Class Activity - Tuning EIGRP

Objectives

Implement advanced EIGRP features to enhance operation in a small- to medium-sized business network.

This chapter will focus on some advanced methods to tune EIGRP network configurations. This modeling activity will prove your mastery of some of these concepts.

Scenario

The purpose of this activity is to review EIGRP routing protocol tuning concepts.

You will work with a partner to design one EIGRP topology. This topology will be the basis for two parts of the activity. The first will use default settings for all configurations and the second will incorporate at least three of the following EIGRP tuning options:

- Default routes
- Default routes propagation
- Hello interval timer settings
- EIGRP bandwidth percent utilization

Refer to the labs, Packet Tracer activities, and interactive activities to help you as you progress through this modeling activity.

Directions are listed on the PDF file for this activity. Share your completed work with another group. You may wish to save a copy of this activity to a portfolio.

Resources

- Packet Tracer software or physical network lab equipment
- Word processing program

Directions

Step 1: Design a WAN and LAN topology.

a. Use Packet Tracer to design a network with two routers (1941 model, suggested). If necessary, add NICs to the routers to provide connectivity to the routers for at least two LANs for each router. Add at least one PC to each LAN.

b. Address the networks using either an IPv4 or IPv6 addressing scheme. VLSM may be used per group discretion. A fully VLSM-addressed network will work with EIGRP because auto-summarization is turned off by default.

c. Configure the topology using basic EIGRP default settings.

d. Make sure all PCs can ping each other, to prove connectivity.

e. Save your work.

Step 2: Copy the topology.

a. Using your cursor, highlight the entire EIGRP-configured topology.

b. Press **Ctrl**+**C** to copy the highlighted topology.

c. Use **Ctrl**+**V** to paste a full copy of the topology to the Packet Tracer desktop. There should be two EIGRP-configured topologies displayed. You will use the topology copy to tune the network.

d. While highlighted, move the copied topology to a different location on the Packet Tracer desktop to create room between the two for configuration purposes.

Step 3: Configure tuning features on the copied topology.

a. Choose three of the bulleted items from the Scenario section of this activity. Configure your changes on the copied topology.

Note: By changing the Hello interval times, network instability may occur, however you should be able to troubleshoot it. Make sure to notice adjacency status changes if you choose the Hello interval configuration option.

b. Save your work to avoid losing your configuration.

Step 4: Use verification commands to compare and contrast the default configuration and the tuned configuration.

a. Use at least three output commands to compare and contrast the two topologies, and copy them to a word processing software program. For example, some useful commands include:

- **`show ip route`**
- **`show running-configuration`**
- **`show ip protocols, show ip eigrp neighbors`**

b. Share your work with another group. Explain how you changed the second topology from the first configured example. Justify what happened when you configured the three EIGRP tuning options.