



## Installing and Configuring Windows Server 2012 36 Contact Hours

### Course Overview

This version of this course 20410A utilizes pre-release software in the virtual machines for the labs. The course is part one of a series of three courses that provide 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. While there is some cross-over in skillset and tasks across the courses, this course primarily covers the initial implementation and configuration of those core services, such as Active Directory Domain Services (AD DS), networking services, and Hyper-V configuration.

### Audience

This course is intended for Information Technology (IT) Professionals who have good Windows operating system knowledge and experience and who want to acquire the skills and knowledge necessary to implement the core infrastructure services in an existing Windows Server 2012 environment. Although students would benefit from having some previous Windows Server experience, they must have good hands-on Windows Client experience with Windows Vista, Windows 7, or Windows 8.

### At Course Completion

After completing this course, students will be able to:

Install and Configure Windows Server 2012.

Describe AD DS infrastructure, and install and configure domain controllers.

Manage AD DS objects.

Automate AD DS administration.

Describe Internet Protocol Version 4 (IPv4) addressing.

Describe installing and configuring Dynamic Host Configuration Protocol (DHCP), in addition to managing a DHCP database.

Describe name resolution for Windows operating system clients and Windows Server servers.

Describe implementing IPv6 addressing.

Describe implementing storage configuration options for Windows Server 2012.

Enable and configure file and print services in Windows Server 2012.

Describe implementing Group Policy.

Increase security in a Windows Server 2012 infrastructure by using Group Policy Objects, AppLocker, and Windows Firewall.

Describe Microsoft Virtualization technologies, including Hyper-V.

### Prerequisites

A good understanding of networking fundamentals.

An understanding and experience configuring security and administration tasks in an enterprise environment.

Experience supporting or configuring Microsoft Windows clients.



## Course Outline

### Module 1: Deploying and Managing Windows Server 2012

This module introduces the new Windows Server 2012 administrative interface. This module covers the different roles and features that are available with the Windows Server 2012 operating system. It also discusses the various installation and configuration options you can use when deploying and configuring Windows Server 2012.

#### Lessons

Windows Server 2012 Overview

Overview of Windows Server 2012 Management

Installing Windows Server 2012

Post-Installation Configuration of Windows Server 2012

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 .

Describe the management tools available in Windows Server 2012 .

Install Windows Server 2012 .

Perform post-installation configuration of Windows Server 2012 .

Perform basic administrative tasks using Windows PowerShell.

### Module 2: Introduction to Active Directory Domain Services

This module introduces Active Directory Domain Services (AD DS) in Windows Server 2012. It covers general AD DS infrastructure including forests, trees, schema, Global Catalog, Operations Masters. It also covers installing and configuring domain controllers.

#### 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 Active Directory Domain Services (AD DS).

Describe the purpose of domain controllers.

Install a domain controller.



### Module 3: Managing Active Directory Domain Services Objects

This module covers configuring Active Directory Objects such as users, groups and computers. The functionality of AD DS Administrative Tools is addressed, in addition to the configuration of user profiles and the process of delegating permissions to perform AD DS administration.

#### Lessons

Managing User Accounts

Managing Group Accounts

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 groups with graphical tools.

Manage computer accounts.

Delegate permissions to perform AD DS administration.

### Module 4: Automating Active Directory Domain Services Administration

This module covers using command-line tools to configure and administer AD DS. It introduces using Windows PowerShell cmdlets for AD DS administration, and using Windows PowerShell to perform bulk AD DS administrative operations.

#### Lessons

Using Command-line Tools for Administration

Using Windows PowerShell for 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 covers Internet Protocol Version 4 (IPv4) addressing. It details the various IPv4 components, covers subnetting and supernetting, and discusses configuring and general troubleshooting of IPv4 addresses.

#### 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 DHCP

This module covers the installation and configuration of DHCP as well as managing a DHCP database. It also covers security and monitoring of DHCP, including auditing and logging.

Lessons

Installing a DHCP Server Role

Configuring DHCP Scopes

Managing a DHCP Database

Securing and Monitoring DHCP

Lab : Implementing DHCP

Implementing DHCP

Implementing a DHCP Relay (Optional Exercise)

After completing this module, students will be able to:

Install the DHCP server role.

Configure DHCP scopes.

Manage a DHCP database .

Secure and monitor the DHCP server role.

## Module 7: Implementing DNS

This module covers name resolution for Windows Server and clients. It details the installation of a DNS server and configuring Active Directory Integrated DNS zones.

Lessons

Name Resolution for Windows Client and Servers

Installing and Managing 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 DNS service.



Manage DNS zones.

### Module 8: Implementing IPv6

This module covers understanding and implementing IPv6 addressing. It covers configuration and troubleshooting as well as co-existence with IPv4 using transition technologies.

Lessons

Overview of IPv6

IPv6 Addressing

Coexistence with IPv6

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 covers the storage configuration options for Windows Server 2012, including managing disks and volumes and implementing file systems. It also covers creating and managing storage pools.

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:

Explain the various storage technologies.

Manage disks and volumes.

Implement Storage Spaces.

### Module 10: Implementing File and Print Services

This module covers securing files, folders and network file shares, in addition to using shadow copies to protect network file shares. It also covers configuring network printing and creating a printer pool.

Lessons

Securing Files and Folders

Protecting Shared Files and Folders Using Shadow Copies

Configuring Network Printing



## Lab : Implementing File and Print Services

Creating and Configuring a File Share

Configuring Shadow Copies

Creating and Configure 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 network printing.

## Module 11: Implementing Group Policy

This module covers using Group Policy to centrally manage and apply configuration settings.

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.

Describe Group Policy processing.

Implement a central store for administrative templates.

## Module 12: Securing Windows Servers Using Group Policy Objects

Increase security in a Windows Server 2012 infrastructure by using Group Policy Objects, AppLocker, and Windows Firewall.

Lessons

Windows Security Overview

Configuring Security Settings

Restricting Software

Configuring Windows Firewall with Advanced Security

Lab : Lab A: Increasing Security for Server Resources

Using Group Policy to Secure Member Servers

Auditing File System Access

Auditing Domain Logons

Lab : Lab B: Configuring AppLocker and Windows Firewall

Configuring AppLocker Policies

Configuring Windows Firewall

After completing this module, students will be able to:

Describe Windows Security.

Configure security settings by using Group Policy.

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 Microsoft Virtualization technologies. It covers installing and configuring Hyper-V virtual machines, configuring virtual storage, and configuring virtual networks.

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 Server Role

Configuring Virtual Networking

Creating and Configuring a Virtual Machine

Using Virtual Machine Snapshots

After completing this module, students will be able to:

Understand and describe Microsoft's virtualization technologies.

Implement Hyper-V.

Manage virtual machine storage.

Manage virtual networks.

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