

Packet Tracer - Configure Basic EIGRP with IPv4 (Instructor Version)

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

Answers: [2.2.1 Packet Tracer - Configure Basic EIGRP with IPv4](#)

Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	172.16.1.1	255.255.255.0	N/A
	S0/0/0	172.16.3.1	255.255.255.252	
	S0/0/1	192.168.10.5	255.255.255.252	
R2	G0/0	172.16.2.1	255.255.255.0	N/A
	S0/0/0	172.16.3.2	255.255.255.252	
	S0/0/1	192.168.10.9	255.255.255.252	
R3	G0/0	192.168.1.1	255.255.255.0	N/A
	S0/0/0	192.168.10.6	255.255.255.252	
	S0/0/1	192.168.10.10	255.255.255.252	
PC1	NIC	172.16.1.10	255.255.255.0	172.16.1.1
PC2	NIC	172.16.2.10	255.255.255.0	172.16.2.1
PC3	NIC	192.168.1.10	255.255.255.0	192.168.1.1

Objectives

Part 1: Configure EIGRP

Part 2: Verify EIGRP Routing

Background / Scenario

In this activity, you will implement basic EIGRP including network commands, passive interfaces, and disabled automatic summarization. You will then verify your EIGRP configuration by using a variety of show commands and by testing end-to-end connectivity.

Instructions

Part 1: Configure EIGRP

Step 1: Enable the EIGRP routing process.

Enable the EIGRP routing process on each router using AS number 1. The configuration for **R1** is shown.

```
R1(config)# router eigrp 1
```

```
R2(config)# router eigrp 1
R3(config)# router eigrp 1
```

What is the range of numbers that can be used for AS numbers?

1 - 65,535

Step 2: Advertise directly connected networks.

- Use the **show ip route** command to display the directly connected networks on each router.

How can you tell the difference between subnet addresses and interface addresses?

Subnets are identified with a "C" and link addresses are identified with an "L".

- On each router, configure EIGRP to advertise the specific directly connected subnets. The configuration for **R1** is shown.

```
R1(config-router)# network 172.16.1.0 0.0.0.255
R1(config-router)# network 172.16.3.0 0.0.0.3
R1(config-router)# network 192.168.10.4 0.0.0.3
```

```
R2(config-router)# network 172.16.2.0 0.0.0.255
R2(config-router)# network 172.16.3.0 0.0.0.3
R2(config-router)# network 192.168.10.8 0.0.0.3
```

```
R3(config-router)# network 192.168.1.0 0.0.0.255
R3(config-router)# network 192.168.10.4 0.0.0.3
R3(config-router)# network 192.168.10.8 0.0.0.3
```

Step 3: Configure passive interfaces.

Configure the LAN interfaces to not advertise EIGRP updates. The configuration for **R1** is shown.

```
R1(config-router)# passive-interface g0/0
R2(config-router)# passive-interface g0/0
R3(config-router)# passive-interface g0/0
```

Step 4: Disable automatic summarization.

The topology contains discontinuous networks. Therefore, automatic summarization should be disabled on each router. The configuration for **R1** is shown.

```
R1(config-router)# no auto-summary
R2(config-router)# no auto-summary
R3(config-router)# no auto-summary
```

Note: Prior to IOS 15 auto-summary had to be manually disabled.

Step 5: Save the configurations.

Part 2: Verify EIGRP Routing

Step 1: Examine neighbor adjacencies.

- a. Which command displays the neighbors discovered by EIGRP?

show ip eigrp neighbors

- b. All three routers should have two neighbors listed. How are the neighbor routers identified?

The neighbor routers are identified by the IP address of the attached neighbor interface.

Step 2: Display the EIGRP routing protocol parameters.

- a. What command displays the parameters and other information about the current state of any active IPv4 routing protocol processes configured on the router?

show ip protocols

- b. On **R2**, enter the command you listed for 2a and answer the following questions:

How many routers are sharing routing information with **R2**?

2

Where is this information located under?

Routing Information Sources

What is the maximum hop count?

100

Step 3: Verify end-to-end connectivity

PC1, PC2 and PC3 should now be able to ping each other. If not, troubleshoot your EIGRP configurations.

Answer Scripts

Router R1

```
enable
configure terminal
router eigrp 1
  passive-interface GigabitEthernet0/0
  network 172.16.1.0 0.0.0.255
  network 172.16.3.0 0.0.0.3
  network 192.168.10.4 0.0.0.3
  no auto-summary
end
```

Router R2

```
enable
configure terminal
router eigrp 1
  passive-interface GigabitEthernet0/0
  network 172.16.2.0 0.0.0.255
  network 172.16.3.0 0.0.0.3
  network 192.168.10.8 0.0.0.3
  no auto-summary
end
```

Router R3

```
enable
configure terminal
router eigrp 1
  passive-interface GigabitEthernet0/0
  network 192.168.1.0
  network 192.168.10.4 0.0.0.3
  network 192.168.10.8 0.0.0.3
  no auto-summary
end
```