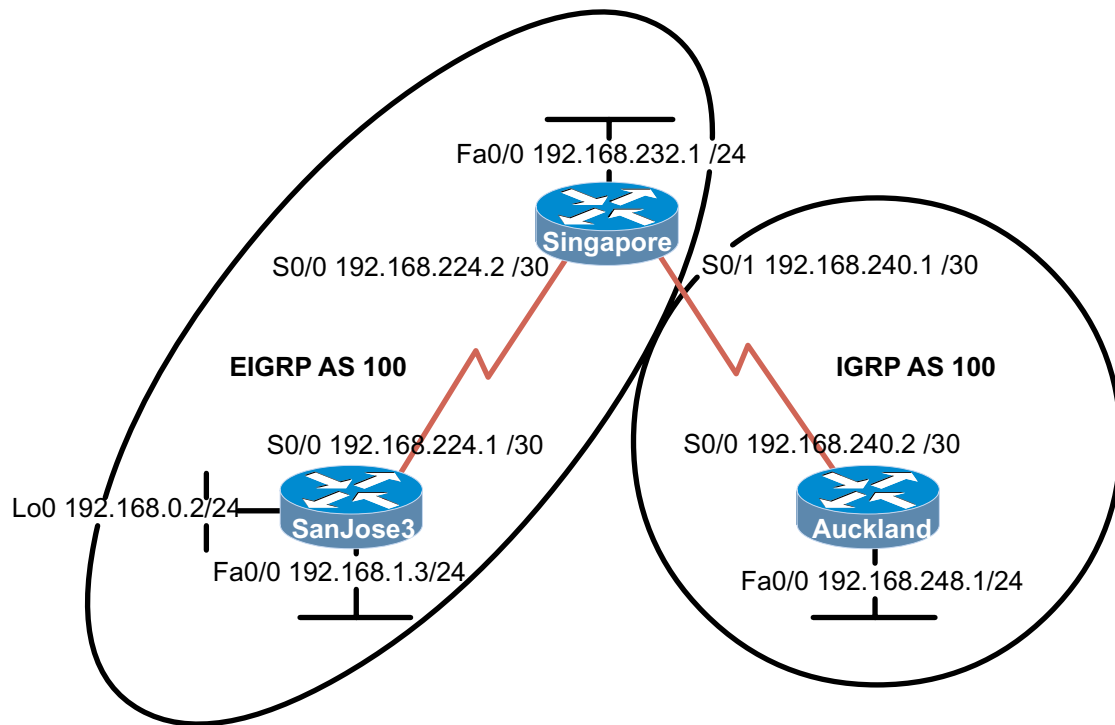


6.7.1 Configuring EIGRP with IGRP



Objective

In this lab, you configure both EIGRP and IGRP within the International Travel Agency WAN and observe the automatic sharing of route information between both protocols.

Scenario

The International Travel Agency migrated from IGRP to EIGRP between its overseas headquarters and its North American headquarters. However, the Auckland headquarters is still unable to support EIGRP and must continue running IGRP for the time being. You must configure EIGRP on the SanJose3 and Singapore routers so that they can exchange information with the Auckland router.

Step 1

Build and configure the network according to the diagram, but do not configure EIGRP or IGRP yet.

Use **ping** to verify your work and test connectivity between serial interfaces. SanJose3 should be unable to ping Auckland until a routing protocol is enabled.

Step 2

On the Auckland router, configure IGRP for AS 100:

```
Auckland(config)#router igrp 100
Auckland(config-router)#network 192.168.248.0
Auckland(config-router)#network 192.168.240.0
```

Because the Singapore router has to use IGRP to communicate with the Auckland router, you must also configure the Singapore router for IGRP, but only on the network connected via the serial interface to Auckland.

```
Singapore(config)#router igrp 100
Singapore(config-router)#network 192.168.240.0
```

Step 3

Configure EIGRP. In order to redistribute routes from IGRP to EIGRP automatically, you must use the same AS number for each routing process. On the Singapore router, enter these commands:

```
Singapore(config)#router eigrp 100
Singapore(config-router)#network 192.168.224.0
Singapore(config-router)#network 192.168.232.0
```

To complete the configuration, configure EIGRP on the SanJose3 router:

```
SanJose3(config)#router eigrp 100
SanJose3(config-router)#network 192.168.224.0
SanJose3(config-router)#network 192.168.0.0
SanJose3(config-router)#network 192.168.1.0
```

Step 4

After you enable routing processes on each of the three routers, verify their operation using the **show ip route** command on the Singapore router. The Singapore router should have routes to all networks.

1. Based on the output of this command, which of the routes was learned via EIGRP?

2. Which route was learned via IGRP?

Now issue the **show ip route** command on the SanJose3 router, the EIGRP router. The SanJose3 router received EIGRP routes that are internal to the EIGRP domain (192.168.224.0), as well as routes that are external to the domain (192.168.240.0 and 192.168.248.0). Notice that these routes are differentiated in the table; internally learned routes have a D, and externally learned routes are denoted by a D EX.

3. What is the administrative distance of an internal EIGRP route?

4. What is the administrative distance of an external EIGRP route?

Now issue the **show ip route** command on the Auckland router, the IGRP router.

5. Can you tell which IGRP routes are internal and which are external based on the information in this table?

6. What is the administrative distance of an IGRP route?

Step 5

Now that EIGRP and IGRP are configured, use **show** commands to view EIGRP's neighbor and topology tables on the SanJose3 router.

From the SanJose3 router, issue the **show** command to view the neighbor table:

```
SanJose3#show ip eigrp neighbor
```

1. Why isn't the Auckland router an EIGRP neighbor of the SanJose3 router?

To view the topology table, issue the **show ip eigrp topology all-links** command.

2. How many routes are in passive mode?

To view more-specific information about a topology table entry, use an IP address with this command:

```
SanJose3#show ip eigrp topology 192.168.248.0
```

3. Based on the output of this command, can you tell what external protocol originated this route to 192.168.248.0?

4. Can you tell which router originated the route?

Finally, you can use **show** commands to view key EIGRP statistics. On the SanJose3 router, issue the **show ip eigrp traffic** command.

5. How many hellos packets has the SanJose3 router received? How many has it sent?
