MCSE Core Infrastructure Bootcamp

Length: 12 days
Format: Bootcamp
Time: Day

About This Course

The Microsoft Certified Solutions Expert (MCSE): Core Infrastructure certification validates that you have the skills needed to run a highly efficient and modern data center, with expertise in cloud technologies, identity management, systems management, virtualization, storage, and networking.

Required Exams

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

70-741: Networking with Windows Server 2016

70-742: Identity with Windows Server 2016

70-744 ï¿½ Securing Windows Server 2016

Audience Profile

The MCSE Core Infrastructure certification is for IT professionals either looking to get their first job in Microsoft technology or to document their existing skill sets. This boot camp is intended for students seeking to earn the MCSE Core Infrastructure certification and who need an expert instructor to guide them throughout the training and exam preparation process.

Course Objectives

After completing this course, students will have the knowledge to:

* 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.
* 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.
* 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.
* Install and configure domain controllers.
* Manage objects in AD DS by usingï¿½graphical 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.
* Secure Windows Server.
* Secure application development and a server workload infrastructure.
* Manage security baselines.
* Configure and manage just enough and just-in-time (JIT) administration.
* Manage data security.
* Configure Windows Firewall and a software-defined distributed firewall.
* Secure network traffic.
* Secure your virtualization infrastructure.
* Manage malware and threats.
* Configure advanced auditing.
* Manage software updates.
* Manage threats by using Advanced Threat Analytics (ATA) and Microsoft Operations Management Suite (OMS).

Outline

Module 1: Installing, upgrading, and migrating servers and workloads

This module explains how to prepare and install Nano Server and Server Core. This module also explains how to upgrade and migrate server roles and workloads. Finally, this module explains how to choose an activation model based on your environment characteristics.

Lessons

* 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

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Module 2: Configuring local storage

This module explains how to manage disks and volumes in Windows Server 2016.

Lessons

* Managing disks in Windows Server 2016
* Managing volumes in Windows Server 2016

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Module 3: Implementing enterprise storage solutions

This module describes the direct-attached storage (DAS), network-attached storage (NAS), and storage area networks (SANs). It also helps you understand Microsoft Internet Storage Name Service (iSNS) Server, data center bridging, and Multipath I/O (MPIO). Additionally, this module also compares Fibre Channel, Internet Small Computer System Interface (iSCSI), and Fibre Channel Over Ethernet (FCoE), and describes how to configure sharing in Windows Server 2016.

Lessons

* 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

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Module 4: Implementing Storage Spaces and Data Deduplication

This module explains how to implement and manage Storage Spaces. This module also explains how to

implement Data Deduplication.

Lessons

* Implementing Storage Spaces
* Managing Storage Spaces
* Implementing Data Deduplication

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Module 5: Installing and configuring Hyper-V and virtual machines

This module provides an overview of Hyper-V. This module also explains how to configure, manage, and install Hyper-V.

Lessons

* 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

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Module 6: Deploying and managing Windows Server and Hyper-V containers

This module provides and overview of containers in Windows Server 2016. It also explains how to deploy, install, configure, and manage containers in Windows Server 2016.

Lessons

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

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Module 7: Overview of high availability and disaster recovery

This module provides an overview of high availability, business continuity, and disaster recovery. It further explains how to plan high availability and disaster recovery solutions. Additionally, in this module you will know how to back up and restore the Windows Server 2016 operating system and data by using Windows Server Backup. Finally, you will learn about Windows Server 2016 high availability with failover clustering.

Lessons

* 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

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Module 8: Implementing and managing failover clustering

This module explains how to plan, create, configure, maintain, and troubleshoot a failover cluster. This module also explains how to implement site high availability with stretch clustering.

Lessons

* 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

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Module 9: Implementing failover clustering for Hyper-V virtual machines

This module describes integrating Hyper-V virtual machines in a clustered environment. It also explains how to implement and maintain Hyper-V virtual machines on failover clusters. Additionally, this module also explains how to configure network health protection.

