Classless EIGRP (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Objectives

Describe the basic features of EIGRP.

EIGRP is introduced to students through the informative video, Fundamental Configuration and Verification of EIGRP. After viewing the video, students should be able to explain how classless routing occurs, what is involved in auto-summarization of network addresses, and how EIGRP is configured.

Students are not expected to memorize the facts from the video, as it is being viewed to introduce students to the concept of EIGRP as a distance vector routing protocol.

Scenario

EIGRP was introduced as a distance vector routing protocol in 1992. It was originally designed to work as a proprietary protocol on Cisco devices only. In 2013, EIGRP became a multi-vendor routing protocol, meaning that it can be used by other device vendors in addition to Cisco devices.

View the *Fundamental Configuration and Verification of EIGRP* video located at http://www.cisco.com/E-Learning/bulk/subscribed/tac/netbits/iprouting/eigrp/01_fundamental_eigrp/start.htm. In order to view the video you must have a cisco.com account. If you do not have a cisco.com account, please register to create one.

While viewing the video, pay close attention to the following concepts and terms:

- Subnet mask reporting to routing tables for classful and classless networks
- Auto-summarization of networks in routing tables
- Autonomous system numbers
- Wildcard masks
- Passive interfaces
- EIGRP configuration commands
- EIGRP verification commands

Complete the reflection questions which accompany the PDF file for this activity. Save your work and be prepared to share your answers with the class.

Resources

Internet access

Reflection

1. Explain classful routing protocols.

   _____
   Classful routing protocols do not include the subnet mask in the routing update.

2. Explain classless routing protocols.

   _____
   Classless routing protocols do include the subnet mask in the routing update.

3. What is network auto-summarization?

_____
Auto-summarization allows routing tables to be reduced in size by representing several subnetted networks as one summarized network.

4. What is an autonomous system number?

_____
An autonomous system number is used in EIGRP configuration to define all routers belonging to a specific group to exchange EIGRP neighbor and update information.

5. What are wildcard masks?

_____
Wildcard masks are the inverse of subnet masks. They indicate how many hosts are available within subnets and are used as a part of the EIGRP configuration process to indicate specific, subnetted networks.

6. What is a passive interface?

_____
A passive interface is a network link configured to not participate in the EIGRP reporting process.

7. Is EIGRP considered a distance-vector or a link-state routing protocol?

_____
Like RIP, EIGRP is considered a distance vector routing protocol.

Identify elements of the model that map to IT-related content:

- Auto-summarization
- Classless routing
- Wildcard masks
- Passive interfaces
- EIGRP routing protocol
- Distance vector routing protocol