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## Server Virtualization with Windows Server Hyper-V and System Center

Duration: 5 Days Course Code: M20409

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### 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.

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.

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### Target 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.

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### Objectives:

- Evaluate an organization's virtualization requirements and plan for server virtualization.
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  - Install and configure the Hyper-V server role.
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  - Create virtual machines, create and manage virtual hard disks and work with snapshots.
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  - Create and configure virtual machine networks in a Hyper-V environment.
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  - Implement virtual machine movement and Hyper-V Replica.
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  - Provide high availability for Hyper-V environment by implementing failover clustering.
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  - Manage virtual environment by using System Center 2012 R2 Virtual Machine Manager.
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  - Manage networking and storage infrastructure in Virtual Machine Manager.
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  - Configure and manage Virtual Machine Manager library and library objects.
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  - Create and manage virtual machines by using Virtual Machine Manager.
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  - Create and manage clouds by using System Center 2012 R2 Virtual Machine Manager.
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  - Create and manage services in System Center 2012 R2 Virtual Machine Manager.
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  - Protect virtualization infrastructure by using Windows Server Backup and Data Protection Manager.
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### Prerequisites:

### Testing and Certification

- 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

- 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.
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## Content:

### Module 1: Evaluating the Environment for Virtualization

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V

### Lab : Creating and Configuring Virtual Machine Networks

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Lab : Creating and Managing Virtual Machines by Using System Center 2012 R2 Virtual Machine Manager

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## Checkpoints

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

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## Machine Manager

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Module 10: Configuring and Managing the System Center 2012 R2 Virtual Machine

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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.
- Creating and Configuring Virtual Hard Disks
- Creating and Configuring Virtual Machines
- Installing and Importing Virtual Machines
- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V

- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components
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- Monitoring Hyper-V
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- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
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- Understanding Services in System Center

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- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
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- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
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  - Creating and Managing Services in VMM
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  - Deploying a Service and Updating Service Template
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  - Deploying Virtual Machine in App Controller
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  - Monitoring Hyper-V
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  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features

- 2012 R2 Virtual Machine Manager
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- Managing Infrastructure Updates
- Implementing a Network Infrastructure
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- Managing Infrastructure Updates
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- Overview of the Virtual Machine Manager Library
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- Managing Hosts and Host Groups

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

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- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
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- Managing Hyper-V Failover Cluster
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- Installing System Center 2012 R2 Virtual Machine Manager
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- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
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Lab : Virtual Machine Movement and Hyper-V Replica

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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

- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

Lab : Configuring and Managing the System Center 2012 R2 Virtual Machine Manager SP1 Library and Library Objects

- Creating and Managing Profiles and Templates
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- Installing the Hyper-V Server Role
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- After completing this module, students will be able to:
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- Creating and Configuring Virtual Hard Disks
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- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization

- Using System Center 2012 R2 App Controller
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- 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.
  - 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
  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features
  - Configuring and Using Hyper-V Network Virtualization
  - Creating and Using Hyper-V Virtual Switches
  - Configuring and Using Advanced Virtual Switch Features
  - Configuring Hyper-V Network Virtualization
  - Providing High Availability and Redundancy for Virtualization
  - Implementing Virtual Machine Movement
  - Implementing and Managing Hyper-V Replica
  - Moving Hyper-V Storage and Virtual Machines
  - Configuring and Managing Hyper-V Replica
  - Overview of Failover Clustering
  - Configuring and Using Shared Storage
  - Implementing and Managing Failover Clustering with Hyper-V
  - Creating Hyper-V Failover Cluster
  - Managing Hyper-V Failover Cluster
  - 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
  - Installing and Configuring System Center 2012 VMM SP1
  - Managing Hosts and Host Groups
  - Managing Networking Infrastructure
  - Managing Storage Infrastructure

- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
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- Installing System Center 2012 R2 Virtual Machine Manager
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- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying

- Virtualization
- Overview of System Center 2012 Virtual Machine Manager
- Installing System Center 2012 R2 Virtual Machine Manager
- Adding Hosts and Managing Host Groups
- Installing and Configuring System Center 2012 VMM SP1
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- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components
  
- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization

- Managing Infrastructure Updates
  - Implementing a Network Infrastructure
  - Implementing a Storage Infrastructure
  - Managing Infrastructure Updates
  - Virtual Machine Management Tasks in VMM
  - Creating, Cloning, and Converting Virtual Machines
  - Overview of Virtual Machine Updating
  - Creating a Virtual Machine and Modifying Its Properties
  - Cloning a Virtual Machine
  - Overview of the Virtual Machine Manager Library
  - Working With Profiles and Templates
  - Introduction to Clouds
  - Creating and Managing a Cloud
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  - Working With User Roles
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  - Understanding Services in System Center 2012 R2 Virtual Machine Manager
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- Overview of Microsoft Virtualization
  - Overview of System Center 2012 R2 Components
  - Evaluating Current Environment for Virtualization
  - Extending Virtualization to the Cloud
  - Selecting the Appropriate Virtualization Method
  - Accessing the Environment by Using MAP
  - 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.
  - Managing Hyper-V.

- Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
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- Working With User Roles
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#### Module 6: Implementing Failover Clustering with Hyper-V

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- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
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- Lab : Installing and Configuring the Hyper-V Server Role
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- Configuring Hyper-V Settings
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- After completing this module, students will be able to:
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- Configuring Hyper-V Settings
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- Configuring Hyper-V Settings
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- After completing this module, students will be able to:
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- Managing Hyper-V.
- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- Integrating System Center and Server Virtualization
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- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups



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- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates

- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
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- Installing and Importing Virtual Machines
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- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
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- Managing Storage Infrastructure
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- Implementing a Storage Infrastructure
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- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components
- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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

- Introduction to Clouds
  - Creating and Managing a Cloud
  - Working With User Roles in Virtual Machine Manager
  - Creating a Cloud
  - Working With User Roles
  - Deploying Virtual Machines to a Cloud
  - Understanding Services in System Center 2012 R2 Virtual Machine Manager
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  - 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.
    - 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
    - Creating and Managing Virtual Hard Disks
    - Creating and Managing Virtual Machines
    - Importing Virtual Machines and Working with

- Its Properties
  - Cloning a Virtual Machine
  - Overview of the Virtual Machine Manager Library
  - Working With Profiles and Templates
  - Introduction to Clouds
  - Creating and Managing a Cloud
  - Working With User Roles in Virtual Machine Manager
  - Creating a Cloud
  - Working With User Roles
  - Deploying Virtual Machines to a Cloud
  - Understanding Services in System Center 2012 R2 Virtual Machine Manager
  - Creating and Managing Services in VMM
  - Using System Center 2012 R2 App Controller
  - Creating a Service Template
  - Deploying a Service and Updating Service Template
  - Configuring an App Controller
  - Deploying Virtual Machine in App Controller
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  - Extending Virtualization to the Cloud
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  - Lab : Installing and Configuring the Hyper-V Server Role
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  - 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.
    - Creating and Configuring Virtual Hard

- Configuring Hyper-V Settings
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- After completing this module, students will be able to:
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  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features
  - Configuring and Using Hyper-V Network Virtualization
  - Creating and Using Hyper-V Virtual Switches
  - Configuring and Using Advanced Virtual Switch Features
  - Configuring Hyper-V Network Virtualization
  - Providing High Availability and Redundancy for Virtualization
  - Implementing Virtual Machine Movement
  - Implementing and Managing Hyper-V Replica
  - Moving Hyper-V Storage and Virtual Machines
  - Configuring and Managing Hyper-V Replica
  - Overview of Failover Clustering
  - Configuring and Using Shared Storage
  - Implementing and Managing Failover Clustering with Hyper-V
  - Creating Hyper-V Failover Cluster
  - Managing Hyper-V Failover Cluster
  - 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
  - Installing and Configuring System Center 2012 VMM SP1
  - Managing Hosts and Host Groups
  - Managing Networking Infrastructure
  - Managing Storage Infrastructure
  - Managing Infrastructure Updates
  - Implementing a Network Infrastructure
  - Implementing a Storage Infrastructure
  - Managing Infrastructure Updates
  - Virtual Machine Management Tasks in VMM
  - Creating, Cloning, and Converting Virtual

