LAB8: Named EIGRP – IPv4

Disclaimer

This Configuration Guide is designed to assist members to enhance their skills in respective technology area. While every effort has been made to ensure that all material is as complete and accurate as possible, the enclosed material is presented on an "as is" basis. Neither the authors nor Forum assume any liability or responsibility to any person or entity with respect to loss or damages incurred from the information contained in this guide. This Lab Guide was developed by RSTForum. Any similarities between material presented in this configuration guide and any other material is completely coincidental.
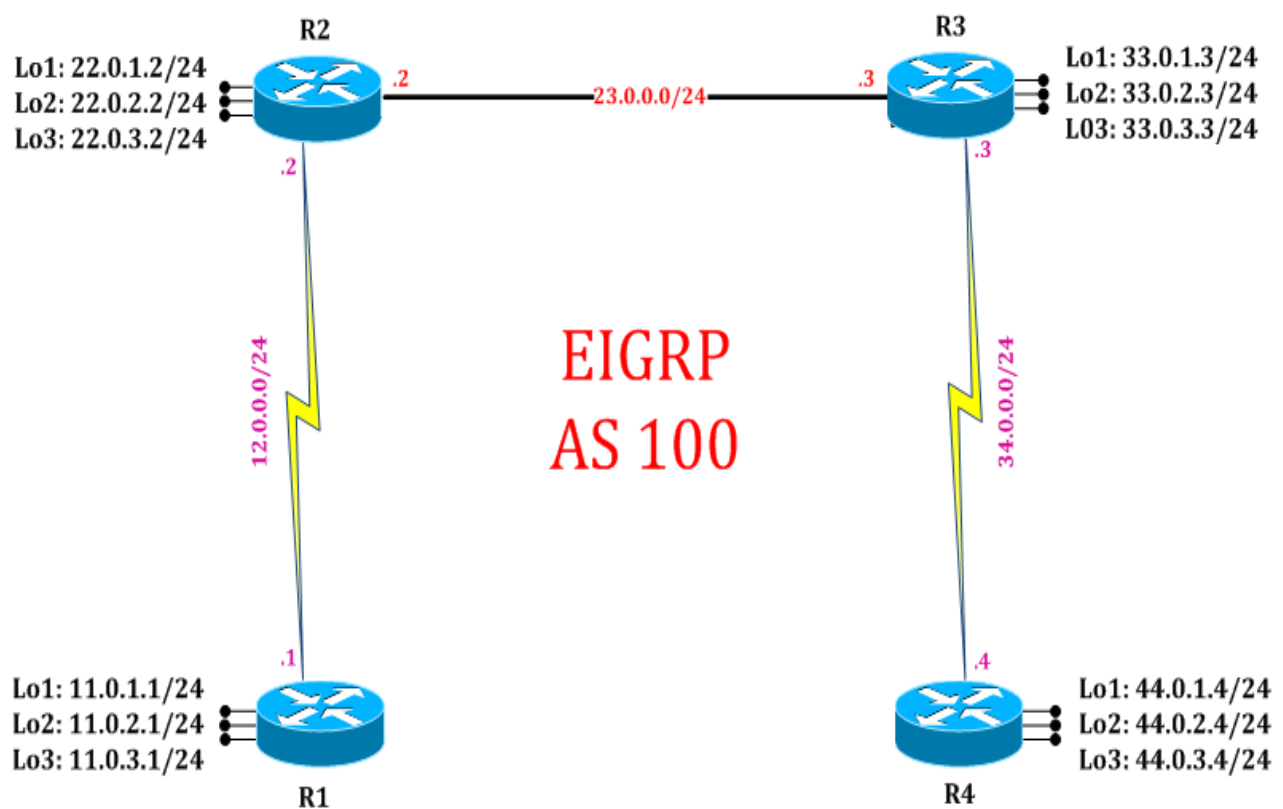

Routing
Switching
Tigers
Forum

EIGRP: Summarization

|||| www.rstforum.net

LAB 8: Diagram

Note: This Lab was developed on Cisco IOS Version15.2(4) M1 ADVENTERPRISEK9-M.

