

LAB11: EIGRP – IPv4

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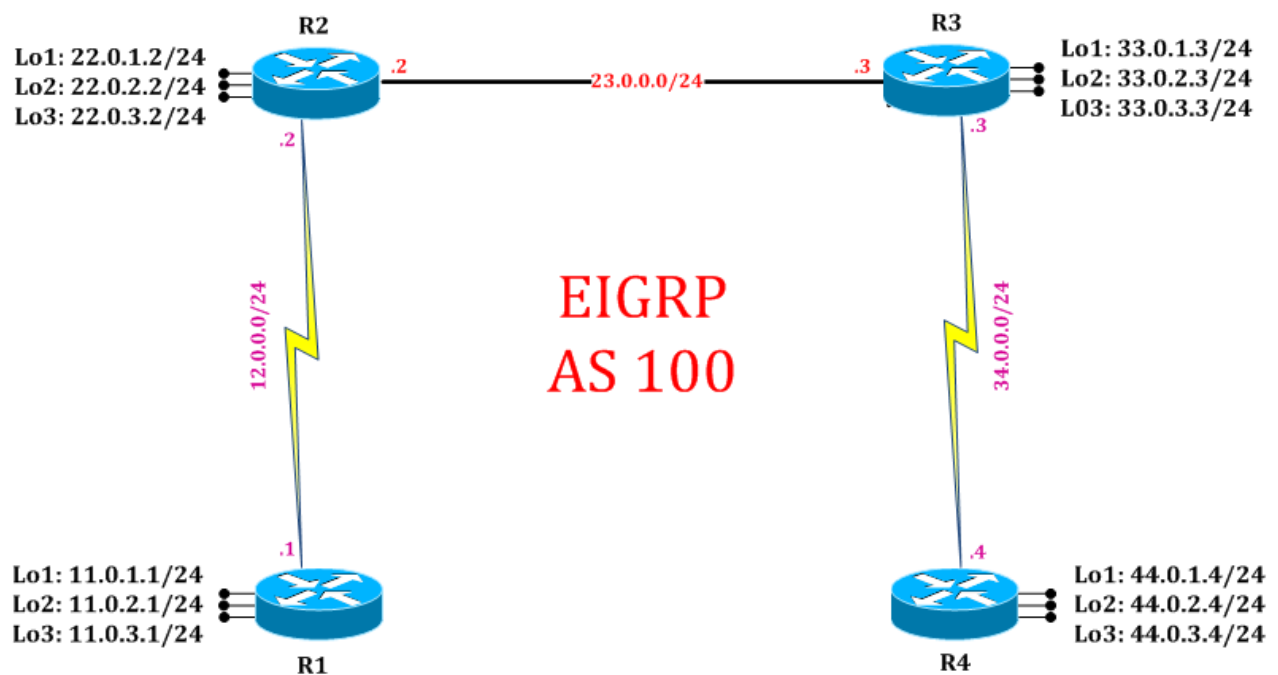
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EIGRP: Stub

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LAB 11: Diagram

Note: This Lab was developed on Cisco IOS Version 15.2(4) M1 ADVENTERPRISEK9-M.



LAB 11: EIGRP Stub

Task 1: Configure EIGRP Stub

Step 1 In the configuration mode of router configure loopbacks with network address in sequence.

```
R1:
interface loopback 1
ip address 11.0.1.1 255.255.255.0
exit
interface loopback 2
ip address 11.0.2.1 255.255.255.0
exit
interface loopback 3
ip address 11.0.3.1 255.255.255.0
exit
```

Step 2 Configure EIGRP stub with connected option

```
R1:
router eigrp 100
eigrp stub ?
connected      Do advertise connected routes
leak-map       Allow dynamic prefixes based on the leak-map
receive-only   Set receive only neighbor
redistributed  Do advertise redistributed routes
static         Do advertise static routes
summary        Do advertise summary routes

eigrp stub connected
exit
```

(EIGRP Stub router will do advertise its connected routes to the neighbor router.)

Step 3 Configure EIGRP stub with connected static option

```
R1:
router eigrp 100
eigrp stub static
exit
```

(EIGRP Stub router will do advertise static routes.)

Step 4 Configure EIGRP stub with receive only option

```
R1:  
router eigrp 100  
eigrp stub receive-only  
exit
```

(EIGRP Stub router will only receive routes from its neighbor but will not advertise any routes to its neighbor.)

Task 2: Verification:

Step 1 Verify route in neighbors router routing table by following command:

```
R2#show ip route
```

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

```
12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks  
C    12.0.0.0/24 is directly connected, Serial2/0  
L    12.0.0.2/32 is directly connected, Serial2/0  
22.0.0.0/8 is variably subnetted, 6 subnets, 2 masks  
C    22.0.1.0/24 is directly connected, Loopback1  
L    22.0.1.2/32 is directly connected, Loopback1  
C    22.0.2.0/24 is directly connected, Loopback2  
L    22.0.2.2/32 is directly connected, Loopback2  
C    22.0.3.0/24 is directly connected, Loopback3  
L    22.0.3.2/32 is directly connected, Loopback3  
23.0.0.0/8 is variably subnetted, 2 subnets, 2 masks  
C    23.0.0.0/24 is directly connected, Ethernet0/0  
L    23.0.0.2/32 is directly connected, Ethernet0/0  
33.0.0.0/24 is subnetted, 3 subnets  
D    33.0.1.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0  
D    33.0.2.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0  
D    33.0.3.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0  
34.0.0.0/24 is subnetted, 1 subnets  
D    34.0.0.0 [90/2195456] via 23.0.0.3, 01:39:32, Ethernet0/0  
44.0.0.0/24 is subnetted, 3 subnets  
D    44.0.1.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0  
D    44.0.2.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0  
D    44.0.3.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0
```

(Router R2 will not receive 11 network from Stub router because Stub router will only receive and will not advertise its own 11 network to Router R2.)

Step 2 Configure no auto summary and verify routes on neighbor router routing table

R1:

```
router eigrp 100
no auto-summary
exit
```

R2#show ip route

Codes: L - local, C - connected, S - static, 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
i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

```
12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    12.0.0.0/24 is directly connected, Serial2/0
L    12.0.0.2/32 is directly connected, Serial2/0
22.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C    22.0.1.0/24 is directly connected, Loopback1
L    22.0.1.2/32 is directly connected, Loopback1
C    22.0.2.0/24 is directly connected, Loopback2
L    22.0.2.2/32 is directly connected, Loopback2
C    22.0.3.0/24 is directly connected, Loopback3
L    22.0.3.2/32 is directly connected, Loopback3
23.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    23.0.0.0/24 is directly connected, Ethernet0/0
L    23.0.0.2/32 is directly connected, Ethernet0/0
33.0.0.0/24 is subnetted, 3 subnets
D    33.0.1.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0
D    33.0.2.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0
D    33.0.3.0 [90/409600] via 23.0.0.3, 01:39:35, Ethernet0/0
34.0.0.0/24 is subnetted, 1 subnets
D    34.0.0.0 [90/2195456] via 23.0.0.3, 01:39:32, Ethernet0/0
44.0.0.0/24 is subnetted, 3 subnets
D    44.0.1.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0
D    44.0.2.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0
D    44.0.3.0 [90/2323456] via 23.0.0.3, 01:39:35, Ethernet0/0
```