuring Internet Access by Using a Router
- Configuring Internet Access by Using NAT

Module 12: Configuring a Web Server

- Overview of Microsoft Internet Information Services (IIS)
- Preparing for an IIS Installation
- Installing IIS
- Configuring a Web Site
- Administering IIS
- Troubleshooting IIS

Module 13: Deploying Windows 2000 Professional by Using RIS

- RIS Overview
- Installing and Configuring RIS
- Configuring Remote Installation Options
- Deploying Images by Using RIS
- Creating an RIPrep Image
- Comparing CD-Based Images and RIPrep Images Identifying
- Solutions to RIS Problems

Module 14: Managing a Windows 2000 Network

- Windows 2000 Administrative Strategies
- Performing Administrative Tasks Remotely by Using Terminal Services
- Simple Network Management Protocol (SNMP) Operation
- Implementing the Windows 2000 SNMP Service

Module 15: Troubleshooting Windows 2000 Network Services

- Troubleshooting Network Problems
- Identifying the Symptoms and Causes of Network Problems
- Resolving TCP/IP Problems
- Resolving Name Resolution Problems
- Troubleshooting Network Services
- Monitoring the Network

Module 16: Configuring Network Connectivity Between Operating Systems

- Configuring Access to NetWare Resources
- Providing Macintosh Users Access to Windows 2000 Resources
- Connecting to Systems Network Architecture (SNA) Hosts by Using Host Integration Server 2000
- Connecting to UNIX Resources

MCSE Windows 2000 Tracks: 70-217

Course: Implementing and Administering Microsoft Windows 2000 Directory Services Infrastructure

MCP Exam: 70-217

Associated Certification: MCP, MCSE

Duration: 5 days

Microsoft

Introduction

This course is designed to provide students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows® 2000 Active Directory™ directory services. The course also focuses on implementing Group Policy and performing the Group Policy-related tasks that are required to centrally manage users and computers.

TARGET AUDIENCE

The target audience for this course is as follows: Participants for this course operate in medium to very large computing environments that use the Windows 2000 network operating system. They have a minimum of one year's experience implementing and administering network operating systems in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.
- Those who need the knowledge and skills necessary to design a Microsoft® Windows 2000 directory services infrastructure in an enterprise network.
- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants

Prerequisites

This course requires that students meet the following prerequisites:

- Course titled, *Microsoft Windows 2000 Network and Operating System Essentials*, or equivalent skills and knowledge.
- Course titled, *Implementing Microsoft Windows 2000 Professional and Server*, or equivalent knowledge and skills. These include:
 - ➔ Installing Windows 2000
 - ➔ Using administrative tools in Windows 2000
 - ➔ Configuring hard disks and partitions
 - ➔ Creating users
 - ➔ Creating and using security groups to manage access to resources
 - ➔ Creating and administering printers
 - ➔ Setting up and administering permissions for files and folders
- Course titled, *Implementing a Microsoft Windows 2000 Network Infrastructure*, or equivalent knowledge and skills. This includes installing and configuring Transmission Control Protocol/Internet Protocol (TCP/IP), DNS, and Certificate Services.
- A thorough understanding of DNS, including hands-on experience configuring DNS, and setting up forward and reverse lookup zones.

At Course Completion

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

- Identify the concepts of the Active Directory directory service and its logical and physical structures.

GNT ... far more than certification

- Implement a Domain Name System (DNS) infrastructure in preparation for installing Active Directory.
 - Install Active Directory on a computer running Windows 2000 Server, and perform post-installation tasks.
 - Set up and administer domain user accounts and groups.
 - Publish resources, including printers and shared folders, in Active Directory.
 - Delegate administrative control of Active Directory objects in Windows 2000.
 - Implement Group Policy.
 - Manage user environments by using Group Policy.
- Use Group Policy to deploy software.
 - Create and manage trees and forests in a Windows 2000 network, and administer forest-wide resources.
 - Manage Active Directory replication within a site and between sites.
 - Manage operations masters.
 - Manage and restore the Active Directory database.
 - Implement an Active Directory infrastructure that is based on the business requirements of a fictitious organization.

