TechyEdz Solutions

Training | Consulting | Developement | Outsourcing

MCSA 2016

9032803832

9032803832

contact@techyedz.com

www.techyedz.com

Microsoft Certified Solutions Associate (MCSA 2016)

MCSA – 2016 (70-740, 70-741 & 70742)

1. 70-740: Installation, Storage, and Compute with Windows Server 2016
2. 70-741: Networking with Windows Server 2016
3. 70-742: Identity with Windows Server 2016

MCSE-2016 (70-743 & 70-744)

4. 70-743: Upgrading Your Skills to MCSA: Windows Server 2016
5. 70-744: Securing Windows Server 2016

70-740: Installation, Storage, and Compute with Windows Server 2016

- **Audience Profile:**

Candidates for this exam are involved with the installation, storage, and compute functionalities available in Windows Server 2016. Candidates perform general installation tasks, as well as creating and managing images for deployment.

Candidates should have experience with local and server storage solutions including the configuration of disks and volumes, Data Deduplication, High Availability, Disaster Recovery, Storage Spaces Direct, and Failover Clustering solutions. The candidates should also be familiar with managing Hyper-V and Containers as well as maintaining and monitoring servers in physical and compute environments.

- **Course Outline:**

Install Windows Servers in Host and Compute Environments

Install, upgrade, and migrate servers and workloads:

- determine appropriate Windows Server 2016 editions per workloads
- install Windows Server 2016; install Windows Server 2016 features and roles
- install and configure Windows Server Core; manage Windows Server Core

- installations using Windows PowerShell, command line, and remote management capabilities
- implement Windows PowerShell Desired State Configuration (DSC) to install and maintain integrity of installed environments
- perform upgrades and migrations of servers and core workloads from Windows Server 2008 and Windows Server 2012 to Windows Server 2016
- determine the appropriate activation model for server installation, such as Automatic Virtual Machine Activation (AVMA), Key Management Service (KMS), and Active Directory-based Activation

Create, manage, and maintain images for deployment

- Plan for Windows Server virtualization
- assess virtualization workloads using the Microsoft Assessment and Planning (MAP) Toolkit
- determine considerations for deploying workloads into virtualized environments
- update images with patches, hotfixes, last cumulative updates and drivers
- install roles and features in offline images
- manage and maintain Windows Server Core, and VHDs using Windows PowerShell

Implement Storage Solutions

Configure disks and volumes

- Configure sector sizes appropriate for various workloads
- configure GUID partition table (GPT) disks
- create VHD and VHDX files using Disk Management or Windows PowerShell
- mount virtual hard disks; determine when to use NTFS and ReFS file systems; configure NFS and SMB shares using Server Manager
- configure SMB share and session settings using Windows PowerShell
- configure SMB server and SMB client configuration settings using Windows PowerShell
- configure file and folder permissions

Implement server storage

- Configure storage pools
- implement simple, mirror, and parity storage layout options for disks or enclosures
- expand storage pools
- configure Tiered Storage
- configure iSCSI target and initiator

- configure iSNS
- configure Datacenter Bridging (DCB)
- configure Multi-Path IO (MPIO)
- determine usage scenarios for Storage Replica
- implement Storage Replica for server-to-server, cluster-to-cluster, and stretch cluster scenarios

Implement data deduplication

- Implement and configure deduplication
- determine appropriate usage scenarios for deduplication
- monitor deduplication
- implement a backup and restore solution with deduplication

Implement Hyper-V

Install and configure Hyper-V

- Determine hardware and compatibility requirements for installing Hyper-V
- install Hyper-V
- install management tools
- upgrade from existing versions of Hyper-V
- delegate virtual machine management
- perform remote management of Hyper-V hosts
- Using Windows PowerShell Direct
- implement nested virtualization

Configure virtual machine (VM) settings

- Add or remove memory in a running VM
- configure dynamic memory
- configure Non-Uniform Memory Access (NUMA) support
- configure smart paging
- configure Resource Metering
- manage Integration Services
- create and configure Generation 1 and 2 VMs and determine appropriate usage scenarios
- implement enhanced session mode
- create Linux and FreeBSD VMs
- install and configure Linux Integration Services (LIS)
- install and configure FreeBSD Integration Services (BIS)
- implement Secure Boot for Windows and Linux environments
- move and convert VMs from previous versions of Hyper-V to Windows Server 2016

