

AV-006: Installing, Administering and Configuring Windows Server® 2012

Career Details

Duration

105 hours

Prerequisites

This course requires that student meet the following prerequisites, including that they have:

- An understanding of networking fundamentals.
- An understanding of basic AD DS concepts.
- An awareness and understanding of security best practices.
- Basic knowledge of server hardware.
- Experience working with, and configuring, Windows client operating systems, such as Windows 7 or Windows 8.

Additionally, students would benefit from having some previous Windows Server operating system experience.

All of the above prerequisites can be met by having knowledge equivalent to, or by attending, course 10967A: Fundamentals of a Windows Server Infrastructure because this course builds upon knowledge and skills covered in that course.

Career Modules:

I. 20410 Installing and Configuring Windows Server 2012

Overview

About this Course

Get hands-on instruction and practice installing and configuring Windows Server 2012, including Windows Server 2012 R2, in this five-day Microsoft Official Course. This course is part one in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment.

The three courses collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across these courses, this course focuses on the initial implementation and configuration of core services, such as Networking, Storage, Active Directory Domain Services (AD DS), Group Policy, File and Print Services, and Hyper-V.

This course maps directly to and is the preferred choice for hands-on preparation for the Microsoft Certified Solutions Associate (MCSA) Exam 410: Installing and Configuring Windows Server 2012, which is the first of three exams required for the MCSA: Windows Server 2012 credential.

Labs in this course are based on Windows Server 2012 R2 and Windows 8.1.

Audience Profile

This course is intended for information technology (IT) professionals who have some knowledge and experience working with Windows operating systems and who want to acquire the skills and knowledge necessary to install and perform the initial configuration of a Windows Server 2012 or Windows Server 2012 R2 server in an existing Windows server environment. Typically, candidates who are interested in attending this course include:

- Windows Server administrators who are relatively new to Windows Server administration and related technologies who are looking to learn more about Windows Server 2012 and Windows Server 2012 R2.
- IT professionals who are experienced in other non-Microsoft technologies, who meet the course prerequisites and are looking to cross-train on Windows Server 2012 and Windows Server 2012 R2.
- IT professionals who are looking to take the Microsoft Certified Solutions Associate (MCSA) 410: Installing and Configuring Windows Server 2012 exam.
- IT professionals who want to take the Microsoft Certified Solutions Expert (MCSE) exams in DataCenter, Desktop Infrastructure, Messaging, Collaboration and Communications will also be interested in taking this course as they prepare for the Microsoft Certified Solutions Associate (MCSA) exams. These are a prerequisite for their individual specialties.

At Course Completion

After completing this course, students will be able to:

- Install and configure Windows Server 2012.
- Describe AD DS.
- Manage Active Directory objects.
- Automate Active Directory administration.
- Implement IPv4.
- Implement Dynamic Host Configuration Protocol (DHCP).
- Implement Domain Name System (DNS).
- Implement IPv6.
- Implement local storage.
- Implement file and print services.
- Implement Group Policy.
- Secure Windows servers by using Group Policy Objects (GPOs).
- Implement server virtualization by using Hyper-V.

Course Details

Course Outline

Module 1: Deploying and Managing Windows Server 2012

This module introduces students to the editions of Windows Server 2012 and the new Windows Server 2012 management tools. It also covers how to install Windows Server 2012, how to perform post-deployment tasks, and how to perform basic administrative tasks.

Lessons

- Windows Server 2012 Overview
- Installing Windows Server 2012
- Post-Installation Configuration of Windows Server 2012
- Overview of Windows Server 2012 Management
- Introduction to Windows PowerShell

Lab: Deploying and Managing Windows Server 2012

- Deploying Windows Server 2012
- Configuring Windows Server 2012 Server Core
- Managing Servers
- Using Windows PowerShell to Manage Servers

After completing this module, students will be able to:

- Describe Windows Server 2012.
- Install Windows Server 2012.
- Perform post-installation configuration of Windows Server 2012.
- Describe the management tools available in Windows Server 2012.
- Perform basic administrative tasks using Windows PowerShell.

Module 2: Introduction to Active Directory Domain Services

This module covers the structure of Active Directory Domain Services (AD DS) and its various components, such as forest, domain, and organizational units (OUs). It also gives an overview of domain controllers, in addition to choices that are available with Windows Server 2012 for installing AD DS on a server.

Lessons

- Overview of AD DS
- Overview of Domain Controllers
- Installing a Domain Controller

Lab: Installing Domain Controllers

- Installing a Domain Controller
- Installing a Domain Controller by Using IFM

After completing this module, students will be able to:

- Describe the structure of AD DS.
- Describe the purpose of domain controllers.
- Install a domain controller.

