



Implementing an Advanced Server Infrastructure

Course ID#: 1410-831-12-W

35 Hrs

Course Content

Course Description:

In the Implementing an Advanced Server Infrastructure course, students will learn how to plan and implement some of the more advanced features available in Windows Server 2012. Course 20413A is a prerequisite course for Course 20414A.

This course is intended for Information Technology (IT) professionals who are responsible for planning, designing and deploying a physical and logical Windows Server 2012 enterprise and Active Directory Domain Services (AD DS) infrastructures including the network services. Candidates would typically have experience of previous Windows Server operating systems and have Windows Server 2012 certification (MCSA) or equivalent skills. The secondary audience for this course will be candidates are IT professionals who are looking to take the exam 70-414: Implementing an Advanced Enterprise Server Infrastructure, as a standalone, or as part of the requirement for the MCSE certification.

After completing this course, students will be able to:

- Plan and implement server virtualization strategy.
- Plan and implement networks and storage for virtualization.
- Plan and deploy virtual machines.
- Manage a virtual machine deployment.
- Plan and implement a server monitoring strategy.
- Plan and implement high availability for file services and applications.
- Plan and implement a highly available infrastructure using failover clustering.
- Plan and implement an server updates infrastructure.
- Plan and implement a business continuity strategy.
- Plan and implement a public key infrastructure (PKI).
- Plan and implement an identity federation infrastructure.
- Plan and Implement an information rights management infrastructure.

Prerequisites:

Before attending this course, students must have:

- Understanding of TCP/IP and networking concepts.
- Understanding of Windows Server 2012 and AD DS, including planning, designing and deploying.
- Understanding of scripts and batch files.
- Understanding of security concepts such as authentication and authorization.
- Understanding of deployment, packaging, and imaging tools.
- Working in a team or a virtual team.
- Creating proposals and making budget recommendation.
- Have achieved the Windows Server 2012 MCSA certification as well as information in the course 20413A: Designing and Implementing an Enterprise Server Infrastructure.



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Topics:

Module 1: Planning and Implementing a Server Virtualization Strategy

This module explains how to plan and implement a server virtualization strategy using Microsoft System Center 2012.

Lessons

- Overview of System Center 2012 Components
- Integrating System Center 2012 and Server Virtualization
- Planning and Implementing a Server Virtualization Host Environment

Lab: Planning and Implementing a Server Virtualization Strategy

- Planning the Hyper-V Host Deployment
- Configuring Hyper-V Host Groups
- Configuring VMM Libraries

After completing this module, students will be able to:

- Describe the System Center 2012 components.
- Describe how System Center 2012 is used to manage a server virtualization deployment.
- Plan and implement a server virtualization environment based on Windows Server 2012 Hyper-V and Microsoft System Center 2012 - Virtual Machine Manager (VMM).

Module 2: Planning and Implementing Networks and Storage for Virtualization

This module explains how to plan a storage infrastructure for a Hyper-V server virtualization deployment.

Lessons

- Planning a Storage Infrastructure for Virtualization
- Implementing a Storage Infrastructure for Virtualization
- Planning and Implementing a Network Infrastructure for Virtualization

Lab: Planning and Implementing Virtualization Networks and Storage

- Planning a Storage Infrastructure for Virtualization
- Planning a Network Infrastructure for Virtualization
- Implementing a Storage Infrastructure for Virtualization
- Implementing a Network Infrastructure for Virtualization

After completing this module, students will be able to:

- Plan a storage infrastructure for a Hyper-V server virtualization deployment.
- Implement a storage infrastructure for server virtualization.
- Plan and implement a network infrastructure for server virtualization.

Module 3: Planning and Deploying Virtual Machines

This module explains how to plan and deploy virtual machines on Windows Hyper-V.

Lessons

- Planning Virtual Machine Configuration
- Preparing for Virtual Machine Deployments with VMM
- Deploying Virtual Machines

Lab: Planning and Implementing a Virtual Machine Deployment and Management Strategy

- Planning Physical to Virtual Server Conversions
- Planning Virtual Machine and Service Templates
- Configuring VMM Profiles and Templates

After completing this module, students will be able to:

- Plan a virtual machine configuration.
- Plan and configure the VMM profiles and templates that can be used to implement a VMM deployment.



