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**MICROSOFT**

# **MCSA: Windows Server 2016 Boot Camp**

This training prepares IT and networking professionals to earn the MCSA: Windows Server 2016 certification.

**Due to Covid-19 safety restrictions** PhoenixTS will temporarily be unable to provide food to our students who attend class at our Training Center; however, our Break Areas are **currently open** where students will find a constant supply of Coffee, Tea and Water. Students may bring their own lunch and snacks to eat in our breakrooms or at their seat in the classroom or eat out at one of the many nearby restaurants.

## **Course Overview**

This 10-day MCSA Windows Server 2016 Boot Camp training supplies individuals with the fundamental knowledge of Windows Server 2016 to prepare them to earn their MCSA Windows Server 2016 certification. This training encompasses content from these courses:

### **20740: Install, Storage, & Compute with Windows Server 2016**

This training covers the management of storage and compute with Windows Server 2016. Students learn to understand the scenarios, requirements, and storage and compute options available and applicable to Windows Server 2016. Topics include:

- Prepare and install Nano Server, a Server Core installation, and plan a server upgrade and migration strategy
- Describe the various storage options, including partition table formats, basic and dynamic disks, file systems, virtual hard disks, and drive hardware, and explain how to manage disks and volumes
- Describe enterprise storage solutions, and select the appropriate solution for a given situation
- Implement and manage Storage Spaces and Data Deduplication
- Install and configure Microsoft Hyper-V, and configure virtual machines
- Deploy, configure, and manage Windows and Hyper-V containers

- Describe the high availability and disaster recovery technologies in Windows Server 2016
- Plan, create, and manage a failover cluster
- Implement failover clustering for Hyper-V virtual machines
- Configure a Network Load Balancing (NLB) cluster, and plan for an NLB implementation
- Create and manage deployment images
- Manage, monitor, and maintain virtual machine installations

## **20741: Networking with Windows Server 2016**

This training reviews networking skills necessary to thrive with Windows Server 2016, including:

- Plan and implement an IPv4 network
- Implement Dynamic Host Configuration Protocol (DHCP)
- Implement IPv6
- Implement Domain Name System (DNS)
- Implement and manage IP address management (IPAM)
- Plan for remote access
- Implement DirectAccess
- Implement virtual private networks (VPNs)
- Implement networking for branch offices
- Configure advanced networking features
- Implement Software Defined Networking

## **20742: Identity with Windows Server 2016**

This training teaches IT professionals how to 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. Topics include:

- Install and configure domain controllers
- Manage objects in AD DS by using graphical tools and Windows PowerShell
- Implement AD DS in complex environments
- Implement AD DS sites, and configure and manage replication
- Implement and manage Group Policy Objects (GPOs)
- Manage user settings by using GPOs
- Secure AD DS and user accounts
- Implement and manage a certificate authority (CA) hierarchy with AD CS
- Deploy and manage certificates
- Implement and administer AD FS
- Implement and administer Active Directory Rights Management Services (AD RMS)

- Implement synchronization between AD DS and Azure AD
- Monitor, troubleshoot, and establish business continuity for AD DS services

## Course Outline

### 20740: Installation, Storage, and Compute with Windows Server 2016

#### Installing, Upgrading, and Migrating Servers and Workloads

- Introducing Windows Server 2016
- Preparing and installing Nano Server and Server Core
- Preparing for upgrades and migrations
- Migrating server roles and workloads
- Windows Server activation models
- Lab: Installing and configuring Nano Server

#### Configuring Local Storage

- Managing disks in Windows Server 2016
- Managing volumes in Windows Server 2016
- Lab: Managing disks and volumes in Windows Server 2016

#### Implementing Enterprise Storage Solutions

- Overview of direct-attached storage, network-attached storage, and storage area networks
- Comparing Fibre Channel, iSCSI, and FCoE
- Understanding iSNS, data centre bridging, and MPIO
- Configuring sharing in Windows Server 2016
- Lab: Planning and configuring storage technologies and components

#### Implementing Storage Spaces and Data Deduplication

- Implementing Storage Spaces
- Managing Storage Spaces
- Implementing Data Deduplication
- Lab: Implementing Storage Spaces
- Lab: Implementing Data Deduplication

#### Installing and Configuring Hyper-V And Virtual Machines

- Overview of Hyper-V
- Installing Hyper-V

- Configuring storage on Hyper-V host servers
- Configuring networking on Hyper-V host servers
- Configuring Hyper-V virtual machines
- Managing Hyper-V virtual machines
- Lab: Installing and configuring Hyper-V

