

Exam 70-414: Implementing a Cloud Based Infrastructure

Course Overview

This course teaches students about creating the virtualization infrastructure, planning and deploying virtual machines, monitoring, solutions for the virtualization administration, high availability, PKI, updates, BCP, and IDA.

Course Introduction

3m

Course Introduction

Module 01 - Creating the Virtualization Infrastructure

2h 30m

Lesson 1: Introducing Microsoft System Center 2012 Components

What is the VMM

What is Operations Manager

What is Orchestrator

What is the App Controller

What is Service Manager

What is Data Protection Manager

What is Configuration Manager

System Center Services and Tools

Lesson 2: Using System Center for Virtualization

Scaling VMs with the VMM

Management with App Controller

Monitoring with Operations Manager

Using Service Manager

Automating Tasks with Orchestrator

Using Data Protection Manager to Help Protect a Virtual Deployment

Demo - Using the VMM Management Console

Lesson 3: Planning a VMM Deployment

Calculating the VMM Deployment Topology

Planning a VMM Management Server

Creating a VMM Library

Creating a VMM Database

Lesson 4: Creating the Virtualization Host

Deploying Hyper-V Hosts

What are Host Groups

Demo - Configuring Host Groups

Working with VMM Libraries

Demo - Working with Libraries

Lesson 5: Storage Infrastructure

Storage Options for Server Virtualization

Options for Configuring Virtual Disks

Using Fibre Channel Storage

Implementing iSCSI Storage
Implementing NFS and SMB 3 Storage
HA for Storage
Lesson 6: Configuring a Storage Infrastructure for Virtualization
iSCSI Configuration Overview
Managing Storage in VMM
Demo - Configuring Storage in VMM
Lesson 7: Network Infrastructure for Virtualization
Networking Requirements
Hyper-V Virtual Switch
New Features Hyper-V Virtual Switch Server 2012 R2
Configuration Options for Virtual Networks
Demo - Configuring Virtual Networks
Planning Networks for a Hyper-V Deployment
Managing Virtual Networks in VMM
What Is Network Virtualization
Demo - Configuring Virtual Networks in VMM
Module 01 Review

Module 02 - Planning and Deploying Virtual Machines

1h 19m

Lesson 1: Considerations for Virtual Machine Setup
When to Virtualize
Virtual Machine Components
Microsoft Solution Accelerators
VMM Integration with System Center 2012
Windows Server 2012 R2 as Gateway With VMM
Planning for Virtual Machine Configuration
Virtualizing Exchange
SQL Server
SharePoint Server
Planning Virtual Machines for Active Directory Domain Services
Virtualized Domain Controllers
Cloning Virtual Domain Controllers
Process: Cloning Server 2012 VDC
DcCloneConfig.xml Syntax
DcCloneConfig.xml Parameters
Domain Controller Safe Backup and Restore
Lesson 2: Planning Virtual Machine Deployment with VMM
Profiles - OS
Profiles - Hardware
Configuring SQL Server Using SQL Server Profiles
Profiles - Applications
Service Templates
VM Templates
Guidelines for VMM Profiles and Templates
Lesson 3: How to Deploy a Virtual Machine
Using VMM for Deployment

Using VMM for Smart Placement
P2V
Considerations for Implementing P2V Conversions
V2V Machine Conversions
Considerations for V2V Conversions
Demo - Configuring a Virtual Machine
Module 02 Review

Module 03 - Monitoring

1h 42m

Lesson 1: Monitoring in Windows Server 2012
Introduction to Monitoring Tools in Windows Server 2012
Using Server Manager for Monitoring
Strategies for Monitoring
Monitoring Server Roles
Options for Monitoring Virtualization
Considerations for Monitoring Virtual Machines
Demo - Enabling and Viewing Resource Metering Data
Lesson 2: Introduction to Operations Manager
Features of Operations Manager
Operations Manager Components
Options for Operations Manager Agent Installation
Demo - Installing the Operations Manager Agent
What is ACS?
Deploying Audit Collection Services
Considerations for Deploying Operations Manager
Demo - Using the Operations Manager Console
Lesson 3: Management Packs
Overview of Management Packs
Management Pack Authoring
Using Management Packs
Creating Overrides
Planning Monitoring with Operations Manager
Lesson 4: Notifications and Reporting
Overview of Notifications
Configuring Notifications
Overview of Reporting
Configuring Reports and Reporting
Implementing Notifications and Reports
Lesson 5: Integration with VMM
Operations Manager Integration with VMM
Configuring Operations Manager and VMM Integration
What is PRO?
Comparing PRO and Advanced Placement Options in VMM
Considerations for Implementing PRO
Configuring Advanced Monitoring for Virtualization Components
Module 03 Review

