

Installation, Storage, and Compute with Windows Server 2016 (20740)

Duration: 5 Days (*Face-to-Face & Remote-Live*), or 35 Hours (*MOC On-Demand*)

Price: \$2495 (*Face-to-Face & Remote-Live*), or \$895 (*MOC On-Demand*)

Discounts: We offer multiple discount options. [Click here](#) for more information.

Delivery Options: Attend face-to-face in the classroom, [remote-live](#) or via [MOC On-Demand](#).

Students Will Learn

- Preparing and installing Nano Server, a Server Core installation, and planning a server upgrade and migration strategy
- Describing 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
- Describing enterprise storage solutions, and selecting the appropriate solution for a given situation
- Implementing and managing Storage Spaces and Data Deduplication
- Installing and configuring Microsoft Hyper-V
- Deploying, configuring and managing Windows and Hyper-V containers
- Describing the high availability and disaster recovery technologies in Windows Server 2016
- Planning, creating and managing a failover cluster
- Implementing failover clustering for Hyper-V virtual machines
- Configuring a Network Load Balancing (NLB) cluster, and planning for an NLB implementation
- Creating and managing deployment images
- Managing, monitoring, and maintaining virtual machine installations

Course Description

This is a Microsoft Official Course (MOC) and includes Microsoft courseware and hands-on labs. This course is designed primarily for IT professionals who have some experience with Windows Server. It is designed for professionals who will be responsible for managing storage and compute by using Windows Server 2016, and who need to understand the scenarios, requirements, and storage and compute options that are available and applicable to Windows Server 2016.

The secondary audience for this course includes IT professionals who take this course as

preparation material for exam [70-740: Installation, Storage and Compute with Windows Server 2016](#).

Course Prerequisites

Before attending this course, students must have:

- A basic understanding of networking fundamentals
- An awareness and understanding of security best practices
- An understanding of basic AD DS concepts
- Basic knowledge of server hardware
- Experience supporting and configuring Windows client operating systems such as Windows 8 or Windows 10

About MOC On-Demand

This course is also available via Microsoft Official Courses On-Demand. MOC On-Demand uses a combination of streaming video, text, lab exercises and assessment checks throughout the course. MOC On-Demand courses are available for 90 days and recommend the following system requirements:

- Browser: Current version of Internet Explorer, Microsoft Edge, Google Chrome or Firefox
- Internet: Broadband Internet connection of over 4Mbps
- Screen Resolution: 1280 x 1024 or higher

Course Overview

Module 1: Installing, Upgrading and Migrating Servers and Workloads

This module describes the new features of Windows Server 2016, and explains how to prepare for and install Nano Server and Server Core. This module also describes how to plan a server upgrade and migration strategy, and explains how to perform a migration of server roles and workloads within and across domains. Finally, this module explains how to choose an activation model based on your environment characteristics.

Lessons

- Introducing Windows Server 2016
- Preparing and installing Server Core
- Preparing for upgrades and migrations
- Migrating server roles and workloads
- Windows Server activation models

Labs

- Installing Server Core
- Completing post-installation tasks on Windows Server 2016 Core
- Performing remote management

After completing this module, students will be able to:

- Describe the new features of Windows Server 2016

- Prepare for and install Server Core
- Plan a server upgrade and migration strategy
- Perform a migration of server roles and workloads within a domain and across domains
- Choose an appropriate activation model

Module 2: Configuring Local Storage

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

Lessons

- Managing disks in Windows Server
- Managing volumes in Windows Server

Labs

- Creating and managing volumes
- Resizing volumes
- Managing virtual hard disks

After completing this module, students will be able to:

- Manage disks in Windows Server
- Manage volumes in Windows Server

Module 3: Implementing Enterprise Storage Solutions

This module discusses direct-attached storage (DAS), network-attached storage (NAS), and storage area networks (SANs). It also explains the purpose of Microsoft Internet Storage Name Service (iSNS) Server, data center bridging (DCB), and Multipath I/O (MPIO). Additionally, this module 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 DAS, NAS, and SANs
- Comparing Fibre Channel, iSCSI, and Fibre Channel over Ethernet
- Understanding iSNS, DCB, and MPIO
- Configuring sharing in Windows Server 2016

Labs

- Planning storage requirements
- Configuring iSCSI storage
- Configuring and managing the share infrastructure

After completing this module, students will be able to:

- Describe DAS, NAS, and SANs
- Compare Fibre Channel, iSCSI, and FCoE
- Explain the use of iSNS, DCB, and MPIO
- Configure sharing in Windows Server

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

Labs

- Creating a storage space
- Installing data deduplication
- Configuring data deduplication

After completing this module, students will be able to:

- Describe and implement the Storage Spaces feature in the context of enterprise storage needs
- Manage and maintain Storage Spaces
- Describe and implement Data Deduplication

Module 5: Installing and Configuring Hyper-V and Virtual Machines

This module provides an overview of Hyper-V and virtualization. It explains how to install Hyper-V, and how to configure storage and networking on Hyper-V host servers. Additionally, it explains how to configure and manage Hyper-V virtual machines.