Course Outline

Module 1: Introduction to Active Directory in Windows 2000

- Introduction to Active Directory
- Active Directory Logical Structure
- Active Directory Physical Structure
- Methods for Administering a Windows 2000 Network

Module 2: Implementing DNS to Support Active Directory

- Introduction to the Role of DNS in Active Directory
- DNS and Active Directory
- DNS Name Resolution in Active Directory
- Active Directory Integrated Zones
- Installing and Configuring DNS to Support Active Directory

Module 3: Creating a Windows 2000 Domain

- Introduction to Creating a Windows 2000 Domain
- Installing Active Directory
- The Active Directory Installation Process
- Examining the Default Structure of Active Directory
- Performing Post Active Directory Installation Tasks
- Troubleshooting the Installation of Active Directory
- Removing Active Directory

Module 4: Setting Up and Administering Users and Groups

- Introduction to User Accounts and Groups
- User Logon Names
- Creating Multiple User Accounts
- Administering User Accounts
- Using Groups in Active Directory
- Strategies for Using Groups in a Domain
- Troubleshooting Domain User Accounts and Groups

Module 5: Publishing Resources in Active Directory

- Introduction to Publishing Resources

- Setting Up and Administering Published Printers
- Implementing Printer Locations
- Setting Up and Administering Published Shared Folders
- Comparing Published Objects and Shared Resources
- Troubleshooting Published Resources

Module 6: Delegating Administrative Control

- Object Security in Active Directory
- Controlling Access to Active Directory Objects
- Delegating Administrative Control of Active Directory Objects
- Customizing MMC Consoles
- Setting Up Taskpads

Module 7: Implementing Group Policy

- Introduction to Group Policy
- Group Policy Structure
- Working with Group Policy Objects
- How Group Policy Settings Are Applied in Active Directory
- Modifying Group Policy Inheritance
- Delegating Administrative Control of Group Policy
- Monitoring and Troubleshooting Group Policy

Module 8: Using Group Policy to Manage User Environments

- Introduction to Managing User Environments
- Introduction to Administrative Templates
- Using Administrative Templates in Group Policy
- Assigning Scripts in Group Policy
- Using Group Policy to Redirect User Folders

- Using Group Policy to Secure the User Environment
- Troubleshooting User Environment Management

Module 9: Using Group Policy to Manage Software

- Introduction to Managing Software Deployment
- Windows Installer Technology
- Deploying Software
- Configuring Software Deployment
- Maintaining Deployed Software
- Removing Deployed Software
- Troubleshooting Software Deployment

Module 10: Creating and Managing Trees and Forests

- Introduction to Trees and Forests
- Creating Trees and Forests
- Trust Relationships in Trees and Forests
- The Global Catalog
- Strategies for Using Groups in Trees and Forests
- Troubleshooting Creating and Managing Trees and Forests

Module 11: Managing Active Directory Replication

- Introduction to Active Directory Replication
- Replication Components and Processes
- Replication Topology
- Using Sites to Optimize Active Directory Replication
- Implementing Sites to Manage Active Directory Replication
- Monitoring Replication Traffic
- Adjusting Replication

- Troubleshooting Active Directory Replication

Module 12: Managing Operations Masters

- Introduction to Operations Masters
- Operations Master Roles
- Managing Operations Master Roles
- Managing Operations Master Failures

Module 13: Maintaining the Active Directory Database

- Introduction to Maintaining the Active Directory Database
- The Process of Modifying Data in Active Directory
- The Garbage Collection Process
- Backing Up Active Directory
- Restoring Active Directory
- Moving the Active Directory Database
- Defragmenting the Active Directory Database

Module 14: Implementing an Active Directory Infrastructure

- Business Scenario
- Requirements for the Active Directory Infrastructure
- Class Discussion: How to Implement the Active Directory Infrastructure

MCSE Windows 2000 Tracks: 70-219

Course: Designing a Windows 2000 Directory Services Infrastructure

MCP Exam: 70-219

Associated Certification: MCP, MCSE

Duration: 5 Days

Introduction

This course provides students with the knowledge and skills necessary to design a Microsoft Windows® 2000 directory services infrastructure in an enterprise network. Strategies are presented to assist the student in identifying the information technology needs of an organization, and then designing an Active Directory™ structure that meets those needs.

