

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

Course outline

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
- Introducing the software-defined datacenter
- Extending virtualization to the cloud

Lab : Evaluating virtualization options

- Selecting the appropriate virtualization method
- Creating Azure virtual machines

After completing this module, students will be able to:

- Describe the various virtualization technologies and the scenarios in which you would apply them.
- Describe the working of software-defined datacenters and compare them to traditional datacenters
- List the main benefits of Microsoft Azure and the process of managing Azure.

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

Lab : Creating and managing virtual hard disks and virtual machines

- Installing and configuring the Hyper-V server role
- 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

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 with Hyper-V.

Module 3: Installing and configuring Virtual Machine Manager

This module explains how to install and configure Virtual Machine Manager for managing a virtualization environment.

Lessons

- Overview of Virtual Machine Manager
- Installing Virtual Machine Manager
- Adding hosts and managing host groups

Lab : Installing and configuring Virtual Machine Manager

- Installing and configuring Virtual Machine Manager
- Managing hosts and host groups
- Managing an Azure subscription by using Virtual Machine Manager

After completing this module, students will be able to:

- Describe the key features of Virtual Machine Manager.
- Explain how to install Virtual Machine Manager.

Add virtualization hosts to Virtual Machine Manager, and manage virtualization hosts and host group

Module 4: Managing storage fabric and fabric updates

This module explains how to manage storage fabric and fabric updates in Virtual Machine Manager.

Lessons

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

After completing this module, students will be able to:

- Describe the storage technologies that Virtual Machine Manager utilizes.
- Deploy and manage storage fabric in Virtual Machine Manager.
- Manage updates of the Virtual Machine Manager.

Module 5: Configuring and managing the Virtual Machine Manager library and library objects

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

Lessons

- Overview of the Virtual Machine Manager library
- Preparing Windows for deployment in Virtual Machine Manager
- Working with profiles
- Working with VM templates

Lab : Configuring and managing the Virtual Machine Manager library and library objects

- Configuring and managing a Virtual Machine Manager library
- Creating a Windows image for the Virtual Machine Manager library
- Creating and managing profiles and templates

After completing this module, students will be able to:

- Describe the Virtual Machine Manager library and library resources.
- Prepare Windows for deployment in Virtual Machine Manager.
- Explain working with profiles.
- Describe working with VM templates.

Module 6: Managing the networking fabric

This module explains how to manage networking fabric in Virtual Machine Manager.

Lessons

- Networking concepts in Virtual Machine Manager
- Managing Software Defined Networking
- Understanding network function virtualization

Lab : Creating and configuring the networking fabric

- Associating virtual network adapters of Hyper-V hosts with the management logical network
- Deploying Network Controller

Lab : Configuring and testing Hyper-V Network Virtualization

- Configuring Hyper-V Network Virtualization
- Provisioning and testing tenant VM networks

After completing this module, students will be able to:

- Explain the primary networking concepts in Virtual Machine Manager.
- Implement Software Defined Networking by using Virtual Machine Manager .
- Describe the core network function virtualization (NFV) 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 Virtual Machine Manager.

Lessons

- VM management tasks
- Creating, cloning, and converting VMs

Lab : Creating and managing VMs by using System Center VM Manager

- Creating a VM and modifying its properties
- Creating and managing checkpoints
- Cloning and migrating a VM

After completing this module, students will be able to:

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

Module 8: Managing clouds in Microsoft System Center Virtual Machine Manager

This module explains how to create and manage clouds by using Virtual Machine Manager.

Lessons

- Introduction to clouds
- Creating and managing a cloud
- Creating user roles in Virtual Machine Manager

Lab : Managing clouds in Virtual Machine Manager

- 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 Virtual Machine Manager to create a cloud.
- Create and manage cloud services.
- Create user roles in Virtual Machine Manager.

Module 9: Managing services in Virtual Machine Manager

This module explains how to create and manage services in Virtual Machine Manager.

Lessons

- Overview of services in Virtual Machine Manager
- Creating and managing services in Virtual Machine Manager

Lab : Managing services in Virtual Machine Manager

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

After completing this module, students will be able to:

- Describe the services in Virtual Machine Manager.
- Create and manage services in Virtual Machine Manager.

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 Virtual Machine Manager and Data Protection Manager

Lab : Monitoring a virtualization infrastructure by using Operations Manager

- Implementing Operations Manager agents
- Integrating Operations Manager with Virtual Machine Manager

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 Virtual Machine Manager and Data Protection Manager.

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

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

- 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 Data Protection Manager for protecting virtualization infrastructure.

Lessons

- Overview of backup and restore options for VMs
- Configuring and managing Data Protection Manager for virtualization infrastructure protection

Lab : Protecting virtualization infrastructure by using Data Protection Manager

- 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 Data Protection Manager for protecting a virtualization infrastructure.