EIGRP Lab5 - Configuring EIGRP Authentication

?Lab objectives?

1. Understand EIGRP authentication process

2. Learn EIGRP authentication configuration

?Lab Topology?



?Lab steps?

- 1. Configure IP addresses of every router, and use ping command to confirm the direct interface connectivity of every router.
- 2. Configure on two routers EIGRP auto system number as 50
- 3. Check R1 and R2 routing table

R1#show ip route

- 172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
- C 172.16.1.8/30 is directly connected, Serial1/1
- D 172.16.0.0/16 is a summary, 00:00:37, Null0
- 10.0.0/8 is variably subnetted, 2 subnets, 2 masks
- C 10.1.1.0/24 is directly connected, Loopback0
- D 10.0.0.0/8 is a summary, 00:00:37, Null0
- D 192.168.1.0/24 [90/2297856] via 172.16.1.10, 00:00:09, Serial1/1

R2#show ip route 172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks C 172.16.1.8/30 is directly connected, Serial1/0 D 172.16.0.0/16 is a summary, 00:00:53, Null0 D 10.0.0.0/8 [90/2297856] via 172.16.1.9, 00:00:51, Serial1/0 C 192.168.1.0/24 is directly connected, Loopback0

4. Configure EIGRP authentication

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R1#configure terminal R1(config)#key chain Bible R1(config-keychain)#key 1 R1(config-keychain-key)#key-string cisco R1(config-keychain-key)#exit R1(config-keychain)#exit R1(config)# R1(config)#interface serial 1/1 R1(config)#interface serial 1/1 R1(config-if)#ip authentication key-chain eigrp 50 Bible R1(config-if)#ip authentication mode eigrp 50 md5 R1(config-if)#end

5. Both routers use clear ip route * command to refresh routing table and speed up the convergence of routing table.6. Check the routing table of R1 and R2. Observe the changes.

R1#show ip route C 172.16.1.8/30 is directly connected, Serial1/1 D 172.16.0.0/16 is a summary, 00:00:16, Null0 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks C 10.1.1.0/24 is directly connected, Loopback0 D 10.0.0.0/8 is a summary, 00:00:16, Null0

R2#show ip route ??? C 172.16.1.8/30 is directly connected, Serial1/0 D 172.16.0.0/16 is a summary, 00:02:53, Null0 C 192.168.1.0/24 is directly connected, Loopback0

Now R1 and R2 cannot learn route of each other. And here is feedback of R2 system:

*Mar 14 15:35:27.343: %DUAL-5-NBRCHANGE: IP-EIGRP(0) 50: Neighbor 172.16.1.9 (Serial1/0) is up: new adjacency *Mar 14 15:35:29.767: %DUAL-5-NBRCHANGE: IP-EIGRP(0) 50: Neighbor 172.16.1.9 (Serial1/0) is down: Auth failure

7. Check R2 routing table. If authentication failed, R1 and R2 can no longer be neighbors.

R2#show ip eigrp 50 neighbors IP-EIGRP neighbors for process 50

R2#

8. Configure EIGRP authentication of R2

R2#configure terminal R2(config)#key chain Bible R2(config-keychain)#key 1 R2(config-keychain-key)#key-string cisco R2(config-keychain-key)#exit R2(config-keychain)#exit R2(config)#interface serial 1/0 R2(config-if)#ip authentication key-chain eigrp 50 Bible R2(config-if)#ip authentication mode eigrp 50 md5 R2(config-if)#exit

9. After we finish authentication configuration on R2, the system will prompt:

*Mar 14 15:46:04.071: %DUAL-5-NBRCHANGE: IP-EIGRP(0) 50: Neighbor 172.16.1.9 (Serial1/0) is up: new adjacency

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Meanwhile, check R2 neighbor list, we find that R1 become neighbor of R2.

R2#show ip eigrp 50 neighbors IP-EIGRP neighbors for process 50 H Address Interface Hold Uptime SRTT RTO Q Seq (sec) (ms) Cnt Num 0 172.16.1.9 Se1/0 11 00:01:17 28 200 0 8

10. Refresh routing table again, and observe the changes on routing table of R1 and R2.

R1#show ip route

172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks C 172.16.1.8/30 is directly connected, Serial1/1 D 172.16.0.0/16 is a summary, 00:08:41, Null0 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks C 10.1.1.0/24 is directly connected, Loopback0 D 10.0.0.0/8 is a summary, 00:08:42, Null0 D 192.168.1.0/24 [90/2297856] via 172.16.1.10, 00:02:54, Serial1/1

R2#show ip route 172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks C 172.16.1.8/30 is directly connected, Serial1/0 D 172.16.0.0/16 is a summary, 00:08:28, Null0 D 10.0.0.0/8 [90/2297856] via 172.16.1.9, 00:03:44, Serial1/0 C 192.168.1.0/24 is directly connected, Loopback0

11. Lab finished.Hope to helpful for you!