

Windows 2003 Microsoft Certified Systems Engineers demonstrate the knowledge and skills needed to successfully design, implement and manage Windows Server 2003 networks. The Windows Server 2003 Networking series from LearnKey provides comprehensive instruction in preparation for these Microsoft certification exams: Managing and Maintaining a Microsoft Windows Server 2003 Environment, Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure, Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure, and Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure.

LearnKey courses meet or exceed all Microsoft certification objectives and provide skills critical for successful certification and network administration. Passing these four core exams and one client operating system exam, one design exam and one elective exam leads to MCSE on Windows 2003 certification.

Active Directory Infrastructure

Session 1

Section A: AD Introduction

- Overview
- Objectives
- Overview Continued

Section B: AD Foundations & CIA Model

- Foundations Overview
- Active Directory
- Directory Service in AD
- Directory Service Char.
- AD Interoperability
- CIA Model
- CIA Responsibility

Section C: Logical & Physical Components

- AD Definitions
- Logical Components
- More Logical Component
- Logical Structure
- Physical Components
- Physical Structure

Section D: FSMO Roles of AD

- Master Roles Overview
- Understanding Schema
- Schema Master
- Schema Master Seizure
- Viewing Schema
- Schema User Class
- New User Attributes
- Role Transition

Section E: Additional FSMO Roles of AD

- Domain Naming Master
- Domain Naming Seizure
- Domain Specific Masters
- Domain Naming Controls
- Domain Specific Controls
- Infrastructure Roles

Section F: Uniqueness Rules & Global Catalog

- Uniqueness Rules
- Global Catalog
- Distinguished Name
- Relative Name
- Domain & Forest Summary

Section G: Administrative Tools

- Create New User Object
- New User Password
- Change New User Object
- Windows Support Tools
- ADSI Edit
- NetBIOS Commands

Session 2

Section A: DNS Concepts

- Installation Overview
- AD Authentication
- DNS Components
- DNS & AD
- DNS Structure
- DNS Namespace
- DNS Types
- DNS Queries

Section B: DNS Zone Types

- Zone Types Overview
- Primary & Secondary
- Zone Transfers
- Stub Zone vs. Secondary
- Delegation & Integration
- Excumination & Identification
- Zone Identification
- Create & Integrate

Section C: Installation Requirements

- Domains & Forests
- Checklist
- Preparation
- Operating Systems
- Information Required

Section D: Installation Process

- Installation of AD
- Installation Upgrade
- ADPREP Forest
- ADPREP Domain
- Installation Specifics
- Installation Decisions

Section E: AD Replica

- Add a Replica
- IFM
- IFM Rules
- Adding a Replica

Section F: Validate Installation

- Validate Process
- Validate Tools
- Validate Steps
- Validation
- SYSVOL & SRV Records

Section G: Post Installation Process

- Post Checklist
- Zone Integration
- New Group Policy
- SMB Signing Policy

Session 3

Section A: Forest & Domain Levels

- Forest Functional Levels
- Domain Functional Levels
- Enhancements
- Raising

Section B: Trust & Decommissioning a DC

- Trust Relationships
- Relationship Types
- Create a Trust
- Trust Direction
- Trust Password
- Complete Trust
- Decommissioning Steps

Section C: Organizational Unit Structure

- OU Overview
- OU's Role in AD
- OU Phases
- OU Hierarchy
- Organizational Factors
- Guidelines
- Creating OU's
- Using DS add

Section D: OU Delegation

- Delegation of Control
- Security & Permissions

Section E: Implementing Users & Groups

- Implementing Concepts
- SID, RID, & GUID
- SIDHistory
- SIDHistory Tool
- Exploring SID & RID

Section F: User Acct & Group Types

- Account Types
- Group Types & Scopes
- Group Scopes
- Universal Groups
- Enterprise Model
- Single Domain Forest
- Creating & Managing
- User Admin Tools

Session 4

Section A: UPN & Password Policies

- UPN Suffixes
- Alternate UPN
- Password Strategies
- Securing Auth
- Password & Auth

