# CCNP BSCI(642-901) Lab ? EIGRP Stub

By increasing the first distant office, JS manufactures has extended their business. They antecedently configured the remote office router (P4S-R3) from which they can reach all Corporate subnets. In order to raise network stableness and lower the memory usage and broadband utilization to P4S-R3, JS manufactures makes use of route summarization together with the EIGRP Stub Routing feature. Another network engineer is responsible for the implementing of this solution. However, in the process of configuring EIGRP stub routing connectivity with the remote network devices off of P4S-R3 has been missing.

Presently JS has configured EIGRP on all routers in the network P4S-R2, P4S-R3, and P4S-R4. Your duty is to find and solve the connectivity failure problem with the remote office router P4S-R3. You should then configure route summarization only to the distant office router P4S-R3 to complete the task after the problem has been solved.

The success of pings from P4S-R2 to the P4S-R3 LAN interface proves that the fault has been corrected and the he P4S-R3 IP routing table only contains 2 10.0.0.0 subnets.
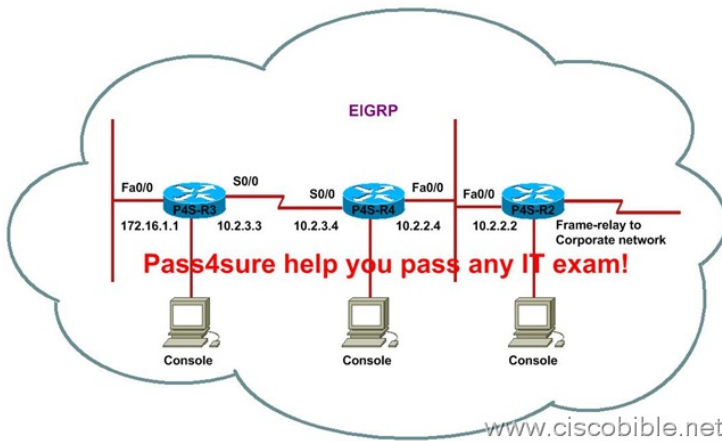
Answer and Explanation:

First we have to figure out why P4S-R3 and P4S-R4 can not communicate with each other. Use the show running-config on router P4S-R3

Notice that P4S-R3 is configured as a stub receive-only router. The **receive-only** keyword will restrict the router from sharing any of its routes with any other router in that EIGRP autonomous system, and the receive-only keyword will prevent any type of route from

being sent.

Therefore we will remove this command and replace it with the eigrp stub command:

P4S-R3#configure terminal
P4S-R3(config)#router eigrp 123
P4S-R3(config-router)#no eigrp stub receive-only
P4S-R3(config-router)#eigrp stub
P4S-R3(config-router)#end

Now P4S-R3 will send updates containing its connected and summary routes to other routers. Notice that the **eigrp stub** command equals to the **eigrp stub connected summary** because the **connected** and **summary** options are enabled by default.

Next we will configure router P4S-R3 so that it has only 2 subnets of 10.0.0.0 network. Use the show ip route command on P4S-R3 to view its routing table

P4S-R3#show ip route

```
P4S-R3# show ip route
10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks
D       10.0.0.0/8 is a summary, 02:04:27, Null0
D       10.2.2.0/24 [90/30720] via 10.2.3.4, 00:00:06, Serial0/0
C       10.2.3.0/24 is directly connected, Serial0/1
D       10.2.4.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
D       10.2.5.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
D       10.2.6.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
D       10.2.7.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
D       10.2.8.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
D       10.2.9.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
     172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
D       172.16.0.0/16 is a summary, 02:04:27, Null0
C       172.16.1.0/24 is directly connected, FastEthernet0/0
```

Because we want the routing table of P4S-R3 only have 2 subnets so we have to summary sub-networks at the interface which is connected with P4S-R3, the s0/0 interface of P4S-R4.

There is one interesting thing about the output of the **show ip route** shown above: the **10.2.3.0/24**, which is a directly connected network of P4S-R3. We can't get rid of it in the routing table no matter what technique we use to summary the networks. Therefore, to make the routing table of P4S-R3 has only 2 subnets we have to summary other subnets into one subnet.

In conclusion, we will use the **ip summary-address eigrp 123 10.0.0.0 255.0.0.0** at the interface s0/0 of P4S-R4 to summary.

P4S-R4>enable
P4S-R4#configure terminal
P4S-R4(config)#interface s0/0
P4S-R4(config-if)#ip summary-address eigrp 123 10.0.0.0 255.0.0.0

Now we jump back to P4S-R3 and use the show ip route command to verify the effect, the output is shown below:

```
P4S-R3# show ip route
10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D     10.0.0.0/8 is a summary, 00:06:22, Null0
C     10.2.3.0/24 is directly connected, Serial0/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
D     172.16.0.0/16 is a summary, 00:06:22, Null0
C     172.16.1.0/24 is directly connected, FastEthernet0/0
```

(But please notice that the ip addresses and the subnet masks in your real exam might be different so you might use different ones to solve this question)

Just for your information, notice that if you use another network than 10.0.0.0/8 to summary, for example, if you use the command **ip summary-address eigrp 123 10.2.0.0 255.255.0.0** you will leave a /16 network in the output of the **show ip route** command.

```
P4S-R3# show ip route
10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
D     10.0.0.0/8 is a summary, 00:18:43, Null0
D     10.2.0.0/16 [90/30720] via 10.2.3.4, 00:00:06, FastEthernet0/1
C     10.2.3.0/24 is directly connected, FastEthernet0/1
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
D     172.16.0.0/16 is a summary, 00:18:43, Null0
C     172.16.1.0/24 is directly connected, FastEthernet0/0
```

But if in your real exam, you don't see the line "10.0.0.0/8 is a summary,....Null0" then you can summary using the network 10.2.0.0/16. This summarization is better because all the pings can work well.

Finally don't forget to use the copy running-config startup-config command on routers P4S-R3 and P4S-R4 to save the configurations.

P4S-R4(config-if)#end
P4S-R4#copy running-config startup-config

That is all, hope to helpful for you. Best Luck for ur BSCI 642-901 Exam.

If you need the complete pass4sure test questions for 642-901 Exam, you can visit Latest Pass4sure 642-901,maye it helpful for ur exam!