Hyper-V; export and import VMs
- implement Discrete Device Assignment (DDA), Troubleshoot VM configuration versions

Configure Hyper-V storage
- Create VHDs and VHDX files using Hyper-V Manager
- create shared VHDX files
- configure differencing disks
- modify virtual hard disks
- configure pass-through disks
- resize a virtual hard disk
- manage checkpoints
- implement production checkpoints
- implement a virtual Fibre Channel adapter
- configure storage Quality of Service (QoS)

Configure Hyper-V networking
- Add and remove virtual network interface cards (vNICs)
- configure Hyper-V virtual switches
- optimize network performance
- configure MAC addresses
- configure network isolation
- configure synthetic and legacy virtual network adapters
- configure NIC teaming in VMs
- configure virtual machine queue (VMQ)
- enable Remote Direct Memory Access (RDMA) on network adapters bound to a Hyper-V virtual switch using Switch Embedded Teaming (SET)
- configure Bandwidth Management

Implement Windows Containers

Deploy Windows containers
- Determine installation requirements and appropriate scenarios for Windows Containers
- install and configure Windows Server container host in physical or virtualized environments
- install and configure Windows Server container host to Windows Server Core in a physical or virtualized environment
- install Docker Enterprise Edition on Windows Server
- configure Docker start-up options; install a base container image

- tag an image
- remove a container
- create Windows Server containers
- create Hyper-V containers

Manage Windows containers

- Manage Windows containers by using Docker CLI
- manage container networking; manage container data volumes
- manage Resource Control
- create new container images using Dockerfile
- manage container images using DockerHub repository for public and private scenarios
- manage container images using Microsoft Azure

Implement High Availability

Implement high availability and disaster recovery options in Hyper-V

- Implement Hyper-V Replica
- implement Live Migration including Shared Nothing Live Migration
- configure CredSSP or Kerberos authentication protocol for Live Migration
- implement storage migration

Implement failover clustering

- Implement Workgroup, Single, and Multi Domain clusters
- configure quorum
- configure cluster networking
- restore single node or cluster configuration
- configure cluster storage
- implement Cluster-Aware Updating
- implement Cluster Operating System Rolling Upgrade
- configure and optimize cluster shared volumes (CSVs)
- configure clusters without network names
- implement Scale-Out File Server (SoFS)
- determine different scenarios for the use of SoFS vs. File Server for general use
- determine usage scenarios for implementing guest clustering
- implement a Clustered Storage Spaces solution using Shared SAS storage enclosures
- implement Storage Replica
- implement Cloud Witness
- implement VM resiliency

- implement shared VHDX as a storage solution for guest clusters

Implement Storage Spaces Direct

- Determine scenario requirements for implementing Storage Spaces Direct
- enable Storage Spaces Direct using Windows PowerShell
- implement a disaggregated Storage Spaces Direct scenario
- implement a hyper- converged Storage Spaces Direct scenario

Manage failover clustering

- Configure role-specific settings, including continuously available shares
- configure VM monitoring
- configure failover and preference settings
- implement stretch and site-aware failover clusters
- enable and configure node fairness

Manage VM movement in clustered nodes

- Perform a live migration
- perform a quick migration
- perform a storage migration
- import, export, and copy VMs; configure VM network health protection
- configure drain on shutdown

Implement Network Load Balancing (NLB)

- Install NLB nodes
- configure NLB prerequisites
- configure affinity
- configure port rules
- configure cluster operation mode
- upgrade an NLB cluster

Maintain and Monitor Server Environments

Maintain server installations

- Implement Windows Server Update Services (WSUS) solutions
- configure WSUS groups
- manage patch management in mixed environments
- implement an antimalware solution with Windows Defender
- integrate Windows Defender with WSUS and Windows Update
- perform backup and restore operations using Windows Server Backup
- determine backup strategies for different Windows Server roles and workloads,

including Hyper-V Host, Hyper-V Guests, Active Directory, File Servers, and Web Servers using Windows Server 2016 native tools and solutions

Monitor server installations

- Monitor workloads using Performance Monitor, Server Manager, Event Viewer
- configure Data Collector Sets
- determine appropriate CPU, memory, disk, and networking counters for storage and compute workloads
- configure alerts
- monitor workloads using Resource Monitor, manage and monitor Windows Server by using Windows Admin Center.

