

Exam 70-410: Installing and Configuring Windows Server 2012 R2

Course Overview

This course gives students an overview of Server 2012, and teaches them Windows Server 2012 management, working with Server Core, configuring local storage, configuring file and print access, remote management and virtualization, TCP/IP protocol suite, DHCP and DNS, Active Directory Domain Services, and Windows security.

Course Introduction

7m

Course Introduction

Module 01 - Server 2012 Overview

1h 10m

Server 2012 Overview

On Premise vs. Cloud

Common Cloud Computing

Cloud Computing

Local Resources Provided to Clients

Windows Server 2012 Editions

Server 2012 Server Roles

Features with Windows Server 2012

Server Core

Installation Options

Install Options Integrated

Media Formats

Windows DS

Other Install Options

Demo - Installing Windows 2012 Enterprise

Windows Server Installation

Server Upgrades

Server Migration

Minimum Hardware Requirements

Installation Steps

Post Server Installation Tasks – Round One

Demo - Introduction to Server Manager

Windows Activation

Offline Domain Join

Post Server Installation Tasks – Round Two

Using PowerShell to Manage Servers

Resources Utilization by Using Features on Demand

Features on Demand – Order of Search

How to Override Features on Demand (Default Behavior)

Removing Feature Files

Migrate Roles from Previous Versions of Windows Server

Supported Operation Systems (Source)

Module 01 Review

Module 02 - Windows Server 2012 Management

1h 6m

Windows Server 2012 Management
Server Manager
Demo - Add Roles Server Manager
Demo - Event Viewer
Demo - Best Practice Analyzer
Administrative Tools Available
Demo - Administrative Tools Available
Enabling Remote Management
Delegate Administration
Delegation Planning
Demo - Delegation of Domain Administration
Advanced Services
Configuring NIC Teaming
Switch Dependent Teaming Modes
802.11ac Support
NetSh Commands with Windows Server 2012 R2
Wired and Wireless Ethernet Access Passwords
Module 02 Review

Module 03 - Working with Server Core

1h 19m

Working with Server Core
Demo - Installing Server Core
Introduction to PowerShell
Demo - PowerShell
Adding GUI to Server Core
Removing GUI to Server Core
To Install a Removed Role or Feature Using WIM Image
Server Core Tools
Demo - Recover from Closing Command Prompt
Roles Available to Server Core
Listing Roles on Server Core
Enabling Remote Management
Demo - Netsh-Firewall
Server Configuration - Core
Demo - Sconfig on Server Core
Features Not Supported by Server Core
Installing Domain Controllers on Server Core - Options
PowerShell Examples for User Management
PowerShell Examples for Group Management
PowerShell Examples for Computer Management
PowerShell Examples for OU's
Module 03 Review

Module 04 - Configuring Local Storage

1h 40m

Configuring Local Storage
Key Features of Storage
Disk Types and Performance
Enhanced Integrated Drive Electronics (EIDE)
Serial Advanced Technology Attachment (SATA)

Small Computer System Interface (SCSI)
Solid State Drives
Direct Attached Storage (DAS)
Network Attached Storage (NAS)
Storage Area Network (SAN)
Common RAID Levels
Windows Server 2012 R2 Storage Features
Storage Spaces
Demo - Configuring Storage Spaces
Work Folders
Work Folder Limitations
Work Folder Components
Certificate Notes
Work Folder Server Components
Work Folder Server Configuration
Work Folder Server Configuration PowerShell Commands
Work Folders Client Configuration
Demo - Configuring Work Folders
Offload Data Transfers (ODX)
SMB 3.0 Support
File System Enhancements
Storage Management
Resilient File System (ReFS)
Storage PowerShell Cmdlets
Configure Basic Disks
Configure Dynamic Disks
Common Operations – Basic and Dynamic Disks
Demo - Creating Volume Mount Points
Configuring MBR Disks
Configuring GPT Disks
Installing And Configuring A New Disk
eNotes: Types of Volumes / Pools
Demo - Create VHDs
Extending and Shrinking Volumes
Utilities for Volumes
BranchCache
BranchCache Requirements
BranchCache Server Settings
BranchCache Client Settings
Enabling Distributed Cache Mode or Hosted Cache Mode
Module 04 Review

Module 05 - Configure File and Print Access

1h 17m

File Shares and Permissions
Create and Configure Shares
File Sharing Profiles
Demo - Configure File Shares
Configure Offline Files
Offline Files Settings
Configure NTFS Permissions

NTFS Permissions
eNotes: NTFS Permission Examples
Access Based Enumeration (ABE)
Configure Volume Shadow Copy Service (VSS)
Demo - Shadow Copies
Configure Print and Document Services
Demo - Install Print and Document Services Role
Easy Print - Print Driver
Network Printing Security Options
Demo - Create a Shared Printer
Printer Pooling
Demo - Creating a Printer Pool
Branch Office Direct Printing
Options to Deploy Printers
Printer Migration for Web Services for Devices (WSD Print Devices)
Server 2012 R2 New and Updated
Module 05 Review

Module 06 - Remote Management and Virtualization

1h 56m

Remote Management
Demo - Enable Remote Management
Remote Management - MISC
Remote Desktop
Remote Desktop Services Role Services
Server 2012 R2 Improvements and Additions
Demo - Remote Desktop
Multi-Server Management
Demo - Server Groups
Virtualization
Presentation Virtualization
Remote Desktop Gateway
Virtualization
Hyper-V
Application Virtualization (App-V)
Microsoft Enterprise Desktop Virtualization (MED-V)
Simulated Hardware for VM's
Demo - Create a VM
Demo - Hyper-V Settings
Dynamic Memory
Integration Services
Start and Stop Actions
Resource Metering
Virtual Hard Disk
Virtual Disk Types
Shrinking Fixed Virtual Hard Disks
VHD's vs. VHDX
Demo - Managing VHD's
Differencing Disks
Virtual Hard Disk Operations/Maintenance Operations
Methods of Creating Virtual Hard Disk

VHD's and File Shares
Differencing Disks
Virtual Networks
Virtual Network Extensions
Demo - Hyper-V Network Settings
Virtual Adapters
Legacy Network Adapters
Demo - Creating Network Adapters
Considerations for VM Network Configuration
Important Note – External Virtual Networks
Virtual Machine MAC Address
Using Snapshots
Module 06 Review

Module 07 - TCP/IP Protocol Suite

2h 1m

TCP/IP Protocol Suite
Components of Network Infrastructure
TCP/IP Protocol
Architecture
TCP/IP Applications
Sockets
Ports
IPv4 Addressing
IP Configuration
Public vs. Private IPv4 Addresses
Relating to Binary
IP Address Classes
CIDR Notations / VLSM
eNotes: CIDR
Configuring IP Addresses Using Server Manager
Configuring IP Address Using a Command Line
Configure IP Address Using PowerShell
Demo - Configure IP Address Using PowerShell
TCP/IP Troubleshooting with PowerShell
TCP/IP Diagnostics
Network Card Teaming
Supernetting
Supernetting Examples
Overview Of IPv6
IPv4 vs IPv6
Comparing IPv4 and IPv6
IPv6 Benefits
Equivalents
IPv6 Addressing
Link Local Unicast Addresses
Host Private Address
Zone ID's
Hexadecimal Numbering System
Converting Binary to Hex
Binary To Hex Examples

Things to Know About TCP/IPv6
Global Unicast Addresses
Global Unicast Addresses Structure
Unique Local Unicast Address
Zone ID
Format Prefixes
IPv6 Address Structure
Demo - Configuring IPv6 Client
Autoconfiguration IPv6 Addresses
Autoconfiguration Address States
Autoconfiguration Process
IPv6 Over IPv4 Tunneling
Defining Capabilities: Node Types
Configure ISATAP
Host Configuration
6to4
Teredo
PortProxy
Transition Process
Module 07 Review

Module 08 - DHCP and DNS

1h 27m

DNS
DNS for Name Resolution
eNotes: How Names are Resolved – Iterative Queries
Link-Local Multicast Name Resolution
WINS
Single Label Names - WINS
Tools and Commands
Demo - Tools and Commands
DNS Terms to Know
DNS Zones
DNS Registration Enhancements Windows Server 2012 R2
Demo - Installing the DNS Server Role
Enhanced Zone Level Statistics Windows Server 2012 R2
Enhanced PowerShell Support Server 2012 R2
Dynamic Updates
DNS Server Cache and Forwarding
DNS Cache
DNS Records Required for IPv6 Coexistence
Troubleshooting Name Resolution
eNotes: Troubleshooting Name Resolution
DHCP
Dynamic Host Configuration Protocol (DHCP) Service
Lease Generation
DHCP Relay Agent
DHCP on Server Core
DHCP Installation
Demo - Install DHCP
Create and Configure Scopes IPv4

Create and Configure Scopes IPv6
DHCP Reservation
Common DHCP Options
Order Options are Assigned
Managing DHCP Database
Move DHCP Database
Securing DHCP and Unauthorized Computers
Improved PowerShell Commands for DHCP in Server 2012 R2
New PowerShell Commands for DHCP
Configure Client and Server for PXE Boot
DHCP Audit Logging
Common Event Codes
DHCP Issues - Discussion
Module 08 Review

Module 09 - Overview of Active Directory Domain Services

3h 31m

Overview of Active Directory Domain Services
Physical Components of Active Directory
Logical Components of Active Directory
Domain Structures - Domain and Forest
Domain Structure - Forest
Domain Structure - Schema
Domain Structures - Logical
Default Containers and OU's
Domain Structures - Sites (Physical)
Components of Site Structure
Domain - Wide Scope
Overview of Domain Controllers
What Domain Controllers Do
Deprecated Features Server 2012 Related to AD DS
Server 2012 R2 Enhancements
AD and Workplace Join
Global Catalog
Demo - Global Catalog
Operations Master Roles
Best Practices - FSMO and GC
Forest and Domain Functional Levels
Guidelines for Raising Domain and Forest Functional Levels
Functional Level Options
Functional Levels and Recycle Bin
Demo - Functional Levels and FSMO
Forest Functional Levels
ADPrep Commands
RODC
How DC's are Found and Used
Demo - SRV Records DNS
The AD DS Logon Process
Install Domain Controllers
DC Install Questions and Required Information
Required Information to Collect Pre-Install

Demo - Install Domain Controllers
Upgrading Domain Controllers
Clean Installation of Windows Server 2012 Domain Controllers
Install Domain Controller Using IFM
Demo - Remove A Domain Controller From A Domain
Active Directory Management Tools
User Accounts
Uniqueness of Accounts
Attributes of Users
Creating Account Templates
Locking vs. Disabled
Directory Service Command Line Tools
Groups
Group Scopes
Helpful Acronyms
E-Notes
Default Groups
Protected Users Security Group
Protected Users Security Group User Limitations
Special Identities
Computer Accounts
Troubleshooting Computer Accounts
Troubleshooting Steps
Listing Group Membership
Delegate Management of Active Directory Objects
CSVDE for Exporting
CSVDE for Importing
Ldifde
Ldifde - Export
Ldifde - Import
Managing AD DS with PowerShell
Module 09 Review

Module 10 - Windows Security

1h 28m

Windows Security
Windows Security – Defense in Depth
Security Templates
Methods to Distribute Security Templates
User Rights
Demo - Local Security Policy
Auditing
Restricted Groups
Account Policies
Security Compliance Manager (SCM)
Group Policy
GPO Locations - Content
Components of Group Policy
Group Policy Structure
Administrative Templates
ADM Files

Group Policy Central Store
Multiple Local Group Policies
Notes: Local Group Policies
Group Policy Preferences
Common Preferences
Starter GPO
GPO Permissions
Group Policy Processing
Inheritance
Default GPO's
Demo - Create a GPO
Authentication Policies – Server 2012 R2
Software Restriction Policies
Basics: Software Restriction Policies
AppLocker
AppLocker Rules
Windows Firewall
Windows Firewall with Advanced Security
Enhancements Over Standard Windows Firewall
Firewall Profiles
Connection Security Rules
Deploy Firewall Rules
Configure Authenticated Firewall Exceptions
Module 10 Review
Course Closure

Total Duration: 17h 1m