Module 3: Managing Active Directory Domain Services Objects

This module describes how to manage user accounts and computer accounts, including how to manage various consumer devices that employees use. The module also covers how to manage an enterprise network by managing groups, and how to delegate administrative tasks to designated users or groups.

Lessons

- Managing User Accounts
- Managing Groups
- Managing Computer Accounts
- Delegating Administration

Lab: Managing Active Directory Domain Services Objects

- Delegating Administration for a Branch Office
- Creating and Configuring User Accounts in AD DS
- Managing Computer Objects in AD DS

After completing this module, students will be able to:

- Manage user accounts with graphical tools.
- Manage group accounts with graphical tools.
- Manage computer accounts.
- Delegate permissions to perform AD DS administration.

Module 4: Automating Active Directory Domain Services Administration

This module describes how to use command-line tools and Windows PowerShell to automate AD DS administration. It discusses various command-line tools and Windows PowerShell commands, and then describes how to use these tools and commands to modify objects individually and in bulk operations.

Lessons

- Using Command-line Tools for AD DS Administration
- Using Windows PowerShell for AD DS Administration
- Performing Bulk Operations with Windows PowerShell

Lab: Automating AD DS Administration by Using Windows PowerShell

- Creating User Accounts and Groups by Using Windows PowerShell
- Using Windows PowerShell to Create User Accounts in Bulk
- Using Windows PowerShell to Modify User Accounts in Bulk

After completing this module, students will be able to:

- Use command-line tools for AD DS administration.
- Use Windows PowerShell cmdlets for AD DS administration.
- Perform bulk operations by using Windows PowerShell.

Module 5: Implementing IPv4

This module discusses using IPv4, which is the network protocol used on the Internet and on local area networks. In this module, students learn how to implement an IPv4 addressing scheme and how to troubleshoot network communication. This module also covers how to determine and troubleshoot network-related problems.

Lessons

- Overview of TCP/IP
- Understanding IPv4 Addressing
- Subnetting and Supernetting
- Configuring and Troubleshooting IPv4

Lab: Implementing IPv4

- Identifying Appropriate Subnets
- Troubleshooting IPv4

After completing this module, students will be able to:

- Describe the TCP/IP protocol suite.
- Describe IPv4 addressing.
- Determine a subnet mask necessary for supernetting or subnetting.
- Configure IPv4 and troubleshoot IPv4 communication.

Module 6: Implementing Dynamic Host Configuration Protocol

This module covers supporting and troubleshooting a Windows Server–based network infrastructure by deploying, configuring, and troubleshooting the Dynamic Host Configuration Protocol (DHCP) server role.

Lessons

- Overview of the DHCP Server Role
- Configuring DHCP Scopes
- Managing a DHCP Database
- Securing and Monitoring DHCP

Lab: Implementing DHCP

- Implementing DHCP
- Implementing a DHCP Relay Agent (Optional Exercise)

After completing this module, students will be able to:

- Explain the DHCP server role.
- Configure DHCP scopes.
- Manage a DHCP database.
- Secure and monitor the DHCP server role.

Module 7: Implementing DNS

This module describes name resolution for Windows operating system clients and Windows Server servers. It also covers installing and configuring a DNS Server service and its components.

Lessons

- Name Resolution for Windows Clients and Servers
- Installing a DNS Server
- Managing DNS Zones

Lab: Implementing DNS

- Installing and Configuring DNS
- Creating Host Records in DNS
- Managing the DNS Server Cache

After completing this module, students will be able to:

- Describe name resolution for Windows operating system clients and Windows Server servers.
- Install and manage a DNS Server.
- Manage DNS zones.

Module 8: Implementing IPv6

This module discusses the features and benefits of IPv6, how IPv6 affects IPv4 networks, and how to integrate IPv6 into IPv4 networks by using various transition technologies.

Lessons

- Overview of IPv6
- IPv6 Addressing
- Coexistence with IPv4
- IPv6 Transition Technologies

Lab: Implementing IPv6

- Configuring an IPv6 Network
- Configuring an ISATAP Router

After completing this module, students will be able to:

- Describe the features and benefits of IPv6.
- Describe IPv6 addressing.
- Describe IPv6 coexistence with IPv4.
- Describe IPv6 transition technologies.

Module 9: Implementing Local Storage

This module introduces several different storage technologies. It discusses how to implement the storage solutions in Windows Server 2012, and how to use the new Storage Spaces feature, which enables you to combine disks into pools that you can configure for automatic management.

Lessons

- Overview of Storage
- Managing Disks and Volumes
- Implementing Storage Spaces

Lab: Implementing Local Storage

- Installing and Configuring a New Disk
- Resizing Volumes
- Configuring a Redundant Storage Space

After completing this module, students will be able to:

- Describe various storage technologies.
- Explain how to manage disks and volumes.
- Explain how to implement Storage Spaces.