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- Plan and implement a virtual machine deployment in VMM.

Module 4: Planning and Implementing a Virtualization Administration Solution

This module explains how to plan and implement a virtualization administration solution by using System Center 2012.

Lessons

- Planning and Implementing Microsoft System Center Administration
- Planning and Implementing Self-Service with System Center
- Planning and Implementing Automation with System Center

Lab: Planning and Implementing a Virtualization Administration Solution

- Planning Administrative Delegation and Self-Service in System Center 2012
- Configuring Delegated Administration and Self-Service in VMM
- Configuring Process Automation in System Center 2012

After completing this module, students will be able to:

- Plan a delegated administration model in System Center 2012.
- Plan self-service and automation of a virtual machine environment by using the System Center 2012.
- Plan automation of a virtual machine environment by using System Center 2012.

Module 5: Planning and Implementing a Server Monitoring Strategy

This module explains how to plan and implement a server monitoring strategy using the Windows Server 2012 tools and using Microsoft System Center 2012 - Operations Manager (Operations Manager).

Lessons

- Planning Monitoring in Windows Server 2012
- Overview of System Center Operations Manager
- Planning and Configuring Monitoring Components
- Configuring Integration with VMM

Lab: Implementing a Server Monitoring Strategy

- Configuring Server Monitoring Using Windows Server 2012
- Implementing Operations Manager Monitoring
- Configuring the Operations Manager Monitoring Components
- Monitoring Virtual Machines and Host Machines

After completing this module, students will be able to:

- Plan a monitoring strategy using the Windows Server 2012 tools.
- Describe the Operations Manager components and describe how Operations Manager can be used to monitor physical and virtual servers.
- Plan and configure management packs, notifications and reporting.
- Configure the integration of Operations Manager and VMM.

Module 6: Planning and Implementing High Availability for File Services and Applications

This module explains how to plan and implement an application and file services infrastructure that is highly available.

Lessons

- Planning and Implementing Storage Spaces
- Planning and Implementing DFS
- Planning and Implementing Network Load Balancing

Lab: Planning and Implementing High Availability for File Services and Applications

- Planning a High Availability Strategy for File Services
- Planning a High Availability Strategy for Web Applications



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- Implementing a High Availability Solution for File Storage
- Implementing a High Availability Solution Using Network Load Balancing

After completing this module, students will be able to:

- Plan and implement a highly available storage infrastructure by using storage spaces.
- Plan and implement a highly available file services deployment by using distributed file system (DFS).
- Plan and implement high availability for applications by using network load balancing (NLB).

Module 7: Planning and Implementing a Highly Available Infrastructure Using Failover Clustering

This module explains how to plan and implement a highly available server infrastructure by using the failover clustering features in Windows Server 2012.

Lessons

- Planning a Failover Clustering Infrastructure
- Implementing Failover Clustering
- Integrating Failover Clustering with Server Virtualization
- Planning a Multi-Site Failover Cluster

Lab: Planning and Implementing a Highly Available Infrastructure Using Failover Clustering

- Designing Highly Available Server Roles
- Implement Hyper-V Replica
- Deploy a Failover Cluster
- Implement a Scale-Out File Server
- Implement Highly Available Virtual Machines
- Implement Operations Manager and VMM Integration

After completing this module, students will be able to:

- Plan and implement a highly available storage infrastructure by using storage spaces
- Plan and implement a highly available file services deployment by using DFS.
- Plan and implement high availability for applications by using NLB.

Module 8: Planning and Implementing an Server Updates Infrastructure

This module explains how to plan and implement an infrastructure for updating Windows Servers and virtual machines.