LAB 8: EIGRP Summarization using named configuration

Task 1: Configure IPv4 EIGRP Summarization using named configuration

Step 1 In the configuration mode of router configure IPv4 EIGRP process with a name

R1:
interface serial2/0
ip address 12.0.0.1 255.255.255.0
no shutdown
interface loopback 1
ip address 11.0.0.1 255.255.255.0
exit
interface loopback 2
ip address 11.0.1.1 255.255.255.0
exit
interface loopback 3
ip address 11.0.2.1 255.255.255.0
exit
interface loopback 4
ip address 11.0.3.1 255.255.255.0
exit

router eigrp cisco
address-family ipv4 autonomous-system 100
network 12.0.0.1 255.255.255.0
network 11.0.0.1 255.255.255.0
network 11.0.1.1 255.255.255.0
network 11.0.2.1 255.255.255.0
network 11.0.3.1 255.255.255.0
exit

Step 2 Enter address-family interface mode and summarize EIGRP routes on outgoing interfaces

R1:
af-interface serial 2/0
summary-address 11.0.0.0 255.255.252.0
exit

Task 2: Verification:

Step 1 Verify receipt of summary route in neighbors 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
    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

    11.0.0.0/22 is subnetted, 1 subnets
D   11.0.0.0 [90/13556702] via 12.0.0.1, 00:10:18, Serial2/0
    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 [90/1024640] via 23.0.0.3, 00:02:51, Ethernet0/0
D   33.0.2.0 [90/1024640] via 23.0.0.3, 00:02:41, Ethernet0/0
D   33.0.3.0 [90/1024640] via 23.0.0.3, 00:02:32, Ethernet0/0
    34.0.0.0/24 is subnetted, 1 subnets
D   34.0.0.0 [90/14068062] via 23.0.0.3, 00:03:02, Ethernet0/0
    44.0.0.0/24 is subnetted, 3 subnets
D   44.0.1.0 [90/14068702] via 23.0.0.3, 00:00:43, Ethernet0/0
D   44.0.2.0 [90/14068702] via 23.0.0.3, 00:00:37, Ethernet0/0
D   44.0.3.0 [90/14068702] via 23.0.0.3, 00:00:31, Ethernet0/0

Step 2   Verify creation of null interface in routing table by following command:

R1#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

     11.0.0.0/8 is variably subnetted, 7 subnets, 3 masks
D   11.0.0.0/22 is a summary, 00:19:00, Null0
C   11.0.1.0/24 is directly connected, Loopback1
L   11.0.1.1/32 is directly connected, Loopback1
C   11.0.2.0/24 is directly connected, Loopback2
L   11.0.2.1/32 is directly connected, Loopback2
C   11.0.3.0/24 is directly connected, Loopback3
L   11.0.3.1/32 is directly connected, Loopback3
     12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C   12.0.0.0/24 is directly connected, Serial2/0
L   12.0.0.1/32 is directly connected, Serial2/0
     22.0.0.0/24 is subnetted, 3 subnets
D   22.0.1.0 [90/13556702] via 12.0.0.2, 01:15:20, Serial2/0
D   22.0.2.0 [90/13556702] via 12.0.0.2, 01:15:15, Serial2/0
D   22.0.3.0 [90/13556702] via 12.0.0.2, 01:15:11, Serial2/0
     23.0.0.0/24 is subnetted, 1 subnets
D   23.0.0.0 [90/14068062] via 12.0.0.2, 01:15:28, Serial2/0
     33.0.0.0/24 is subnetted, 3 subnets
D   33.0.1.0 [90/1024640] via 23.0.0.3, 00:02:51, Ethernet0/0
D   33.0.2.0 [90/1024640] via 23.0.0.3, 00:02:41, Ethernet0/0
D   33.0.3.0 [90/1024640] via 23.0.0.3, 00:02:32, Ethernet0/0
     34.0.0.0/24 is subnetted, 1 subnets
D   34.0.0.0 [90/14068062] via 23.0.0.3, 00:03:02, Ethernet0/0
     44.0.0.0/24 is subnetted, 3 subnets
D   44.0.1.0 [90/14068702] via 23.0.0.3, 00:00:43, Ethernet0/0
D   44.0.2.0 [90/14068702] via 23.0.0.3, 00:00:37, Ethernet0/0
D   44.0.3.0 [90/14068702] via 23.0.0.3, 00:00:31, Ethernet0/0