

Course 20414B:

Implementing an Advanced Server Infrastructure

Length: 5 Days

About this Course

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

Audience Profile

This course is intended for Information Technology (IT) professionals who are responsible for planning, designing, and deploying Windows Server 2012 enterprise infrastructures including Active Directory and network services. Candidates would typically have experience with previous versions of Windows Server and have an MCSA: Windows Server 2012 certification or equivalent skills. This course will help you prepare for Exam 70-414: Implementing an Advanced Enterprise Server Infrastructure as part of the requirements for MCSE: Server Infrastructure certification.

At Course Completion

After completing this course, students will be able to:

- Describe the considerations for managing an enterprise data center.
- Plan and implement a server virtualization strategy using Microsoft System Center 2012.
- 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 high availability infrastructure by using failover clustering.
- Plan and implement a 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 (IRM) infrastructure.

Course Outline

Module 1: Overview of Management in an Enterprise Data Center

This module describes some of the changes and new requirements that organizations are experiencing in their data centers. The module then describes how you can use System Center 2012 to manage this environment.

Lessons

- Overview of the Enterprise Data Center
- Overview of the Microsoft System Center 2012 Components
- Considerations for Implementing an Enterprise Data Center

Lab: Considerations for Implementing an Enterprise Data Center

- Planning the Secure Implementation of Services Within an Enterprise Data Center

After completing this module, students will be able to:

- Describe the enterprise data center.
- Describe how you can use System Center 2012 to manage the enterprise data center.

Module 2: Planning and Implementing a Server Virtualization Strategy

This module introduces the Microsoft System Center 2012 components. You will see how they can integrate to enable you to configure, deploy, and manage a server virtualization environment. Later, you will review the planning steps and considerations for a Microsoft System Center 2012 - Virtual Machine Manager (VMM) deployment.

Lessons

- Planning a VMM Deployment
- Planning and Implementing a Server Virtualization Host Environment
- Planning and Implementing a Network Infrastructure for Virtualization

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 how you can use System Center 2012 to deploy and manage a virtualization environment.
- Plan and implement a server virtualization strategy by using Windows Server 2012 Hyper-V and VMM.
- Deploy Hyper-V hosts, configure host groups, and implement VMM libraries.

Module 3: Planning and Implementing Networks and Storage for Virtualization

This module describes the factors that you must consider when you are planning the storage and network infrastructure for your virtual environment, and details on how to deploy these components in Windows Server 2012 Hyper-V and VMM.

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

Module 4: Planning and Deploying Virtual Machines

In this module, you will learn how to configure virtual machines, reusable profiles, and templates to aid in deployment. You also will review application specific workloads, and learn about the options for physical and virtual machine migrations.

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
- Deploying Virtual Machines by Using VMM Templates

After completing this module, students will be able to:

- Plan virtual machine configurations.
- Plan and configure the VMM profiles and templates that you can use to implement a VMM deployment.
- Plan and implement a virtual machine deployment in VMM.

Module 5: Planning and Implementing a Virtualization Administration Solution

This module will prepare you for designing an administrative model that you can use to manage virtualization using System Center 2012. You will see and use VMM, Microsoft System Center 2012 – Orchestrator (Orchestrator) and Microsoft System Center 2012 – App Controller (App Controller). Use these components to delegate administrative functions, plan for basic self-service, design and implement automation. The skills gained in this module are the

foundation for the basic building blocks used to operate an IT infrastructure that is similar or equal to that of cloud computing.

Lessons

- Planning and Implementing Automation with System Center 2012
- Planning and Implementing System Center 2012 Administration
- Planning and Implementing Self-Service Options in System Center 2012

Lab: Planning and Implementing an Administration Solution for Virtualization

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

After completing this module, students will be able to:

- Plan automation of a virtual machine environment by using Orchestrator and System Center 2012 integration.
- Plan a delegated administration model using VMM.
- Plan self-service in a virtual machine environment by using VMM and App Controller.

Module 6: Planning and Implementing a Server Monitoring Strategy

This module explains how to use the monitoring tools included in Windows Server 2012 and Microsoft System Center 2012 – Operations Manager (Operations Manager).

Lessons

- Planning Monitoring in Windows Server 2012
- Overview of System Center Operations Manager
- Planning and Configuring Management Packs
- Planning and Configuration Notifications and Reporting
- Configuring Integration with VMM

Lab: Implementing a Server Monitoring Strategy

- Configuring Server Monitoring Using Windows Server 2012
- Implementing the Microsoft System Center 2012 - Operations Manager Agent
- Configuring Operations Manager Monitoring Components

After completing this module, students will be able to:

- Plan monitoring in Windows Server 2012.
- Describe Operations Manager.
- Plan the configuration of management packs.
- Plan the configuration of notifications and reporting.
- Configure integration of Operations Manager and VMM.

Module 7: Planning and Implementing High Availability for File Services and Applications

This module explains how to plan and implement high availability for file services and applications.

