



**This is a reference document on how class flows.**

## **New and Updated Syllabus.**

This is a doc for Windows Server 2012 R2 , and 2019 Administration.

# **Windows Server Administration**

## **Installing Windows Server 2012 R2 /2019, 2019**

- Features and Advantages of Windows Server 2012 and Server 2012 R2 /2019
- Planning the Windows Server 2012 R2 /2019 Installation
- Server Roles in Windows Server 2012 R2 /2019
- Migrating Roles and Features to Windows Server 2012 R2 /2019
- Roles and Features That Have Been Reduced in Windows Server 2012 R2 /2019
- Deciding Which Windows Server 2012 R2 /2019 Versions to Use
- Deciding on the Type of Installation
- Installing Windows Server 2012 R2 /2019
- Using Windows Deployment Services
- Understanding Features On Demand
- Storage in Windows Server 2012 R2 /2019
- Initializing Disks
- Configuring Basic and Dynamic Disks
- Managing Volumes
- Storage Spaces in Windows Server 2012 R2 /2019
- Redundant Array of Independent Disks
- Mount Points
- iSCSI
- Internet Storage Name Service

- Fibre Channel
- Network Attached Storage
- Virtual Disk Service

## Complete DNS and DHCP Management

- Introducing DNS
- The Form of an IP Address
- Understanding Servers, Clients, and Resolvers
- Understanding the DNS Process
- Introducing DNS Database Zones
- Understanding Primary Zones
- Understanding Secondary Zones
- Understanding Active Directory Integrated DNS
- Understanding Stub Zones
- Global Name Zones
- Zone Transfers and Replication
- Advantages of DNS in Windows Server 2012 R2 /2019
- Background Zone Loading
- Support for IPv6 Addresses
- Support for Read-Only Domain Controllers
- DNS Cache Locking
- DNS Security Extensions
- Zone Level Statistics
- Record Weighting
- Netmask Ordering
- Windows PowerShell Support
- Introducing DNS Record Types
- Start of Authority Records
- Name Server Records
- Host Record

- Alias Record
- Pointer Record
- Mail Exchanger Record
- Service (SRV) Record
- Configuring DNS
- Installing DNS
- Load Balancing with Round Robin
- Configuring a Caching-Only Server
- Setting Zone Properties
- Configuring Zones for Dynamic Updates
- Delegating Zones for DNS
- DNS Forwarding
- Manually Creating DNS Records
- DNS Aging and Scavenging
- Monitoring and Troubleshooting DNS
- Monitoring DNS with the DNS Snap-In
- Troubleshooting DNS
- Overview of DHCP
- Introducing the DORA Process
- Advantages and Disadvantages of DHCP
- Ipconfig Lease Options
- Understanding Scope Details
- Installing and Authorizing DHCP
- Installing DHCP
- Introducing the DHCP Snap-In
- Authorizing DHCP for Active Directory
- Creating and Managing DHCP Scopes
- Creating a New Scope in IPv4
- Changing Scope Properties
- Changing Server Properties
- Managing Reservations and Exclusions
- Setting Scope Options for IPv4
- Activating and Deactivating Scopes

- Creating a Superscope for IPv4
- Creating IPv4 Multicast Scopes
- Integrating Dynamic DNS and IPv4 DHCP
- Using Multiple DHCP Servers
- Working with the DHCP Database Files

### Plan and Install Active Directory

- Verifying the File system
- NTFS
- Verifying Network Connectivity
- Basic Connectivity Tests
- Tools and Techniques for Testing
- Network Configuration
- Understanding Domain and Forest Functionality
- About the Domain Functional Level
- About Forest Functionality
- Planning the Domain Structure
- Installing Active Directory
- Adprep
- Active Directory Prerequisites
- The Installation Process
- Deploying Active Directory IaaS in Windows Azure
- Verifying Active Directory Installation
- Using Event Viewer
- Using Active Directory Administrative Tools
- Testing from Clients
- Creating and Configuring Application Data Partitions
- Creating Application Data Partitions
- Managing Replicas
- Removing Replicas
- Using ntdsutil to Manage Application Data Partitions
- Configuring DNS Integration with Active Directory

## Plan and Implement File Server

- Understanding File Servers
- Configuring File Servers
- Sharing Folders
- Making Active Directory Objects Available to Users
- Access-Based Enumeration
- Configuring Offline Files
- Volume Shadow Copy Services
- Configuring Permissions
- Configuring Disk Quotas
- Configuring File Server Resource Manager
- FSRM Features
- Installing the FSRM Role Service
- Configure File and Disk Encryption
- Configuring Distributed File System
- Advantages of DFS
- Types of DFS
- What's New in Windows Server 2012 R2 /2019
- Remote Differential Compression
- Implementing an Audit Policy
- Overview of Auditing
- Implementing Auditing
- Viewing Auditing Information
- Using the Auditpol.exe Command
- Windows Server 2012 R2 /2019 Auditing Features
- Configuring Print Services
- Creating and Publishing Printers
- Configuring Printer
- Migrating Print Servers
- Printer Pooling
- Easy Print Driver
- Configuring Remote Management

- Windows Remote Management
- Windows PowerShell
- Configuring Down-Level Servers
- Configuring Server Core