70-741: Networking with Windows Server 2016

About this course

Provides the fundamental networking skills required to deploy and support Windows Server 2016 in most organizations. It covers IP fundamentals, remote access technologies, and more advanced content including Software Defined Networking.

- **Audience Profile:**

Candidates for this exam perform tasks related to the networking features and functionalities available in Windows Server 2016. Candidates should have familiarity with implementing and managing DNS, DHCP, and IPAM, as well as deploying remote access solutions such as VPN and RADIUS.

Candidates should also have experience managing DFS and branch cache solutions, configuring high performance network features and functionality, and implementing Software Defined Networking (SDN) solutions such as Hyper-V Network Virtualization (HNV) and Network Controller.

Implement Domain Name System (DNS)

Install and configure DNS servers

- Determine DNS installation requirements
- install DNS

- configure forwarders
- configure Root Hints
- configure delegation
- implement DNS policies
- Configure DNS Server settings using Windows PowerShell
- configure Domain Name System Security Extensions (DNSSEC)
- configure DNS Socket Pool
- configure cache locking
- enable Response Rate Limiting
- configure DNS-based Authentication of Named Entities (DANE)
- configure DNS logging
- configure delegated administration
- configure recursion settings
- implement DNS performance tuning
- configure global settings

Create and configure DNS zones and records

- Create primary zones
- configure Active Directory primary zones
- create and configure secondary zones
- create and configure stub zones
- configure a GlobalNames zone
- analyze zone-level statistics
- create and configure DNS Resource Records (RR), including A, AAAA, PTR, SOA, NS, SRV, CNAME, and MX records
- configure zone scavenging
- configure record options, including Time To Live (TTL) and weight
- configure round robin
- configure secure dynamic updates
- configure unknown record support
- use DNS audit events and analytical (query) events for auditing and troubleshooting
- configure Zone Scopes
- configure records in Zone Scopes
- configure policies for zones

Implement DHCP and IPAM

Install and configure DHCP

- Install and configure DHCP servers
- authorize a DHCP server

- create and configure scopes
- create and configure superscopes and multicast scopes
- configure a DHCP reservation
- configure DHCP options
- configure DNS options from within DHCP
- configure policies
- configure client and server for PXE boot
- configure DHCP Relay Agent
- implement IPv6 addressing using DHCPv6
- perform export and import of a DHCP server
- perform DHCP server migration

Manage and maintain DHCP

- Configure a lease period
- back up and restore the DHCP database
- configure high availability using DHCP failover
- configure DHCP name protection
- troubleshoot DHCP

Implement and Maintain IP Address Management (IPAM)

- Provision IPAM manually or by using Group Policy
- configure server discovery
- create and manage IP blocks and ranges
- monitor utilization of IP address space
- migrate existing workloads to IPAM
- configure IPAM database storage using SQL Server
- determine scenarios for using IPAM with System Center Virtual Machine Manager for physical and virtual IP address space management, Manage DHCP server properties using IPAM
- configure DHCP scopes and options
- configure DHCP policies and failover
- manage DNS server properties using IPAM
- manage DNS zones and records
- manage DNS and DHCP servers in multiple Active Directory forests
- delegate administration for DNS and DHCP using role-based access control (RBAC)
- Audit the changes performed on the DNS and DHCP servers
- audit the IPAM address usage trail
- audit DHCP lease events and user logon events

Implement Network Connectivity and Remote Access Solutions

Implement network connectivity solutions

- Implement Network Address Translation (NAT)
- configure routing

Implement virtual private network (VPN) and DirectAccess solutions

- Implement remote access and site-to-site (S2S) VPN solutions using remote access gateway
- configure different VPN protocol options
- configure authentication options
- configure VPN reconnect
- create and configure connection profiles
- determine when to use remote access VPN and site-to-site VPN and configure appropriate protocols
- install and configure DirectAccess
- implement server requirements
- implement client configuration
- troubleshoot DirectAccess

Implement Network Policy Server (NPS)

- Configure a RADIUS server including RADIUS proxy
- configure RADIUS clients
- configure NPS templates
- configure RADIUS accounting
- configure certificates
- configure Connection Request Policies
- configure network policies for VPN and wireless and wired clients
- import and export NPS policies

Implement Core and Distributed Network Solutions

Implement IPv4 and IPv6 addressing

- Configure IPv4 addresses and options
- determine and configure appropriate IPv6 addresses
- configure IPv4 or IPv6 subnetting
- implement IPv6 stateless addressing
- configure interoperability between IPv4 and IPv6 by using ISATAP, 6to4, and Teredo scenarios

