Server Virtualization with Windows Server Hyper-V and System Center Course 20409

Duration: 5 Days | Language: English

Course Delivery: Classroom

Course Overview

Get hands-on instruction and practice implementing Microsoft Server Virtualization with Windows Server 2012 R2 Hyper-V and System Center 2012 R2 Virtual Machine Manager in this 5-day Microsoft Official Course. This course provides the hands-on training that can help you prepare for the Microsoft Specialist exam 74-409: Server Virtualization with Windows Server Hyper-V and System Center. You will learn the skills you need to deploy and manage a Microsoft Server Virtualization infrastructure in an enterprise environment. You will learn how to configure, manage, and maintain Windows Server 2012 R2 Hyper-V and System Center 2012 R2 Virtual Machine Manager including networking and storage services. You will learn how to configure key Microsoft Server Virtualization features such as Generation 2 Virtual Machines, Replication Extension, Online Export, Cross-Version Live Migration, Online VHDX Resizing, Live Migration Performance tuning as well as Dynamic Virtual Switch Load Balancing and virtual Receive Side Scaling (vRSS). As part of the learning experience, you will perform hands-on exercises in a virtual lab environment. NOTE: This course is based on Windows Server 2012 R2 Preview and System Center 2012 R2 Preview. This course is designed for experienced IT professionals who support medium to large enterprises and have experience administering Windows Server 2012.

Audience

This course is intended for IT professionals who are responsible for designing, implementing, managing, and maintaining a virtualization infrastructure or are interested in learning about current Microsoft Virtualization technologies. The secondary audience for this course includes IT decision makers who will determine which virtualization product to implement in their data centers.

At Course Completion

After completing this course, students will be able to:

Evaluate an organization's virtualization requirements and plan for server virtualization.

Install and configure the Hyper-V server role.

Create virtual machines, create and manage virtual hard disks and work with snapshots.

Create and configure virtual machine networks in a Hyper-V environment.

Implement virtual machine movement and Hyper-V Replica.

Provide high availability for Hyper-V environment by implementing failover clustering.

Manage virtual environment by using System Center 2012 R2 Virtual Machine Manager.

Manage networking and storage infrastructure in Virtual Machine Manager.

Configure and manage Virtual Machine Manager library and library objects.

Create and manage virtual machines by using Virtual Machine Manager.

Create and manage clouds by using System Center 2012 R2 Virtual Machine Manager.

Create and manage services in System Center 2012 R2 Virtual Machine Manager.

Protect virtualization infrastructure by using Windows Server Backup and Data Protection Manager.

Prerequisites

Before attending this course, students must have:
An understanding of TCP/IP and networking concepts
An understanding of different storage technologies and concepts
The ability to work in a team/virtual team
An understanding of Windows PowerShell

Course Outline

Module 1: Evaluating the Environment for Virtualization

This module provides an overview of Microsoft virtualization technologies and the various components of System Center 2012 R2. The module also explains how to evaluate the current environment for virtualization and extend virtualization to the cloud.
Lessons
Overview of Microsoft Virtualization
Overview of System Center 2012 R2 Components
Evaluating Current Environment for Virtualization
Extending Virtualization to the Cloud
Lab : Evaluating the Environment for Virtualization
Selecting the Appropriate Virtualization Method
Accessing the Environment by Using MAP
After completing this module, students will be able to:
Describe the various virtualization technologies and the scenarios where you would apply each technology.
Describe the different System Center 2012 R2 components and explain how they can be used to manage both traditional and modern infrastructure solutions.
Evaluate an organization's virtualization requirements and plan for server virtualization.
Explain the concept of a public cloud and how to extend virtualization to the cloud.

Module 2: Installing and Configuring the Hyper-V Server Role

This module describes how to install and manage the Hyper-V server role. The module also explains how to configure Hyper-V settings, storage, and networking.
Lessons
Installing the Hyper-V Server Role
Managing Hyper-V
Configuring Hyper-V Settings
Hyper-V Host Storage and Networking
Lab : Installing and Configuring the Hyper-V Server Role
Installing the Hyper-V Server Role
Configuring Hyper-V Settings
Accessing and Managing Hyper-V Remotely
After completing this module, students will be able to:
Install the Hyper-V server role.
Manage Hyper-V.