Module 10: Implementing File and Print Services

This module discusses how to provide file and print resources with Windows Server 2012. It describes how to secure files and folders, how to protect previous versions of files and folders by using shadow copies, and how to give workers remote access to corporate files by implementing the new Work Folders role service. It also describes new network printing features that help manage the network printing environment.

Lessons

- Securing Files and Folders
- Protecting Shared Files and Folders by Using Shadow Copies
- Configuring Work Folders
- Configuring Network Printing

Lab: Implementing File and Print Services

- Creating and Configuring a File Share
- Configuring Shadow Copies

- Enabling and Configuring Work Folders
- Creating and Configuring a Printer Pool

After completing this module, students will be able to:

- Secure shared files and folders.
- Protect shared files and folders by using shadow copies.
- Configure the Work Folders role service.
- Configure network printing.

Module 11: Implementing Group Policy

This module provides an overview of Group Policy and provides details about how to implement Group Policy.

Lessons

- Overview of Group Policy
- Group Policy Processing
- Implementing a Central Store for Administrative Templates

Lab: Implementing Group Policy

- Configuring a central store
- Creating GPOs

After completing this module, students will be able to:

- Create and manage Group Policy Objects (GPOs).
- Describe Group Policy processing.
- Implement a Central Store for Administrative Templates.

Module 12: Securing Windows Servers Using Group Policy Objects

This module describes Windows Server 2012 operating system security. It covers how to identify security threats, plan your strategy to mitigate security threats, and secure your Windows Server 2012 infrastructure.

Lessons

- Security Overview for Windows Operating Systems
- Configuring Security Settings
- Restricting Software
- Configuring Windows Firewall with Advanced Security

Lab: Increasing Security for Server Resources

- Using Group Policy to Secure Member Servers
- Auditing File System Access
- Auditing Domain Logons

Lab: Configuring AppLocker and Windows Firewall

- Configuring AppLocker Policies
- Configuring Windows Firewall

After completing this module, students will be able to:

- Describe WindowsServer operating system security.
- Configure security settings by using Group Policy.
- Increase security for server resources.
- Restrict unauthorized software from running on servers and clients.

- Configure Windows Firewall with Advanced Security.

Module 13: Implementing Server Virtualization with Hyper-V

This module describes virtualization technologies available on Windows, specifically focusing on the Hyper-V role in Windows Server 2012 and Windows Server 2012 R2. It covers the components of the Hyper-V role, configuring and deploying the role, in addition to and how to configure and manage key components of a Hyper-V implementation, such as Storage and Networking.

Lessons

- Overview of Virtualization Technologies
- Implementing Hyper-V
- Managing Virtual Machine Storage
- Managing Virtual Networks

Lab: Implementing Server Virtualization with Hyper-V

- Installing the Hyper-V Role onto a Server
- Configuring Virtual Networking
- Creating and Configuring a Virtual Machine
- Using Virtual Machine Checkpoints

After completing this module, students will be able to:

- Describe virtualization technologies.
- Implement Hyper-V.
- Manage virtual machine storage.
- Manage virtual networks

II. 20411: Administering Windows Server 2012

Overview

Get hands-on instruction and practice administering Windows Server 2012, including Windows Server 2012 R2, in this five-day Microsoft Official Course. This course is part two in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment.

The three courses collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across these courses, this course focuses on the administration tasks necessary to maintain a Windows Server 2012 infrastructure such as configuring and troubleshooting name resolution, user and group management with Active Directory Domain Services (AD DS) and Group Policy, implementing Remote Access solutions such as DirectAccess, VPNs and Web Application Proxy, implementing Network Policies and Network Access Protection, Data Security, deployment and maintenance of server images, as well as update management and monitoring of Windows Server 2012 environments.

This course maps directly to and is the preferred choice for hands-on preparation for Microsoft Certified Solutions Associate (MCSA): Exam 411: Administering Windows Server 2012, which is the second of three exams required for MCSA: Windows Server 2012 credential.

Labs in this course are based on Windows Server 2012 R2 and Windows 8.1.

