

MOC 20745 B: Implementing a Software-Defined DataCenter Using System Center Virtual Machine Manager

Course Summary

Description

This five-day course explains how to implement and manage virtualization infrastructure in a software-defined datacenter by using Microsoft System Center 2016 Virtual Machine Manager. The course also describes how to monitor the infrastructure by using Microsoft System Center Operations Manager and protect it by using Microsoft System Center Data Protection Manager.

Objectives

After taking this course, students will be able to:

- Explain the different virtualization options.
- Install and manage Hyper-V on Windows Server 2016.
- Install and configure System Center 2016 Virtual Machine Manager.
- Manage storage fabric and fabric updates.
- Configure and manage the Virtual Machine Manager library and library objects.
- Manage the networking fabric.
- Create and manage virtual machines by using Virtual Machine Manager.
- Manage clouds in Virtual Machine Manager.
- Manage services in Virtual Machine Manager.
- Monitor a virtualization infrastructure by using System Center Operations Manager.
- Implement and manage Microsoft Hyper-V Replica and Microsoft Azure Site Recovery.
- Protect virtualization infrastructure by using Data Protection Manager.

Topics

- Introduction to server virtualization
- Overview of Hyper-V virtualization
- 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 System Center 2016 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 a virtualization infrastructure by using Data Protection Manager

Audience

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.

This course is also intended for IT decision makers who want to determine which virtualization product to implement in their software-defined datacenters and who want to become familiar with the System Center 2016 solution for managing virtualization infrastructure.

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Course Summary (cont'd)

Prerequisites

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- 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.

Students who attend this training can meet the prerequisites by attending the following courses, or obtaining equivalent knowledge and skills:

- MOC 20740 - Storage & Compute with Windows Server 2016 (PT10601)
- MOC 20741 - Networking with Windows Server 2016 (PT10602)

Duration

Five days

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Course Outline

I. Introduction to server virtualization

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

- A. Overview of Microsoft Virtualization
- B. Introduction to the software-defined datacenter
- C. Extending virtualization to the cloud

Lab: Evaluating virtualization options

- Selecting the appropriate virtualization method
- Creating Azure virtual machines

II. Overview of Hyper-V virtualization

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

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

Lab: Creating and managing virtual hard disks and virtual machines

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

Lab: Implementing failover clustering with Hyper-V

- Creating a Hyper-V failover cluster
- Managing a Hyper-V failover cluster

III. 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.

- A. Overview of System Center 2016 VMM
- B. Installing System Center 2016 VMM
- C. Adding hosts and managing host groups

Lab: Installing and configuring System Center 2016

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

IV. Managing storage fabric and fabric updates

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

- A. Overview of server virtualization storage technologies
- B. Managing storage fabric
- C. Managing fabric updates

Lab: Managing storage fabric and fabric updates

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

V. 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.

- A. Overview of the VMM library
- B. Preparing Windows for deployment in VMM
- C. Working with profiles
- D. Working with virtual machine templates

Lab: Configuring and managing VMM library and library objects

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

VI. Managing the networking fabric

This module explains how to manage networking fabric in VMM.

- A. Networking concepts in VMM
- B. Managing Software-Defined Networking
- C. Understanding network function virtualization

Lab: Creating and configuring the networking fabric

- Associating virtual network adapters of Hyper-V hosts
- Deploying Network Controller

Lab: Configuring and testing Hyper-V Network Virtualization

- Configuring Hyper-V Network Virtualization
- Provisioning and testing tenant virtual machine networks

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Course Outline (cont'd)

VII. *Creating and managing virtual machines by using Virtual Machine Manager*

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

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

Lab: Creating and managing virtual machines by using System Center 2016 VMM

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

VIII. *Managing clouds in System Center 2016 Virtual Machine Manager*

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

- A. Introduction to clouds
- B. Creating and managing a cloud
- C. Creating user roles in VMM

Lab: Managing clouds in System Center 2016 VMM

- Creating a private cloud
- Creating user roles

IX. *Managing services in Virtual Machine Manager*

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

- A. Overview of services in VMM
- B. Creating and managing services in VMM

Lab: Managing services in VMM

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

X. *Monitoring a virtualization infrastructure by using System Center Operations Manager*

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

- A. Operations Manager architecture and security
- B. Using Operations Manager for monitoring and reporting
- C. Integrating Operations Manager with VMM and DPM

Lab: Monitoring a virtualization infrastructure by using Operations Manager

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

XI. *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

- A. Implementing and managing Hyper-V Replica
- B. Implementing and managing Azure Site Recovery

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

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

XII. *Protecting a virtualization infrastructure by using Data Protection Manager*

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

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

Lab: Protecting virtualization infrastructure by using DPM

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