Module 04 - Solution for the Virtualization Administration

53m

Lesson 1: System Center 2012 Administration

Overview of Run As Accounts in System Center 2012

Administration Delegation for VMM

Administration Delegation for App Controller

Administration Delegation for Service Manager

Administration Delegation for Operations Manager

Administration Delegation for Orchestrator

Administration Delegation Plans for System Center

Demo - Delegated Administration

Using Self-Service Options in VMM

Using Self-Service Options in Service Manager

Using Self-Service Options in Orchestrator

Using Self-Service Options in System Center 2012

Lesson 2: Automation with System Center 2012

Options for Automating Virtualization Management in Service Manager

Options for Automating Virtualization Management in Orchestrator

Options for Automating Virtualization Management in Operations Manager

Implementing Process Automation in System Center 2012

Demo - VMM Private Clouds

Module 04 Review

Module 05 - High Availability

2h 34m

Lesson 1: Storage Spaces

Describing Storage Spaces

Storage Space Configurations

Clustered Storage Space

How to Configure Storage Spaces

Storage Space Configuration

Storage Space Needs

Demo - RAID

DFS Components

Scenarios for Using DFS

DFS Namespace

Referrals

DFS Namespaces

Best Practices

Designing DFS Replication

Lesson 2: NLB

Scenarios

NLB

Port Rules

Data Storage for NLB Clusters

Managing NLB with VMM

VMM Control of NLB

Lesson 3: The Infrastructure for Failover Clustering

What is Failover Clustering

Considerations for Server Workloads on Failover Clusters
Cluster Nodes Hardware
Network Components
Storage Components
Cluster Quorum
Application Considerations
Lesson 4: Defining Failover Clustering
Configuring a Failover Cluster
New Features to Failover Clustering Windows Server 2012 R2
Improved Features for Failover Clustering in Windows Server 2012 R2
What Server Roles are Used
Settings for a Failover Cluster
Application and Resource Settings
The Scale-Out File Server for Server 2012
Lesson 5: Integrating Failover Clustering with Server Virtualization
Options for Making Virtual Machine Workloads Highly Available
How Does a Failover Cluster Work with Hyper-V?
Infrastructure Requirements for Implementing Failover Clustering for Hyper-V
Implementing Storage Migration
Implementing Live Migration
Implementing Hyper-V Replica
Implementing Virtual Machine Availability
Lesson 6: Multisite Planning a Multisite Failover Cluster
Multisite Challenges for Planning Multisite Clusters
Multisite Planning Data Replication in a Multisite Failover Cluster
Network Infrastructure Considerations
Quorum Mode Considerations
Multisite General Guidelines for Planning Multisite Clusters
Module 05 Review

Module 06 - PKI

1h 12m

Lesson 1: The Certificate Authority
Certification Authorities
CA Hierarchy
Internal and Public CAs
Planning a CA Hierarchy
When to Use Standalone and Enterprise CAs
Deploying a Root CA
Designing a CA Hierarchy
CA Recovery
Migrating and Upgrading Certification Authorities
Lesson 2: Certificate Templates
Describing the CA
Template Versions
Modifying Certificate Templates
Certificate Template Security
Designing Certificate Templates
Demo - Overview of Certificate Services

Lesson 3: CRL
Enrollments
Auto Enrollment
Choosing an Enrollment Method
Certificate Revocation
Designing Certificate Revocation
Delegating CA and Certificate Management
Lesson 4: Key Archival
Scenarios for Private Key Recovery
Options for Configuring Key Archival
Options for Configuring Key Recovery
Managing Key Archival and Recovery
Module 06 Review

