Course 20247D:

Configuring and Deploying a Private Cloud

Course Outline

Module 1: Planning for the Cloud

Students learn how to plan for a hybrid cloud. This includes the various cloud models, understanding the requirements for a private and public cloud and designing a private cloud infrastructure. They are also provided with an overview of the System Center 2012 R2 components.

Lessons

- Understanding Cloud Models
- Benefits for Deploying a Private Cloud
- Designing a Private Cloud Infrastructure
- Overview of Windows Server 2012 R2 Hyper-V
- Overview of System Center 2012 R2 Components
- Deploying Hyper-V Clustering with VMM

Lab : Preparing the Private Cloud Infrastructure

After completing this module, you will be able to:

- Describe the private cloud.
- Understand the requirements for deploying a private cloud.
- Design the private cloud infrastructure.
- Describe the Microsoft System Center 2012 R2 components.
- Deploy Hyper-V host clustering with Microsoft System Center 2012 R2 Virtual Machine Manager (VMM).

Module 2: Configuring and Deploying the Private Cloud with Microsoft System Center 2012 R2 Virtual Machine Manager

Students learn how to configure and deploy a private cloud using Virtual Machine Manager. This includes an overview of the various Virtual Machine Manager components including Security Roles and host groups.

Lessons

- Overview of VMM Architecture and Components
- Configuring Advanced Networking in VMM
- Installing and Upgrading VMM
- Configuring VMM Security and Roles
- Understanding Host Groups

Lab : Configuring and Deploying the Private Cloud Infrastructure

After completing this module, you will be able to:

- Define and describe the components of VMM and its architecture.
- Configure advanced networking in VMM.
- Install and upgrade VMM.
- Configure VMM security and roles.
- Understand host groups.

Module 3: Extending and Maintaining Cloud Infrastructure

Students learn how to extend and maintain the private cloud infrastructure. This includes how VMM integrates with WDS and WSUS and how to deploy bare-metal Hyper-V host servers. They also learn how to configure software updates for the private cloud fabric using VMM.

Lessons

- Overview of the PXE and Update Server Roles
- Deploying Bare-Metal Hyper-V Host Servers
- Configuring the Update Server Role
- Creating and Using an Update Baseline

Lab : Maintaining Cloud Infrastructure

After completing this module, you will be able to:

- Describe how VMM integrates with WDS and WSUS to provide Pre-Boot eXecution Environment (PXE) Server role and Update Server roles.
- Describe how to deploy bare-metal Hyper-V host servers.
- Configure the Update Server role.
- Create and remediate a software update compliance baseline.

Module 4: Configuring Application Delivery

Students learn how to configure application delivery for the private cloud using VMM. This includes configuring dynamic application deployment and sequencing applications using Server App-V.

Lessons

- Dynamic Application Deployment Overview
- Web Deployment Packages
- Server Application Virtualization Overview
- Configuring Server App-V Components
- Sequencing and Deploying Virtual Applications

Lab : Configuring Virtual Application Delivery

After completing this module, you will be able to:

- Describe dynamic application deployment.
- Create web deployment packages by using the Web Deployment Tool.
- Configure the Server App-V Sequencer and agent.
- Sequence and then deploy a Server App-V virtualized application.

Module 5: Creating the Private Cloud Building Blocks

Students learn about the private cloud building blocks which include configuring virtual machine templates and profiles in VMM. They also learn how to configure the Service Provider Foundation and networking in VMM.

Lessons

- Configuring Guest Operating System Profiles
- Configuring Hardware Profiles
- Configuring SQL Server Using SQL Server Profiles
- Configuring Application Profiles
- Configuring Virtual Machine Templates
- Configuring Service Provider Foundation
- Configuring User Roles

Lab : Creating the Private Cloud Building Blocks

After completing this module, you will be able to:

- Configure the guest operating system profiles.
- Configure hardware profiles.
- Configure SQL Server by using SQL Server profiles.
- Configure application profiles.
- Configure virtual machine templates.
- Configure the Service Provider Foundation.
- Configure the self-service user role.

Module 6: Deploying and Configuring Access to a Private Cloud

Students learn how to deploy and access a private cloud. This includes configuring private cloud resources and private cloud capacity. They also learn how to install and configure App Controller and how to manage services and service templates.

Lessons

- Understanding Private Cloud Computing
- Installing and Configuring App Controller
- Creating and Managing Service Templates

Lab : Deploying and Configuring Accessing to a Hybrid Cloud

After completing this module, you will be able to:

- Describe a private cloud.
- Install and configure App Controller.
- Create and manage services and service templates.

