

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

Course Overview

This course is designed basically for IT professionals who have some experience with Windows Server. It is designed for professionals who will be responsible for managing storage and

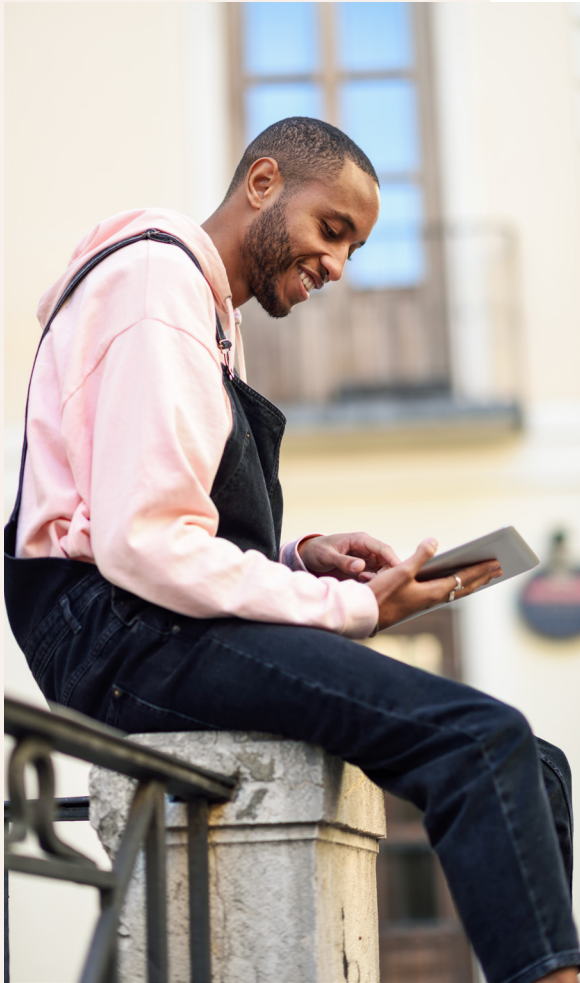
compute by using Windows Server 2016, and who need to understand the scenarios, requirements, and storage and compute options that are available and applicable to Windows Server 2016.

What you will learn.

This course will teach you how 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 Mic-

rosoft 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.

Who is this course for?

This course will help IT professionals who have some experience working with Windows Server, and who are looking for

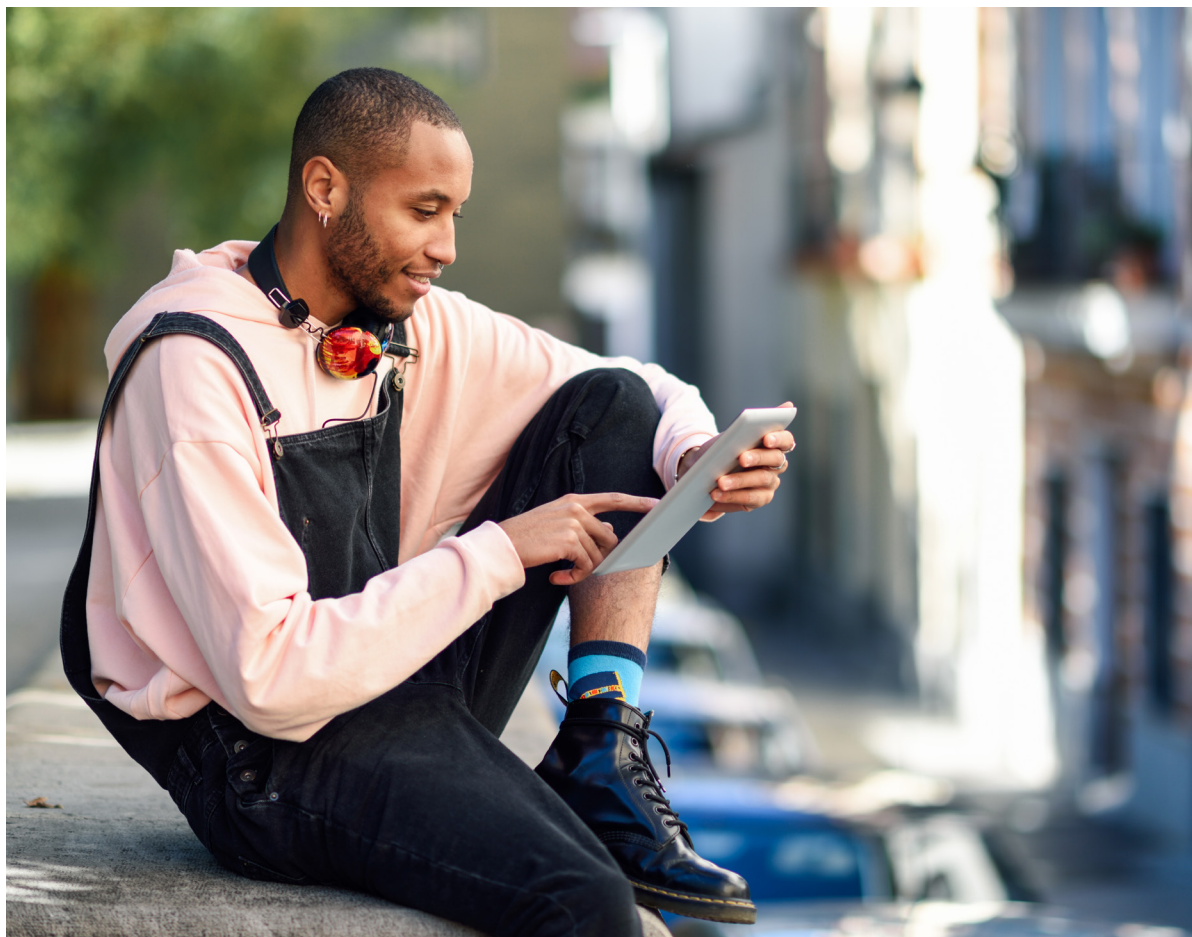
a single five-day course that covers storage and compute technologies in Windows Server 2016, it will then update their knowledge and skills related to storage and compute for Windows Server 2016.

Requirement

Student must have you must have a basic understanding of network fundamental, An awareness and understanding of security best practices and basic AD DS concepts. You must also have basic knowledge of

hardware.

In Addition students would benefit from having some previous Windows Server operating system experience, such as experience as a Windows Server systems administrator.





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

Lessons

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

Lab : Installing and configuring Server Core

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

Lessons

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

Lab : Configuring local storage

- 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

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

Lab : Planning and configuring storage technologies and components

- 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 Dedupli-

cation

Lessons

- Implementing Storage Spaces
- Managing Storage Spaces
- Implementing Data Deduplication

Lab : Implementing Storage Spaces

- Creating a Storage Space

Lab : Implementing Data Deduplication

- 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

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

Lab : Installing and configuring Hyper-V

- 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 Hy-

per-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

Lessons

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

Lab : Installing and configuring containers

- 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

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

Lab : Planning and implementing a high availability and disaster recovery solution

- 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

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



Lab : Implementing failover clustering

- Creating a failover cluster
- Verifying quorum settings and adding a node

Lab : Managing a failover cluster

- 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 Win-

dows Server 2016 Hyper-V

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

Lab : Implementing failover clustering with Windows Server 2016 Hyper-V

- 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

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

Lessons

- 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

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

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 Moni-



tor

- Monitoring event logs

Lab : Implementing WSUS and deploying updates

- Implementing WSUS
- Configuring update settings
- Approving and deploying an update by using WSUS

Lab : Monitoring and troubleshooting Windows Server 2016

- 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.