

MOC 55021 A Configuring and Administering Hyper-V in Windows Server 2012

Course Summary

Description

This three-day instructor-led course provides students with the knowledge and skills to configure and administer Hyper-V in Windows Server 2012. Students will learn the history of Virtualization as it pertains to Microsoft technologies. Students will learn the new features of Hyper-V in Windows Server 2012. After completing this course students will be able to install, configure, and administer Hyper-V in Windows Server 2012. Students will also be able to describe the High Availability features built into Hyper-V in Windows Server 2012.

Objectives

At the end of this course, students will be able to:

- Describe Microsoft's virtualization technologies.
- Implement Hyper-V.
- Design and Manage virtual machine storage solutions.
- Design and Manage virtual networks.
- Design the Hyper-V host architecture.
- Design the virtual machine architecture.
- Design a Windows Server 2012 Hyper-V Virtualization Infrastructure.
- Describe and manage Hyper-V Snapshots
- Describe Hyper-V host and virtual machine high availability.
- Describe storage options for Virtual Machines.
- Describe the different types of virtual hard disks.
- Describe the Hyper-V integration services.
- Describe Live Migration.
- Understand Storage Migration.
- Understand Virtual Machine Import.

Topics

- Planning for Virtualization
- Implementing Server Virtualization with Hyper-V
- Creating and Configuring Virtual Hard Disks and Virtual Machines
- Configure Networking in Hyper-V
- Scale-up Virtual Machines
- Hyper-V Replica and Disaster Recovery
- Hyper-V Migration

Audience

This course is intended for Network Administrators who are responsible for virtualization in their environment specifically Hyper-V.

Prerequisites

Before attending this course, students must have:

- Deep understanding of Virtualization technologies
- Prior experience with Hyper-V or other virtualization technologies
- Previous storage configuration experience
- Previous networking configuration experience

Duration

Three days

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Course Outline

I. Planning for Virtualization

After completing this module students will be able to describe virtualization as it relates to server environments. Students will be able to plan for hardware requirements, storage, availability, and security.

- A. Overview of Microsoft Virtualization
- B. Assessment of Virtualization Candidates
- C. Planning for Virtualization

Lab: Assessing the Environment for Virtualization

- Planning for the Hyper-V Server Role
- Assess the environment by using the Microsoft Assessment and Planning (MAP) Toolkit

II. Implementing Server Virtualization with Hyper

This module describes how to install and configure Hyper-V virtual machines, configuring virtual storage, and configuring virtual networks. Students will be able to design their Hyper-V environment and storage networks.

- A. Implementing Hyper-V
- B. Managing Virtual Machine Storage
- C. Managing Virtual Networks

Lab: Installing and Configuring the Hyper-V Server Role

- Installing the Hyper-V Server Role
- Plan for Virtual Switch Configuration
- Configuring Virtual Networking

III. Creating and Configuring Virtual Hard Disks and Virtual Machines

After completing this module students will be able to determine and configure the most appropriate virtual hard disk(s) format to use in their environment. Students also will be able to create and configure virtual machines.

- A. Creating and Configuring Virtual Hard Disks
- B. Creating and Configuring Virtual Machines
- C. Managing Virtual Machine Snapshots
- D. Virtual Machine Import

Lab: Creating Virtual Hard Disks and Virtual Machines

- Creating Virtual Hard Disks
- Creating New Virtual Machines
- Modifying Virtual Machine Settings
- Creating and Modifying Virtual Machine Snapshots
- Import Virtual Machines into Hyper-V

IV. Configure Networking in Hyper-V

This module describes all of the new network features available in Hyper-V. Students will be able to describe Hyper-V Network Virtualization along with the Hyper-V Extensible Switch. Students will also be able to plan how to implement the new networking features available with Windows Server 2012 Hyper-V.

- A. Advanced features of Virtual Network Adapters
- B. Hyper-V Network Virtualization
- C. Hyper-V Extensible Switch

Lab: Configuring Network Settings

- Configure NIC Teaming
- Configure Advanced Network Settings

V. Scale-up Virtual Machines

This module explains how Windows Server 2012 can be used to scale-up your virtual machines. Students will learn the details around non-uniform memory access (NUMA) and the other scale-up options in Windows Server 2012. It also compares the scale-up options in Windows Server 2012 with the options that were available in previous versions of Windows Server.

- A. Overview of Scale-up options in Windows Server 2012
- B. Non-uniform memory access (NUMA)
- C. Hyper-v Scale Comparison

Lab: Configuring NUMA

- Planning for Hyper-V Scale
- Configuring NUMA

VI. Hyper-V Replica and Disaster Recovery

This module describes disaster recovery options for Hyper-V, including Hyper-V Replica and backup/restore options for Hyper-V. Students will learn how to plan and prepare for Hyper-V Replica, learn how to configure and enable replication, perform planned failovers, and how to respond to unplanned failovers. They will also learn how to backup and restore Hyper-V hosts and virtual machines.

- A. Overview of Hyper-V Replica
- B. Configuring Hyper-V Replica
- C. Hyper-V Replica Failover Operations
- D. Hyper-V Backup

Lab: Configuring Hyper-V Replica and Backups

- Configure Hyper-V Replica
- Configure Hyper-V Backup and Recovery

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Course Outline (cont'd)

VII. Hyper-V Migration

This module describes the Hyper-V virtual machine (VM) mobility technologies. Students will learn changes to Live Migration that are introduced with Windows Server 2012. Students will also learn best practices for securing Live Migrations.

- A. Live Migration Overview
- B. Storage Migration Overview
- C. Live Migration Security
- D. Live Migration using SMB

Lab: Implementing Migration in Hyper-V

- Configure a Failover Cluster for Hyper-V
- Configure a Highly Available Virtual Machine
- Configure Live Migration using SMB