Implementing a Software Defined Datacenter

Duration: 5 Days   Course Code: M20745   Version: A

Overview:

This five-day 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.

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.

Target 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.

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.

Objectives:

- **After completing 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 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 virtualization infrastructure by using System Center Operations Manager.

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

- Protect virtualization infrastructure by using Data Protection Manager.

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:

- 20740 - Storage & Compute with Windows Server 2016
- 20741 - Networking with Windows Server 2016

Content:

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

Lab : Evaluating the virtualization options

Selecting the appropriate virtualization method

Activating Azure subscription and managing Azure

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

Managing fabric updates

After completing this module, students will be able to:

Describe storage technologies used with server virtualization.

Manage a storage fabric in Virtual Machine Manager.

Manage fabric updates in Virtual Machine Manager.

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

This module describes how to configure and manage 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 Virtual Machine Manager library and library objects

Configuring and managing the Virtual Machine Manager library

Creating Windows image for the Virtual Machine Manager library

Creating and managing profiles and templates

After completing this module, students will be

Creating user roles

After completing this module, students will be able to:

Describe how to use Virtual Machine Manager to create a cloud.

Create and manage a cloud.

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 service and updating the service

After completing this module, students will be able to:

Describe the common scenarios for using services.

Create and manage services in Virtual Machine Manager.

Module 10: Monitoring virtualization infrastructure by using System Center

Creating and using Hyper-V virtual switches

Implementing failover clustering with Hyper-V

Lab : Installing Hyper-V and working with Hyper-V virtualization

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

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 Virtual Machine Manager for managing a virtualization environment.

Lessons

Overview of System Center 2016 Virtual Machine Manager

Installing System Center 2016 Virtual Machine

able to:

Describe how to use the Virtual Machine Manager library.

Prepare Windows for deployment in Virtual Machine Manager.

Work with profiles in Virtual Machine Manager.

Create and work with VM templates in Virtual Machine Manage.

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

Configuring network virtualization

Lab : Managing the networking fabric

Configuring networking fabric

Implementing and testing network virtualization

Deploying network controller

After completing this module, students will be able to:

Describe Virtual Machine Manager networking concepts.

Configure software-defined networking in Virtual Machine Manager.

Configure network isolation in Virtual Machine Manager.

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 virtualization infrastructure by using Operations Manager

Implementing the System Center 2016 Operations Manager agent

Configuring the Operations Manager monitoring components

Configuring the integration of Operations Manager integration with Virtual Machine Manager

After completing this module, students will be able to:

Describe the Operations Manager architecture and security.

Describe how to use Operations Manager to monitor physical and virtual servers.

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

Manager

Adding hosts and managing host groups

Lab : Installing and configuring System Center 2016 Virtual Machine Manager

Installing and configuring System Center 2016 Virtual Machine Manager

Managing hosts and host groups

Managing Azure subscription by using Virtual Machine Manager

After completing this module, students will be able to:

Describe the main features in System Center 2016 Virtual Machine Manager.

Install System Center 2016 Virtual Machine Manager.

Add virtualization hosts and manage host groups.

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

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

Virtual machine management tasks

Creating, cloning, and converting virtual machines

Lab : Creating and managing virtual machines by using System Center 2016 Virtual Machine Manager

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:

Manage virtual machines in Virtual Machine Manager.

Create virtual machines by using different options.

Module 8: Managing clouds in 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

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 virtualization infrastructure by using Data Protection Manager

Lessons

Overview of backup and restore options for virtual machines

Configuring and managing Data Protection Manager for virtualization infrastructure protection

Lab : Protecting virtualization infrastructure by using Data Protection Manager

Deploying DPM protection agents

Creating and configuring protection groups

Backing up and restoring virtual machines

Integrating DPM with Microsoft Azure

Create a File Server cluster and a storage QoS policy	Creating user roles in Virtual Machine Manager	After completing this module, students will be able to:
	Lab : Managing clouds in Virtual Machine Manager	Use backup and restore options provided in Windows Server 2016 and Virtual Machine Manager.
	Creating a cloud	■ Use DPM for protecting virtualization infrastructure.

Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

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