Lessons

* 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

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Module 10: Implementing Network Load Balancing

This module provides an overview of NLB clusters. It also explains how to plan and configure an NLB cluster implementation.

Lessons

* Overview of NLB clusters
* Configuring an NLB cluster
* Planning an NLB implementation

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Module 11: Creating and managing deployment images

This module provides an introduction to deployment images. It also explains how to create and manage deployment images by using the Microsoft Deployment Toolkit (MDT). Additionally, it explains how to evaluate an organizationï¿½s requirements for server virtualization.

Lessons

* Introduction to deployment images
* Creating and managing deployment images by using MDT
* Virtual machine environments for different workloads

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Module 12: Managing, monitoring, and maintaining virtual machine installations

This module provides an overview on WSUS and explains the deployment options. It explains how to update management process with WSUS and also how to use Performance Monitor. Additionally, this module also provides an overview of PowerShell Desired State Configuration (DSC) and Windows Server 2016 monitoring tools. Finally, this module describes how to use Performance Monitor and monitor Event Logs.

Lessons

* 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

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Module 13: Planning and implementing an IPv4 network

This module explains how to plan and implement an IPv4 addressing scheme to support organizational needs. This module also explains how to use fundamental networking tools and techniques to configure and troubleshoot IPv4-based networks.

Lessons

* Planning IPv4 addressing
* Configuring an IPv4 host
* Managing and troubleshooting IPv4 network connectivity

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Module 14: Implementing DHCP

This module explains how to plan and implement DHCP to support the IPv4 infrastructure.

Lessons

* Overview of the DHCP server role
* Deploying DHCP
* Managing and troubleshooting DHCP

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Module 15: Implementing IPv6

This module explains how to implement IPv6, and how to integrate IPv6 and IPv4 networks.

Lessons

* Overview of IPv6 addressing
* Configuring an IPv6 host
* Implementing IPv6 and IPv4 coexistence
* Transitioning from IPv4 to IPv6

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Module 16: Implementing DNS

This module explains how to install, configure, and troubleshoot DNS within the organizationï¿½s network.

Lessons

* 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

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Module 17: Implementing and managing IPAM

This module explains how to implement and manage the IPAM feature in Windows Server 2016. This module also explains how to use IPAM to manage services such as DHCP and DNS.

Lessons

* Overview of IPAM
* Deploying IPAM
* Managing IP address spaces by using IPAM

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Module 18: Remote access in Windows Server 2016

This module explains how to plan for remote access in Windows Server 2016 and how to implement Web Application Proxy.

Lessons

* Overview of remote access
* Implementing Web Application Proxy

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Module 19: Implementing DirectAccess

This module explains how to implement and manage DirectAccess in Windows Server 2016.

Lessons

* Overview of DirectAccess
* Implementing DirectAccess by using the Getting Started Wizard
* Implementing and managing an advanced DirectAccess infrastructure

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Module 20: Implementing VPNs

This module explains how to implement and manage remote access in Windows Server 2016 by using VPNs.

Lessons

* Planning VPNs
* Implementing VPNs

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Module 21: Implementing networking for branch offices

This module explains how to implement network services for branch offices.

Lessons

* Networking features and considerations for branch offices
* Implementing Distributed File System (DFS) for branch offices
* Implementing BranchCache for branch offices

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Module 22: Configuring advanced networking features

This module explains how to implement an advanced networking infrastructure.

Lessons

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

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Module 23: Implementing Software Defined Networking

This module explains how to implement software defined networking.

Lessons

* Overview of Software Defined Networking
* Implementing network virtualization
* Implementing Network Controller

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Module 24: Installing and configuring domain controllers

This module describes features of AD DS and how to install domain controllers (DCs). It also covers the considerations for deploying DCs.

Lessons

* Overview of AD DS

* Overview of AD DS domain controllers
* Deploying a domain controller
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Module 25: Managing objects in AD DS

This module describes how to use various techniques to manage objects in AD DS. This includes creating and configuring user, group, and computer objects.

