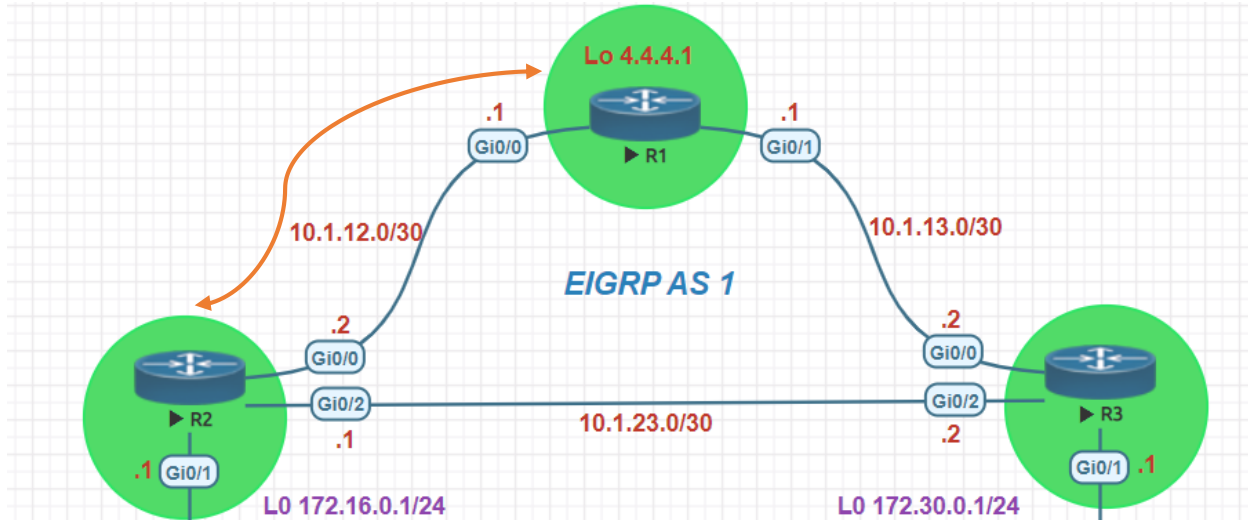


Path Selection Optimization:

Change EIGRP metrics by manipulating the bandwidth and/or delay values. Changing the bandwidth value is not recommended because that value is used for many other reasons and features in the router. Also, configure the K-Values to influence the EIGRP metric calculation.



EIGRP uses a default bandwidth based on the type of interface in the router. Modify bandwidth so that the link between R1 and R2 has a lower bandwidth than the link between R1 and R3.

```
R1#show interfaces gigabitEthernet 0/0 | sec BW
MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
```

```
R1#show ip eigrp topology | sec 10.1.23.0
P 10.1.23.0/30, 2 successors, FD is 3072
via 10.1.12.2 (3072/2816), GigabitEthernet0/0
via 10.1.13.2 (3072/2816), GigabitEthernet0/1
```

```
R1#show ip route eigrp | sec 10.1.23.0
D 10.1.23.0/30 [90/3072] via 10.1.13.2, 00:56:34, GigabitEthernet0/1
[90/3072] via 10.1.12.2, 00:56:34, GigabitEthernet0/0
R1#
```

R1 and R2 EIGRP Metric Configuration

```
R1#show interfaces gigabitEthernet 0/0
R1#show ip route eigrp | begin Gateway
R1(config)#interface GigabitEthernet0/0
R1(config-if)#bandwidth 500000
R2(config)#interface GigabitEthernet0/0
R2(config-if)#bandwidth 500000
```

```
R1#show ip route eigrp | sec 10.1.23.0
D      10.1.23.0/30 [90/3072] via 10.1.13.2, 00:00:41, GigabitEthernet0/1
R1#
```

```
R1#show ip eigrp topology | sec 10.1.23.0
P 10.1.23.0/30, 1 successors, FD is 3072
   via 10.1.13.2 (3072/2816), GigabitEthernet0/1
   via 10.1.12.2 (5632/2816), GigabitEthernet0/0
R1#
```

R1 and R2 EIGRP Metric Configuration

```
R1#show interfaces gigabitEthernet 0/0
R1#show ip route eigrp | begin Gateway
R1(config)#interface GigabitEthernet0/0
R1(config-if)#no bandwidth 500000
R2(config)#interface GigabitEthernet0/0
R2(config-if)#no bandwidth 500000
```

Let's Change the Delay this time default delay is 10 usec.

```
R1#show interfaces gigabitEthernet 0/0 | sec BW
MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
```

R1 and R2 EIGRP Metric Configuration

```
R1#show interfaces gigabitEthernet 0/0
R1#show ip route eigrp | begin Gateway
R1(config)#interface GigabitEthernet0/0
R1(config-if)# delay 100
R2(config)#interface GigabitEthernet0/0
R2(config-if)# delay 100
```

```
R1#show ip route eigrp | sec 10.1.23.0
D      10.1.23.0/30 [90/3072] via 10.1.13.2, 00:00:41, GigabitEthernet0/1
R1#
```

```
R1#show ip eigrp topology | sec 10.1.23.0
P 10.1.23.0/30, 1 successors, FD is 3072
   via 10.1.13.2 (3072/2816), GigabitEthernet0/1
   via 10.1.12.2 (28416/2816), GigabitEthernet0/0
-
```