Configure Hyper-V settings.
Describe Hyper-V host storage and networking.

Module 3: Creating and Managing Virtual Hard Disks, Virtual Machines, and Checkpoints

This module explains how to create and configure virtual hard disks and virtual machines. The module then describes how to install, import, monitor, and manage virtual machines.

Lessons

Creating and Configuring Virtual Hard Disks
Creating and Configuring Virtual Machines
Installing and Importing Virtual Machines
Managing Virtual Machine Checkpoints
Monitoring Hyper-V
Designing and Managing Virtual Machines

Lab : Creating and Managing Virtual Hard Disks and Virtual Machines

Creating and Managing Virtual Hard Disks
Creating and Managing Virtual Machines

Lab : Creating and Managing Checkpoints, and Monitoring Hyper-V

Importing Virtual Machines and Working with Checkpoints
Monitoring Hyper-V

After completing this module, students will be able to:

Create and configure virtual hard disks.
Create and configure virtual machines.
Install and import virtual machines.
Manage virtual machine checkpoints.
Monitor Hyper-V.
Design and manage virtual machines.

Module 4: Creating and Configuring Virtual Machine Networks

This module explains how to create and use Hyper-V virtual switches and Hyper-V networking features. The module also describes how to configure and implement Hyper-V network virtualization.

Lessons

Creating and Using Hyper-V Virtual Switches
Advanced Hyper-V Networking Features
Configuring and Using Hyper-V Network Virtualization

Lab : Creating and Configuring Virtual Machine Networks

Creating and Using Hyper-V Virtual Switches
Configuring and Using Advanced Virtual Switch Features
Configuring Hyper-V Network Virtualization

After completing this module, students will be able to:

Describe the Hyper-V virtual switch.
Describe the different types of virtual switches.
Describe VLAN tagging.
Explain how to use Virtual Switch Manager.

Explain the use of dynamic switch ports.
Explain how to configure and use VLANs.

Module 5: Virtual Machine Movement and Hyper-V Replica

This module describes how to provide high availability and redundancy for virtualization. The module also explains how to implement virtual machine movement and Hyper-V Replica.

Lessons

Providing High Availability and Redundancy for Virtualization
Implementing Virtual Machine Movement
Implementing and Managing Hyper-V Replica
Lab : Virtual Machine Movement and Hyper-V Replica
Moving Hyper-V Storage and Virtual Machines
Configuring and Managing Hyper-V Replica

After completing this module, students will be able to:

Explain the importance of providing high availability and redundancy for virtualization.
Implement virtual machine movement.
Implement and manage Hyper-V Replica.

Module 6: Implementing Failover Clustering with Hyper-V

This module provides an overview of failover clustering. The module also describes how configure shared storage, and how to implement failover clustering with Hyper-V.

Lessons

Overview of Failover Clustering
Configuring and Using Shared Storage
Implementing and Managing Failover Clustering with Hyper-V
Lab : Implementing Failover Clustering with Hyper-V
Creating Hyper-V Failover Cluster
Managing Hyper-V Failover Cluster

After completing this module, students will be able to:

Describe failover clustering.
Configure and use shared storage.
Implement and manage failover clustering with Hyper-V.

Module 7: Installing and Configuring System Center 2012 R2 Virtual Machine Manager

This module describes how to integrate System Center and server virtualization. The module also describes how to install System Center 2012 R2 Virtual Machine Manager, add hosts, and manage host groups.

Lessons

Integrating System Center and Server Virtualization
Overview of System Center 2012 Virtual Machine Manager
Installing System Center 2012 R2 Virtual Machine Manager
Adding Hosts and Managing Host Groups
Lab : Installing and Configuring System Center 2012 R2 Virtual Machine Manager
Installing and Configuring System Center 2012 VMM SP1

Managing Hosts and Host Groups
After completing this module, students will be able to:
Explain how to use different System Center 2012 R2 SP1 components for managing a virtual environment.
Describe the key features of System Center 2012 R2 VMM.
Install System Center 2012 R2 VMM.
Add virtualization hosts to VMM, and manage virtualization hosts and host groups.