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 virtual machines

Labs

- Verify installation of the Hyper-V server role
- Configuring Hyper-V networks
- Creating and configuring virtual machines
- Enable nested virtualization for a virtual machine

After completing this module, students will be able to:

- Describe Hyper-V and virtualization
- Install Hyper-V
- Configure storage on Hyper-V host servers
- Configure networking on Hyper-V host servers
- Configure Hyper-V virtual machines
- Manage Hyper-V virtual machines

Module 6: Deploying and Managing Windows and Hyper-V Containers

This module provides an overview of containers in Windows Server 2016. Additionally, this module explains how to deploy Windows Server and Hyper-V containers. It also explains how to install, configure, and manage containers by using Docker.

Lessons

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

Labs

- Installing and configuring Windows Server containers by using Windows PowerShell
- Installing and configuring Windows Server containers by using Docker

After completing this module, students will be able to:

- Describe containers in Windows Server 2016
- Explain how to deploy containers
- Explain how to install, configure, and manage containers using Docker

Module 7: Overview of High Availability and Disaster Recovery

This module provides an overview of high availability and high availability with failover clustering in Windows Server 2016. It further explains how to plan high availability and disaster recovery solutions with Hyper-V virtual machines. Additionally, this module explains how to back up and restore the Windows Server 2016 operating system and data by using Windows Server Backup.

Lessons

- Defining levels of availability
- Planning high availability and disaster recovery solutions with Hyper-V virtual machines
- Backing up and restoring by using Windows Server Backup
- High availability with failover clustering in Windows Server 2016

Labs

- Determining the appropriate high availability and disaster recovery solution
- Implementing storage migration
- Configuring Hyper-V replicas

After completing this module, students will be able to:

- Define levels of availability
- Plan high availability and disaster recovery solutions with Hyper-V virtual machines
- Back up and restore data by using Windows Server Backup
- Describe high availability with failover clustering in Windows Server 2016

Module 8: Implementing Failover Clustering

This module explains how to plan for failover clustering. It also explains how to create, manage, and troubleshoot a failover cluster.

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

Labs

- Creating a failover cluster
- Verifying quorum settings and adding a node
- Evicting a node and verifying quorum settings
- Changing the quorum from disk witness to file-share witness, and defining node voting
- Verifying high availability

After completing this module, students will be able to:

- Plan for a failover-clustering implementation
- Create and configure a failover cluster
- Maintain a failover cluster
- Troubleshoot a failover cluster
- Implement high availability and stretch clustering for a site

Module 9: Implementing Failover Clustering with Windows Server 2016 Hyper-V

This module describes how Hyper-V integrates with failover clustering. It also explains how to implement Hyper-V virtual machines (VMs) in failover clusters.

Lessons

- Overview of the integration of Hyper-V Server 2016 with failover clustering
- Implementing Hyper-V VMs on failover clusters
- Key features for VMs in a clustered environment

Labs

- Configure iSCSI storage
- Configuring a failover cluster for Hyper-V
- Configuring a highly available VM

After completing this module, students will be able to:

- Describe how Hyper-V integrates with failover clustering
- Implement Hyper-V VMs on failover clusters
- Describe the key features for VMs in a clustered environment

Module 10: Implementing Network Load Balancing

This module provides an overview of **Network Load Balancing** (NLB) clusters. It also explains how to plan and configure an NLB cluster implementation.

Lessons

- Overview of NLB
- Configuring an NLB cluster
- Planning an NLB implementation

Lab : Implementing NLB

- Implementing a Network Load Balancing (NLB) cluster
- Configuring and managing the NLB cluster
- Validating high availability for the NLB cluster

After completing this module, students will be able to:

- Describe NLB
- Configure an NLB cluster
- Explain how to plan an NLB implementation

Module 11: Creating and Managing Deployment Images

This module provides an overview of the Windows Server 2016 image deployment process. It also explains how to create and manage deployment images by using the Microsoft Deployment Toolkit (MDT). Additionally, it describes different workloads in the virtual machine environment.

Lessons

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

Labs

- Configuring MDT
- Creating and deploying an image

After completing this module, students will be able to:

- Describe the Windows Server 2016 image deployment process
- Create and manage deployment images by using MDT
- Describe the different workloads in the virtual machine environment

Module 12: Managing, Monitoring and Maintaining Virtual Machine Installations

This module provides an overview on Windows Server Update Services (WSUS) and the requirements to implement WSUS. It explains how to manage the update process with WSUS. Additionally, this module provides an overview of Windows PowerShell Desired State Configuration (DSC) and Windows Server 2016 monitoring tools. This module describes how to use Performance Monitor, and how to manage event logs.

Lessons

- WSUS overview and deployment options
- Update management process with WSUS
- Overview of Windows PowerShell DSC
- Overview of Windows Server 2016 monitoring tools
- Using Performance Monitor
- Monitoring event logs

Labs

- Implementing WSUS
- Configuring update settings
- Approving and deploying an update by using WSUS
- Establishing a performance baseline
- Identifying the source of a performance problem
- Viewing and configuring centralized event logs

After completing this module, students will be able to:

- Describe the purpose of WSUS and the requirements to implement WSUS
- Manage the update process with WSUS
- Describe the purpose and benefits of Windows PowerShell DSC
- Describe the monitoring tools available in Windows Server 2016
- Use Performance Monitor
- Manage event logs

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