Lessons

* 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

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Module 26: Advanced AD DS infrastructure management

This module describes how to plan and implement an AD DS deployment that includes multiple domains and forests. The module provides an overview of the components in an advanced AD DS deployment, the process of implementing a distributed AD DS environment, and the procedure for configuring AD DS trusts.

Lessons

* Overview of advanced AD DS deployments
* Deploying a distributed AD DS environment
* Configuring AD DS trusts

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Module 27: Implementing and administering AD DS sites and replication

This module describes how to plan and implement an AD DS deployment that includes multiple locations. The module explains how replication works in a Windows Server 2016 AD DS environment.

Lessons

* Overview of AD DS replication
* Configuring AD DS sites
* Configuring and monitoring AD DS replication

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Module 28: Implementing Group Policy

This module describes how to implement a GPO infrastructure. The module provides an overview of the components and technologies that compose the Group Policy framework.

Lessons

* Introducing Group Policy
* Implementing and administering GPOs
* Group Policy scope and Group Policy processing
* Troubleshooting the application of GPOs

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Module 29: Managing user settings with Group Policy

This module describes how to configure Group Policy settings and Group Policy preferences. This includes implementing administrative templates, configuring folder redirection and scripts, and configuring Group Policy preferences.

Lessons

* Implementing administrative templates
* Configuring Folder Redirection, Software Installation, and Scripts
* Configuring Group Policy preferences

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Module 30: Securing Active Directory Domain Services

This module describes how to configure domain controller security, account security, password security, and Group Managed Service Accounts (gMSA).

Lessons

* Securing domain controllers
* Implementing account security
* Implementing audit authentication
* Configuring managed service accounts

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Module 31: Deploying and managing AD CS

This module describes how to implement an AD CS deployment. This includes deploying, administering, and

troubleshooting CAs.

Lessons

* Deploying CAs
* Administering CAs
* Troubleshooting and maintaining CAs

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Module 32: Deploying and managing certificates

This module describes how to deploy and manage certificates in an AD DS environment. This involves deploying and managing certificate templates, managing certificate revocation and recovery, using certificates in a business environment, and implementing smart cards.

Lessons

* Deploying and managing certificate templates
* Managing certificate deployment, revocation, and recovery
* Using certificates in a business environment
* Implementing and managing smart cards

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Module 33: Implementing and administering AD FS

This module describes AD FS and how to configure AD FS in a single-organization scenario and in a partner-organization scenario.

Lessons

* Overview of AD FS
* AD FS requirements and planning
* Deploying and configuring AD FS
* Overview of Web Application Proxy

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Module 34: Implementing and administering AD RMS

This module describes how to implement an AD RMS deployment. The module provides an overview of AD RMS, explains how to deploy and manage an AD RMS infrastructure, and explains how to configure AD RMS content protection.

Lessons

* Overview of AD RMS
* Deploying and managing an AD RMS infrastructure
* Configuring AD RMS content protection

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Module 35: Implementing AD DS synchronization with Microsoft Azure AD

This module describes how to plan and configure directory syncing between Microsoft Azure Active Directory (Azure AD) and on-premises AD DS. The modules describes various sync scenarios, such as Azure AD sync, AD FS and Azure AD, and Azure AD Connect.

Lessons

* Planning and preparing for directory synchronization
* Implementing directory synchronization by using Azure AD Connect
* Managing identities with directory synchronization

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Module 36: Monitoring, managing, and recovering AD DS

This module describes how to monitor, manage, and maintain AD DS to help achieve high availability of AD DS.

Lessons

* Monitoring AD DS
* Managing the Active Directory database
* Active Directory backup and recovery options for AD DS and other identity and access solutions

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Module 37: Breach detection and using the Sysinternals tools

In this module, students will learn about breach detection, attack types and vectors, cybercrime, and how you can analyse your systemï¿½s activity by using the Sysinternals tool suite.