Module 07 - Updates

57m

Lesson 1: WSUS Deployment
WSUS Topology
Designing a WSUS Infrastructure
Configuring WSUS Replicas
WSUS on Isolated Networks
WSUS Database
Update Storage Location
WSUS Management
Considerations for Managing Update Deployment
Demo - WSUS
Lesson 2: Using Configuration Manager 2012
Introducing Software Updates Feature in Configuration Manager
Implementing the Software Updates Feature
Software Updates Feature
Working with Software Updates Feature
The Software Update Point
Software Update Deployments
Selecting an Update Management Technology
Lesson 3: Updating Virtualization
Cluster-Aware Updating
Considerations for Configuring CAU
Update Management in VMM
Update Baseline
Considerations for integrating WSUS and VMM
Module 07 Review

Module 08 - BCP

1h 8m

Lesson 1: BCP
Requirements for BCP
Strategies for BCP
SLAs
Components of a Backup Strategy

Components of a Restore Strategy
Using Windows Server Backup
Using System Center 2012 DPM
Considerations for Using Windows Azure Online Backup
Lesson 2: Backups
Planning Server Backups
AD DS Backup
Backing Up Windows Server 2012 Roles
Backing Up File Storage
Performing Windows Server Backups with DPM
Planning a Backup Strategy
Demo - Windows Backup Utility
Lesson 3: Recovery
Planning Server Recovery
AD DS Restore
Restoring Windows Server 2012 Roles
Restoring Files and Data
Restoring Windows Servers
Performing Windows Server Restores with DPM
Recovery Strategy
Disaster Recovery Site
Lesson 4: Backup and Recovery of VMs
Options for Implementing Backups for Virtual Machines
Using DPM
Configuring DPM
Backing Up VMs
Restoring VMs
Configuring Hyper-V Replica
Planning for Implementing Virtual Machine Backup and Recovery
Module 08 Review

Module 09 - IDA

1h 19m

Lesson 1: Planning and Implementing an AD FS Server Infrastructure
What is AD FS?
Overview of AD FS Components
AD FS Operational Flow
Overview of AD FS Deployment Scenarios
Options for Implementing the AD FS Server Role
Configuring Certificates
Choosing an AD FS Deployment Scenario
Configuring High Availability for AD FS Services
Integrating AD FS with Online Services
Lesson 2: Planning and Implementing AD FS Claims Providers and Relying Parties
Overview of Claims Provider and Relying Party Roles
Overview of AD FS Compatible Applications
Options for Implementing Attribute Stores
Overview of Claims Provider Trust Components

Overview of Relying Party-Trust Components
Configuring Claims Provider Trusts
Configuring Relying Party Trusts
Lesson 3: Planning and Implementing AD FS Claims and Claim Rules
Claims
Options for Configuring Claim Rules on a Federation Trust
Creating Claim Rules by Using the Claims Rule Language
Designing AD FS Claims
Options for Interoperation with Previous Versions of AD FS
Lesson 4: Planning and Implementing an AD RMS Cluster
What is IRM?
How AD RMS Works
AD RMS Deployment Scenarios
AD RMS Components
Options for Configuring AD RMS Clusters
Guidelines for Designing AD RMS Clusters
Configuring High Availability for AD RMS Services
Planning AD RMS Management
Implementing an AD RMS Backup and Recovery Strategy
Decommissioning and Removing AD RMS
Demo - Installing an AD RMS Cluster
Lesson 5: Planning and Implementing AD RMS Templates and Policies
Options for Configuring AD RMS Rights Policy Templates
Planning for AD RMS Template Distribution
Options for Configuring AD RMS Exclusion Policies
Planning the AD RMS Super Users Group
Planning for AD RMS Client Applications
Lesson 6: Planning and Implementing External Access to AD RMS Services
Options for Enabling External Users to Access AD RMS
Options for Enabling Application Access for AD RMS Clients
Planning Trusted User Domains
Planning Trusted Publishing Domains
Integrating AD RMS with Microsoft Federation Gateway Support
Integrating AD RMS with Windows Live ID
Integrating AD RMS with AD FS
Considerations for Enabling External User Access to AD RMS
Lesson 7: Planning and Implementing AD RMS Integration with DAC
What is DAC?
Overview of Dynamic Access Control Configuration Process
Integrating AD RMS and DAC
How AD RMS Integrates with DAC
Module 09 Review
Course Closure

Total Duration: 13h 37m