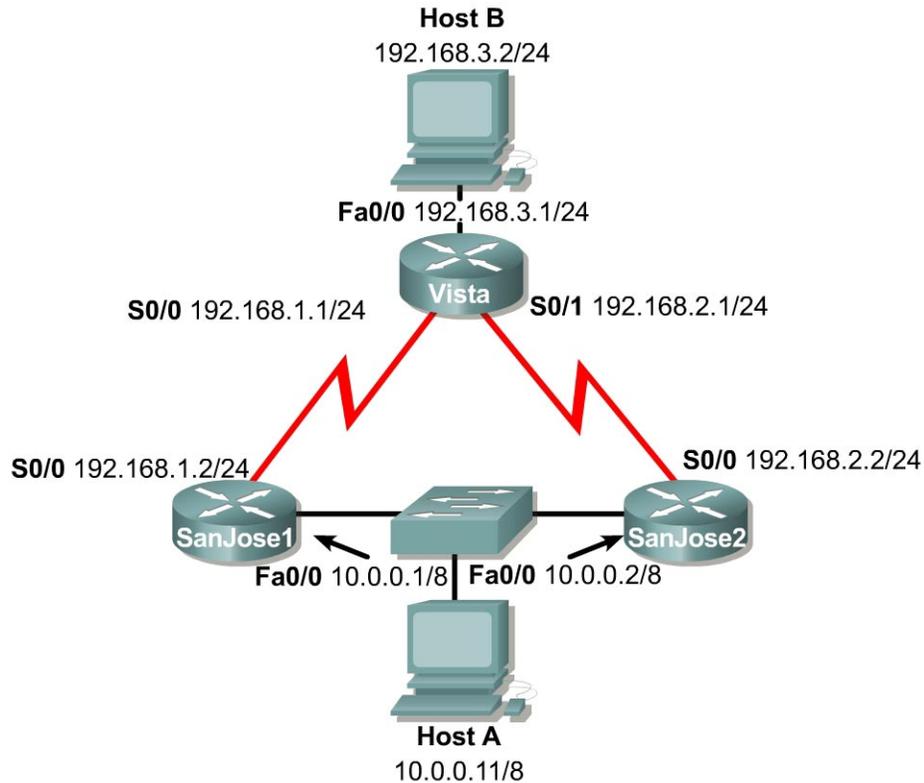


Lab 3.6.1 Migrating from RIP to EIGRP



Objective

In this lab, configure RIP v2 and then EIGRP so that their metric calculations can be compared.

Scenario

International Travel Agency (ITA) currently uses RIP v2 as its interior gateway protocol. Migrate its network to EIGRP.

Step 1

Build and configure the network according to the diagram.

Note: Host A and Host B are not required to complete this lab, but they might be used in testing or as Telnet clients. If used, the Host A gateway may be either SanJose1 router or the SanJose2 router.

On all three routers, configure RIP v2 and enable updates on all active interfaces with the `network` command. The following are sample commands for SanJose1:

```
SanJose1(config)#router rip
SanJose1(config-router)#version 2
SanJose1(config-router)#network 192.168.1.0
SanJose1(config-router)#network 10.0.0.0
```

Use **ping** and **show ip route** to verify full connectivity within the network.

Step 2

While migrating to EIGRP, leave RIP running on all the routers to avoid a loss of connectivity. On SanJose1 and SanJose2, configure EIGRP for Autonomous System 24. Do not configure Vista for EIGRP yet.

```
SanJose1(config)#router eigrp 24
SanJose1(config-router)#network 192.168.1.0
SanJose1(config-router)#network 10.0.0.0
```

and

```
SanJose2(config)#router eigrp 24
SanJose2(config-router)#network 192.168.2.0
SanJose2(config-router)#network 10.0.0.0
```

Step 3

From the Vista console, issue the **show ip route** command. The EIGRP has not be configured on this router yet. Therefore, a route has been established to the 10.0.0.0 /8 network through the RIP.

1. What is the administrative distance of this route?

-
2. What is the metric of this route?
-

Enable **debug** so that changes to the routing table will be reported to the console.

```
Vista#debug ip routing
```

If the connection is through Telnet, enter the **terminal monitor** command so that the logging output can be seen.

Now enable EIGRP on Vista.

```
Vista(config)#router eigrp 24
Vista(config-router)#network 192.168.1.0
Vista(config-router)#network 192.168.2.0
Vista(config-router)#network 192.168.3.0
```

3. After this configuration is made, did **debug** report any changes to the routing table? If so, what were they?
-

Issue the **show ip route** command again from Vista. There should now be an EIGRP route to network 10.0.0.0 /8.

4. What is the metric of this route?
-

5. Because this metric is higher than the metric of the RIP route, why did Vista choose the EIGRP route over the RIP route?
-

Step 4

To see more with the `debug ip routing` command, force the routing table to rebuild with this command:

```
Vista#clear ip route *
```

6. According to the `debug` output, what are the administrative distances of Vista connected routes?

-
7. What is the metric for each of the connected routes?
-

Step 5

To complete the migration from RIP to EIGRP, disable RIP on all three routers using the command `no router rip`.

Next, enter the command `show ip route`:

```
Vista#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

D    10.0.0.0/8 [90/20514560] via 192.168.1.2, 00:00:59, Serial0/0
      [90/20514560] via 192.168.2.2, 00:00:59, Serial0/1
C    192.168.1.0/24 is directly connected, Serial0/0
C    192.168.2.0/24 is directly connected, Serial0/1
C    192.168.3.0/24 is directly connected, FastEthernet0/0
```

Turn off debug before exiting the Vista router.

```
Vista#no debug all
```

Save the configuration files for the next lab.