Lessons

- Planning and Implementing a Windows Server Update Services (WSUS) Deployment
- Planning Software Updates with System Center 2012 Configuration Manager
- Planning and Implementing Updates in a Server Virtualization Infrastructure

Lab: Planning and Implementing an Update Remediation Infrastructure

- Implement Host Updating in VMM
- Configuring Cluster-Aware Updating
- Planning a WSUS Deployment
- Deploying a Replica Server
- Configure and Validate the WSUS Server Deployment

After completing this module, students will be able to:

- Plan and implement a WSUS deployment to distribute updates to Windows Servers.
- Plan a software update deployment infrastructure by using Configuration Manager.
- Plan and implement updates for Hyper-V hosts by using Cluster Aware Updating and VMM.

Module 9: Planning and Implementing a Business Continuity Strategy

This module explains how to plan and implement a business continuity strategy in a Windows Server 2012 environment.



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Lessons

- Overview of Business Continuity Planning
- Planning and Implementing Backup Strategies
- Planning and Implementing Recovery
- Planning and Implementing Virtual Machine Backup and Recovery

Lab: Implementing a Virtual Machine Backup Strategy with Data Protection Manager

- Configuring Data Protection Manager
- Implementing Backup and Restore for Virtual Machine Data
- Implementing Virtual Machine Backup and Recovery using Data Protection Manager

After completing this module, students will be able to:

- Describe the high level requirements and strategies for implementing a business continuity strategy.
- Plan backup strategies for a variety of Windows roles.
- Plan and implement recovery of servers and data.

Module 10: Planning and Implementing an Public Key Infrastructure

This module explains how to plan and implement a PKI deployment, and plan and implement a certificate management solution.

Lessons

- Planning and Implementing a Certification Authority Deployment
- Planning and Implementing Certificate Templates
- Planning and Implementing Certificate Distribution and Revocation
- Planning and Implementing Key Archival and Recovery

Lab: Planning and Implementing an Active Directory Certificate Services (AD CS) Infrastructure

- Planning the AD CS Deployment
- Deploying the Certificate Authority (CA) Infrastructure

- Implementing Certificate Templates
- Implementing Certificate Revocation and Distribution

After completing this module, students will be able to:

- Plan and implement a CA deployment hierarchy in AD CS.
- Design and implement a strategy for configuring and maintaining certificate templates.
- Design and implement a strategy for distributing and revoking certificates.
- Plan and implement private key and certificate recovery.

Module 11: Planning and Implementing an Identity Federation Infrastructure

This module explains how to plan and implement an AD FS server deployment and claims aware application access.

Lessons

- Planning and Implementing an AD FS Server Infrastructure
- Planning and Implementing AD FS Claim Providers and Relying Parties
- Planning and Implementing AD FS Claims and Claim Rules

Lab: Planning and Implementing an Active Directory Federation Services (AD FS) Infrastructure

- Designing the AD FS Deployment
- Configuring Prerequisite Components for AD FS
- Deploying AD FS for Internal Users
- Deploying AD FS for a Partner Organization

After completing this module, students will be able to:

- Plan and implement and AD FS server infrastructure.
- Plan and implement AD FS claim providers and relying parties.
- Plan and implement AD FS claims and claim rules.



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Module 12: Planning and Implementing an Information Rights Management Infrastructure

This module describes how to plan and implement an Active Directory Rights Management Services (AD RMS) deployment, plan and manage AD RMS templates and access, and plan and implement external access to AD RMS services.

Lessons

- Planning and Implementing an AD RMS Cluster
- Planning and Implementing AD RMS Templates and Policies
- Planning and Implementing External Access to AD RMS Services
- Planning and Implementing AD RMS Integration with Dynamic Access Control (DAC)

Lab: Planning and Implementing an AD RMS Infrastructure

- Planning the AD RMS Deployment
- Deploy the AD RMS Infrastructure for Internal Users
- Implement AD RMS Integration with DAC
- Implement AD RMS Integration with External Users

After completing this module, students will be able to:

- Plan, implement, and manage an AD RMS cluster.
- Plan and implement AD RMS templates and policies.
- Plan and implement external access to AD RMS services.
- Plan the integration of AD RMS and DAC.