Target audience

Participant for this course operate in medium to very large computing environments that use the Windows 2000 network operating system. They have a minimum of one year's experience designing network infrastructures in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.
- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants

Prerequisites

Before attending this course, students must meet the following requirements:

- Course on *Updating Support Skills from Microsoft Windows NT® 4.0 to Microsoft Windows 2000*, or equivalent knowledge and skills.

OR

- Course on *Implementing and Administering Microsoft Windows 2000 Directory Services*, or equivalent knowledge and skills.

At Course Completion

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

- Describe guidelines for gathering business and administrative information from an organization, and explain how an architect uses that information to design an Active Directory structure for an enterprise.
- Design an Active Directory naming strategy that accommodates the organizational structure of a business.
- Develop a plan to secure and delegate administrative authority over Active Directory objects based on the administrative model of an organization.
- Identify business needs and scenarios that may require modification of the Active Directory schema, and plan a policy to govern schema modification.
- Create an Active Directory design based on administrative Group Policy requirements defined by business needs.
- Design an Active Directory domain and the organizational unit hierarchy within the domain.

- Identify situations where a multiple-domain Active Directory structure may be necessary to meet the administrative and security needs of an organization, and then design a structure that meets those needs.
- Design a site topology for managing Active Directory replication that fulfills the administrative needs of an organization, and that optimizes the available bandwidth of the physical network.
- Plan for the design of an Active Directory structure that combines administrative, replication, and naming requirements of an organization.

Course Outline**Module 1: Introduction to Designing a Directory Services Infrastructure**

- Role of Active Directory in an Enterprise Network
- Conducting an Organizational Analysis
- Architectural Elements of Active Directory

Module 2: Designing an Active Directory Naming Strategy

- Identifying Business Needs
- DNS and Active Directory
- Planning Active Directory Domain Names
- Designing a DNS Naming Strategy for Active Directory

Module 3: Designing Active Directory to Delegate Administrative Authority

- Identifying Business Needs
- Characterizing the IT Organization

- Developing a Strategy for Administrative Design
- Developing a Strategy for Delegation

Module 4: Designing a Schema Policy

- Identifying Business Needs, schema Fundamentals
- Implications of Modifying the Schema, Planning for Schema Modification

Module 5: Designing Active Directory to Support Group Policy

- Identifying Business Needs, Applying Group Policy in Active Directory, Planning for Group Policy

Module 6: Designing an Active Directory Domain

- Identifying Business Needs, Designing the Initial Active Directory Domain
- Planning for Security Groups, Planning for OUs

Module 7: Designing a Multiple Domain Structure

- Identifying Business Needs
- Accessing Resources Between Domains
- Planning for Multiple-Domain Trees
- Planning for Multiple-Tree Forests
- Planning for Multiple Forests

Module 8: Designing an Active Directory Site Topology

- Using Sites in Active Directory
- Assessing the Need for Active Directory Sites
- Using Site Links in a Network
- Planning the Inter-Site Replication Topology
- Planning for Server Placement in Sites

Module 9: Designing an Active Directory Infrastructure

- Conducting an Organizational Analysis
- Designing an Active Directory Structure
- Creating a Functional Specification

MCSE Windows 2000 Tracks: 70-220

Course: Designing Security for a Microsoft Windows 2000 Network

MCP Exam: 70-220

Associated Certification: MCP, MCSE

Duration: 5 Days

Introduction

This course provides students with the knowledge and skills necessary to design a security framework for small, medium, and enterprise networks by using Microsoft Windows 2000 technologies. This course contains

four units that describe the securing of specific areas of the network:

- Unit 1, Providing Secure Access to Local Network Users
- Unit 2, Providing Secure Access to Remote Users and Remote Offices
- Unit 3, Providing Secure Access Between Private and Public Networks
- Unit 4, Providing Secure Access to Partners

Target Audience

Participant for this course operate in medium to very large computing environments that use the Windows 2000 network operating system. They have a minimum of one year's experience designing network infrastructures in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.
- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants

Prerequisites

- Working knowledge of Windows 2000 Directory Services
- Completion of Course 1560, *Upgrading Support Skills from Microsoft Windows NT 4.0 to Microsoft Windows 2000*

OR

- Completion of Course 2154, *Implementing and Administering Windows 2000 Directory Services*

