

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

**Exam Code: 74-409**

**Duration: 40 Hrs**

**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

**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

**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

## **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

## **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

## **Module 6: Implementing Failover Clustering with Hyper-V**

This module provides an overview of failover clustering. The module also describes how to 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

## **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

## **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

## **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

**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

**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

**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

## Module 13: Protecting and Monitoring Virtualization Infrastructure

This module provides an overview of backup and restores 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
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### 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