Audience Profile

This course is intended for Information Technology (IT) Professionals with hands on experience working in a Windows server 2008 or Windows Server 2012 environment who wish to acquire the skills and knowledge necessary to be able to manage and maintain the core infrastructure required for a Windows Server 2012 and Windows Server 2012 R2 environment. The key focus for students is to broaden the initial deployment of Windows Server 2012 services and infrastructure and provide the skills necessary to Manage and Maintain a domain based Windows Server 2012 environment, providing skills in areas such as User and Group management, Network Access and Data Security. Candidates typically interested in attending this course would be

- Windows Server Administrators experienced in working with Windows Server 2008 or Windows Server 2012 who wish to gain skills necessary to perform daily management and maintenance tasks in a Windows Server 2012 or Windows Server 2012 R2 environment.
- IT Professionals who are looking to take the 411, Administering Windows Server 2012 exam
- IT professional wishing to take the Microsoft Certified Solutions Expert (MCSE) exams in DataCenter, Desktop Infrastructure, Messaging, Collaboration and Communications will also be interested in taking this course as they prepare for the Microsoft Certified Solutions Associate (MCSA) exams, which are a pre-requisite for their individual specialties

At Course Completion

After completing this course, students will be able to:

- Configure and Troubleshoot Domain Name System
- Maintain Active Directory Domain Services
- Manage User and Service Accounts
- Implement Group Policy Infrastructure
- Manage User Desktops using Group Policy
- Install, Configure and Troubleshoot Network Policy Server
- Implement Network Access Protection
- Implement Remote Access
- Optimize File Services
- Configure Encryption and Advanced Auditing
- Deploy and Maintain Server Images
- Implement Update Managements
- Monitor Windows Server 2012

Course Outline

Module 1: Configuring and Troubleshooting Domain Name System

This module explains how to configure and troubleshoot DNS, including DNS replication and caching.

Lessons

- Configuring the DNS Server Role

- Configuring DNS Zones
- Configuring DNS Zone Transfers
- Managing and Troubleshooting DNS

Lab: Configuring and Troubleshooting DNS

- Configuring DNS Resource Records
- Configuring DNS Conditional Forwarding
- Installing and Configuring DNS Zones
- Troubleshooting DNS

After completing this module, students will be able to:

- Install and configure the DNS server role.
- Create and configure DNS zones.
- Configure DNS zone transfers.
- Manage and troubleshoot DNS.

Module 2: Maintaining Active Directory Domain Services

This module explains how to implement virtualized domain controllers and read-only domain controller (RODCs). It also explains how to perform common AD DS administrative tasks and manage the AD DS Database.

Lessons

- Overview of AD DS
- Implementing Virtualized Domain Controllers
- Implementing RODCs
- Administering AD DS
- Managing the AD DS Database

Lab: Maintaining AD DS

- Installing and Configuring a RODC
- Configuring AD DS Snapshots
- Configuring the Active Directory Recycle Bin
- Optional Exercise- Cloning a domain controller

After completing this module, students will be able to:

- Implement virtualized domain controllers.
- Implement RODCs.
- Administer AD DS.
- Manage the AD DS database

Module 3: Managing User and Service Accounts

This module explains how to create, configure and automate the creation of user accounts. It also explains how to configure account-related properties of user objects. It further explains how to create and administer Managed Service Accounts.

Lessons

- Configuring Password Policy and User Account Lockout Settings
- Configuring Managed Service Accounts

Lab: Managing User and Service Accounts

- Configuring Password Policy and Account Lockout Settings

- Creating and Associating a Managed Service Account

After completing this module, students will be able to:

- Configure password policy and user account lockout settings.
- Configure managed service accounts.

Module 4: Implementing a Group Policy Infrastructure

This module explains how to implement a GPO infrastructure. This also teaches how to perform common GPO management tasks, and manage GPOs by using Windows PowerShell. It also focuses on troubleshooting the application of GPOs.

Lessons

- Introducing Group Policy
- Implementing and Administering GPOs
- Group Policy Scope and Group Policy Processing
- Troubleshooting the Application of GPOs

Lab: Implementing a Group Policy Infrastructure

- Creating and Configuring Group Policy Objects
- Managing GPO Scope
- Verify GPO Application
- Managing GPOs

After completing this module, students will be able to:

- Explain what Group Policy is.
- Implement and administer Group Policy Objects (GPOs).
- Manage Group Policy scope and Group Policy processing.
- Troubleshoot the application of GPOs.

Module 5: Managing User Desktops with Group Policy

This module explains how you can use Group Policy Objects (GPOs) to implement desktop environments across your organization by using Administrative Templates, Folder Redirection, Group Policy preferences, and where applicable, use software deployment to install and update application programs. It is important to know how to use these various GPO features so that you can configure your users' computer settings properly.

Lessons

- Implementing Administrative Templates
- Configuring Folder Redirection and Scripts
- Configuring Group Policy Preferences
- Managing Software with Group Policy

Lab: Managing User Desktops with Group Policy

- Implement Settings by Using Group Policy Preferences
- Managing Office 2013 by using Administrative Templates
- Deploying Software by using Group Policy
- Configuring Folder Redirection

After completing this module, students will be able to:

- Configure folder redirection and scripts by using GPOs.
- Describe and implement Administrative Templates.