OR

- Equivalent knowledge

At Course Completion

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

- Identify the security risks associated with managing resource access and data flow on the network.
- Describe how key technologies within Windows 2000 are used to secure a network and its resources.
- Plan a Windows 2000 administrative structure so that permissions are granted only to appropriate users.
- Plan an Active Directory™ directory service structure that facilitates secure and verifiable user account creation and administration.
- Define minimum security requirements for Windows 2000–based domain controllers, application servers, file and print servers, and workstations.
- Design a strategy for securing local storage of data and providing secure network access to file and print resources.
- Design end-to-end security for the transmission of data between hosts on the network.
- Design a strategy for securing access for non-Microsoft clients within a Windows 2000–based network.
- Design a strategy for securing local resources accessed by remote users who use dial-up or virtual private network (VPN) technologies.

- Design a strategy for securing local resources accessed by remote offices within a wide area network (WAN) environment.
- Protect private network resources from public network users.
- Design a strategy for securing private network user access to public networks.
- Design a strategy for authenticating trusted users over public networks.
- Design a strategy for securing data and application access for the private network when accessed by trusted partners.
- Plan for an e-commerce implementation between your organization and external business partners that facilitates business communication.
- Design a structured methodology for securing a Windows 2000 network.

Course Outline

Module 1: Assessing Security Risks

- Identifying Risks to Data
- Identifying Risks to Services
- Identifying Potential Threats
- Introducing Common Security Standards
- Planning Network Security

Module 2: Introducing Windows 2000 Security

- Introducing Security Features in Active Directory
- Authenticating User Accounts
- Securing Access to Resources
- Introducing Encryption Technologies
- Encrypting Stored and Transmitted Data
- Introducing Public Key Infrastructure Technology

Unit 1: Providing Secure Access to Local Network Users

Module 3: Planning Administrative Access

- Determining the Appropriate Administrative Model
- Designing Administrative Group Strategies
- Planning Local Administrative Access
- Planning Remote Administrative Access

Module 4: Planning User Accounts

- Designing Account Policies and Group Policy
- Planning Account Creation and Location
- Planning Delegation of Authority
- Auditing User Account Actions

Module 5: Securing Windows 2000–Based Computers

- Planning Physical Security for Windows 2000–based Computers
- Evaluating Security Requirements
- Designing Security Configuration Templates
- Evaluating Security Configuration
- Deploying Security Configuration Templates

Module 6: Securing File and Print Resources

- Examining Windows 2000 File System Security
- Protecting Resources Using DACLs
- Encrypting Data Using EFS
- Auditing Resource Access
- Securing Backup and Restore Procedures
- Protecting Data from Viruses

Module 7: Securing Communication Channels

- Assessing Network Data Visibility Risks
- Designing Application-Layer Security
- Designing IP-Layer Security
- Deploying Network Traffic Encryption

Module 8: Providing Secure Access to Non-Microsoft Clients

- Providing Secure Network Access to UNIX Clients
- Providing Secure Network Access to NetWare Clients
- Providing Secure Access to Macintosh Clients
- Securing Network Services in a Heterogeneous Network
- Monitoring for Security Breaches

Unit 2: Providing Secure Access to Remote Users and Offices

Module 9: Providing Secure Access to Remote Users

- Identifying the Risks of Providing Remote Access
- Designing Security for Dial-Up Connections
- Designing Security for VPN Connections
- Centralizing Remote Access Security Settings

Module 10: Providing Secure Access to Remote Offices

- Defining Private and Public Networks
- Securing Connections Using Routers
- Securing VPN Connections Between Remote Offices
- Identifying Security Requirements

Unit 3: Providing Secure Access Between Private and Public Networks

Module 11: Providing Secure Network Access to Internet Users

- Identifying Potential Risks from the Internet
- Using Firewalls to Protect Network Resources
- Using Screened Subnets to Protect Network Resources
- Securing Public Access to a Screened Subnet

Module 12: Providing Secure Internet Access to Network Users

- Protecting Internal Network Resources
- Planning Internet Usage Policies
- Managing Internet Access Through Proxy Server Configuration
- Managing Internet Access Through Client-Side Configuration