## **Deploying and Managing Windows and Hyper-V Containers**

- Overview of containers in Windows Server 2016
- Deploying Windows Server and Hyper-V containers
- Installing, configuring, and managing containers
- Lab: Installing and configuring containers

## **Overview of High Availability and Disaster Recovery**

- Defining levels of availability
- Planning high availability and disaster recovery solutions with Hyper-V virtual machines
- Backing up and restoring the Windows Server 2016 operating system and data by using Windows Server B
- High availability with failover clustering in Windows Server 2016
- Lab: Planning and implementing a high availability and disaster recovery solution

## **Implementing Failover Clustering**

- Planning a failover cluster
- Creating and configuring a new failover cluster
- Maintaining a failover cluster
- Troubleshooting a failover cluster
- Implementing site high availability with stretch clustering
- Lab: Implementing a failover cluster
- Lab: Managing a failover cluster

## **Implementing Failover Clustering With Windows Server 2016 Hyper-V**

- Overview of integrating Hyper-V in Windows Server 2016 with failover clustering
- Implementing and maintaining Hyper-V virtual machines on failover clusters
- Key features for virtual machines in a clustered environment
- Lab: Implementing failover clustering with Hyper-V

## **Implementing Network Load Balancing**

- Overview of NLB clusters
- Configuring an NLB cluster
- Planning an NLB implementation
- Lab: Implementing an NLB cluster

## Creating and Managing Deployment Images

- Introduction to deployment images
- Creating and managing deployment images by using MDT
- Virtual machine environments for different workloads
- Lab: Using MDT to deploy Windows Server 2016

## Managing, Monitoring, and Maintaining Virtual Machine Installations

- WSUS overview and deployment options
- Update management process with WSUS
- Overview of PowerShell DSC
- Overview of Windows Server 2016 monitoring tools
- Using Performance Monitor
- Monitoring Event Logs
- Lab: Implementing WSUS and deploying updates
- Lab: Monitoring and troubleshooting Windows Server 2016

## 20741: Networking with Windows Server 2016

### Planning and implementing an IPv4 network

- Planning IPv4 addressing
- Configuring an IPv4 host
- Managing and troubleshooting IPv4 network connectivity
- Lab: Planning an IPv4 network
- Lab: Implementing and troubleshooting an IPv4 network

### Implementing DHCP

- Overview of the DHCP server role
- Deploying DHCP
- Managing and troubleshooting DHCP
- Lab: Implementing DHCP

### Implementing IPv6

- Overview of IPv6 addressing
- Configuring an IPv6 host
- Implementing IPv6 and IPv4 coexistence
- Transitioning from IPv4 to IPv6
- Lab: Configuring and evaluating IPv6 transition technologies

## **Implementing DNS**

- Implementing DNS servers
- Configuring zones in DNS
- Configuring name resolution between DNS zones
- Configuring DNS integration with Active Directory Domain Services (AD DS)
- Configuring advanced DNS settings
- Lab: Planning and Implementing name resolution by using DNS
- Lab: Integrating DNS with AD DS
- Lab: Configuring advanced DNS settings

## **Implementing and Managing IPAM**

- Overview of IPAM
- Deploying IPAM
- Managing IP address spaces by using IPAM
- Lab: Implementing IPAM

## **Remote Access in Windows Server 2016**

- Overview of remote access
- Implementing Web Application Proxy
- Lab: Implementing Web Application Proxy

## **Implementing DirectAccess**

- Overview of DirectAccess
- Implementing DirectAccess by using the Getting Started Wizard
- Implementing and managing an advanced DirectAccess infrastructure
- Lab: Implementing DirectAccess by using the Getting Started Wizard
- Lab: Deploying an advanced DirectAccess solution

## **Implementing VPNs**

- Planning VPNs
- Implementing VPNs
- Lab: Implementing a VPN

## **Implementing Networking for Branch Offices**

- Networking features and considerations for branch offices
- Implementing Distributed File System (DFS) for branch offices
- Implementing BranchCache for branch offices
- Lab: Implementing DFS for branch offices
- Lab: Implementing BranchCache

## **Configuring Advanced Networking Features**

- Overview of high performance networking features
- Configuring advanced Microsoft Hyper-V networking features
- Lab: Configuring advanced Hyper-V networking features