- Configure GPO preferences.
- Deploy software by using GPOs.

Module 6: Installing, Configuring, and Troubleshooting the Network Policy Server Role

This module explains how to install and configure NPS, RADIUS Clients and servers. It also describes NPS authentication methods. It describe NPS authentication methods and how to monitor and troubleshoot NPS.

Lessons

- Installing and Configuring a Network Policy Server
- Configuring RADIUS Clients and Servers
- NPS Authentication Methods
- Monitoring and Troubleshooting a Network Policy Server

Lab: Installing and Configuring a Network Policy Server

- Installing and Configuring NPS to Support RADIUS
- Configuring and Testing a RADIUS Client

After completing this module, students will be able to:

- Install and configure a Network Policy Server (NPS).
- Configure clients and servers with the Remote Authentication Dial-In User Service (RADIUS) protocol.
- Explain NPS authentication methods.
- Monitor and troubleshoot NPS.

Module 7: Implementing Network Access Protection

This module explains how to configure, monitor, and troubleshoot NAP. It also explains how NAP can help to protect your network and the various NAP enforcement processes.

Lessons

- Overview of Network Access Protection
- Overview of NAP Enforcement Processes
- Configuring NAP
- Configuring IPsec Enforcement for NAP
- Monitoring and Troubleshooting NAP

Lab: Implementing Network Access Protection

- Configuring NAP Components
- Configuring Virtual Private Network Access
- Configuring the Client Settings to Support NAP

After completing this module, students will be able to:

- Describe how NAP can help to protect your network.
- Describe the various NAP enforcement processes.
- Configure NAP.
- Monitor and troubleshoot NAP.

Module 8: Implementing Remote Access

In this module, you will learn how to implement and manage remote access in Windows Server 2012. You will also learn how to implement DirectAccess by using the Getting Started wizard, implement and manage an advanced DirectAccess infrastructure, and implement VPN.

Lessons

- Overview of Remote Access
- Implementing DirectAccess by Using the Getting Started Wizard
- Implementing and Managing an Advanced DirectAccess Infrastructure
- Implementing VPN
- Implementing Web Application Proxy

Lab: Implementing DirectAccess by Using the Getting Started Wizard

- Verifying Readiness for a DirectAccess Deployment
- Configuring DirectAccess
- Validating the DirectAccess Deployment

Lab: Deploying an Advanced DirectAccess Solution

- Preparing the Environment for DirectAccess
- Implementing the Advanced DirectAccess Infrastructure
- Validating the DirectAccess Deployment

Lab: Implementing VPN

- Implementing VPN
- Validating the VPN Deployment

Lab: Implementing Web Application Proxy

- Implementing Web Application Proxy
- Validating the Web Application Proxy Deployment

After completing this module, students will be able to:

- Install and manage the Remote Access role in Windows Server 2012 operating system.
- Implement DirectAccess by using the Getting Started Wizard.
- Implement and manage an advanced DirectAccess Infrastructure.
- Implement VPN access.
- Implement Web Application Proxy.

Module 9: Optimizing File Services

This module describes FSRM, configure quotas, file screening, and storage reports and implement classification management and file management tasks. It describes the components of the DFS. I also explains how to configure DFS namespaces and DFS replication.

Lessons

- Overview of FSRM
- Using FSRM to Manage Quotas, File Screens, and Storage Reports
- Implementing Classification and File Management Tasks
- Overview of DFS
- Configuring DFS Namespaces
- Configuring and Troubleshooting DFS Replication

Lab: Configuring Quotas and File Screening Using File Server Resource Manager

- Configuring File Server Resource Manager Quotas
- Configuring File Screening and Storage Reports

Lab: Implementing Distributed File System

- Installing the DFS role service
- Configuring a DFS Namespace

- Configuring DFS Replication

After completing this module, students will be able to:

- Describe the File Server Resource Manager (FSRM) in the Windows Server 2012 operating system.
- Use FSRM to manage quotas, file screens, and storage reports.
- Implement classification and file management tasks.
- Describe Distributed File System (DFS).
- Configure DFS namespaces.
- Configure and troubleshoot DFS Replication.

Module 10: Configuring Encryption and Advanced Auditing

This module explains how to encrypt files using EFS and configure advanced auditing features.

Lessons

- Encrypting Drives by Using BitLocker
- Encrypting Files by Using EFS
- Configuring Advanced Auditing

Lab: Configuring Encryption and Advanced Auditing

- Using Windows BitLocker Drive Encryption to Secure Data Drives
- Encrypting and Recovering Files
- Configuring Advanced Auditing

After completing this module, students will be able to:

- Secure data by using BitLocker Drive Encryption.
- Encrypt files by using Encrypting File System (EFS).
- Configure advanced auditing.

