

## Configure, Administering, and Supporting Hyper-V in Windows Server 2012

**Length:** 4 days

**Overview:** Get hands-on instruction and practice implementing Microsoft Server Virtualization with Windows Server 2012 R2 Hyper-V in this 4-day Hyper-V Course. 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. As part of the learning experience, you will perform hands-on exercises in a virtual lab environment.

**Audience Profile** 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.

**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

**At Course Completion:** After completing 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.
- 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.

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## COURSE CONTENT

### Module 1: 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.

#### Lessons

- Overview of Microsoft Virtualization
- Assessment of Virtualization Candidates
- 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

### Module 2: 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 3: 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 4: 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 5: 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 6: 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 7: 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 8: 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.

### Lessons

- Live Migration Overview
- Storage Migration Overview
- Live Migration Security
- 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