## Checkpoints

- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
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- Implementing a Network Infrastructure
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- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service

## Disks

- Creating and Configuring Virtual Machines
- Installing and Importing Virtual Machines
- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V
- Designing and Managing Virtual Machines
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
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- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library

## Machines

- Overview of Virtual Machine Updating
  - Creating a Virtual Machine and Modifying Its Properties
  - Cloning a Virtual Machine
  - Overview of the Virtual Machine Manager Library
  - Working With Profiles and Templates
  - Introduction to Clouds
  - Creating and Managing a Cloud
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  - Creating a Cloud
  - Working With User Roles
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  - Using System Center 2012 R2 App Controller
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- Lab : Working With User Roles in Virtual Machine Manager
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  - Evaluating Current Environment for Virtualization
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  - Installing the Hyper-V Server Role
  - Managing Hyper-V
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  - After completing this module, students will be able to:

- Template
  - Configuring an App Controller
  - Deploying Virtual Machine in App Controller
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    - Implementing a Storage Infrastructure
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    - Creating, Cloning, and Converting Virtual Machines
    - Overview of Virtual Machine Updating
    - Creating a Virtual Machine and Modifying Its Properties
    - Cloning a Virtual Machine
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  - Creating and Managing a Cloud
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  - Deploying Virtual Machines to a Cloud
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- Creating and Managing Virtual Hard Disks
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- Monitoring Hyper-V
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## Machine Manager

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- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
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- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
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- Working With User Roles
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- Creating and Managing Services in VMM
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- Accessing and Managing Hyper-V Remotely
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- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
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- Working With User Roles
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- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches

- with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
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- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App

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- Configuring Operations Manager Monitoring Components

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

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  - Overview of Microsoft Virtualization
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  - Configuring Hyper-V Settings
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- Deploying a Service and Updating Service Template

- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template

- Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
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- Working With User Roles
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- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components
- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
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- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
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- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
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- Managing Hyper-V
- Configuring Hyper-V Settings
- Hyper-V Host Storage and Networking



## 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:
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  - Describe Hyper-V host storage and networking.
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  - Creating and Configuring Virtual Machines
  - Installing and Importing Virtual Machines
  - Managing Virtual Machine Checkpoints
  - Monitoring Hyper-V
  - Designing and Managing Virtual Machines
  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features
  - Configuring and Using Hyper-V Network Virtualization
  - Creating and Using Hyper-V Virtual Switches
  - Configuring and Using Advanced Virtual Switch Features
  - Configuring Hyper-V Network Virtualization
  - Providing High Availability and Redundancy for Virtualization
  - Implementing Virtual Machine Movement
  - Implementing and Managing Hyper-V Replica
  - Moving Hyper-V Storage and Virtual Machines
  - Configuring and Managing Hyper-V Replica
  - Overview of Failover Clustering
  - Configuring and Using Shared Storage
  - Implementing and Managing Failover Clustering with Hyper-V
  - Creating Hyper-V Failover Cluster
  - Managing Hyper-V Failover Cluster
  - 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
  - Installing and Configuring System Center 2012 VMM SP1
  - Managing Hosts and Host Groups
  - Managing Networking Infrastructure
  - Managing Storage Infrastructure
  - Managing Infrastructure Updates
  - Implementing a Network Infrastructure
  - Implementing a Storage Infrastructure
  - Managing Infrastructure Updates
  - Virtual Machine Management Tasks in VMM
  - Creating, Cloning, and Converting Virtual Machines
  - Overview of Virtual Machine Updating

## Switches

- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
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- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
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- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- Overview of Backup and Restore Options