Module 11: Deploying and Maintaining Server Images

This module explains how to create and manage server images by using Windows Deployment Services

Lessons

- Overview of Windows Deployment Services
- Managing Images
- Implementing Deployment with Windows Deployment Services
- Administering Windows Deployment Services

Lab: Using Windows Deployment Services to Deploy Windows Server 2012

- Installing and Configuring Windows Deployment Services
- Creating Operating System Images with Windows Deployment Services
- Configuring Custom Computer Naming
- Deploying Images with Windows Deployment Services

After completing this module, students will be able to:

- Describe the important features and functionality of Windows Deployment Services (Windows DS).
- Manage images by using Windows Assessment and Deployment Kit (Windows ADK) Tools.
- Configure Windows Deployment Services in Windows Server 2012.
- Perform deployments with Windows Deployment Services.

Module 12: Implementing Update Management

This module explains how to use Windows Server Update Services (WSUS) to deploy updates to Windows servers and clients.

Lessons

- Overview of WSUS
- Deploying Updates with WSUS

Lab: Implementing Update Management

- Implementing the WSUS Server Role
- Configuring Update Settings
- Approving and Deploying an Update by using WSUS

After completing this module, students will be able to:

- Describe the role of WSUS.
- Describe the WSUS update management process.
- Deploy updates with WSUS.

Module 13: Monitoring Windows Server 2012

This module explains the monitoring tools available in Windows Server 2012. It also explains how to use Performance Monitor and monitor events.

Lessons

- Monitoring Tools
- Using Performance Monitor
- Monitoring Event Logs

Lab: Monitoring Windows Server 2012

- Establishing a Performance Baseline
- Identifying the Source of a Performance Problem
- Viewing and Configuring Centralized Event Logs

After completing this module, students will be able to:

- Describe the monitoring tools for the Windows Server 2012 operating system.
- Use Performance Monitor to view and analyze performance statistics of programs that are running on their servers.
- Monitor event logs to view and interpret the recorded events

III. 20412 Configuring Advanced Windows Server 2012 Services

About this Course

Get hands-on instruction and practice configuring advanced Windows Server 2012, including Windows Server 2012 R2, services in this five-day Microsoft Official Course. This course is part three in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment.

The three courses collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across these courses, this course focuses on advanced configuration of services necessary to deploy, manage and maintain a Windows Server 2012 infrastructure, such as advanced networking services, Active Directory Domain Services (AD DS), Active Directory Rights Management Services (AD RMS), Active

Directory Federation Services (AD FS), Network Load Balancing, Failover Clustering, business continuity and disaster recovery services as well as access and information provisioning and protection technologies such as Dynamic Access Control (DAC), and Web Application Proxy integration with AD FS and Workplace Join.

This course maps directly to and is the preferred choice for hands-on preparation for Microsoft Certified Solutions Associate (MCSA): Exam 412: Configuring Advanced Windows Server 2012 Services, which is the third of three exams required for MCSA: Windows Server 2012 credential.

Note: Labs in this course are based on Windows Server 2012 R2 and Windows 8.1.

Audience Profile

This course is intended for Information Technology (IT) Professionals with hands on experience implementing, managing and maintaining a Windows Server 2012 or Windows Server 2012 R2 environment who wish to acquire the skills and knowledge necessary to perform advanced management and provisioning of services within that Windows Server 2012 environment. Candidates who would typically be interested in attending this course will be:

- Experienced Windows Server Administrators who have real world experience working in a Windows Server 2008 or Windows Server 2012 enterprise environment.
- IT Professionals who are looking to take the exam 412: Configuring Advanced Windows Server 2012 Services.
- IT Professionals wishing to take the Microsoft Certified Solutions Expert (MCSE) exams in Datacenter, Desktop Infrastructure, Messaging, Collaboration and Communications will also be interested in taking this course as they prepare for the MCSA exams, which are a pre-requisite for their individual specialties.

At Course Completion

After completing this course, students will be able to:

- Configure advanced features for Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and configure IP Address Management (IPAM) with Windows Server 2012.
- Configure and manage iSCSI, BranchCache and FSRM.
- Configure DAC to manage and audit access to shared files.
- Plan and implement an AD DS deployment that includes multiple domains and forests.
- Plan and implement an AD DS deployment that includes locations.
- Implement and configure an Active Directory Certificate Services (AD CS) deployment.
- Implement an AD RMS deployment.
- Implement an AD FS deployment.
- Provide high availability and load balancing for web-based applications by implementing Network Load Balancing (NLB).
- Implement and validate high availability and load balancing for web-based applications by implementing NLB.