### Administering Active Directory

- An Overview of OUs
- The Purpose of OUs
- Benefits of OU
- Planning the OU Structure
- Logical Grouping of Resources
- Understanding OU Inheritance
- Delegating Administrative Control
- Applying Group Policies
- Creating OUs
- Managing OUs
- Moving, Deleting, and Renaming OUs
- Administering Properties of OUs
- Delegating Control of OUs
- Troubleshooting OUs
- Creating and Managing Active Directory Objects
- Overview of Active Directory Objects
- Managing Object Properties
- Understanding Groups
- Filtering and Advanced Active Directory Features
- Moving, Renaming, and Deleting Active Directory Objects
- Resetting an Existing Computer Account
- Publishing Active Directory Objects
- Making Active Directory Objects Available to Users
- Publishing Printers
- Publishing Shared Folders

- Querying Active Directory
- Using the Active Directory Administrative Center
- Using the Command Prompt for Active Directory Configuration

## Administering Group Policy Object

- Introducing Group Policy
- Understanding Group Policy Settings
- The Security Settings Section of the GPO
- Group Policy Objects
- Group Policy Inheritance
- Planning a Group Policy Strategy
- Implementing Group Policy
- Creating GPOs
- Linking Existing GPOs to Active Directory
- Managing Group Policy
- Managing GPOs
- Security Filtering of a Group Policy
- Delegating Administrative Control of GPOs
- Controlling Inheritance and Filtering Group Policy
- Assigning Script Policies
- Understanding the Loopback Policy
- Managing Network Configuration
- Automatically Enrolling User and Computer
- Certificates in Group Policy
- Redirecting Folders
- Managing GPOs with Windows PowerShell
- Group Policy Cmdlets
- Deploying Software Through a GPO
- The Software Management Life Cycle
- The Windows Installer

- Deploying Applications
- Implementing Software Deployment
- Preparing for Software Deployment
- Software Restriction Policies
- Using AppLocker
- Group Policy Slow Link Detection
- Publishing and Assigning Applications
- Applying Software Updates
- Verifying Software Installation
- Configuring Automatic Updates in Group Policy
- Configuring Software Deployment Settings
- The Software Installation Properties Dialog Box
- Removing Programs
- Microsoft Windows Installer Settings
- Troubleshooting Group Policies
- Using the gpresult.exe Command

### Configuring TCP/IP

- Understanding TCP/IP
- Details of the TCP/IP Model
- How TCP/IP Layers Communicate
- Understanding Port Numbers
- Understanding IP Addressing
- The Hierarchical IP Addressing Scheme
- Understanding Network Classes
- Subnetting a Network
- Implementing Subnetting
- An Easier Way to Apply Subnetting
- Applying Subnetting the Traditional Way
- Working with Classless Inter-Domain Routing

### Use Virtualization in Windows Server

- Hyper-V Overview



- What Is Virtualization?
- Hyper-V Features
- Hyper-V Architecture
- Hyper-V Requirements
- Hyper-V Installation and Configuration
- Install the Hyper-V Role
- Hyper-V in Server Manager
- Using Hyper-V Manager
- Configure Hyper-V Settings
- Manage Virtual Switches
- Managing Virtual Hard Disks
- Configuring Virtual Machines
- Creating and Managing Virtual Machines

### **Implement Business Continuity and Disaster Recovery**

- Protecting the System
- Backup and Recovery of Active Directory
- Overview of the Windows Server 2012 R2 /2019 Backup Utility
- Setting Up an Active Directory Backup
- Restoring Active Directory
- Active Directory Recycle Bin
- Restartable Active Directory
- Offline Maintenance
- Monitoring Replication
- Using the ADSI Editor
- Wbadmin Command-Line Utility
- Configure Windows Azure Backups
- Understanding Shadow Copies
- VssAdmin Command
- Using Advanced Boot Options
- Starting in Safe Mode
- Enabling Boot Logging

## Configure the Active Directory Infrastructure

- Overview of Network Planning
- The Three Types of Networks
- Exploring Network Constraints
- Overview of Active Directory
- Replication and Sites
- Replicating Active Directory
- Understanding Active Directory Site Concepts
- Understanding Distributed File System Replication
- Implementing Sites and Subnets
- Creating Sites, Subnets
- Configuring Sites, Replication
- Intrasite and Intersite Replication
- RODCs and Replication
- Configuring Server Topology
- Using Universal Group Membership Caching
- Monitoring and Troubleshooting Active Directory
- Replication
- About System Monitor
- Troubleshooting Replication
- Reasons for Creating Multiple Domains
- Reasons for Using Multiple Domains
- Drawbacks of Multiple Domains
- Creating Domain Trees and Forests
- Planning Trees and Forests
- The Promotion Process
- Creating a Domain Tree
- Joining a New Domain Tree to a Forest
- Adding Additional Domain Controllers
- Managing Multiple Domains
- Managing Single-Master Operations
- Forest Operations Masters

- Domain Operations Masters
- Assigning Single-Master Roles
- Managing Trusts
- Managing Global Catalog Servers
- Managing Universal Group Membership Caching
- Upgrading Existing Domains and Forest.