Unit 4: Providing Secure Access to Partners

Module 13: Extending the Network to Partner Organizations

- Providing Access to Partner Organizations
- Securing Applications Used by Partners
- Securing Connections Used by Remote Partners
- Structuring Active Directory to Manage Partner Accounts
- Authenticating Partners from Trusted Domains

Module 14: Designing a Public Key Infrastructure

- Introducing a Public Key Infrastructure
- Using Certificates

- Examining the Certificate Life Cycle
- Choosing a Certification Authority
- Planning a Certification Authority Hierarchy
- Mapping Certificates to User Accounts
- Managing CA Maintenance Strategies

Module 15: Developing a Security Plan

- Designing a Security Plan
- Defining Security Requirements
- Maintaining the Security Plan

MCSE Windows 2000 Tracks: 70-221

Course: Designing a Microsoft 2000 Networking Services Infrastructure

MCP Exam: 70-221

Associated Certification: MCP, MCSE

Duration: 5 Days

Introduction

This course provides students with the information and skills needed to create a networking services infrastructure design that supports the required network applications. Each module provides a solution based on the needs of the organization. Some Microsoft Windows® 2000 network solutions require a single technology, such as DHCP, to provide Internet Protocol (IP) address configuration support. In other situations, several technology options exist, such as Open Shortest Path First (OSPF), Routing Information Protocol (RIP), and Internet Group Management Protocol (IGMP), to design an IP routing scheme.

Target Audience

Participants for this course operate in medium to very large computing environments that use the Windows 2000 network operating system. They have a minimum of one year's experience designing network infrastructures in environments that have the following characteristics:

- Supported users range from 200-26,000+
- Physical locations range from 5-150+
- Typical network services and applications include file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting.
- Connectivity needs include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet.
- Systems engineers
- Technical support engineers
- Systems analysts
- Network analysts
- Technical consultants

Prerequisites

Before taking this course, the student should have completed **one** of the following courses:

- Accelerated Training for Updating Skills and Designing a Directory Services Infrastructure for Microsoft Windows 2000
- Updating Support Skills from Microsoft Windows NT® 4.0 to Microsoft Windows 2000
- Implementing and Administering Windows 2000 Directory Services

At Course Completion

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

- Describe the attributes of a Windows 2000 networking services infrastructure design.
- Define the design requirements for a Transmission Control Protocol/Internet Protocol (TCP/IP) solution.
- Design a DHCP solution for automating IP configuration.
- Design a DNS service for name resolution.
- Evaluate WINS as a solution for name resolution.
- Evaluate and create an Internet connectivity design using Network Address Translation.
- Evaluate and create an Internet connectivity design using Microsoft Proxy Server 3.0.
- Evaluate and create private network connectivity designs using Routing and Remote Access.
- Evaluate and create a design to connect a remote user to a private network using Routing and Remote Access.
- Evaluate and create a design to connect a remote user to a private network using Remote Authentication Dial-In User Service (RADIUS).
- Develop a management strategy for networking services.
- Evaluate strategies to address interaction issues for the placement of services within an infrastructure.
- Evaluate and create designs based upon the applications in use by an organization.

Course Content

Module 1: Windows 2000 Networking Overview

- Introduction to Windows 2000 Network Services
- Defining the Network Design Attributes

Unit 1: Designing the Network Foundation

Module 2: Designing a TCP/IP Solution

- Identifying the Networking Solutions Provided by TCP/IP
- Designing a Functional TCP/IP Solution
- Securing a TCP/IP Solution
- Enhancing a TCP/IP Design for Availability
- Enhancing a TCP/IP Design for Performance

Module 3: Designing an Automated IP Configuration Service Using DHCP

- Identifying the Automated IP Configuration Solutions Using DHCP
- Designing a Functional DHCP Solution
- Securing a DHCP Solution
- Enhancing a DHCP Design for Availability
- Enhancing a DHCP Design for Performance

Module 4: Designing a Name Resolution Service Using DNS

- Identifying DNS as a Solution for Name Resolution
- Establishing DNS Functionality
- Securing a DNS Solution
- Enhancing the DNS Design for Availability
- Optimizing the DNS Design for Performance

Module 5: Designing a NetBIOS Name Resolution Service Using WINS

- Identifying the Networking Solutions Provided by WINS
- Designing a Functional WINS Solution
- Securing a WINS Solution
- Enhancing the WINS Design for Availability
- Optimizing the WINS Design for Performance