- Provide high availability for network services and applications by implementing failover clustering.
- Implement a failover cluster, and configure and validate a highly available network service.
- Deploy and manage Hyper-V virtual machines in a failover cluster.
- Implement a backup and disaster recovery solution based on business and technical requirements.

Course Outline

Module 1: Implementing Advanced Network Services

In this module students will be able to configure advanced features for Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), and configure IP Address Management (IPAM).

Lessons

- Configuring Advanced DHCP Features
- Configuring Advanced DNS Settings
- Implementing IPAM
- Managing IP Address Spaces with IPAM

Lab: Implementing Advanced Network Services

- Configuring Advanced DHCP Settings
- Configuring Advanced DNS Settings
- Configuring IPAM

After completing this module, students will be able to:

- Configure advanced features in DHCP with Windows Server 2012.
- Configure the advanced DNS settings in Windows Server 2012.
- Implement IP Address Management in Windows Server 2012.

Module 2: Implementing Advanced File Services

In this module students will be able to configure file services to meet advanced business requirements.

Lessons

- Configuring iSCSI Storage
- Configuring BranchCache
- Optimizing Storage Usage

Lab: Implementing Advanced File Services

- Configuring iSCSI Storage
- Configuring the File Classification Infrastructure

Lab: Implementing BranchCache

- Configuring the Main Office Servers for BranchCache
- Configuring the Branch Office Servers for BranchCache
- Configuring Client Computers for BranchCache
- Monitoring BranchCache

After completing this module, students will be able to:

- Learn how to configure and manage iSCSI.
- Implement BranchCache using Windows Server 2012.
- Implement Windows Server 2012 features that optimize storage utilization.

Module 3: Implementing Dynamic Access Control

In this module students will be able to configure Dynamic Access Control (DAC) to manage and audit access to shared files.

Lessons

- Overview of DAC
- Implementing DAC Components
- Implementing DAC for Access Control
- Implementing Access Denied Assistance
- Implementing and Managing Work Folders

Lab: Implementing Secure Data Access

- Preparing for DAC deployment
- Implementing DAC
- Validating and Remediating DAC
- Implementing Work Folders

After completing this module, students will be able to:

- Describe DAC.
- Implement and configure components of DAC.
- Implement DAC on file servers.
- Describe and implement access- denied assistance.
- Implement the integration of Work Folders with DAC.

Module 4: Implementing Distributed Active Directory Domain Services Deployments

In this module students will be able to plan and implement an Active Directory Domain Services (AD DS) deployment that includes multiple domains and forests.

Lessons

- Overview of Distributed AD DS Deployments
- Deploying a Distributed AD DS Environment
- Configuring AD DS Trusts

Lab: Implementing Distributed AD DS Deployments

- Implementing Child Domains in AD DS
- Implementing Forest Trusts

After completing this module, students will be able to:

- Describe the components of a highly complex AD DS deployment.
- Implement a complex AD DS deployment.
- Configure AD DS trusts.

Module 5: Implementing Active Directory Domain Services Sites and Replication

In this module students will be able to plan and implement an AD DS deployment that includes multiple locations.

Lessons

- AD DS Replication Overview
- Configuring AD DS Sites
- Configuring and Monitoring AD DS Replication

Lab: Implementing AD DS Sites and Replication

- Modifying the Default Site
- Creating Additional Sites and Subnets
- Configuring AD DS Replication
- Monitoring and Troubleshooting AD DS Replication

After completing this module, students will be able to:

- Describe how replication works in a Windows Server 2012 AD DS environment.
- Configure AD DS sites in order to optimize AD DS network traffic.
- Configure and monitor AD DS replication.

Module 6: Implementing AD CS

In this module students will be able to implement an Active Directory Certificate Services (AD CS) deployment.

Lessons

- Using Certificates in a Business Environment
- PKI Overview
- Deploying CAs
- Deploying and Managing Certificate Templates
- Implementing Certificate Distribution and Revocation
- Managing Certificate Recovery

Lab: Deploying and Configuring CA Hierarchy

- Deploying a Stand-Alone Root CA
- Deploying an Enterprise Subordinate CA

Lab: Deploying and Managing Certificates

- Configuring Certificate Templates
- Configuring Certificate Enrollment
- Configuring Certificate Revocation
- Configuring Key Recovery

After completing this module, students will be able to:

- Describe and use certificates in business environments.
- Describe the Public Key Infrastructure (PKI) components and concepts, and describe the options for implementing a certification authority infrastructure.
- Plan and implement an AD CS certification authority infrastructure.
- Plan and implement a certificate template deployment using an AD CS certification authority.
- Plan and implement certificate distribution and revocation.
- Configure and manage key archival and recovery.

