Implementing a Software-Defined DataCenter (20745)

Duration: Approximately 35 hours of coursework to be completed within 90 days.

Price: $895

Delivery Option: Attend via MOC On-Demand

Students Will Learn

- Explaining the different virtualization options

- Installing and managing Hyper-V on Windows Server 2016

- Installing and configuring System Center 2016 Virtual Machine Manager

- Managing storage fabric and fabric updates

- Configuring and managing the Virtual Machine Manager library and library objects

- Managing the networking fabric

- Creating and managing virtual machines by using Virtual Machine Manager

- Managing clouds in Virtual Machine Manager

- Managing services in Virtual Machine Manager

- Monitoring a virtualization infrastructure by using System Center Operations Manager

- Implementing and managing Hyper-V Replica and Azure Site Recovery

- Protecting virtualization infrastructure by using Data Protection Manager

Course Description

This is a Microsoft Official Course (MOC) and includes Microsoft courseware and hands-on labs. This course explains how to implement and manage virtualization infrastructure in a software-defined Datacenter by using System Center 2016 Virtual Machine Manager. The course also describes how to monitor the infrastructure by using System Center Operations Manager and protect it by using Data Protection Manager.

This course is intended for IT professionals and administrators who are responsible for designing, implementing, and managing virtualization infrastructure in a software-defined datacenter by using System Center 2016 Virtual Machine Manager. The main focus of this course is on managing Hyper-V virtualization infrastructure in Windows Server 2016, although the course also covers other virtualization platforms that can be managed by using Virtual Machine Manager 2016.

Course Prerequisites

Before attending this course, students must have:

- An understanding of TCP/IP and networking concepts
- An understanding of different storage technologies and concepts
- Familiarity with different types of virtualizations
- Familiarity with Windows Server and Windows Server administration
- An understanding of Windows PowerShell
- Students should have the ability to work in a team/virtual team and possess good documentation and communication skills.

Attending the courses [Installation, Storage, and Compute with Windows Server 2016](#) and [Networking with Windows Server 2016](#) meet the prerequisites or obtaining equivalent knowledge and skills.

About MOC On-Demand

Microsoft Official Courses 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: Introduction to Server Virtualization

This module explains the different virtualization solutions. It also describes the concepts of software-defined datacenter and Microsoft Azure.

Lessons

- Overview of Microsoft Virtualization
- Introduction to the software-defined datacenter
- Extending virtualization to the cloud

Labs

- Selecting the appropriate virtualization method
- Creating Azure virtual machines

After completing this module, students will be able to:

- Describe the virtualization options available in Microsoft
- Describe the concept of a software-defined datacenter
- Describe how to extend a datacenter to the cloud

Module 2: Overview of Hyper-V Virtualization

This module explains how to install and manage Hyper-V in Windows Server 2016.

Lessons

- Installing and configuring the Hyper-V role
- Creating and managing virtual hard disks and virtual machines
- Creating and using Hyper-V virtual switches
- Implementing failover clustering with Hyper-V

Labs

- Installing and configuring the Hyper-V server role
- Creating a Nano Server virtual machine
- Configuring virtual machines and virtual hard disks
- Creating a Hyper-V failover cluster
- Managing a Hyper-V failover cluster

After completing this module, students will be able to:

- Install and configure the Hyper-V role
- Create and manage virtual hard disks and virtual machines
- Create and use Hyper-V virtual switches
- Implement failover clustering

Module 3: Installing and Configuring System Center 2016 Virtual Machine Manager

This module explains how to install and configure System Center 2016 VMM for managing a virtualization environment.

Lessons

- Overview of System Center 2016 VMM
- Installing System Center 2016 VMM
- Adding hosts and managing host groups

Labs

- Installing and configuring System Center 2016
- Managing hosts and host groups
- Managing an Azure subscription by using VMM

After completing this module, students will be able to:

- Describe the main features in System Center 2016 VMM
- Install System Center 2016 VMM
- Add virtualization hosts to VMM and manage host groups

Module 4: Managing Storage Fabric and Fabric Updates

This module explains how to manage storage fabric and fabric updates in VMM.