Unit 2: Designing Internet Connectivity Module 6: Designing Internet Connectivity Using Network Address Translation

- Identifying NAT as a solution for Internet Connectivity
- Designing a Functional NAT Solution
- Securing a NAT Solution
- Enhancing a NAT Design for Availability
- Optimizing the NAT Design for Performance

Module 7: Designing Internet Connectivity Using Proxy Server 3.0

- Identifying Proxy Server as a Solution for Internet Connectivity
- Designing a Functional Proxy Server Solution
- Securing a Proxy Server Solution
- Enhancing a Proxy Server Design for Availability
- Optimizing a Proxy Server Solution for Performance

Unit 3: Designing Extranet Connectivity
Module 8: Designing Connectivity Between Private Networks

- Recognizing Routing as a Solution for Connectivity between Private Networks
- Designing a Functional Routing Solution
- Securing Private Network Connections
- Optimizing a Router Design for Availability and Performance

Module 9: Designing Remote User Connectivity

- Identifying Routing and Remote Access as a Solution for Remote Access
- Designing a Functional Remote Access Solution
- Securing a Remote Access Solution
- Enhancing the Remote Access Design for Availability
- Optimizing the Remote Access Design for Performance

Module 10: Designing a Remote Access Solution Using RADIUS

- Recognizing RADIUS as a Solution for Remote Access
- Designing a Functional RADIUS Solution
- Securing a RADIUS Design
- Enhancing the RADIUS Design for Availability
- Enhancing the RADIUS Design for Performance

Unit 4: Creating an Integrated Network Services Infrastructure Design
Module 11: Developing a Windows 2000 Network Management Strategy

- Defining a Management Strategy
- Identifying the Processes of the Strategy
- Generating Information of the Status of Services
- Selecting Reactive or Predictive Strategies

Module 12: Designing Strategies for Combining Services

- Identifying Benefits of Designing Services
- Combining Services in a Design
- Securing a Design by Combining Services
- Enhancing Availability by Combining Services
- Optimizing Performance by Combining Services

Module 13: Creating Networking Service Designs to Support Applications

- Providing E-Commerce Solutions
- Providing Joint Project Development Solutions
- Providing Distributed Sales Solutions
- Providing Internet Service Provider Solutions
- Providing Virtual Office Solutions

MCSE Windows 2000 Tracks: 70-224

Course: Installing, Configuring and Administering Microsoft Exchange 2000 Server

MCP Exam: 70-224

Associated Certification: MCP, MCSE, MCSA

Duration: 5 Days

Introduction

The goal of this course is to teach students the knowledge and skills necessary to install, configure, and administer Microsoft Exchange 2000. This course also provides prerequisite knowledge and skills required for Course titled, *Designing Microsoft Exchange 2000 for the Enterprise*, and Course titled, *Upgrading Microsoft Exchange Server 5.5 to Microsoft Exchange 2000*.

Target Audience

This course is intended for:

- IT professionals who will administer Exchange 2000 organizations.
- Those who operate in medium to very large computing environments that typically have multiple physical locations, mixed client connection protocols, and internet messaging connectivity.
- Systems engineers
- Technical support engineers
- **Network analysts/Engineers**
- **Technical consultants**

Prerequisites

Before attending this course, students must have:

- A working knowledge of Microsoft Windows® 2000.
- Completed Course 1560, *Updating Support Skills from Windows NT 4.0 to Windows 2000*, or Course 2154, *Implementing and Administering Microsoft Windows 2000 Directory Services*, or equivalent working knowledge.
- Working knowledge of Networking, including Transmission Control Protocol/Internet Protocol (TCP/IP), Domain Name System (DNS), and Internet Information Services (IIS).
- Working knowledge of Internet protocols, including Post Office Protocol version 3 (POP3) or Internet Message Access Protocol version 4 (IMAP4), SMTP, Hypertext Transfer Protocol (HTTP), and Network News Transfer Protocol (NNTP).
- Knowledge of Exchange Server 5.5 is beneficial but not essential.