Section B: Group Policy Objects in AD

- GPO Settings
- GPO Concepts
- GPO Application
- GPO Planning

Section C: Create, Configure, & Manage GPOs

- Exploring GPO's
- User Settings

Section D: Tools & Delegating GPO

- GPO Tools
- Using GPO Tools
- Delegate Control
- Validate & Test

Section E: Software Deployment with GPOs

- Windows Installer
- Software Life Cycle
- Deployment Process
- Assignment vs. Publishing
- Deployment

Section F: Software Management & Removal with GPOs

- Management Overview
- Management Options
- Removing Software

Section G: Replication in AD

- Sites & Replication
- Replication Notification
- Update Notification
- Replication Process
- Replication Conflicts

Section H:

- Intrasite & Intersite in AD
- Sites in AD
- Intrasite
- Intersite
- Intersite Replication
- Create Site
- Intrasite Replication

Session 5

Section A: Security Settings

- GPO Editor
- Smart Card Auth
- User Certificates
- IP Security Policies
- Local Group Policy

Section B: Highly Available DNS

- DNS Role
- DNS in AD
- Global Catalog Servers
- Enable Global Catalog
- Universal Group Caching
- DC Best
- Capacity Planning

Section C: FSMO Rules

- Schema & Domain Naming
- PDC Emulator & RID
- Infrastructure Master
- Transfer Roles
- Seizing Roles
- ntdsutil

Section D: Backup, Analysis, & Monitor

- NTBackup
- Backing up AD
- Restoring AD
- Restore Process
- Replication Tools
- Performance Analysis
- Replication Monitor

Section E: Directory Serv Models & Bus Req

- Directory Serv Models
- Project Life Cycle
- AD Project Documents
- Resources

Implementing Network Infrastructure

Session 1

Section A: Network Infrastructure Overview

- Required Skills
- Required Components
- Base Platform
- Network Planning

Section B: Understanding TCP/IP

- TCP/IP History
- TCP/IP Protocol Suite
- OSI Model
- OSI Upper Layers
- OSI Middle Layers
- OSI Lower Layers
- Mapping TCP/IP to OSI
- TCP/IP Communications

Section C: IP Addresses

- MAC Addresses
- IP Addresses
- Subnet Mask
- IP Address Clauses
- Subnet Mathematics

Section D: Addressing Your Network

- Static Addresses
- Dynamic Addresses
- Assigning Addresses
- Assign Static Address
- Alternate Configuration
- Advanced IP Properties
- Configure Advanced Settings

Section E: Dynamic Addressing

- APIPA
- Using APIPA
- DHCP
- DHCP Process
- DHCP Scopes
- DHCP Superscopes

Section F: Implementing DHCP

- DHCP Authorization
- Create Scope
- Configure Client
- Create Reservation

Session 2

Section A: Managing DHCP

- Reconcile Scopes
- Backup DHCP
- DHCP Relay Agent
- Install Relay Agent
- Configure Relay Agent

Section B: IP Address Troubleshooting

- DHCP Problems
- Troubleshooting Tools
- Conflict Detection
- DHCP Authorization
- Client IP Problems
- Section C: Name Resolution
- DNS History
- Authority/Delegation
- Zones/Domains
- DNS Namespace
- DNS Servers
- DNS Zone Types
- Section D: Install DNS Servers
- Install DNS
- Configure DNS Servers
- Configure DNS Options
- Server Properties
- Configure Forwarding
- Section E: Configuring Zones
- Choose Zone Type
- Active Directory Integration
- Create Zone
- Zone Properties
- Create DNS Records
- Delegate Domain
- Section F: Monitor & Troubleshoot DNS
- Monitoring DNS
- Event Viewer
- Debug Logging
- Nslookup
- Aging & Scavenging
- Troubleshoot Name Resolution

Session 3

- Section A: Remote Access
- Types of Connectivity
- Configure Remote Access
- Configure Modem
- Configure RRAS
- RRAS Properties
- Ports
- Section B: Virtual Private Networks
- PPTP
- L2TP/IPSec
- Configure Security
- IP Settings
- Configure Client
- IPSec Settings
- Access Network
- Section C: Remote Access Policies
- RRAS User Authentication
- Configure Logging
- User Properties
- Remote Access Policies
- Configure Policies
- Policy Properties
- Verify Policy
- Section D: Internet Authentication Service