- 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.
  - 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
  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features
  - Configuring and Using Hyper-V Network Virtualization
  - Creating and Using Hyper-V Virtual Switches
  - Configuring and Using Advanced Virtual Switch Features
  - Configuring Hyper-V Network Virtualization
  - Providing High Availability and Redundancy for Virtualization
  - Implementing Virtual Machine Movement
  - Implementing and Managing Hyper-V Replica
  - Moving Hyper-V Storage and Virtual Machines
  - Configuring and Managing Hyper-V Replica
  - Overview of Failover Clustering
  - Configuring and Using Shared Storage
  - Implementing and Managing Failover Clustering with Hyper-V
  - Creating Hyper-V Failover Cluster
  - Managing Hyper-V Failover Cluster
  - 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
  - Installing and Configuring System Center 2012 VMM SP1
  - Managing Hosts and Host Groups
  - Managing Networking Infrastructure
  - Managing Storage Infrastructure
  - Managing Infrastructure Updates
  - Implementing a Network Infrastructure
  - Implementing a Storage Infrastructure
  - Managing Infrastructure Updates

- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

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

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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

- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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.

- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network

- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

### Lab : Managing Services in System Center 2012 R2 VMM and App Controller

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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

networking.

- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- Integrating System Center and Server Virtualization
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- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager

Virtualization

- Providing High Availability and Redundancy for Virtualization
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- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- Overview of Backup and Restore Options for Virtual Machines
- Protecting Virtualization Infrastructure by Using Data Protection Manager
- Using System Center Operations

Remotely

- After completing this module, students will be able to:
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- Describe Hyper-V host storage and networking.
- Creating and Configuring Virtual Hard Disks
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- Managing Virtual Machine Checkpoints
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- Creating and Managing Virtual Hard Disks
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- Importing Virtual Machines and Working with Checkpoints
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- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
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- Managing Infrastructure Updates
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- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating

- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
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- Implementing System Center 2012 R2 Operations Manager Agent
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- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches

- Manager for Monitoring and Reporting
- Integrating Virtual Machine Manager with Operations Manager
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

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- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement

- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
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- Working With User Roles
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- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
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- Configuring and Using Shared Storage
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- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V
- Designing and Managing Virtual Machines
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
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- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
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  - Using System Center Operations Manager for Monitoring and Reporting
  - Integrating Virtual Machine Manager with Operations Manager
  - Implementing System Center 2012 R2 Operations Manager Agent
  - Configuring Operations Manager Monitoring Components
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  - Creating and Managing Virtual Machines
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- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
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## Server Role

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## Using Data Protection Manager

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- Accessing the Environment by Using MAP
- 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.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual

- Creating a Virtual Machine and Modifying Its Properties
  - Cloning a Virtual Machine
  - Overview of the Virtual Machine Manager Library
  - Working With Profiles and Templates
  - Introduction to Clouds
  - Creating and Managing a Cloud
  - Working With User Roles in Virtual Machine Manager
  - Creating a Cloud
  - Working With User Roles
  - Deploying Virtual Machines to a Cloud
  - Understanding Services in System Center 2012 R2 Virtual Machine Manager
  - Creating and Managing Services in VMM
  - Using System Center 2012 R2 App Controller
  - Creating a Service Template
  - Deploying a Service and Updating Service Template
  - Configuring an App Controller
  - Deploying Virtual Machine in App Controller
  - 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
  - Implementing System Center 2012 R2 Operations Manager Agent
  - Configuring Operations Manager Monitoring Components
- 
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  - Overview of System Center 2012 R2 Components
  - Evaluating Current Environment for Virtualization
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  - Selecting the Appropriate Virtualization Method
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  - Hyper-V Host Storage and Networking
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  - Install the Hyper-V server role.
  - Manage Hyper-V.
  - Configure Hyper-V settings.
  - Describe Hyper-V host storage and networking.
  - Creating and Configuring Virtual Hard Disks
  - Creating and Configuring Virtual Machines
  - Installing and Importing Virtual Machines