At Course Completion

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

- Install Exchange 2000.
- Create and manage Storage Groups, Mailbox Stores, and Public Folder Stores.
- Create and manage public folders, users, contacts, and distribution lists.
- Configure full-text indexing.
- Create and apply mailbox store and public folder store Policies.
- Create a Simple Mail Transfer Protocol (SMTP) Connector to the Internet.
- Create and connect Exchange Routing Groups.
- Configure Microsoft Outlook® Web Access.
- Install and configure Instant Messaging.
- Implement and configure Exchange 2000 Conferencing Server.
- Monitor and tune Exchange 2000 performance.

- Backup Exchange 2000 data and restore Exchange 2000 after a disaster.

Course Outline

Module 1: Introduction to Microsoft Exchange 2000

- Exchange 2000 Product Offerings
- Integration with Windows 2000
- Administrative Capabilities
- Message Routing Capabilities
- User Capabilities
- Developer Capabilities

Module 2: Installing Microsoft Exchange 2000

- Exchange and Windows 2000
- Preparing to Install Exchange 2000
- Installing Exchange 2000
- Default File Locations and Share-Point Permissions
- Troubleshooting Installation Options

Module 3: Administering Microsoft Exchange 2000

- Introduction to Administrative Utilities
- Introduction to Exchange System Manager
- Managing Administrative Security
- Creating and Configuring Administrative Groups
- Using Exchange 2000 System Policies
- Administering Exchange 2000 Address Lists

Module 4: Creating and Managing Storage Groups and Stores

- Storage Groups
- ESE Features of Exchange 2000
- Creating Storage Groups
- Creating Stores
- Managing Storage Groups and Stores

Module 5: Creating and Managing Recipient Objects

- Creating Recipient Objects
- Configuring Recipient Objects
- Managing Recipient Objects
- Making Bulk Changes to the Directory
- Configuring Policies

Module 6: Creating and Managing Public Folders

- Introduction to Public Folders
- Configuring Public Folder Permissions
- Managing Public Folder Replication
- Replicating Public Folders
- Setting Public Store Policies

Module 7: SMTP in Microsoft Exchange 2000

- Introduction to SMTP
- Configuring multiple SMTP Domain Names
- Configuring an SMTP virtual server
- Configuring an SMTP connector
- Troubleshooting SMTP connectivity

Module 8: Message Routing in Microsoft Exchange 2000

- Message Routing and Routing Groups
- Connecting Routing Groups
- Determining Link Status
- Routing Messages

Module 9: Message Flow in Microsoft Exchange 2000

- Message Flow Architecture
- Working with Failed Links
- Message Tracking

Module 10: Configuring Internet Protocols

- IIS Integration with Exchange 2000
- Examining Client Connectivity and Security
- Kerberos Authentication
- Front-End/Back-End Server Configuration and Security
- Configuring NNTP Services
- Troubleshooting Client Connectivity by Using Telnet

Module 11: Accessing Microsoft Exchange 2000 with Outlook Web Access

- Examining Outlook Web Access Components and Process
- Configuring an HTTP Virtual Server
- Securing Outlook Web Access Communication

Module 12: Configuring Instant Messaging

- Introduction to Instant Messaging
- Basics of Instant Messaging
- Instant Messaging Terminology
- Instant Messaging Components
- Installing and Configuring Instant Messaging
- Instant Messaging Operations and Considerations
- Best Practices

Module 13: Implementing Microsoft Exchange 2000 Conferencing Server

- Capabilities of Exchange 2000 Conferencing Server
- Architecture of Exchange 2000 Conferencing Server
- Components and Technologies of Exchange 2000
- Conferencing Server
- Windows 2000 Dependencies
- Configuring Exchange 2000 Conferencing Server

Module 14: Monitoring Microsoft Exchange 2000

- Tools for Monitoring Exchange 2000
- Monitoring Exchange 2000 by Using The Performance Console
- Monitoring Exchange 2000 by Using Monitoring And Status
- Logging and Viewing Diagnostic Data

Module 15: Disaster Recovery in Microsoft Exchange 2000

- Introduction to Disaster Recovery in Exchange 2000
- Backing Up Exchange 2000 by Using the Windows 2000 Backup Utility
- Restoring Exchange 2000
- Creating a Disaster Recovery Plan

Module 16: The Microsoft Exchange 2000 Challenge

- The Exchange 2000 Challenge is an activity used to review the entire course and inspire classroom discussions.

Contacts



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