70-414: Implementing a Cloud Based Infrastructure

Course Overview

This course covers will prepare the student for Exam 70-414: Implementing a Cloud Based Infrastructure. Students will learn how to create the virtual infrastructure, plan and deploy virtual machines and implement solutions for the virtual administration. They will also learn about monitoring, high availability, updates, PKI, BCP and IDA.

Course Introduction   **3m**
Course Introduction

Module 01 - Creating the Virtualization Infrastructure   **2h 27m**
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
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

<u>Module 02 - Planning and Deploying Virtual Machines</u>   **1h 9m**
Lesson 1: Considerations for Virtual Machine Setup
When to Virtualize
Virtual Machine Components
Microsoft Solution Accelerators
Planning for Virtual Machine Configuration
Virtualizing Exchange
SQL Server
SharePoint Server
Planning Virtual Machines for Active Directory Domain Services
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

<u>Module 03 - Monitoring</u>   **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 40m**
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
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 7m
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 29m