- Implementing and Managing Failover Clustering with Hyper-V
  - Creating Hyper-V Failover Cluster
  - Managing Hyper-V Failover Cluster
  - 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
  - Installing and Configuring System Center 2012 VMM SP1
  - Managing Hosts and Host Groups
  - Managing Networking Infrastructure
  - Managing Storage Infrastructure
  - Managing Infrastructure Updates
  - Implementing a Network Infrastructure
  - Implementing a Storage Infrastructure
  - Managing Infrastructure Updates
  - Virtual Machine Management Tasks in VMM
  - Creating, Cloning, and Converting Virtual Machines
  - Overview of Virtual Machine Updating
  - Creating a Virtual Machine and Modifying Its Properties
  - Cloning a Virtual Machine
  - Overview of the Virtual Machine Manager Library
  - Working With Profiles and Templates
  - Introduction to Clouds
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  - Working With User Roles
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  - Deploying a Service and Updating Service Template
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  - Configuring Operations Manager Monitoring Components
- 
- Overview of Microsoft Virtualization
  - Overview of System Center 2012 R2

- Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- Integrating System Center and Server Virtualization
- Overview of System Center 2012 Virtual Machine Manager
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- Installing and Configuring System Center 2012 VMM SP1
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- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
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- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V
- Designing and Managing Virtual Machines
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
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- Managing Hyper-V Failover Cluster
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- Installing System Center 2012 R2 Virtual Machine Manager
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- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
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- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center

## Components

- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- Installing the Hyper-V Server Role
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- Configuring Hyper-V Settings
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- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster

## Module 13: Protecting and Monitoring Virtualization Infrastructure

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- Installing the Hyper-V Server Role
- Managing Hyper-V
- Configuring Hyper-V Settings
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- Configuring Hyper-V Settings
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- Install the Hyper-V server role.
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- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- Creating and Configuring Virtual Hard Disks
- Creating and Configuring Virtual Machines
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- Designing and Managing Virtual Machines
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage

- 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
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- Managing Hyper-V
- Configuring Hyper-V Settings
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- Lab : Installing and Configuring the Hyper-V Server Role
- Installing the Hyper-V Server Role
- Configuring Hyper-V Settings
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  - Install the Hyper-V server role.
  - Manage Hyper-V.
  - Configure Hyper-V settings.
  - Describe Hyper-V host storage and networking.
  - Creating and Configuring Virtual Hard Disks
  - Creating and Configuring Virtual Machines
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  - Managing Virtual Machine Checkpoints
  - Monitoring Hyper-V
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  - Creating and Managing Virtual Hard Disks
  - Creating and Managing Virtual Machines
  - Importing Virtual Machines and Working with Checkpoints
  - Monitoring Hyper-V
  - Creating and Using Hyper-V Virtual Switches
  - Advanced Hyper-V Networking Features
  - Configuring and Using Hyper-V Network Virtualization
  - Creating and Using Hyper-V Virtual

- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

#### Module 8: Managing the Networking and Storage Infrastructure in System Center 2012 R2 Virtual Machine Manager

- Overview of Microsoft Virtualization

- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2

- Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
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- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
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- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- Overview of Backup and Restore Options for Virtual Machines
- Protecting Virtualization Infrastructure by Using Data Protection Manager
- Using System Center Operations Manager
- Overview of System Center 2012 R2 Components
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- Installing the Hyper-V Server Role
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- Lab : Installing and Configuring the Hyper-V Server Role
- Installing the Hyper-V Server Role
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- After completing this module, students will be able to:
- Install the Hyper-V server role.
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- Describe Hyper-V host storage and networking.
- Creating and Configuring Virtual Hard Disks
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- Installing and Importing Virtual Machines
- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V
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- Configuring and Managing Hyper-V Replica
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- Integrating System Center and Server Virtualization
- Overview of System Center 2012 Virtual Machine Manager
- Installing System Center 2012 R2 Virtual Machine Manager

- for Monitoring and Reporting
- Integrating Virtual Machine Manager with Operations Manager
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

Lab : Creating and Managing Virtual Hard Disks and Virtual Machines

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
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Lab : Creating and Managing Checkpoints, and Monitoring Hyper-V

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Lab : Managing the Networking and Storage Infrastructure in System Center 2012 R2 Virtual Machine Manager

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Lab : Monitoring and Reporting Virtualization Infrastructure

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- Configuring and Managing Hyper-V Replica
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- Configuring and Using Shared Storage
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- Managing Hyper-V Failover Cluster
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- Cloning a Virtual Machine
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- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
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- Lab : Installing and Configuring the Hyper-V Server Role
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  - Manage Hyper-V.