- RADIUS
 - Authentication
 - Configure IAS Server
 - RADIUS Clients
 - IAS Policies
 - Authorize Server
 - Configure
- Section E: Troubleshooting Remote Access
- Common Problems
 - VPN Security
 - Packet Filters
 - Test Filters
- Section F: Routing Introduction
- IP Routing
 - Routing Protocols
 - RIP Routing
 - OSPF Routing
 - Static Routing

Session 4

- Section A: Implementing Routing
- Managing IP Routing
 - Routing Protocols
 - Routing & Remote Access
 - Static Routing
 - Verify Static Route
 - Dynamic Routing
 - Configure Outbound
 - Configure Inbound
- Section B: Demand-Dial Routing
- Usage
 - Configure DDR
 - Dial-In Setup
 - Dial-Out Setup
 - Two-way Connection
 - Dynamic Routes
 - Configure Remote
 - Demand-Dial Interface
- Section C: Secure Remote Access
- VPNs
 - Corporate VPN
 - VPN Credentials
 - VPN Properties
 - IP Addressing
 - Branch VPN
 - Verify VPN Connection
 - Filtering/Rules
- Section D: ICS NAT
- Address Translation
 - Connection Sharing
 - ICS/ICF Set-Up
 - Advanced Setting
 - ICS/ICF Services
- Section E: RRAS NAT
- Implementation
 - Configuring
 - ICF/ICS Conflict
 - Enable RRAS NAT

- Public/Private
 - NAT Properties
 - Using NAT
- Section F: Troubleshooting Routing
- RRAS
 - Demand-Dial
 - NAT
 - Event Logging
 - Trace Log

Session 5

Section A: Security Templates

- Baseline
- Add Security MMC
- Built-in Templates
- Create Template
- Implement Template
- Import Templates
- Applying Templates

Section B: IPSec

- IPSec Process
- IPSec Protocols
- Transport Mode
- Tunnel Mode
- Integrity/Encryption
- Authentication

Section C: Configure IPSec

- Implementation
- Actions/Rules
- Using IPSec
- IP Filter List
- Filter Actions
- Create Policy
- Assign Policy
- Verify

Section D: Troubleshoot IPSec

- IP Security Monitor
- Tracking IPSec
- Solve/Verify
- View Policy
- Update Policy
- QuickMode

Section E: Monitoring

- Tools
- Network Performance
- Network Diagnostics
- Network Monitor
- Capture VPN Traffic
- Analyze Data
- Troubleshooting Tools

Section F: Troubleshooting Services

- Services
- Failure Actions
- Service Console
- SC Command

Managing a Network Environment

Session 1

Section A: Introduction

- Course Overview
- Windows 2003 Family
- Windows 2003 Editions
- Standard & Enterprise
- Datacenter & Web

Section B: Installation

- Prerequisite Knowledge
- Hardware Requirements
- Clean Installations
- Upgrade Installations
- Upgrading NT 4.0 Domains
- NT 4.0 Upgrade Issues
- NT 4.0 Upgrade Order
- Upgrading to Active Directory

Section C: Upgrading Windows 2000

- Active Directory
- Adprep/forestprep
- Adprep/domainprep
- Set Up Server 2003
- Windows Setup
- Verify Upgrade
- Functional Levels
- Domain/Forest Levels

Section D: Hardware Support

- Server Class Hardware
- Standard/Wireless
- USB Devices
- View Devices
- Optical Drives
- Hardware Installation
- Driver Signing
- Unsigned Drivers

Section E: Troubleshoot Hardware

- Hardware Problems
- Add Hardware Wizard
- Update Drivers
- Audio
- HAL/Computer Driver
- Other Tools

Session 2

Section A: Server 2003

- Hard Drives
- Basic Disks
- Dynamic Disks
- More on Basic Disks
- Basic to Dynamic
- Dynamic Conversion

Section B: Basic Dynamic Volumes

- Volume Types
- Spanned vs. Striped
- Disk Management
- Simple Volume
- Spanned Volume
- Striped Volume

