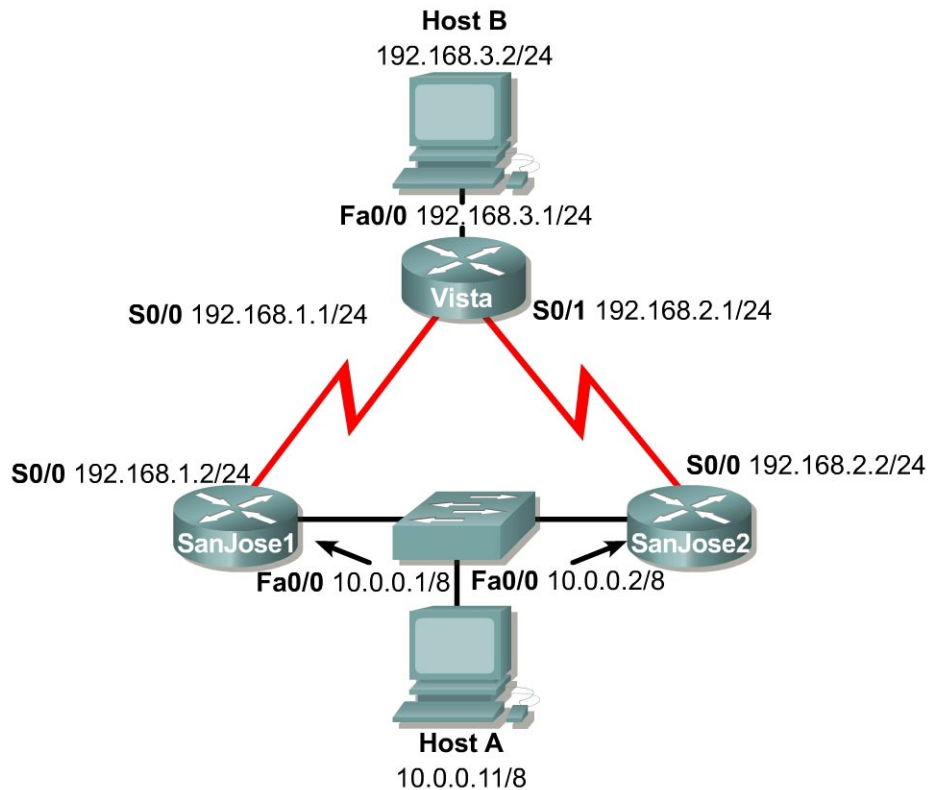


## Lab 3.6.1 Migrating from RIP to EIGRP



### 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.