Module 2 – Network Infrastructure

In this module students will learn about DNS solutions, DHCP servers, strategies to provide single-label name resolution, and remote access servers. Also discussed are RADIUS servers, Network Access Protection (NAP), and using the Windows Firewall to protect against unwanted access.

Section 2.1: DNS

Summary

This section discusses DNS solutions. Details include:

- DNS namespace goals
- Methods for accomplishing DNS namespace goals:
    - Same internal and external domain name
    - External domain name with a delegated internal subdomain
    - Different internal and external domain names
- DNS solutions:
    - Primary zone
    - Secondary zone
    - Reverse lookup zone
    - Active Directory-integrated zone
    - Caching-only server
    - Zone delegation
    - Forwarders
    - Conditional forwarding
    - Stub zone
    - Root zone
    - Root hints
    - Dynamic DNS
    - WINS-integrated zone
    - GlobalNames zone
    - Link-Local Multicast Name Resolution (LLMNR)
    - HOSTS file
- New Features for Windows Server 2008 and 2008 R2
    - Background zone loading
    - IPv6 DNS Support
    - Read-only Domain Controller (RODC)
    - GlobalNames Zone
    - Conditional Forwarding
    - Global Query Block List
    - Link-Local Multicast Name Resolution (LLMNR)
    - Domain controller search
    - DNSSEC Support

- o Devolution
- o Cache locking
- o Socket pool
- o Auditing

Students will learn how to:

- Delegate DNS domains.
- Configure forwarding and conditional forwarding.
- Create stub zones.

Windows Server 2008 Server Administrator

- 103. Plan infrastructure services server roles.

Video/Demo	Time
☐ 🖳 2.1.1 DNS Planning	5:53
☐ 🖳 2.1.2 Viewing Namespace Effects	8:05
☐ 🖳 2.1.4 Configuring Forwarders	5:53
☐ 🖳 2.1.9 New DNS Features	4:19
Total	*24:10*

Lab/Activity

- ☐ Delegate Domains
- ☐ Create a Delegated Zone
- ☐ Configure a Stub Zone

☐ **Number of Exam Questions: 7 questions**

Total Time: About 60 minutes

Section 2.2: DHCP

Summary

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

- Strategies to provide DHCP for multiple subnets:
  - o DHCP server on each subnet
  - o Multihomed DHCP server
  - o BOOTP forwarding
  - o DHCP relay agent
- Superscope

- Split Scope (also called distributed scopes)

Students will learn how to:

- Configure split scopes on multiple DHCP servers.

Windows Server 2008 Server Administrator

- 103. Plan infrastructure services server roles.

Lab/Activity

- ☐ Add a DHCP Server for Fault Tolerance

☐ **Number of Exam Questions: 2 questions**

Total Time: About 10 minutes

Section 2.3: Single-label Name Resolution

Summary

This section examines strategies to provide single-label name resolution in a Windows Server 2008 R2 environments:

- GlobalNames zone
- Link-Local Multicast Name Resolution (LLMNR)
- HOSTS file

Students will learn how to:

- Configure the GlobalNames zone to provide single-label name resolution.

Windows Server 2008 Server Administrator

- 103. Plan infrastructure services server roles.

Video/Demo	Time
☐ 2.3.1 GlobalNames Zone	1:41
☐ 2.3.2 Configuring the GlobalNames Zone	4:12
Total	*5:53*

Lab/Activity

- ☐ Configure a GlobalNames Zone

☐ **Number of Exam Questions: 2 questions**

Total Time: About 15 minutes

Section 2.4: Routing and Remote Access

Summary

This section discusses concepts about routing and remote access. Details include:
- Configuration tasks that must be performed on the server to allow a remote client to connect to a remote access server:
    - Enable remote access
    - Configure ports
    - Configure addressing
    - Configure network policies
- Authentication process when a remote access connection is requested
- VPN protocols that are supported:
    - Point-to-Point Tunneling Protocol (PPTP)
    - Layer Two Tunneling Protocol (L2TP)
    - Secure Socket Tunneling Protocol (SSTP)
- Client requirements for using SSTP
- Server requirements for using SSTP

Students will learn how to:

- Add the Routing and Remote Access role services.
- Configure a remote access server to allow VPN connections.
- Customize the ports used by a VPN server.
- Control remote access by configuring network access policies.

Windows Server 2008 Server Administrator

- 103. Plan infrastructure services server roles.
- 303. Monitor and maintain security and policies.

Video/Demo	Time
☐ 2.4.1 Routing and Remote Access	8:43
☐ 2.4.2 Configuring a VPN Server	6:25
Total	*15:08*

Lab/Activity

- ☐ Add Role Services for Remote Access
- ☐ Configure a VPN Server for SSTP

☐ **Number of Exam Questions: 6 questions**

Total Time: About 35 minutes

Section 2.5: RADIUS

Summary

This section discusses facts about using a RADIUS server. Concepts include:
- Components of a RADIUS solution:
    - Remote access clients
    - RADIUS client
    - RADIUS server
    - RADIUS proxy
    - Remote RADIUS server group
    - Network policies
    - Connection request policies
    - RADIUS Accounting
    - NPS templates
    - User account databases
    - RADIUS messages
- Centralized logging (accounting)
- Types of logging for Windows Server 2008:
    - Event logging
    - Local file logging
    - SQL server logging

Students will learn how to:

- Configure a RADIUS server to authenticate users on remote access servers.
- Configure a RADIUS client for authentication and accounting.

Windows Server 2008 Server Administrator

- 303. Monitor and maintain security and policies.

Video/Demo	Time
☐ 2.5.1 RADIUS Server	7:53
☐ 2.5.2 Configuring a RADIUS Solution	3:05
Total	**10:58**

Lab/Activity

- ☐ Configure a RADIUS Server
- ☐ Configure a RADIUS Client

☐ **Number of Exam Questions: 4 questions**

Total Time: About 30 minutes

Section 2.6: Network Access Protection

Summary

This section presents information about using Network Access Protection (NAP) to regulate network access. Details include:

- Features of NAP
    - Health state validation
    - Health policy compliance
    - Limited access network
- Components that comprise the NAP system:
    - NAP Client
    - NAP Server
    - Enforcement Server (ES)
    - Remediation Server
- Configuring NAP

Students will learn how to:

- Add roles and role services to support NAP.
- Configure a DHCP server and enforcement point for NAP.

Windows Server 2008 Server Administrator

- 103. Plan infrastructure services server roles.
- 303. Monitor and maintain security and policies.

Video/Demo	Time
☐ 2.6.1 Network Access Protection (NAP)	3:54
☐ 2.6.2 Configuring NAP with DHCP Enforcement	9:37
Total	**13:31**

Lab/Activity

- ☐ Add Role Services for NAP

☐ **Number of Exam Questions: 3 questions**

Total Time: About 25 minutes

Section 2.7: Windows Firewall

Summary

This section examines using Windows Firewall with Advanced Security to protect from unwanted access. The following details about Windows Firewall are presented:

- Features of Windows Firewall with Advanced Security:
    - Profiles
    - Firewall rules
    - Connection Security rules
    - Monitoring
    - Policies

Students will learn how to:

- Create a connection security isolation rule.

Windows Server 2008 Server Administrator

- 303. Monitor and maintain security and policies.

Video/Demo	Time
☐ 2.7.1 Windows Firewall	4:10
☐ 2.7.2 Creating an Isolation Rule	<u>2:22</u>
Total	***6:32***

☐**Number of Exam Questions: 3 questions**

Total Time: About 15 minutes