- configure Border Gateway Protocol (BGP)
- configure IPv4 and IPv6 routing

Implement Distributed File System (DFS) and Branch Office solutions

- Install and configure DFS namespaces
- configure DFS replication targets
- configure replication scheduling
- configure Remote Differential Compression (RDC) settings
- configure staging
- configure fault tolerance
- clone a Distributed File System Replication (DFSR) database
- recover DFSR databases
- optimize DFS Replication
- install and configure BranchCache
- implement distributed and hosted cache modes
- implement BranchCache for web, file, and application servers
- troubleshoot BranchCache

Implement an Advanced Network Infrastructure

Implement high performance network solutions

- Implement NIC Teaming or the Switch Embedded Teaming (SET) solution and identify when to use each
- enable and configure Receive Side Scaling (RSS)
- enable and configure network Quality of Service (QoS) with Data Center Bridging (DCB)
- enable and configure SMB Direct on Remote Direct Memory Access (RDMA) enabled network adapters
- configure SMB Multichannel
- enable and configure virtual Receive Side Scaling (vRSS) on a Virtual Machine Queue (VMQ) capable network adapter
- enable and configure Virtual Machine Multi-Queue (VMMQ)
- enable and configure Single-Root I/O Virtualization (SR-IOV) on a supported network adapter

Determine scenarios and requirements for implementing Software Defined Networking (SDN)

- Determine deployment scenarios and network requirements for deploying SDN
- determine requirements and scenarios for implementing Hyper-V Network

Virtualization (HNV) using Network Virtualization Generic Route Encapsulation (NVGRE) encapsulation or Virtual Extensible LAN (VXLAN) encapsulation

- determine scenarios for implementation of Software Load Balancer (SLB) for North-South and East-West load balancing
- determine implementation scenarios for various types of Windows Server Gateways, including L3, GRE, and S2S, and their use
- determine requirements and scenarios for Datacenter firewall policies and network security groups

70-742: Identity with Windows Server 2016

About this course

Deploy and configure Active Directory Domain Services (AD DS) in a distributed environment, how to implement Group Policy, how to perform backup and restore, and how to monitor and troubleshoot Active Directory–related issues with Windows Server 2016. Additionally, this course teaches how to deploy other Active Directory server roles such as Active Directory Federation Services (AD FS) and Active Directory Certificate Services (AD CS).

- **Audience Profile:**

Candidates for this exam manage identities using the functionalities in Windows Server 2016. Candidates install, configure, manage, and maintain Active Directory Domain Services (AD DS) as well as implement Group Policy Objects (GPOs).

Candidates should also be familiar implementing and managing Active Directory Certificate Services (AD CS), Active Directory Federations Services (AD FS), Active Directory Rights Management Services (AD RMS), and Web Application proxy.

- **Course Outline:**

Install and Configure Active Directory Domain Services (AD DS)

Install and configure domain controllers

- Install a new forest
- add or remove a domain controller from a domain
- upgrade a domain controller
- install AD DS on a Server Core installation
- install a domain controller from Install from Media (IFM)
- resolve DNS SRV record registration issues
- configure a global catalog server
- transfer and seize operations master roles
- install and configure a read-only domain controller (RODC)
- configure domain controller cloning

Create and manage Active Directory users and computers

- Automate the creation of Active Directory accounts
- create, copy, configure, and delete users and computers
- configure templates
- perform bulk Active Directory operations
- configure user rights
- implement offline domain join
- manage inactive and disabled accounts
- automate unlocking of disabled accounts automate password resets

Create and manage Active Directory groups and organizational units (OUs)

- Configure group nesting; convert groups, including security, distribution, universal, domain local, and global
- manage group membership using Group Policy
- enumerate group membership
- automate group membership management using Windows PowerShell
- delegate the creation and management of Active Directory groups and OUs
- manage default Active Directory containers
- create, copy, configure, and delete groups and OUs.