Section C: Fault Tolerant Volumes

- Mirrored Volume

- RAID-5 Volume
- Configure Mirror
- Configure RAID-5
- Section D: Managing Volumes
- Disk Management Console
- Mount into Directory
- Storage Commands
- DiskPart Utility
- Defrag Utility
- Schedule Defrag
- Section E: File Systems
- FAT/FAT32
- NTFS
- NTFS-Based Features
- Format NTFS
- Format FAT32
- File Permissions
- Section F: Computer Accounts
- Access Server Resources
- Join Domains
- Create Accounts
- Log onto Domain
- Computer Management
- Computer Account Issues
- DNS Settings
- Reset Account

Session 3

- Section A: User Accounts
- Basic Building Block
- Authentication
- Create Users
- Local User Account
- Active Directory Users
- User Properties
- Verify Resource Access
- Section B: Advanced User Accounts
- Create Users Quickly
- Create Template
- Copy Template
- net User Command
- dsadd User Command
- Section C: User Account Properties
- Properties
- Account Tab
- Profile Tab
- Account & Password Policies
- Account Lockout Policy
- Section D: User Profiles
- Roaming Profile
- Mandatory Profile
- Add Roaming Profile
- Save Profile
- Add Mandatory Profile
- Section E: Groups
- Group Categories
- Group Scope
- Windows 2000 Mixed Mode

- Domain Local Group
- Global Group
- Universal Group
- Domain Groups
- Forest Groups
- Section F: Managing Groups
- Control Access
- Add Users
- Create Group
- Change Group Scope
- Move Users or Groups
- AD Automation

Session 4

Section A: NTFS Permissions

- Local File Access
- Permission Inheritance
- Grant Permissions
- Advanced Permissions
- Modify Inheritance
- Effective Permissions

Section B: Share Permissions

- Create Share
- Real World Permissions
- Modify Permissions
- Troubleshooting

Section C: NTFS Features

- Ownership
- View Ownership
- Take Ownership
- Compression
- Quotas
- Apply Compression
- Set Quota
- Test Quota Entries

Section D: Printers

- Permissions
- Print Devices
- Sharing
- Setting Up
- Install on Server
- Share Permissions
- Install on Client
- Manage Printers
- Print Queue
- Print Server Properties

Section E: Windows Licensing

- Site Licensing
- Licensing Tool
- Verify Licensing
- Licensing Server
- Licensing Modes

Section F: Software Update Services

- Install SUS
- Administrative Interface
- Service Packs

Session 5

Section A: Remote Administration

- Remote Tools
- Install Help
- Add Computer Management
- Remote Assistance
- Using Remote Assistance
- Section B: Remote Desktop
 - Implementing
 - Connection
 - Enable & Add Users
 - Remote Connection
 - Options
 - Remote Control
- Section C: Web Server
 - Web Services
 - IIS 6.0
 - Install IIS
 - Manage Server
 - Securing IIS
- Section D: Monitoring Servers
 - Monitoring Tools
 - System Monitor
 - Remote Monitoring
 - Performance Logs
 - Log/Schedule Properties
 - Create Logs/Alerts
 - View Logs
 - Performance Guidelines
- Section E: Shadow Copies
 - Requirements
 - Enable Shadow Copies
 - Settings
 - Restore Shadow Copies
- Section F: Backup
 - Backup Options
 - Removable Storage
 - Backup Process
 - Advanced Options
 - Scheduled Backups
 - Restore Options
 - Restore Active Directory
 - Restore Data
- Section G: Disaster Recovery
 - Basic Elements
 - Redundancy
 - ASR
 - Using ASR

Planning Network Infrastructure

Session 1

Section A: Introduction

- Connectivity
- RRAS
- Availability
- Security
- Components

Section B: TCP/IP Networking

- Network Planning
- IP Addressing

- IP Address Classes
- Subnet Mask
- Addressing Scheme
- Section C: Network Availability
- Subnetting Requirements
- Network Planning
- Availability
- Redundancy
- Section D: Network Performance
- Affecting Factors
- Physical & Logical Subnets
- Ethernet Usage - 10 Mbps
- Ethernet Usage - 100/1000 Mbps
- Section E: Planning for Growth
- Requirements
- Traffic Flow
- How to Plan
- Section F: DHCP Planning
- Config Methodologies
- DHCP Features
- Integration Benefits
- LAN
- Routed Networks
- Planning
- Non-Microsoft Clients
- Section G: Troubleshooting TCP/IP Addressing
- DHCP Performance
- Lease Duration
- DHCP Security & Issues
- Troubleshooting Tools
- Traffic Monitoring

