# Module 5 – Routing

Module 5 teaches the students the basics of routing and how to manage routing table entries.  Students will become familiar with installing RRAS components, and configuring RIP, demand-dial routing, and ICS and NAT solutions.

# Section 5.1: Routing

## Summary

In this section students will become familiar with routing concepts and the commands to manage routing table entries. Details include:

- NPAS includes the following role services:
    - Network Policy Server (NPS)
    - Remote Access Service
    - Routing
    - Health Registration Authority (HRA)
    - Host Credential Authorization Protocol (HCAP)
- Routing terminology:
    - Router
    - Static Route
    - Route metric
    - Default route
    - Persistent route
- Commands to manage routing table entries
- Multicast routing details


Students will learn how to:

- Install the RRAS components of the Network Policy and Access services.
- Add and modify IPv4 and IPv6 routes through the command line or GUI.

## Configuring Server 2008 Network Infrastructure Objectives
- 103. Configure Routing.
    - Static routing
    - Choosing a default gateway


**Log into LabSim and complete the tasks listed under Resources for each of the items listed below. As you complete them Checkoff the boxes:**

## Video/Demo                                                          Time

☐ 5.1.2 Routing Concepts                                    10:27

☐ 5.1.3 Installing Routing and Remote Access          2:07

☐ 🖥 5.1.4 Configuring Static Routes      <u>13:52</u>

    *Total*      *26:26*

## Lab/Activity

- ☐ Enable LAN Routing
- ☐ Add Static Routes

## ☐ Number of Exam Questions: 10 questions

## Total Time: About 50 minutes

# Section 5.2: RIP

## Summary

This section provides an overview of RIP dynamic routing protocols. Details include:

- Key features of RIP that can be configured:
  - Packet protocol
  - Authentication
  - Route Filters
  - Neighbors
  - Timers
  - Clean-up updates
  - VLSM support

Students will learn how to:

- Configure RIP by adding the RIP protocol and adding interfaces to run RIP.
- Configure RIP sending and receiving protocols, filters, and neighbor lists.

## Configuring Server 2008 Network Infrastructure Objectives

- 103. Configure Routing.
  - Routing Internet protocol (RIP)
  - Maintaining a routing table

==Log into LabSim and complete the tasks listed under Resources for each of the items listed below. As you complete them Checkoff the boxes:==

## Video/Demo      Time

☐ 🖥 5.2.1 Dynamic Routing      4:20

☐ 🖥 5.2.2 Configuring RIP      <u>3:16</u>

    *Total*      *7:36*

**Lab/Activity**

- ☐ Configure RIP Routing

☐ **Number of Exam Questions:9 questions**

**Total Time:About 25 minutes**

# Section 5.3: Demand-dial Routing

## Summary

This section discusses the processes to establish demand-dial routing to connect two networks through a link that is available on demand. Details include:

- The process to establish a demand-dial link
- Details about using demand-dial connections
- Features of demand-dial routing:
  - o Demand-dial filters
  - o Packet filters
  - o Auto-static routing
- Configuring and enabling demand-dial routing


Students will learn how to:

- Use the Routing and Remote Access wizard to configure demand-dial routing.
- Configure auto-static routing for RIP.

## Configuring Server 2008 Network Infrastructure Objectives

- 103. Configure Routing.
  - o Demand-dial routing
- 301 Configure remote access.
  - o Packet filters

Log into LabSim and complete the tasks listed under Resources for each of the items listed below. As you complete them Checkoff the boxes:

## Video/Demo                                                 Time

☐ 5.3.1 Demand-dial Routing                                    4:17

☐ 5.3.2 Configuring Demand-dial Routing            6:59

    *Total*                                                  *11:16*

## Lab/Activity

- ☐ Configure Demand Dial Routing
- ☐ Configure Auto-static Routing

☐ **Number of Exam Questions: 5 questions**

**Total Time: About 30 minutes**

# Section 5.4: ICS and NAT

## Summary

In this section students will learn the basics of using Internet Connection Sharing (ICS) and Network Address Translation (NAT) to share an Internet connection with an internal private network.

- NAT allows you to connect a private network to the Internet without obtaining registered addresses for every host.
- Configuring NAT

Students will learn how to:

- Configure a server as a NAT router.
- Configure a NAT router to provide DHCP and DNS proxy services.
- Configure address and port mappings in NAT.

## Configuring Server 2008 Network Infrastructure Objectives

- 301. Configure remote access.
  - o Network Address Translation (NAT)

Log into LabSim and complete the tasks listed under Resources for each of the items listed below. As you complete them Checkoff the boxes:

## Video/Demo                                    Time

☐ 5.4.1 ICS and NAT                              6:18

☐ 5.4.2 Configuring NAT                          6:26

  *Total*                                        *12:44*

## Lab/Activity

- ☐ Configure NAT

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

**Total Time: About 25 minutes**