

Tweaking EIGRP

Objectives

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

Scenario

The purpose of this activity is to review EIGRP routing protocol fine-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 fine-tuning EIGRP options:

- Manual summary route
- Default routes
- Default routes propagation
- Hello interval timer settings

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 real network lab equipment
- Word processing program

Directions

Step 1: Design a WAN and LAN topology.

- 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 to provide for, at least, two LANs for each router. Add, at least, one PC to each LAN.
- Address the networks using either an IPv4 or IPv6 addressing scheme. VLSM may or may not be used per group discretion. If you use a full VLSM-addressed network, you will need to turn off auto-summarization from the beginning of your configuration design.
- Configure the topology using basic EIGRP default settings.
- Make sure all PCs can ping each other to prove connectivity. If not, work to make this so.
- Save your work.

Step 2: Copy the topology.

- Using your cursor, highlight the entire EIGRP-configured topology.
- Press **Ctrl+C** to copy the highlighted topology.
- Use **Ctrl+V** to paste a full copy of the topology to the Packet Tracer desktop. You will now have displayed two exact EIGRP-configured topologies. You will use the topology copy to tweak the network.
- 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 fine-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. You should be able to configure it; however, notice adjacencies status changing if you do choose this configuration option.
- b. Save your work to avoid losing your configuration.

Step 4: Use verification commands to compare and contrast your default and fine-tuned configurations.

- 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 fine-tuning options.