Module 7: Implementing Active Directory Rights Management Services

In this module students will be able to implement an AD RMS deployment.

Lessons

- AD RMS Overview
- Deploying and Managing an AD RMS Infrastructure
- Configuring AD RMS Content Protection
- Configuring External Access to AD RMS

Lab: Implementing AD RMS

- Installing and Configuring AD RMS
- Configuring AD RMS Templates
- Implementing the AD RMS Trust Policies
- Verifying AD RMS on a Client

After completing this module, students will be able to:

- Describe what AD RMS is, and how it can be used to achieve content protection.
- Deploy and manage an AD RMS infrastructure.
- Configure content protection using AD RMS.
- Enable users outside the organization to access content protected by using AD RMS.

Module 8: Implementing and Administering AD FS

In this module students will be able to implement an Active Directory Federation Services (AD FS) deployment.

Lessons

- Overview of AD FS
- Deploying AD FS
- Implementing AD FS for a Single Organization
- Deploying AD FS in a Business-to-Business Federation Scenario
- Extending AD FS to External Clients

Lab: Implementing AD FS

- Installing and Configuring AD FS
- Configuring an Internal Application for AD FS

Lab: Implementing AD FS for External Partners and Users

- Configuring AD FS for a Federated Business Partner
- Configuring Web Application Proxy

After completing this module, students will be able to:

- Describe the identity federation business scenarios and how AD FS can be used to address the scenarios.
- Configure the AD FS prerequisites and deploy the AD FS services.
- Implement AD FS to enable SSO in a single organization.
- Implement AD FS to enable SSO between federated partners.
- Implement the Web Application Proxy and describe WorkPlace Join integration with AD FS.

Module 9: Implementing Network Load Balancing

In this module students will be able to provide high availability and load balancing for web-based applications by implementing Network Load Balancing (NLB).

Lessons

- Overview of NLB
- Configuring an NLB Cluster
- Planning an NLB Implementation

Lab: Implementing NLB

- Implementing an NLB Cluster
- Configuring and Managing the NLB Cluster
- Validating High Availability for the NLB Cluster

After completing this module, students will be able to:

- Describe how NLB works.
- Configure an NLB cluster.
- Plan an NLB implementation.

Module 10: Implementing Failover Clustering

In this module students will be able to provide high availability for network services and applications by implementing failover clustering.

Lessons

- Overview of Failover Clustering
- Implementing a Failover Cluster
- Configuring Highly Available Applications and Services on a Failover Cluster
- Maintaining a Failover Cluster
- Implementing a Multi-Site Failover Cluster

Lab: Implementing Failover Clustering

- Configuring a Failover Cluster
- Deploying and Configuring a Highly Available File Server
- Validating the Deployment of the Highly Available File Server
- Configuring CAU on the Failover Cluster

After completing this module, students will be able to:

- Explain failover clustering features in Windows Server 2012.
- Describe how to implement a failover cluster.
- Explain how to configure highly available applications and services on a failover cluster.
- Explain how to maintain a failover cluster and how to use new maintenance features.
- Describe how to implement multi-site failover cluster.

Module 11: Implementing Failover Clustering with Hyper-V

In this module students will be able to deploy and manage Hyper-V virtual machines in a failover cluster.

Lessons

- Overview of Integrating Hyper-V with Failover Clustering
- Implementing Hyper-V Virtual Machines on Failover Clusters
- Implementing Hyper-V Virtual Machine Movement

Lab: Implementing Failover Clustering with Hyper-V

- Configuring Hyper-V Replicas
- Configuring a Failover Cluster for Hyper-V
- Configuring a Highly Available Virtual Machine

After completing this module, students will be able to:

- Explain options for making virtual machines highly available.
- Describe how to implement virtual machines in a failover cluster deployed on a host.
- Explain options for moving a virtual machine or its storage.
- Explain a high level overview of Microsoft System Center 2012- Virtual Machine Manager (VMM) 2012.

Module 12: Implementing Business Continuity and Disaster Recovery

In this module students will be able to implement a backup and disaster recovery solution based on business and technical requirements

Lessons

- Data Protection Overview
- Implementing Windows Server Backup
- Implementing Server and Data Recovery

Lab: Implementing Windows Server Backup and Restore

- Backing Up Data on a Windows Server 2012 R2 Server
- Restoring Files Using Windows Server Backup

After completing this module, students will be able to:

- Describe the considerations that must be included when you are implementing a disaster recovery solution.
- Plan and implement a backup solution for Windows Server 2012.
- Plan and implement server and data recovery.