## **Implementing Software Defined Networking**

- Overview of Software Defined Networking
- Implementing network virtualization
- Implementing Network controller
- Lab: Deploying Network Controller

## **20742: Identity with Windows Server 2016**

### **Installing and configuring domain controllers**

- Overview of AD DS
- Overview of AD DS domain controllers
- Deploying a domain controller
- Lab: Deploying and administering AD DS

### **Managing objects in AD DS**

- Managing user accounts
- Managing groups in AD DS
- Managing computer objects in AD DS
- Using Windows PowerShell for AD DS administration
- Implementing and managing OUs
- Lab: Managing AD DS objects
- Lab: Administering AD DS

### **Advanced AD DS infrastructure management**

- Overview of advanced AD DS deployments
- Deploying a distributed AD DS environment
- Configuring AD DS trusts
- Lab: Domain and trust management in AD DS

### **Implementing and Administering AD DS Sites and Replication**

- Overview of AD DS replication
- Configuring AD DS sites

- Configuring and monitoring AD DS replication
- Lab: Implementing AD DS sites and replication

## **Implementing Group Policy**

- Introducing Group Policy
- Implementing and administering GPOs
- Group Policy scope and Group Policy processing
- Troubleshooting the application of GPOs
- Lab: Implementing a Group Policy infrastructure
- Lab: Troubleshooting Group Policy infrastructure

## **Managing User Settings with Group Policy**

- Implementing administrative templates
- Configuring Folder Redirection, Software Installation, and Scripts
- Configuring Group Policy preferences
- Lab: Managing user settings with GPOs

## **Securing Active Directory Domain Services**

- Securing domain controllers
- Implementing account security
- Implementing audit authentication
- Configuring managed service accounts
- Lab: Securing AD DS

## **Deploying and Managing AD CS**

- Deploying CAs
- Administering CAs
- Troubleshooting and maintaining CAs
- Lab: Deploying and configuring a two-tier CA hierarchy

## **Deploying and Managing Certificates**

- Deploying and managing certificate templates
- Managing certificate deployment, revocation, and recovery
- Using certificates in a business environment
- Implementing and managing smart cards
- Lab: Deploying and using certificates

## **Implementing and Administering AD FS**

- Overview of AD FS



- AD FS requirements and planning
- Deploying and configuring AD FS
- Overview of Web Application Proxy
- Lab: Implementing AD FS

## Implementing and Administering AD RMS

- Overview of AD RMS
- Deploying and managing an AD RMS infrastructure
- Configuring AD RMS content protection
- Lab: Implementing an AD RMS infrastructure

## Implementing AD DS Synchronization with Microsoft Azure AD

- Planning and preparing for directory synchronization
- Implementing directory synchronization by using Azure AD Connect
- Managing identities with directory synchronization
- Lab: Configuring directory synchronization

## Monitoring, Managing, and Recovering AD DS

- Monitoring AD DS
- Managing the Active Directory database
- Active Directory backup and recovery options for AD DS and other identity and access solutions
- Lab: Recovering objects in AD DS

## Exam Information

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

Exam Objective	Percentage of Exam
Install Windows Servers in Host and Compute Environments	10-15%
Implement Storage Solutions	10-15%
Implement Hyper-V	20-25%
Implement Windows Containers	5-10%
Implement High Availability	30-35%
Maintain and Monitor Server Environments	10-15%

## Exam 70-741: Networking with Windows Server 2016

Exam Objective	Percentage of Exam
Implement Domain Name System (DNS)	15-20%
Implement DHCP	25-30%
Implement IP Address Management (IPAM)	20-25%
Implementing Network Connectivity and Remote Access Solutions	15-20%
Implementing Core and Distributed Network Solutions	15-20%
Implementing Advanced Network Infrastructure	15-20%

## Exam 70-742: Identity with Windows Server 2016

Exam Objective	Percentage of Exam
Install and Configure Active Directory Domain Services (AD DS)	20-25%
Manage and Maintain AD DS	15-20%
Create and Manage Group Policy	25-30%
Implement Active Directory Certificate Services (AD CS)	10-15%
Implement Identity Federation and Access Solutions	15-20%

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## Included in this **MCSA: Windows Server 2016 Boot Camp**

- 10 days instructor-led training
- MCSA: Windows Server 2016 Boot Camp training book
- Notepad, pen and highlighter
- Variety of bagels, fruits, doughnuts and cereal available at the start of class\*
- Tea, coffee and soda available throughout the day\*
- Freshly baked cookies every afternoon\*