



Designing and Implementing a Server Infrastructure

Course 20413: 4 days; Instructor-Led

Introduction

This 4-day instructor-led course provides you with the skills and knowledge needed to plan, design, and deploy a physical and logical Windows Server 2012 with Active Directory Domain Services (AD DS) infrastructure. The course also provides the skills to perform name resolution, application integration, optimization of automate remediation, and maintenance of network services.

At Course Completion

After completing this course, students will be able to:

- Plan server upgrade and migration.
- Plan and implement a server deployment infrastructure.
- Plan and deploy servers by using Virtual Machine Manager (VMM).
- Design and maintain an IP configuration and address management solution.
- Design and implement name resolution.
- Design and implement an AD DS forest and domain infrastructure.
- Design and implement an AD DS OU Infrastructure.
- Design and implement a Group Policy object (GPO) strategy.
- Design and implement an AD DS physical topology.
- Plan and implement storage and file services.
- Design and implement network protection.
- Design and implement remote access services.

Audience

This course is intended for IT professionals who are responsible for planning, designing, and deploying a physical and a logical Windows Server 2012 enterprise Active Directory Domain Services (AD DS) infrastructure including the network services necessary. They have experience of previous Windows Server operating systems and possess Windows Server 2012 certification Microsoft Certified Solutions Associate (MCSA) or equivalent skills. The course is also intended for IT professionals who are looking to take the exam 70-413: Designing and Implementing a Server Infrastructure, as a stand-alone, or as part of the requirement for the Microsoft Certified Solutions Expert (MCSE): Server Infrastructure Certification.

Prerequisites

Before attending this course, students must have:

- Experience working with Windows Server 2008 or Windows Server 2012 servers day to day in an Enterprise environment.
- Knowledge equivalent to the content covered in courses 20410B: Installing and Configuring Windows Server 2012 and 20411B: Administering Windows Server 2012.

Candidates for this course have good Windows client and server operating system knowledge and basic AD DS and networking experience in an enterprise/small business (SMB) environment together with application configuration experience.

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- A good understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) fundamentals and networking concepts.
- A good working knowledge of both Windows Server 2012 R2 and Active Directory Domain Services (AD DS). For example, domain user accounts, domain vs. local user accounts, user profiles, and group membership.
- A good understanding of both scripts and batch files.
- A solid understanding of security concepts, such as authentication and authorization.
- Familiarity with deployment, packaging, and imaging tools.
- Ability to work in a team/virtual team.
- Ability to produce good documentation and have the appropriate communication skills to create proposals and make budget recommendations.
- Knowledge equivalent to Windows 2012 R2 MCSA.

Students who attend this training can meet the prerequisites by attending the following courses, or obtaining equivalent knowledge and skills:

- 20410C: Installing and Configuring Windows Server 2012
- 20411C: Administering Windows Server 2012
- 20412C: Configuring Advanced Windows Server 2012 Services
OR
- 20417C: Upgrading Your Skills to MCSA Windows Server 2012

Course Outline

Module 1: Planning Server Upgrade and Migration

This module explains how to plan a server upgrade and migration strategy.

Lessons

- Upgrade and Migration Considerations
- Creating a Server Upgrade and Migration Plan
- Planning for Virtualization

Lab: Planning Server Upgrade and Migration

- Plan a Server Upgrade and Migration Strategy
- Evaluate Server Virtualization Candidates

After completing this module, students will be able to:

- Describe the upgrade and migration considerations.
- Describe how to create a server upgrade and migration plan.
- Determine factors that affect the implementation of virtualization within an organization.

Module 2: Planning and Implementing a Server Deployment Infrastructure

This module explains how to design an automated server installation strategy and plan and implement a server deployment infrastructure.

Lessons

- Selecting an Appropriate Server Deployment Strategy
- Implementing an Automated Deployment Strategy

Lab: Planning and Implementing a Server Deployment Infrastructure

- Planning an Automated Server Installation and Deployment Strategy
- Preparing the Windows Server Image
- Deploying Windows Server

After completing this module, students will be able to:

- Select an appropriate server deployment strategy.
- Implement an automated deployment strategy.

Module 3: Planning and Deploying Servers Using Virtual Machine Manager

This module explains how to plan and deploy a Virtual Machine Manager (VMM) infrastructure for deploying servers.

Lessons

- System Center 2012 R2 Virtual Machine Manager Overview
- Implementing VMM Library and Profiles
- Plan and Deploy VMM Services

Lab: Planning and Deploying Virtual Machines Using Virtual Machine Manager

- Planning VMM Components
- Planning VM and Service Templates
- Implementing VMM components

After completing this module, students will be able to:

- Describe the core Virtual Machine Manager architecture and components.
- Implement VMM libraries and profiles.
- Plan and deploy VMM services.

Module 4: Designing and Maintaining an IP Configuration and Address Management Solution

This module explains how to design and maintain IP address management (IPAM) and a Dynamic Host Configuration Protocol (DHCP) solution.

Lessons

- Designing DHCP Servers
- Planning DHCP Scopes
- Designing an IPAM Provisioning Strategy
- Managing Servers and Address Spaces by using IPAM

Lab: Designing and Maintaining an IP Configuration and IP Address Management Solution

- Planning DHCP to Support Your Proposed Scheme
- Planning an IPAM Deployment
- Implementing DHCP and IPAM

After completing this module, students will be able to:

- Design a DHCP server implementation.
- Plan DHCP scope configuration and options.
- Design an IPAM provisioning strategy
- Use IPAM to manage servers and address spaces.

Module 5: Designing and Implementing Name Resolution

This module explains how to design a name resolution solution strategy.

Lessons

- Designing a DNS Server Implementation Strategy
- Designing the DNS Namespace
- Designing DNS Zones
- Designing DNS Zone Replication and Delegation
- Optimizing DNS Servers
- Designing DNS for High Availability and Security

Lab: Designing and Implementing Name Resolution

- Designing a DNS Name Resolution Strategy
- Designing a DNS Server Placement Strategy
- Designing DNS Zones and DNS Zone Replication
- Implementing DNS

After completing this module, students will be able to:

- Design a Domain Name System (DNS) server strategy.
- Design a DNS namespace.
- Design a DNS zone strategy.
- Design a DNS zone replication strategy.
- Optimize the DNS configuration.
- Design DNS for high availability and security.

Module 6: Designing and Implementing an AD DS Forest and Domain Infrastructure

This module explains how to design and implement an AD DS forest and domain infrastructure.

Lessons

- Designing an AD DS Forest
- Designing AD DS Forest Trusts
- Designing AD DS Integration with Windows Azure Active Directory
- Designing AD DS Domains
- Designing DNS Namespaces in AD DS Environments
- Designing and Implementing AD DS Domain Trusts

Lab: Designing and Implementing an AD DS Forest Infrastructure

- Designing an AD DS Forest Infrastructure
- Implementing an AD DS Forest Trust

Lab: Designing and Implementing an AD DS Domain Infrastructure

- Designing an AD DS Domain Infrastructure
- Implementing an AD DS Domain Infrastructure

After completing this module, students will be able to:

- Design and implement an AD DS forest.
- Design a forest trust configuration.
- Design AD DS integration with Windows Azure Active Directory.

- Create an AD DS domain design that meets business requirements.
- Create a DNS design that supports the AD DS infrastructure.
- Create an AD DS domain trust design.

Module 7: Designing and Implementing an AD DS OU Infrastructure

This module explains how to design and implement an organizational unit (OU) infrastructure and AD DS permissions model.

Lessons

- Planning the AD DS Administrative Tasks Delegation
- Designing the OU Structure
- Designing and Implementing an AD DS Group Strategy

Lab: Designing and Implementing an AD DS OU Infrastructure and an AD DS Delegation Model

- Designing an OU Infrastructure
- Implementing the OU Design
- Designing and Implementing an AD DS Permissions Model

After completing this module, students will be able to:

- Create a design for delegating AD DS administrative tasks.
- Create an OU design that meets your organization's administrative and security requirements.
- Design an AD DS group strategy that meets business and administrative requirements.

Module 8: Designing and Implementing a Group Policy Object Strategy

This module explains how to design and implement a Group Policy object (GPO) strategy.

Lessons

- Gathering the Information Required for a GPO Design
- Designing and Implementing GPOs
- Designing GPO Processing
- Planning Group Policy Management

Lab: Designing and Implementing Group Policy Object Strategy

- Designing a GPO strategy
- Implementing the GPO design

After completing this module, students will be able to:

- Collect and analyze the information required to facilitate a GPO design.
- Create a Group Policy object design that meets business and administration requirements.
- Create a Group Policy inheritance design that meets business and administration requirements.
- Plan GPO management.

Module 9: Designing and Implementing an AD DS Physical Topology

This module explains how to design an AD DS sites topology and a domain controller placement strategy.

Lessons

- Designing and Implementing AD DS Sites
- Designing AD DS Replication
- Designing the Placement of Domain Controllers

- Virtualization Considerations for Domain Controllers
- Designing Highly Available Domain Controllers

Lab: Designing and Implementing an AD DS Physical Topology

- Designing AD DS Sites
- Planning the Placement of Domain Controllers and AD DS Replication
- Implementing AD DS Sites and Domain Controllers

After completing this module, students will be able to:

- Create an AD DS site design.
- Design an AD DS replication topology.
- Design domain controller configurations and placements.
- Design a virtualized domain controller infrastructure.
- Create a domain controller design that ensures domain controller availability.

Module 10: Planning and Implementing Storage and File Services

This module explains how to plan and implement storage and file services.

Lessons

- Planning and Implementing iSCSI SANs
- Planning and Implementing Storage Spaces
- Optimizing File Services for Branch Offices

Lab: Planning and Implementing Storage

- Planning a storage solution
- Implementing iSCSI Storage
- Configuring a Redundant Storage Space

After completing this module, students will be able to:

- Plan and implement an Internet Small Computer System Interface (iSCSI) SAN.
- Plan and implement storage spaces.
- Plan and implement optimized file services for branch offices.

Module 11: Designing and Implementing Network Protection

This module explains how to design and implement network protection.

Lessons

- Overview of Network Security Design
- Designing and Implementing a Windows Firewall Strategy
- Designing and Implementing a Network Access Protection (NAP) Infrastructure

Lab: Designing and Implementing Network Protection

- Designing and Implementing a Firewall Solution
- Designing a NAP solution
- Implementing NAP with IPSec Enforcement

After completing this module, students will be able to:

- Describe the network security design process.
- Describe a Windows Firewall implementation.

- Design Network Access Protection (NAP).

Module 12: Designing and Implementing Remote Access Services

This module explains how to design and implement remote access services.

Lessons

- Planning and Implementing DirectAccess
- Planning and Implementing Virtual Private Networking
- Planning and Implementing Web Application Proxy
- Planning a Complex Remote Access Infrastructure

Lab: Designing and Implementing Network Access Services

- Designing a Remote Access Strategy
- Planning and Implementing a DirectAccess Solution
- Implementing a VPN solution
- Implementing Web Application Proxy

After completing this module, students will be able to:

- Plan and implement DirectAccess.
- Plan and implement virtual private networking.
- Plan and implement a Web Application Proxy.
- Plan a complex remote access infrastructure.