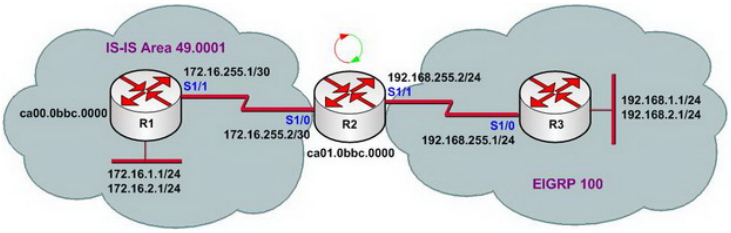
Redistribution Lab2 - Redistributing into EIGRP and IS-IS

?Lab Objectives?
To master the re-release configuration of EIGRP and IS-IS.
?Lab Topology?



?Lab Steps?
1. Configure the router's IP address, and use the Ping command to confirm the connect's interoperability of each router.
2. To configure the IS-IS route protocols of R1 and R2, and EIGRP route protocols of R2 and R3.
3. Check the routing table of R1?R2 and R3:

R1#show ip route

Gateway of last resort is not set

172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.255.0/30 is directly connected, Serial1/1
C 172.16.1.0/24 is directly connected, Loopback0
C 172.16.2.0/24 is directly connected, Loopback1

R2#show ip route

Gateway of last resort is not set

172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.255.0/30 is directly connected, Serial1/0
i L1 172.16.1.0/24 [115/20] via 172.16.255.1, Serial1/0
i L1 172.16.2.0/24 [115/20] via 172.16.255.1, Serial1/0
192.168.255.0/30 is subnetted, 1 subnets

C 192.168.255.0 is directly connected, Serial1/1
D 192.168.1.0/24 [90/2297856] via 192.168.255.1, 00:00:04, Serial1/1
D 192.168.2.0/24 [90/2297856] via 192.168.255.1, 00:00:04, Serial1/1

R3#show ip route

Gateway of last resort is not set

C 192.168.255.0/24 is directly connected, Serial1/0
C 192.168.1.0/24 is directly connected, Loopback0
C 192.168.2.0/24 is directly connected, Loopback1
R3#
*Mar 29 10:39:29.171: %SYS-5-CONFIG_I: Configured from console by console

4. According to the show ip route command can be seen only route R2 can learn to the complete entire network route. Because, Route R2 is in the borders of network OSPF and RIP. It runs two different routing protocols at the same time.
5. In order to ensure the R1 and R3 to learn the entire network route, to configure the route re-release on R2. The configuration is as follows:

R2(config)#router isis cisco
R2(config-router)#redistribute eigrp 100 metric 20 level-2
R2(config-router)#exit
R2(config)#
R2(config)#router eigrp 100
R2(config)#redistribute isis cisco level-1-2 metric 100000 10 255 1 1500
R2(config)#

Because EIGRP used the composite measurement degrees, so in the re-release, the network needs to specify the actual situation of the measurement degrees.
6. Check the routing table of router R1 and router R3:

R1#show ip route

Gateway of last resort is not set

172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.255.0/30 is directly connected, Serial1/1
C 172.16.1.0/24 is directly connected, Loopback0
C 172.16.2.0/24 is directly connected, Loopback1
192.168.255.0/30 is subnetted, 1 subnets
i L2 192.168.255.0 [115/30] via 172.16.255.2, Serial1/1
i L2 192.168.1.0/24 [115/30] via 172.16.255.2, Serial1/1
i L2 192.168.2.0/24 [115/30] via 172.16.255.2, Serial1/1

R3#show ip route

Gateway of last resort is not set

172.16.0.0/24 is subnetted, 2 subnets
D EX 172.16.1.0 [170/2172416] via 192.168.255.2, 00:08:48, Serial1/0
D EX 172.16.2.0 [170/2172416] via 192.168.255.2, 00:08:48, Serial1/0
C 192.168.255.0/24 is directly connected, Serial1/0
C 192.168.1.0/24 is directly connected, Loopback0
C 192.168.2.0/24 is directly connected, Loopback1

7. To confirm the validity of the routing:

R3#ping 172.16.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 88/94/96 ms

R1#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)

8. Check the routing table of R3 once again:

R3#show ip route

Gateway of last resort is not set

172.16.0.0/24 is subnetted, 2 subnets
D EX 172.16.1.0 [170/2172416] via 192.168.255.2, 00:23:06, Serial1/0
D EX 172.16.2.0 [170/2172416] via 192.168.255.2, 00:23:06, Serial1/0
C 192.168.255.0/24 is directly connected, Serial1/0
C 192.168.1.0/24 is directly connected, Loopback0
C 192.168.2.0/24 is directly connected, Loopbac
R3#

When check the route, we found it lacks of network route of 172.16.255.0/24. This problem is caused: when re-release the IS-IS, it will not re-release the direct-linked network segment.
9. To add the configuration to re-release direct-linked network in the EIGRP protocols on R2.

R2(config)#router eigrp 100
R2(config-router)#redistribute connected metric 100000 10 255 1 1500
R2(config-router)#exit

10. Check the routing table of R3:

R3#show ip route

Gateway of last resort is not set

172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
D EX 172.16.255.0/30 [170/2172416] via 192.168.255.2, 00:00:06, Serial1/0
D EX 172.16.1.0/24 [170/2172416] via 192.168.255.2, 00:26:56, Serial1/0
D EX 172.16.2.0/24 [170/2172416] via 192.168.255.2, 00:26:56, Serial1/0
C 192.168.255.0/24 is directly connected, Serial1/0
C 192.168.1.0/24 is directly connected, Loopback0
C 192.168.2.0/24 is directly connected, Loopback1

11. Check the validity of the route on R3:

R1#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 120/148/168 ms

12. Lab completed.
Hope to helpful for you!