- Configuring Operations Manager Monitoring Components
- Configuring Operations Manager Integration with Virtual Machine Manager

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- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying

- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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

- Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
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#### Module 9: Creating and Managing Virtual Machines by Using Microsoft System Center 2012 R2 Virtual Machine Manager

- Overview of Microsoft Virtualization
- Overview of System Center 2012 R2 Components
- Evaluating Current Environment for Virtualization
- Extending Virtualization to the Cloud
- Selecting the Appropriate Virtualization Method
- Accessing the Environment by Using MAP
- 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.

- networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
- Providing High Availability and Redundancy for Virtualization
- Implementing Virtual Machine Movement
- Implementing and Managing Hyper-V Replica
- Moving Hyper-V Storage and Virtual Machines
- Configuring and Managing Hyper-V Replica
- Overview of Failover Clustering
- Configuring and Using Shared Storage
- Implementing and Managing Failover Clustering with Hyper-V
- Creating Hyper-V Failover Cluster
- Managing Hyper-V Failover Cluster
- 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
- Installing and Configuring System Center 2012 VMM SP1
- Managing Hosts and Host Groups
- Managing Networking Infrastructure
- Managing Storage Infrastructure
- Managing Infrastructure Updates
- Implementing a Network Infrastructure
- Implementing a Storage Infrastructure
- Managing Infrastructure Updates
- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating
- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager

- Manage Hyper-V.
- Configure Hyper-V settings.
- Describe Hyper-V host storage and networking.
- 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
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches
- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
- Configuring and Using Advanced Virtual Switch Features
- Configuring Hyper-V Network Virtualization
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- Virtual Machine Management Tasks in VMM
- Creating, Cloning, and Converting Virtual Machines
- Overview of Virtual Machine Updating

- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
- Using System Center 2012 R2 App Controller
- Creating a Service Template
- Deploying a Service and Updating Service Template
- Configuring an App Controller
- Deploying Virtual Machine in App Controller
- 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

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- Installing the Hyper-V Server Role
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- Accessing and Managing Hyper-V Remotely
- After completing this module, students will be able to:
  - Install the Hyper-V server role.
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  - Configure Hyper-V settings.
  - Describe Hyper-V host storage and networking.
- Creating and Configuring Virtual Hard Disks
- Creating and Configuring Virtual Machines
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- Managing Virtual Machine Checkpoints
- Monitoring Hyper-V
- Designing and Managing Virtual Machines
- Creating and Managing Virtual Hard Disks
- Creating and Managing Virtual Machines
- Importing Virtual Machines and Working with Checkpoints
- Monitoring Hyper-V
- Creating and Using Hyper-V Virtual Switches

- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager Library
- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
- Deploying Virtual Machines to a Cloud
- Understanding Services in System Center 2012 R2 Virtual Machine Manager
- Creating and Managing Services in VMM
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- 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.

- Advanced Hyper-V Networking Features
- Configuring and Using Hyper-V Network Virtualization
- Creating and Using Hyper-V Virtual Switches
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- Working With User Roles
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- Creating a Virtual Machine and Modifying Its Properties
- Cloning a Virtual Machine
- Overview of the Virtual Machine Manager



#### 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
- Implementing System Center 2012 R2 Operations Manager Agent
- Configuring Operations Manager Monitoring Components

#### Library

- Working With Profiles and Templates
- Introduction to Clouds
- Creating and Managing a Cloud
- Working With User Roles in Virtual Machine Manager
- Creating a Cloud
- Working With User Roles
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#### Additional Information:

To help you prepare for this class, review the following resources: Course 20410B - Installing and Configuring Windows Server 2012 Course 20411B - Administering Windows Server 2012

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#### Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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