Manage and Maintain AD DS

Configure service authentication and account policies

- Create and configure Service Accounts
- create and configure Group Managed Service Accounts (gMSAs)
- configure Kerberos Constrained Delegation (KCD)
- manage Service Principal Names (SPNs)
- configure virtual accounts

- configure domain and local user password policy settings
- configure and apply Password Settings Objects (PSOs)
- delegate password settings management
- configure account lockout policy settings
- configure Kerberos policy settings within Group Policy, configure Authentication Policies and Authentication Policy Silos

Maintain Active Directory

- Back up Active Directory and SYSVOL
- manage Active Directory offline
- perform offline defragmentation of an Active Directory database
- clean up metadata
- configure Active Directory snapshots
- perform object- and container-level recovery
- perform Active Directory restore
- configure and restore objects by using the Active Directory Recycle Bin
- configure replication to Read-Only Domain Controllers (RODCs); configure Password Replication Policy (PRP) for RODC
- monitor and manage replication
- upgrade SYSVOL replication to Distributed File System Replication (DFSR)

Configure Active Directory in a complex enterprise environment

- Configure a multi-domain and multi-forest Active Directory infrastructure
- deploy Windows Server 2016 domain controllers within a pre- existing Active Directory environment
- upgrade existing domains and forests
- configure domain and forest functional levels
- configure multiple user principal name (UPN) suffixes
- configure external, forest, shortcut, and realm trusts
- configure trust authentication
- configure SID filtering
- configure name suffix routing
- configure sites and subnets
- create and configure site links
- manage site coverage
- manage registration of SRV records
- move domain controllers between sites

Create and Manage Group Policy

Create and manage Group Policy Objects (GPOs)

- Configure a central store
- manage starter GPOs
- configure GPO links
- configure multiple local Group Policies
- back up, import, copy, and restore GPOs
- create and configure a migration table
- reset default GPOs
- delegate Group Policy management
- detect health issues using the Group Policy Infrastructure Status page

Configure Group Policy processing

- Configure processing order and precedence
- configure blocking of inheritance
- configure enforced policies
- configure security filtering and Windows Management Instrumentation (WMI) filtering
- configure loopback processing; configure and manage slow-link processing and Group Policy caching
- configure client-side extension (CSE) behavior
- force a Group Policy update

Configure Group Policy settings

- Configure software installation
- configure folder redirection
- configure scripts
- configure administrative templates
- import security templates
- import a custom administrative template file
- configure for administrative templates

Configure Group Policy preferences

- Configure printer preferences
- define network drive mappings
- configure power options
- configure custom registry settings
- configure Control Panel settings
- configure Internet Explorer settings

- configure file and folder deployment
- configure shortcut deployment
- configure item-level targeting

Implement Active Directory Certificate Services (AD CS)

Install and configure AD CS

- Install Active Directory Integrated Enterprise Certificate Authority (CA)
- install offline root and subordinate CAs
- install standalone CAs
- configure Certificate Revocation List (CRL) distribution points
- install and configure Online Responder
- implement administrative role separation
- configure CA backup and recovery

Manage certificates

- Manage certificate templates
- implement and manage certificate deployment, validation, and revocation
- manage certificate renewal
- manage certificate enrolment and renewal for computers and users using Group Policies
- configure and manage key archival and recovery

Implement Identity Federation and Access Solutions

Install and configure Active Directory Federation Services (AD FS)

- Upgrade and migrate previous AD FS workloads to Windows Server 2016
- implement claims-based authentication, including Relying Party Trusts
- configure authentication policies
- configure multi-factor authentication
- implement and configure device registration
- integrate AD FS with Microsoft Passport
- configure for use with Microsoft Azure and Office 365
- configure AD FS to enable authentication of users stored in LDAP directories

Implement Web Application Proxy (WAP)

- Install and configure WAP
- implement WAP in pass-through mode
- implement WAP as AD FS proxy

- integrate WAP with AD FS
- configure AD FS requirements
- publish web apps via WAP
- publish Remote Desktop Gateway applications
- configure HTTP to HTTPS redirects
- configure internal and external Fully Qualified Domain Names (FQDNs)

Install and configure Active Directory Rights Management Services (AD RMS)

- Install a licensor certificate AD RMS server
- manage AD RMS Service Connection Point (SCP)
- manage AD RMS templates
- configure Exclusion Policies
- back up and restore AD RMS

- **Who Should Attend:**

- All students who start their Microsoft servers study.
- Help Desk who wants to improve to next level as a system admin.
- System admins and engineers who want to study server 2016 in details
- All professional who want to be ready for their MCSA 2016 certificates.

- **Number of Hours: 50hrs**

- **Certification: 70-740, 70-741 & 70-742**

- **Key Features:**

- One to One Training
- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification