

همراه با حمایت فنی رایگان از طریق ایمیل
همراه با اعطاء مدرک معتبر



Microsoft MCSA Edition 2018

مالتی مدیای 70-410

Installing and Configuring Server 2012 R2

به زبان فارسی (۱ DVD – ۳۰ ساعت)

DVD شامل: ✓

۱۰ بخش آموزشی با بیش از ۵۵ درس به زبان انگلیسی و تشریح فارسی ✓

۷۷ لابراتوار کاربردی: Server ۲۰۱۲ و Server ۲۰۱۲ R2 ✓

Utilities شامل: ✓

امتحان بین المللی ۴۱۰-۷۰, EBooks, Server 2012 R2 Documentation, ✓

شبیه ساز VMware Workstation 12.5 ✓

System Requirements

- Windows XP with SP 2
- 256 MB RAM
- CD-ROM or DVD
- 1024 x 768 High Resolution Video Card & Monitor

70-410 - Installing and Configuring Server 2012/R2

Lessons & Labs

Section 1.1: Windows Server 2012 R2 Interface Overview

This section provides an overview of the Windows Server 2012 R2 interface. Students will become familiar with the:

- *Tools to administer Windows Server 2012 R2:*
 - *Server Manager*
 - *PowerShell*
- *Interface elements used to navigate Windows Server 2012 R2:*
 - *Start screen*
 - *Charms menu*
- *Windows Server 2012 R2 editions*

Section 2.1: Installation

This section provides an overview of the Windows Server 2012 R2. Students will become familiar with the:

- *Windows Server 2012 R2 editions:*
 - *Foundation*
 - *Essentials Edition*
 - *Standard Edition*
 - *Datacenter Edition*
- *Minimum requirements for all editions of Windows Server 2012 R2*
- *Windows Server 2012 R2 Upgrade paths*
- *Server Core*
- *Using Server Manager*

Section 2.2: PowerShell

This section discusses using PowerShell to create scripts from the command line to automate system administration and application management tasks. Concepts covered include:

- *Terms used with PowerShell:*
 - *Command line*
 - *Cmdlets*
 - *Providers*
- *New features in PowerShell :*
 - *Deployment Image Servicing and Management (DISM)*
 - *Remote Windows PowerShell*
 - *Windows PowerShell Workflows*
- *Windows Server 2012 R2 introduced PowerShell Desired State Configuration (DSC)*

Section 2.3: Server Roles

In this section students will learn the roles, role services and features in Windows Server 2012 R2. Concepts covered in this section include:

- *Roles:*
 - *Active Directory Domain Service (AD DS)*
 - *Active Directory Certificate Services (AD CS)*
 - *DNS Server*
 - *DHCP Server*
 - *File and Storage Services*
 - *Hyper-V*
 - *Print and Document Services*
 - *Network Policy and Access Services*
 - *Web Server (IIS)*
 - *Windows Deployment Services (WDS)*
 - *Windows Server Update Server*
- *Role services:*
 - *Distributed Scan Server*

- *Network Policy Server (NPS)*
- *Host Credential Authorization Protocol (HCAP)*
- *Health Registration Authority (HRA)*
- *Features:*
 - *Failover Clustering*
 - *Group Policy*
 - *Network Load Balancing*
 - *BitLocker Drive Encryption*
 - *Remote Assistance*
 - *SMTP Server*
 - *Windows Server Backup*
- *Features on Demand*

Section 2.4: Server Core

This section examines selecting and performing a Server Core installation option. Concepts covered include:

- *Installation options when installing Windows Server 2008 R2:*
 - *Server Core*
 - *Minimal Server Interface*
 - *Server with a GUI*
- *Considerations when selecting the installation option*
- *Tasks to perform after the Server Core installation:*
 - *Name the computer*
 - *Set the time and time zone*
 - *Assign a static IP address to the server*
 - *Join the server to the domain*
- *PowerShell commands for switching between server installation options*
- *Tasks to convert from Server with a GUI to a Minimal Server installation*
- *Tasks to convert from Server with a GUI to a Server Core installation*

Section 2.5: Remote and Offline Servers

This section provides information about remote role deployment tasks. Concepts covered include:

- **Role deployment tasks:**
 - *Add domain servers to the server pool*
 - *Manage non-domain workstations*
 - *Deploy a role on a remote server*
 - *Deploy a role to a VHD file*
- *Using the Windows Remote Management WINRM command*
- *Using Deployment Image Servicing and Management (dism) commands*

Section 2.6: NIC Teaming

This section discusses using NIC Teaming to increase bandwidth and provide fault tolerance. Details covered include:

- *Considerations regarding NIC Teaming*
- *NIC Teaming modes:*
 - *Switch-dependent mode*
 - *Switch-independent mode*
- *Load balancing mode methods:*
 - *Hyper-V switch port*
 - *Hashing*

Section 2.7: Traditional Storage

This section examines using managing traditional storage. Concepts covered include:

- *Implementing directly-attached storage*
- *Partition styles of disks:*
 - *Master Boot Record (MBR)*
 - *GUID Partition Table (GPT)*
- *Types of Volumes:*
 - *Basic*
 - *Dynamic*
- *Dynamic Volume Types:*

- *Simple*
- *Spanned*
- *Striped (RAID 0)*
- *Striped with parity (RAID 5)*
- *Mirrored (RAID 1)*
- *Considerations when managing disks and volumes for directly-attached storage*
- *Strategies for adding space to existing volumes:*
 - *Extend the volume*
 - *Configure a mount point*
- *The role of ReFS*

Section 2.8: Storage Pools

In this section students will explore using storage pools. Details include:

- *Components of storage spaces:*
 - *Devices*
 - *Pools of storage*
 - *Storage spaces*
- *Steps to add more space to storage spaces*
- *Configuration options in storage pool creation:*
 - *Allocation*
 - *Storage layout:*
 - *Simple*
 - *Two-way mirror*
 - *Three-way mirror*
 - *Parity*
 - *Provisioning*
 - *Fixed provisioning*
 - *Thin provisioning*
 - *Storage tiers*
 - *Write-back cache*
- *Primordial storage pool*
- *Storage pool limitations*

- *PowerShell command to manage storage spaces*
- *Considerations of enclosure awareness (introduced in Windows Server 2012 R2)*

Section 3.1: Virtual Machines

This section provides details of creating and managing virtual machines. Concepts covered include:

- *Virtualization types:*
 - *Server virtualization*
 - *Network virtualization*
 - *Storage virtualization*
- *Hyper-V details*
- *Hardware requirements for Windows Server 2012 R2 running Hyper-V*
- *New or updated features available in Windows Server 2012 R2 Hyper-V and Windows Server R2*

Hyper-V:

- *Dynamically expanding memory*
- *Smart paging*
- *Resource metering*
- *Resource control*
- *Integration Services*
- *Enhanced Session Mode*
- *Key components of generation 2 virtual machines:*
 - *Supported guest operating systems*
 - *Hardware*
 - *Supported features*
 - *Non-supported features*
- *Facts regarding generation 2 virtual machines*

Section 3.2: Virtual Machine Storage

This section discusses creating and managing virtual machine storage. Concepts covered include:

- *Considerations when creating a new VM*
- *VHDs management tasks:*

- *Expand*
- *Shrink*
- *Compact*
- *Convert*
- *Considerations for Hyper-V in Windows Server 2012 R2*
- *VMs features:*
 - *Pass-through disk*
 - *Differencing disk*
 - *Snapshot/Checkpoint*

Section 3.3: Virtual Networks

In this section students will learn about virtual networks. Concepts covered include:

- *Types of virtual networks:*
 - *External*
 - *Internal*
 - *Private network*
 - *Fibre Channel*
- *Virtual network adapters supported by:*
 - *Generation 1*
 - *Generation 2*
- *Virtual switches*
- *Considerations for installing virtual switches:*
 - *External*
 - *VLAN*
 - *Fibre Channel*
- *Features available to optimize virtual networks:*
 - *Virtual Machine Queue (VQM)*
 - *IPSec Task Offloading (IPSecTO)*
 - *DHCP Guard*
 - *Router Guard*
 - *Port Mirroring*
 - *NIC Teaming*

- *Port Access Control Lists (ACLs)*
- *Meter Port ACLs*
- *Private Virtual Local Area Network (PVLAN)*
- *Trunking*
- *Storage quality of service (QoS)*

Section 4.1: Active Directory

This section provides details of Active Directory. Concepts covered include:

- *Active Directory components:*
 - *Trees and Forests*
 - *Domain*
 - *Organizational Unit (OU)*
 - *Objects*
 - *Generic Containers*
 - *Domain Controller*
 - *Global Catalog*
- *The Active Directory database resides in Ntds.dit*
- *Windows operating system networking models:*
 - *Stand-Alone*
 - *Workgroup*
 - *Client-Server*

Section 4.2: Domain Controllers

This section discusses installing and managing domain controllers. Concepts covered include:

- *Requirements for installing Active Directory Domain Services (AD DS)*
- *Methods for Active Directory Domain Services (AD DS) installation:*
 - *Active Directory Domain Services Installation Wizard*
 - *Command Line*
 - *Answer file*
 - *AD DS installation from media*

- *Considerations when upgrading domain controllers to Windows Server 2012 R2 or Windows Server 2012 R2*
- *Active Directory on Windows Azure*
- *The role of domain controllers*
- *Partitions within the directory partition:*
 - *Domain partition*
 - *Schema partition*
 - *Configuration partition*
 - *Application directory partition*
- *Considerations when working with domains*
- *Additional functions or roles that domain controllers can have:*
 - *Replica domain controller*
 - *Global Catalog*
 - *Operations Master Roles*

Section 4.3: Sites

This section discusses the role of sites and subnets.

Students will learn how to:

- *Configure and configure a site.*

Section 4.4: Organizational Units

In this section students will learn the basics of using Organization Units. Concepts covered in this section include:

- *Containers and OU created by default when Active Directory is installed:*
 - *Domain container*
 - *Builtin container*
 - *Users container*
 - *Computers container*

- *Domain Controller OU*
- *Details about an Organization Unit (OU)*
- *Considerations for managing OUs:*
 - *Group Policy*
 - *Preventing accidental deletion*
 - *Delegating authority*

Section 4.5: Users Accounts

This section discusses considerations when using user accounts. Details include:

- *Types of Windows user accounts:*
 - *Local*
 - *Domain*
- *Active Directory name types:*
 - *User or Logon Name*
 - *User Principal Name (UPN)*
 - *Distinguished names*
 - *Relative Distinguished Name (RDN)*
- *Recommendations when working with user accounts:*
 - *Create/manage user accounts*
 - *Use templates*
 - *Manage passwords*
 - *Create a user profile*
 - *Deprovision a user*

Section 4.6: Bulk User Operations

This section provides information about the following tools when performing bulk user operations such as creating or modifying large number of objects:

- *Csvde*
- *Ldifde*
- *PowerShell*

- *Ldp*
- *DS commands*

Section 4.7: Computer Accounts

In this section students will learn about using computer accounts. Options covered include:

- *Processes to identify a specific computer:*
 - *Create a computer account in Active Directory*
 - *Join the computer to the domain.*
- *Methods to perform these processes:*
 - *Pre-stage accounts*
 - *Manual join*
 - *Redirection*
 - *Offline domain join*
- *Facts about computer accounts and joining a domain*
- *Passwords*

Section 4.8: Groups

This section discusses managing groups. Concepts covered include:

- *Groups:*
 - *Local group*
 - *Domain group*
- *Group types:*
 - *Security*
 - *Distribution*
- *Group scopes:*
 - *Local*
 - *Domain Local*
 - *Global*
 - *Universal*
- *Query for group members*
- *Considerations when managing groups*

Section 4.9: Rights Delegation

This section discusses rights delegation to share administrative tasks with other user. Concepts covered include:

- *Using Delegation of authority to enhance security*
- *Processes to delegate administrative authority*
- *Using the Delegation of Control wizard*
- *Assigning permissions to Active Directory objects*

Section 5.1: Single-label Names

This section provides information about the following strategies to provide single-label name resolution:

- *HOSTS file*
- *Link-Local Multicast Name Resolution (LLMNR)*
- *DNS suffix search list*
- *DNS devolution*
- *GlobalNames zone*

Section 5.2: Name Resolution

This section discusses name resolution using DNS. Concepts covered include:

- *DNS terms:*
 - *Forward lookup*
 - *Reverse lookup*
 - *Authoritative server*
 - *Referral*
 - *Recursion*
 - *Iterative*
 - *Delegation*

- *DNS name resolution process:*
 - *Client*
 - *Server*
- *Root hints and the root zone*

Section 5.3: Zone Management

This section examines managing zones. Concepts covered include:

- *Types of authoritative DNS zones:*
 - *Primary*
 - *Secondary*
 - *Active Directory-integrated*
- *Types that zones are classified as:*
 - *Forward lookup zone*
 - *Reverse lookup zone*

Section 5.4: DNS Records

This section discusses using DNS records. Details covered include:

- *Common DNS database resource records:*
 - *SOA (Start of Authority)*
 - *NS (name server)*
 - *A (host address)*
 - *AAAA (quad-A)*
 - *PTR (pointer)*
 - *CNAME (canonical name)*
 - *MX (Mail Exchanger)*
 - *SRV (service locator)*
 - *WINS and WINS-R resource records*
 - *SPF (Sender Policy Framework)*

Section 5.5: DNS Server Properties

In this section students will explore using DNS Manager to configure the following DNS server properties:

- *Interfaces*
- *Forwarders*
- *Root Hints*
- *Debug Logging*
- *Event Logging*
- *Monitoring*
- *Security*
- *Advanced*

Section 5.6: DNS Troubleshooting

In this section students will learn about the tools to troubleshoot DNS.

- *Ping*
- *NSLookup*
- *IPConfig*

Section 6.1: File Access

This section discusses file and share access. Details covered include:

- *NTFS permissions*
- *Shared folder permissions*
- *Permissions for folders and files:*
 - *Read*
 - *Write*
 - *List Folder Contents*
 - *Read & Execute*
 - *Modify*

- *Full Control*
- *Concepts of setting up or managing NTFS permissions:*
 - *Ownership*
 - *Explicit vs inherited permissions*
 - *Copying or moving files*
 - *Using icaccls*
- *Special permissions*
- *Best practices for permissions*
- *NTFS quotas*

Section 6.2: Access-based Enumeration (ABE) and Volume Shadow Copy (VSS)

This section discusses Access-based Enumeration (ABE) and Volume Shadow Copy (VSS). Details covered include:

- *The role of Access-based Enumeration (ABE)*
- *Differences in implementing ABE in WS2008 and Server 2012 R2*
- *Volume Shadow Copy Service (VSS)*
- *Implementing shadow copies:*
 - *Scheduling*
 - *Storing*
 - *Recovering*
 - *NTFS Permissions*
 - *VSSAdmin*

Section 6.3: Shares

This section discusses managing share access. Details covered include:

- *How share permissions work with NTFS permissions to control access*
- *Types of file sharing:*
 - *Simple File Sharing*
 - *Advanced File Sharing*
- *Advanced share permissions:*

- *Read*
- *Change*
- *Full control*

Section 6.4: Sharing on Server 2012 R2

This section provides information about using the New Share Wizard which is part of the Server Manager task-based interface. Concepts covered include:

- *Protocols for file shares:*
 - *Server Message Block (SMB)*
 - *Network Files System (NFS)*
- *Options available in the New Share Wizard:*
 - *SMB Share – Quick*
 - *SMB Share – Advanced*
 - *SMB Share – Applications*
 - *NFS Share –Quick*
 - *NFS Share – Advanced*
- *Additional settings after selecting the location for the share and naming it:*
 - *Enable access-based enumeration*
 - *Enable continuous availability*
 - *Allow caching of share*
 - *Encrypt data access*
- *Features of Work Folders*
- *Elements Work Folders does not support*
- *Requirements to be met to use Work Folders:*
 - *Server*
 - *Clients*
- *Facts about implementing Work Folders:*
 - *On the server*
 - *On the client*

Section 6.5: Effective Permissions

This section examines how to identify a user's effective permissions for a specific folder. Details discussed include:

- *Effective permissions are the sum of all permissions from the following sources:*
 - *Explicit Assignment*
 - *Group Membership*
 - *Inheritance*
- *Inherited permissions*
- *Effective permissions*
- *Example scenarios of combined share and NTFS permissions*
- *Suggestions to plan NTFS permissions*

Section 7.1: Print Servers

This section provides information about print servers. Details include:

- *Definitions for print and document services:*
 - *Print server*
 - *Printer*
 - *Print device*
 - *Print driver*
 - *Print queue*
 - *Printer port*
- *Services of the Print and Document Services role:*
 - *Print Server*
 - *LPD Service*
 - *Internet Printing*
 - *Distributed Scan Server*
- *Print device properties useful to control print jobs:*
 - *General*
 - *Sharing*
 - *Ports*

- *Advanced*
- *Security*

Section 7.2: Print Management

In this section students will learn about using Print Management, a utility for managing print servers. Details include:

- *When printers are detected, Print Management automatically:*
 - *Installs drivers*
 - *Establishes the queues*
 - *Shares the printers*
- *Features of Print Management:*
 - *Custom Filters*
 - *Printer permissions*
 - *Printer pooling*
 - *Multiple printer objects*
 - *List in Active Directory*
 - *Deploy with Group Policy*
 - *Export/import printers*
 - *Manage print drivers*
 - *Manage documents in the print queue*
 - *Location-aware printing*
 - *Print driver isolation*
 - *Client-Side Rendering (CSR)*
 - *Easy Print driver*
- *Configuration choices for different types of printer*

Section 8.1: Group Policy Foundation

this section discusses the basics of using Group Policies. Concepts covered include:

- *Common GPO configuration settings:*
 - *Account Policies*

- *Local Policies/Audit Policy*
- *Local Policies/User Rights Assignment*
- *Local Policies/Security Options*
- *Registry*
- *File System*
- *Software Restriction Policies*
- *Administrative Templates*
- *Starter Group Policy Objects*
- *Tasks for managing GPOs:*
 - *Creating local GPOs*
 - *Assigning GPO permissions*
 - *Linking GPOs*
 - *Using Administrative Templates*
 - *Using a central store*
- *GPO categories:*
 - *Computer Configuration*
 - *User Configuration*

Section 8.2: Group Policy Management

In this section students will learn about Group Policy Management. Concepts covered include:

- *Considerations when working with Group Policy settings*
- *Scoping methods:*
 - *Block Inheritance*
 - *Enforced*
 - *Security group filtering*
 - *Windows Management Interface (WMI) filtering*
 - *Loopback Processing*
- *Using Group Policy Management to manage the application of the GPO*
- *How scoping affects the application of the GPO*

Section 8.3: Password Policies

In this section students will learn about using password policies. Details covered include:

- *Methods of setting password policies:*
 - *Account policies*
 - *Granular password policy*
- *Strategies to protect against password attacks:*
 - *Educate users*
 - *Protect access to the password file*
 - *Salt the has*
 - *Implement two-factor authentication*
- *Password policies*

Section 8.4: Audit Policies

This section discusses using audit policies to enable auditing to record system events. Concepts covered include:

- *An enabled audit policy can audit for:*
 - *Success*
 - *Failure*
- *Basic audit policies configurable through Group Policy:*
 - *Account logon*
 - *Account management*
 - *Directory service access*
 - *Logon*
 - *Object access*
 - *Policy change*
 - *Privilege use*
 - *Process tracking*
 - *System*
- *Considerations when configuring auditing*
- *Advanced auditing settings*

Section 8.5: User Rights Assignment

This section discusses the basics of permissions, rights, and user rights assignment policies.

Section 8.6: Security Options

This section examines using security options to manage the security on the computer. Details include:

- *Important Group Policy security options*
- *User Account Control (UAC) account types:*
 - *Standard user*
 - *Administrator*
- *Default behavior of UAC*
- *UAC notification level settings:*
 - *Always*
 - *Notify me only when programs try to make changes to my computer*
 - *Notify me only when programs try to make changes to my computer (do not dim the desktop)*
 - *Never notify*
- *Group Policy settings for each notification level:*

Section 8.7: Restricted Groups

In this section students will learn the about using restricted groups to control membership for groups that require high security. Concepts covered include:

- *Restricted groups definitions:*
 - *Members of this group*
 - *This group is a member of*
- *Considerations when using the Restricted Groups Policy*

Section 8.8: Windows Firewall Policies

This section discusses Windows Firewall policies to provide real-time protection to the system. Concepts covered include:

- *Use Group Policy to manage Windows Firewall with Advanced Security:*
 - *Profiles*
 - *Firewall rules*
 - *Connection Security rules*
 - *Policy file*

Section 8.9: Application Restriction Policies

This section examines using application restriction policies to control the applications that run on the computers in the environment. Concepts covered include:

- *The role of Software Restriction Policies*
- *Ways software restriction can be implemented:*
 - *Unrestricted*
 - *Disallowed*
 - *Basic User*
- *Software restriction rules conditions:*
 - *Hash*
 - *Certificate*
 - *Network zone*
 - *Path*
- *Advantages of AppLocker policies*
- *AppLocker rule types:*
 - *Executable*
 - *Windows Installer*
 - *Script*
 - *Packaged app*
- *AppLocker rules have the following conditions:*
 - *Publisher*

- *Path*
- *Hash*
- *Considerations when using AppLocker*

Section 8.10: Group Policy Preferences

This section discusses using group policy preferences to configure, deploy, and manage operating system and application settings. Concepts covered include:

- *The role of the following Group Policy preferences:*
 - *Drive maps*
 - *Environment*
 - *Files Folders*
 - *Ini Files*
 - *Network shares*
 - *Registry*
 - *Shortcuts*
 - *Devices*
 - *Folder options*
 - *Internet settings*
 - *Local users and groups*
 - *Network connections*
 - *Power options*
 - *Printers*
 - *Regional options*
 - *Scheduled tasks*
 - *Services*
 - *Start menu*

Section 9.1: IPv4 Addressing

This section discusses using IPv4 addressing to deliver packets to and from clients on a network. Details include:

- *Rules for using IPv4*
- *IPv4 concepts:*
 - *Host*
 - *IP Address*
 - *Network address*
 - *Subnet mask*
 - *Address Class*
 - *Default subnet mask*
 - *Broadcast address*
 - *Default gateway*
- *IP Address Structure*
- *Subnet Mask*
- *Default address classes*
- *Options for assign IPv4 addresses and other IPv4 configuration values:*
 - *Dynamic Host Configuration Protocol (DHCP)*
 - *Automatic Private IPv4 Addressing (APIPA)*
 - *Static (manual) assignment*
 - *Alternate IPv4 configuration*
- *The role of a Network Address Translation (NAT) router*

Section 9.2: IPv4 Custom Addressing

This section provides information about IPv4 custom addressing concepts. Details covered include:

- *IPv4 custom addressing concepts:*
 - *Subnetting*
 - *Supernetting*
 - *Classless Addressing*
 - *ANDing*
- *Exponent values for powers of 2*
- *Common binary and decimal values used in subnet masks*
- *Subnetting*
- *Calculation to determine if workstations are on the same network*

Section 9.3: IPv6 Addressing

This section discusses transitioning to IPv6 addressing. Details include:

- *IPv6 follows the same basic rules as IPv4*
- *Components of the IPv6 address structure:*
 - *Format*
 - *Leading zeros*
 - *Prefix and interface ID*
- *Comparison of IPv6 address types and IPv4 address types*
- *Strategies for deploying Ipv6:*
 - *Dual stack*
 - *Tunneling*
 - *Manually configured tunnel*
 - *Intra-site Automatic Tunnel Addressing Protocol (ISATAP)*
 - *6-to-4 tunneling*
 - *Teredo tunneling*
 - *PortProxy*
 - *IPv4 Compatible Address*
 - *IPv4 Mapped Address*
 - *IPv6 to IPv4 Address*

Section 10.1: DHCP Basics

In this section students will explore the basics of using Dynamic Host Configuration Protocol (DHCP) to centralize management of IP assignment. Details about the following concepts will be covered:

- *Methods clients use to obtain an address from a DHCP server:*
 - *DHCP Discover (D)*
 - *DHCP Offer (O)*
 - *DHCP Request (R)*
 - *DHCP ACK (A)*
- *DHCP authorization:*
 - *Authorization requirements*

- *Authorization verification*
- *Configuring a DHCP Server*
- *Scope*
- *DHCP options:*
 - *Server options*
 - *Scope options*
 - *Class options*
 - *Client options*
- *DHCP console context-sensitive icons reflect DHCP server status*

Section 10.2: DHCP Exclusions and Reservations

This section discusses DHCP exclusions, reservations, and filters to control DHCP IP address assignment.

Section 10.3: DHCP Centralization

This section covers DHCP centralization. Details include:

- *Administrative features that allow a DHCP server to support multiple scopes:*
 - *Superscope*
 - *Split scope*
- *Options for a DHCP server to service a subnet separated with a router:*
 - *1542 compliant router*
 - *DHCP relay agent*
- *DHCP failover*

Section 10.4: DHCP Troubleshooting

In this section students will learn about troubleshooting DHCP. Details include:

- *Methods by which hosts obtain IP addresses in the event of a DHCP failure:*
 - *Automatic Private IPv4 Addressing (APIPA)*
 - *Alternate IPv4 configuration*

- *Statistics:*
 - *DCHP Discovers are not increasing*
 - *If Discovers are increasing, but Offers are static*
 - *If Discovers and Offers are increasing, but Requests are static*

Appendix-A Server 2012 R2 Updates

- *A1. Server 2012 R2 User Interface*
- *A2. PowerShell Desired State Configuration*
- *A3. Disk Enclosures with Storage Pools*
- *A4. Server 2012 R2 VMs & Enhanced Session Mode*
- *A5. Managing Snapshots/Checkpoints*
- *A6. Adding Virtual Network Adaptors / NIC Teaming / QoS*
- *A7. Deploying Active Directory with Windows Azure*
- *A8. Work Folders*