Module 8: Managing the Networking and Storage Infrastructure in System Center 2012 R2 Virtual Machine Manager
This module describes how to manage networking infrastructure, storage infrastructure, and infrastructure updates.
Lessons
Managing Networking Infrastructure
Managing Storage Infrastructure
Managing Infrastructure Updates
Lab : Managing the Networking and Storage Infrastructure in System Center 2012 R2 Virtual Machine Manager
Implementing a Network Infrastructure
Implementing a Storage Infrastructure
Managing Infrastructure Updates
After completing this module, students will be able to:
Manage networking and storage infrastructure in VMM
Integrate Windows Update Services Server
Create update baselines, scan and remediated non-compliant servers.

Module 9: Creating and Managing Virtual Machines by Using Microsoft System Center 2012 R2 Virtual Machine Manager
This module explains how to create, clone, and convert virtual machines. The module also provides an overview of virtual machine updating.
Lessons
Virtual Machine Management Tasks in VMM
Creating, Cloning, and Converting Virtual Machines
Overview of Virtual Machine Updating
Lab : Creating and Managing Virtual Machines by Using System Center 2012 R2 Virtual Machine Manager
Creating a Virtual Machine and Modifying Its Properties
Cloning a Virtual Machine
After completing this module, students will be able to:
Explain virtual machine management tasks in VMM.
Explain how to create, clone, and convert virtual machines.
Describe methods and tools for updating virtual machines.

Module 10: Configuring and Managing the System Center 2012 R2 Virtual Machine
This module provides an overview of the Virtual Machine Library. The module also describes how to work

with profiles and templates.
Lessons
Overview of the Virtual Machine Manager Library
Working With Profiles and Templates
Lab : Configuring and Managing the System Center 2012 R2 Virtual Machine Manager SP1 Library and Library Objects
Configuring and Managing the Virtual Machine Manager Library
Creating and Managing Profiles and Templates
After completing this module, students will be able to:
Perform virtual machine management tasks in Virtual Machine Manager.
Create and manage profiles and templates by using different options.

Module 11: Managing Clouds in System Center 2012 R2 Virtual Machine Manager

This module provides an introduction to clouds and describes how to create and manage a cloud. The module also describes how to work with user roles in VMM.
Lessons
Introduction to Clouds
Creating and Managing a Cloud
Working With User Roles in Virtual Machine Manager
Lab : Working With User Roles in Virtual Machine Manager
Creating a Cloud
Working With User Roles
Deploying Virtual Machines to a Cloud
After completing this module, students will be able to:
Explain the concept of a cloud and describe how Virtual Machine Manager can be used for creating a cloud.
Create and manage a cloud.
Create and use user roles in Virtual Machine Manager.

Module 12: Managing Services in System Center 2012 R2 Virtual Machine Manager and App Controller

This module provides an overview of services in System Center 2012 R2 VMM. The module also describes how to create and manage services in VMM and how to use System Center 2012 R2 App Controller.
Lessons
Understanding Services in System Center 2012 R2 Virtual Machine Manager
Creating and Managing Services in VMM
Using System Center 2012 R2 App Controller
Lab : Managing Services in System Center 2012 R2 VMM and App Controller
Creating a Service Template
Deploying a Service and Updating Service Template
Configuring an App Controller
Deploying Virtual Machine in App Controller
After completing this module, students will be able to:
Explain purpose and functionality of a service.
Create and manage services in VMM.
Describe how to use System Center 2012 R2 App Controller.

Module 13: Protecting and Monitoring Virtualization Infrastructure

This module provides an overview of backup and restore options for virtual machines. The module describes how to use DPM and System Center Operations Manager for protection, monitoring, and reporting.

Lessons

Overview of Backup and Restore Options for Virtual Machines

Protecting Virtualization Infrastructure by Using Data Protection Manager

Using System Center Operations Manager for Monitoring and Reporting

Integrating Virtual Machine Manager with Operations Manager

Lab : Monitoring and Reporting Virtualization Infrastructure

Implementing System Center 2012 R2 Operations Manager Agent

Configuring Operations Manager Monitoring Components

Configuring Operations Manager Integration with Virtual Machine Manager

After completing this module, students will be able to:

Use backup and restore options provided in Windows Server 2012 R2 and Virtual Machine Manager.

Explain the benefits of using DPM for protecting virtualization environment.

Describe the Operations Manager components and describe how Operations Manager can be used to monitor physical and virtual servers.

Configure Operations Manager integration with Virtual Machine Manager.