Session 2

- Section A: Internet Connectivity
- Connectivity Solutions
- Connection Components
- Using NAT
- Secure Perimeter
- Section B: Network Address Translation
- Define Translation
- NAT Solution
- NAT Server Options
- IP Filters
- Address Pools/Ports
- VPN Tunnels
- Availability/Performance
- Section C: Internet Security & Acceleration
- Planning Decisions
- Filtering & Security Features
- Additional Features
- Design Options
- Design Requirements
- Active Directory
- Perimeter Design
- Section D: Enhancing ISA Server
- Enhance Availability
- Clustering Type
- Caching Method
- Organize Hierarchy

- Distribute IP Traffic

Section E: Clustering Technologies

- NLBS & CLB
- Server Clusters
- X Node Clustering
- Clustering Components
- Failover/Failback
- Cluster Management

Section F: Planning RRAS

- Planning Decisions
- Isolation
- Integration
- Protocol Support
- Routing Solution
- Solution Integration

Session 3

Section A: RRAS Advanced Features

- RRAS Filtering
- Wireless Standards
- Wireless Enhancements
- 802.1x Authentication
- Wireless Security
- Enhancing Performance

Section B: IP Troubleshooting

- Local Clients
- Reachability Issues
- NAT Issues
- Routing Issues
- Strategy for Routing
- Outside-In & Inside-Out
- Divide-by-Half

Section C: Secure Remote Access

- IPSec
- Connect with IPSec
- IPSec Mode
- VPN Tunnels
- Tunneling Protocol
- VPN Compulsory Tunnel
- VPN Voluntary Tunnel
- Tunneling Comparisons

Section D: RAS Authentication

- Planning Decisions
- Authentication Methods
- Kerberos
- Certificate-based
- Smart Cards
- NTLM/Clear-text
- Digest/SSL/RADIUS
- RAS Policy

Section E: Planning IPSec Policy

- IPSec Policy
- Requirements · Components
- Identify Needs
- IPSec Phases
- Negotiation Policies
- Policy Filters

Section F: Planning IPSec Deployment

- Authentication Types
- Digital Certificates
- Certificate Use
- Deployment Options
- GPO Deployment
- Processing Order
- Effective Policy

Session 4

Section A: IPSec Troubleshooting

- IPSec Monitor
- IP Security Management
- Users & Computers
- RSoP
- Event Viewer
- Troubleshooting Process

Section B:

- DNS
- Design Process
- DNS Features
- AD Integrated Zone
- Traditional Zone
- Choosing Zone Type
- Connecting to Internet

Section C: Integrating DNS

- Options
- Namespace
- First DNS Server
- Secure DNS
- Secure Zone Replication
- DNS Availability
- DNS Performance
- DNS Troubleshooting

Section D: Planning WINS

- WINS Solution
- Routed Network
- Client Considerations
- Multiple Servers
- Secure WINS
- WINS Availability
- WINS Performance

Section E: Security Design Process

- Server Roles
- Security Categories
- Identify Risks
- Identify Threats
- Business Requirements
- System Requirements

Section F: Security Baseline

- Baseline Strategy
- Baseline Server Roles
- Physical Security
- Passwords
- Hardware
- Security Templates
- Verify & Analyze
- Deploy & Update

Session 5

Section A: Perimeter Security

- Router Security
- External Attacks
- DoS/Port Scanning
- Firewalls
- DMZ Subnets
- Three-Prong Approach
- Midground Screen

Section B: Securing Public Servers

- Vulnerabilities
- Public Server Roles
- HTTP/FTP Server
- DNS Server
- Messenger Server
- Application Server
- VPN Server
- Terminal Server

Section C: Authentication/Encryption

- Transmission Options
- VPN Connection
- Design Decisions

Section D: Certificates

- PKI
- Reliability
- Requirements
- CA Distribution
- Issuing CAs
- Commercial CAs
- Private CAs

Section E: CA Design

- Guidelines
- Planning CA Hierarchy
- User Accounts
- Mapping

Section F: Planning for Administration

- Planning Aspects
- Remote Administration
- Terminal Services
- Monitoring Performance
- Monitoring Services
- Backup/Recovery
- Media Handling
- Data/System Protection