Lessons

* Overview of breach detection
* Using the Sysinternals tools to detect breaches

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Module 38: Protecting credentials and privileged access

This module explains how you can configure user rights and security options, protect credentials by using credential guard, implement privileged-access workstations, and manage and deploy a local administrator-password solution so that you can manage passwords for local administrator accounts.

Lessons

* Understanding user rights
* Computer and service accounts
* Protecting credentials
* Understanding privileged-access workstations and jump servers
* Deploying a local administrator-password solution

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Module 39: Limiting administrator rights with Just Enough Administration

This module explains how to deploy and configure Just Enough Administration (JEA).

Lessons

* Understanding JEA
* Configuring and deploying JEA

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Module 40: Privileged Access Management and administrative forests

This module explains the concepts of Enhanced Security Administrative Environment (ESAE) forests, Microsoft Identity Manager (MIM), and Just In Time (JIT) Administration, or Privileged Access Management.

Lessons

* Understanding ESAE forests
* Overview of MIM
* Implementing JIT and Privileged Access Management by using MIM

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Module 41: Mitigating malware and threats

This module explains how to configure the Windows Defender, AppLocker, and Device Guard features.

Lessons

* Configuring and managing Windows Defender
* Using software restricting policies (SRPs) and AppLocker
* Configuring and using Device Guard
* Using and deploying the Enhanced Mitigation Experience Toolkit

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Module 42: Analysing activity by using advanced auditing and log analytics

This module explains how to use advanced auditing and Windows PowerShell transcripts.

Lessons

* Overview of auditing
* Understanding advanced auditing
* Configuring Windows PowerShell auditing and logging

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Module 43: Analysing activity with Microsoft Advanced Threat Analytics feature and Operations Management Suite

This module explains the Microsoft Advanced Threat Analytics tool and the Microsoft Operations Management suite (OMS), and details how you can use them to monitor and analyse the security of a Windows Server deployment.

Lessons

* Overview of Advanced Threat Analytics
* Understanding OMS

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Module 44: Securing your virtualization an infrastructure

This module explains how to configure Guarded Fabric virtual machines (VMs), including the requirements for shielded and encryption-supported VMs.

Lessons

* Overview of Guarded Fabric VMs
* Understanding shielded and encryption-supported VMs

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Module 45: Securing application development and server-workload infrastructure

This module details the Security Compliance Manager, including how you can use it to configure, manage, and deploy baselines. Additionally, students will learn how to deploy and configure Nano Server, Microsoft Hyper-V, and Windows Server Containers.

Lessons

* Using Security Compliance Manager
* Introduction to Nano Server
* Understanding containers
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Module 46: Protecting data with encryption

This module explains how to configure Encrypting File System (EFS) and BitLocker drive encryption to protect data at rest.

Lessons

* Planning and implementing encryption
* Planning and implementing BitLocker

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Module 47: Limiting access to file and folders

This module explains how to optimize file services by configuring File Server Resource Manager (FSRM) and Distributed File System (DFS). Students will learn how to protect a deviceï¿½s data by using encryption or BitLocker. Students also will learn how to manage access to shared files by configuring Dynamic Access Control (DAC).

Lessons

* Introduction to FSRM
* Implementing classification management and file-management tasks
* Understanding Dynamic Access Control (DAC)

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Module 48: Using firewalls to control network traffic flow

This module explains the firewalls that are present on Windows Server.

Lessons

* Understanding Windows Firewall
* Software-defined distributed firewalls

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Module 49: Securing network traffic

This module explains how to secure network traffic and how to use Microsoft Message Analyzer, Server Message Block (SMB) encryption, and Domain Name System Security Extensions (DNSSEC).

Lessons

* Network-related security threats and connection-security rules
* Configuring advanced DNS settings
* Examining network traffic with Microsoft Message Analyzer
* Securing SMB traffic, and analysing SMB traffic

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Module 50: Updating Windows Server

This module explains how to use Windows Server Update Services (WSUS) to deploy updates to Windows Servers and clients.

Lessons

* Overview of WSUS
* Deploying updates by using WSUS