Lessons

- Overview of server virtualization storage technologies
- Managing storage fabric
- Managing fabric updates

Labs

- Implementing a storage infrastructure
- Creating a file server cluster and a storage QoS policy
- Managing fabric updates

After completing this module, students will be able to:

- Describe the storage technologies that VMM utilizes
- Deploy and manage a storage fabric in VMM 2016
- Manage updates of the VMM 2016 fabric

Module 5: Configuring and Managing the Virtual Machine Manager Library and Library Objects

This module describes how to configure and manage VMM library and library objects. It also describes the differences between profiles and templates and how they are used.

Lessons

- Overview of the VMM library
- Preparing Windows for deployment in VMM
- Working with profiles
- Working with virtual machine templates

Labs

- Configuring and managing a VMM library
- Creating a Windows image for the VMM library
- Creating and managing profiles and templates

After completing this module, students will be able to:

- Describe the VMM library
- Prepare Windows for deployment in VMM
- Explain working with profiles
- Describe working with VM templates

Module 6: Managing the Networking Fabric

This module explains how to manage networking fabric in VMM.

Lessons

- Networking concepts in VMM
- Managing Software-Defined Networking
- Understanding network function virtualization

Labs

- Associating virtual network adapters of Hyper-V hosts
- Deploying Network Controller
- Configuring Hyper-V Network Virtualization
- Provisioning and testing tenant virtual machine networks

After completing this module, students will be able to:

Explain the primary networking concepts in System Center 2016 VMM
- Implement the Software Defined Networking by using System Center 2016 VMM
- Describe the core components available in Network Controller

Module 7: Creating and Managing Virtual Machines by Using Virtual Machine Manager

This module explains how to create and manage virtual machines by using VMM.

Lessons

- Virtual machine management tasks
- Creating, cloning, and converting virtual machines

Labs

- Creating a virtual machine and modifying its properties
- Creating and managing checkpoints
- Cloning and migrating a virtual machine

After completing this module, students will be able to:

- Describe thee various management tasks that you can perform on virtual machines
- Create, clone, and convert virtual machines

Module 8: Managing Clouds in System Center 2016 Virtual Machine Manager

This module explains how to create and manage clouds by using VMM.

Lessons

- Introduction to clouds
- Creating and managing a cloud
- Creating user roles in VMM

Labs

- Creating a private cloud
- Creating user roles

After completing this module, students will be able to:

- Explain the concept of a cloud and how you can use VMM to create a cloud
- Create and manage cloud services
- Create user roles in VMM

Module 9: Managing Services in Virtual Machine Manager

This module explains how to create and manage services in VMM.

Lessons

- Overview of services in VMM
- Creating and managing services in VMM

Labs

- Creating a service template
- Deploying a service and updating service template
- Scaling out service and updating the service

After completing this module, students will be able to:

- Describe the services in VMM.
  Create and manage services in VMM

Module 10: Monitoring a Virtualization Infrastructure by Using System Center Operations Manager

This module explains how to use Operations Manager for monitoring virtualization infrastructure.

Lessons

- Operations Manager architecture and security
- Using Operations Manager for monitoring and reporting
- Integrating Operations Manager with VMM and DPM

Labs

- Implementing the Operations Manager agents
- Integrating Operations Manager with VMM

After completing this module, students will be able to:

- Describe the Operations Manager architecture and explain how to secure access to Operations Manager data
- Use Operations Manager for monitoring and reporting
- Integrate Operations Manager with VMM and DPM

Module 11: Implementing and Managing Hyper-V Replica and Azure Site Recovery

This module explains how to implement and manage Hyper-V Replica and Azure Site Recovery

Lessons

- Implementing and managing Hyper-V Replica
- Implementing and managing Azure Site Recovery

Labs

- Configuring and Managing Hyper-V Replica
- Configuring and Managing Azure Site Recovery

After completing this module, students will be able to:

- Implement and manage Hyper-V Replica
- Implement and manage Azure Site Recovery

Module 12: Protecting a Virtualization Infrastructure by Using Data Protection Manager

This module explains how to use DPM for protecting virtualization infrastructure.

Lessons

- Overview of backup and restore options for virtual machines
- Configuring and managing DPM for virtualization infrastructure protection

Labs

- Configuring a DPM server and installing DPM protection agents
- Creating and configuring protection groups
- Recovering VMs and other data
- Providing online protection with DPM

After completing this module, students will be able to:

- Describe the backup and restore options for VMs
- Configure and manage DPM for protecting a virtualization infrastructure

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