Module 7: Monitoring Cloud Infrastructure

Students learn how to monitor the hybrid cloud infrastructure with Operations Manager. This includes installing and configuring Operations Manager and integrating Operations Manager with other System Center 2012 R2 components.

Lessons

- Operations Manager Architecture and Security
- Operations Manager Installation Considerations
- Configuring User Roles and Notifications
- Configuring Management Packs
- Configuring Integration with System Center 2012 R2

Lab : Monitoring the Private Cloud Infrastructure

After completing this module, you will be able to:

- Describe the security considerations and architecture of Operations Manager.
- Plan for high availability and disaster recovery.
- Upgrade from Operations Manager 2012 SP1 to Operations Manager 2012 R2.
- Configure notification subscriptions in Operations Manager.
- Install, configure, and upgrade management packs.
- Configure integration between Operations Manager and other System Center 2012 R2 components.

Module 8: Extending and Customizing Monitoring of the Cloud Infrastructure

Students learn how to extend and customize the monitoring of the hybrid cloud infrastructure. This includes configuring System Center Advisor to assess the hybrid cloud infrastructure configuration, integrating Operations Manager with SharePoint and how monitoring templates are used in Operations Manager. They also learn how to implement distributed application monitoring in Operations Manager.

Lessons

- Configuring System Center Advisor
- Configuring the SharePoint Server Portal
- Monitoring Templates
- Distributed Application Monitoring

Lab : Extending and Customizing Monitoring

After completing this module, you will be able to:

- Configure System Center Advisor.
- Configure the Operations Manager SharePoint Web Part.
- Describe how to use Management Pack templates in Operations Manager.
- Configure distributed application monitoring.

Module 9: Implementing Service Management for the Cloud

Students learn how to implement service management for the private cloud using Service Manager. This includes an overview of Service Manager including the architecture, understanding work items and configuring connectors in Service Manager. They also learn how to configure notifications in Service Manager.

Lessons

- Service Manager Architecture Overview
- Upgrading to System Center 2012 R2 Service Manager
- Understanding Service Manager Work Items
- Configuring Service Manager Connectors
- Configuring Service Manager Notifications

Lab : Implementing Service Management for a Cloud

After completing this module, you will be able to:

- Describe the Service Manager architecture.
- Upgrade to System Center 2012 R2 Service Manager.
- Understand Service Manager work items.
- Configure Service Manager connectors.
- Configure Service Manager notifications.

Module 10: Configuring High Availability, Disaster Recovery and Protection for a Cloud

Students learn how to configure protection and disaster recovery for the private cloud. This includes configuring Hyper-V Recovery Manager. Students are also provided with an overview of Data protection Manager (DPM) and learn how to configure data protection and recovery in DPM.

Lessons

- Planning for Azure Site Recovery
- Planning DPM Deployment
- DPM Architecture and Components
- Upgrading DPM
- Configuring DPM for the Private Cloud
- Configuring Application Protection for a Cloud
- Restoring Applications to the Cloud

Lab : Protecting the Private Cloud Infrastructure

After completing this module, you will be able to:

- Configure Azure Site Recovery.
- Plan DPM deployment.
- Describe DPM architecture and components.
- Upgrade DPM.
- Configure DPM for the private cloud.
- Configure application protection for the private cloud.
- Restore applications to the private cloud.

Module 11: Automating and Standardizing a Cloud

Students learn how to automate and standardize the private cloud using System Center 2012 R2 Orchestrator. This includes an overview of Orchestrator including its architecture and components. They also learn how to configure Integration Packs and Runbooks in Orchestrator and how these can be used to automate processes in the private cloud.

Lessons

- Orchestrator Architecture and Components Overview
- Deploying and Configuring Core Components
- Managing Runbooks
- Configuring Integration Packs

Lab : Automating a Private Cloud

After completing this module, you will be able to:

- Describe Orchestrator architecture and components.
- Deploy and configure Orchestrator components.
- Create and execute run books.
- Configure integration packs.

Module 12: Configuring a Self-Service Multi-Tenant Cloud with the Windows Azure Pack

Students learn how to configure a multi-tenant private cloud by Windows Azure Pack including how to configure virtual machine clouds, website clouds and SQL clouds.

Lessons

- Configuring the Windows Azure Pack

Lab : Configuring the Windows Azure Pack

After completing this lesson, you will be able to:
Describe the Windows Azure Pack, configure VM Clouds, configure Website Clouds, configure SQL Clouds, and configure Plans.