MS 20745 B: Implementing a Software-Defined Datacenter using SCVM

Days: 5

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.

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.

Description: 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.

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

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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
- 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 VMM for managing a virtualization environment.

LESSONS

- Overview of System Center 2016 VMM
- Installing System Center 2016 VMM
- 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

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.

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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

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 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

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

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

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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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

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

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

LAB: MANAGING CLOUDS IN SYSTEM CENTER 2016 VMM

- 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

LAB: MANAGING SERVICES IN VMM

- 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.

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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

LAB: MONITORING A VIRTUALIZATION INFRASTRUCTURE BY USING OPERATIONS MANAGER

- 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

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 DPM for protecting virtualization infrastructure.

LESSONS

Overview of backup and restore options for virtual machines 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

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.