Lessons

- Planning and Implementing Storage Spaces
- Planning and Implementing Distributed File System (DFS)
- Planning and Implementing Network Load Balancing (NLB)

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
- Implementing a High Availability Solution for File Storage
- Implementing a High Availability Solution by Using NLB

After completing this module, students will be able to:

- Explain how to plan and implement Storage Spaces.
- Explain how to plan and implement DFS.
- Explain how to plan and implement NLB.
- Explain how to plan and implement high availability for file services and applications.

Module 8: Planning and Implementing a High Availability Infrastructure Using Failover Clustering

This module explains how to plan and implement failover clustering

Lessons

- Planning an Infrastructure for Failover Clustering
- Implementing Failover Clustering
- Integrating Failover Clustering with Server Virtualization
- Planning a Multisite Failover Cluster

Lab: Planning and Implementing a High Availability Infrastructure by Using Failover Clustering

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

After completing this module, students will be able to:

- Plan an infrastructure for failover clustering.
- Implement failover clustering.
- Integrate failover clustering with server virtualization.
- Plan a multisite failover clustering.

Module 9: Planning and Implementing Server Update Infrastructure

This module explains how to plan and implement server update infrastructure by using Windows Server Update Service (WSUS), Configuration Manager, and VMM.

Lessons

- Planning and Implementing a WSUS Deployment
- Planning Software Updates with System Center 2012 Configuration Manager
- Planning and Implementing Updates in a Server Virtualization Infrastructure
- Planning and Implementing Virtual Machine Backup and Recovery

Lab: Planning and Implementing an Update Remediation Infrastructure

- Implement Host Updating in VMM
- Configuring Failover Clustering and Cluster Aware Updating (CAU)
- Planning a WSUS Deployment
- Deploying a Replica WSUS Server
- Configure Client Update Options

After completing this module, students will be able to:

- Plan and implement a WSUS Deployment.
- Plan software updates with Configuration Manager.
- Plan and implement updates in a server virtualization infrastructure.

Module 10: Planning and Implementing a Business Continuity Strategy

This module explains how to plan and implement a business-continuity strategy for your organization, and how to plan and implement backup and recovery strategies, including virtual-machine backup and recovery.

Lessons

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

Lab: Implementing a Virtual Machine Backup Strategy with DPM

- Configure DPM
- Backup and restore virtual machine data
- Backup and restore virtual machines

After completing this module, students will be able to:

- Understand the importance of business continuity planning.
- Plan and implement backup strategies.
- Plan and implement recovery.
- Plan and implement virtual machine backup and recovery.

Module 11: Planning and Implementing an Public Key Infrastructure

This module explains how to plan and implement the various aspects of a PKI, and build an internal PKI by using AD CS.

Lessons

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

Lab: Planning and Implementing an AD CS Infrastructure

- Planning the AD CS Deployment
- Deploying the CA Infrastructure
- Implementing Certificate Templates
- Implementing Certificate Revocation and Distribution

After completing this module, students will be able to:

- Plan and implement CA deployment.
- Plan and implement certificate templates.
- Plan and implement certificate distribution and revocation.
- Plan and implement key archival and recovery.

Module 12: Planning and Implementing an Identity Federation Infrastructure

This module describes how to plan and implement an identity federation infrastructure.

Lessons

- Planning and Implementing an Active Directory Federation Services (AD FS) Server Infrastructure
- Planning and Implementing AD FS Claims Providers and Relying Parties
- Planning and Implementing AD FS Claims and Claim Rules

Lab: Planning and Implementing 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 an identity federation infrastructure, including claims-aware application access.
- Plan and implement an AD FS server infrastructure.
- Plan and configure AD FS claim providers and relying parties.
- Design and deploy AD FS claims and claim rules.

Module 13: Planning and Implementing an Information Rights Management Infrastructure

This module explains how to plan and implement an Active Directory Rights Management Services (AD RMS) deployment to protect content.

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
- Deploying the AD RMS Infrastructure for Internal Users
- Implementing AD RMS Integration with DAC
- Implementing AD RMS Integration with External Users

After completing this module, students will be able to:

- Plan and implement an AD RMS deployment.
- Plan and manage AD RMS templates and access.
- Plan and implement external access to AD RMS services.
- Plan and implement AD RMS integration with DAC.

Before attending this course, students must have:

- TCP/IP and networking concepts.
- Windows Server 2012 and AD DS, including planning, designing and deploying AD DS and network infrastructure.
- Using scripts and batch files.
- Security concepts, such as authentication and authorization.
- Deployment, packaging, and imaging tools.
- Working on a team or with a virtual team.
- Creating proposals and making budget recommendations.
- Students should have achieved the Windows Server 2012 MCSA certification, as well as completed Course 20413B: Designing and Implementing an Enterprise Server Infrastructure, or have equivalent knowledge.