



Cisco Certified Network Professional (CCNP)

# Exam 300-135 Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)

Exam Questions (2018-05-29 Updated)



# **(300-135) Troubleshooting and Maintaining Cisco IP Networks**

## **QUESTION 1**

**A question about DHCP issue. Which troubleshooting method to use?**

- A. divide and conquer**
- B. top-down**
- C. bottom-up**
- D. follow-the-path**

**Correct Answer: C**

## **QUESTION 2**

**A router knows one destination using EIGRP and two OSPF networks. Which will be the best way to determine the path? (Choose two.)**

- A. show ip eigrp topology**
- B. show ip ospf topology**
- C. traceroute**
- D. ping**
- E. show ip route**

**Correct Answer: C, E**

## **QUESTION 3**

**Which two statements about ping and traceroute are true? (Choose two.)**

- A. Ping only using ICMP.**
- B. Only ping have TTL.**
- C. To determine if a host is reachable, using traceroute is better than ping**
- D. Traceroute uses UDP diagram and ICMP.**
- E. Ping uses TCP and ICMP.**

**Correct Answer: A, D**

## **QUESTION 4**

**Which two protocols does the management plane protection feature support? (Choose two.)**

- A. HTTPS**
- B. ARP**
- C. DNS**
- D. TFTP**
- E. DHCP**

**Correct Answer: A, D**

**QUESTION 16**

WAN is 1500 MTU. How do you configure the GRE tunnel where packets doesn't get fragmented? Not all options will be used.

- ip mtu 1500
- ip adjust tcp-mss 1496
- ip mtu 1400
- tunnel mode gre ip
- ip adjust tcp-mss 1360
- tunnel path-mtu-discovery

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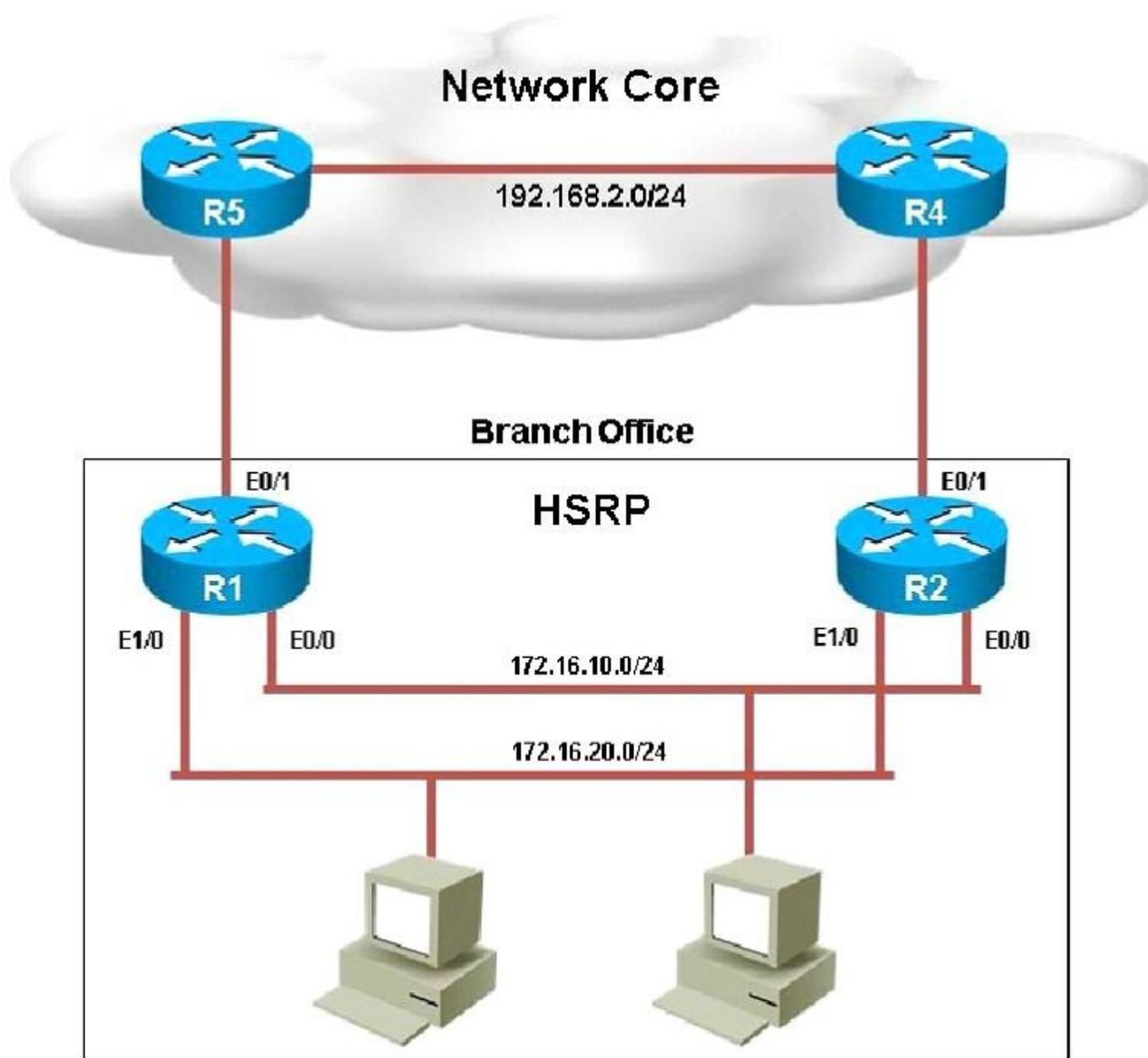
**Answer:**

- ip mtu 1500
- ip adjust tcp-mss 1496
  
- tunnel path-mtu-discovery

- tunnel mode gre ip
- ip mtu 1400
- ip adjust tcp-mss 1360

## HSRP Case

You have been asked by your customer to help resolve issues in their routed network. Their network engineer has deployed HSRP. On closer inspection HSRP doesn't appear to be operating properly and it appears there are other network problems as well. You are to provide solutions to all the network problems.



## QUESTION 1

You have received notification from network monitoring system that link between R1 and R5 is down and you noticed that the active router for HSRP group 1 has not failed over to the standby router for group 1. You are required to troubleshoot and identify the issue.

- A. There is an HSRP group track command misconfiguration
- B. There is an HSRP group priority misconfiguration
- C. There is an HSRP authentication misconfiguration
- D. There is an HSRP group number mismatch
- E. This is not an HSRP issue; this is routing issue.

Answer: A

Explanation:

When looking at the HSRP configuration of R1, we see that tracking has been enabled, but that it is not tracking the link to R5, only the link to R2:

```
R1
!
track 1 interface Ethernet0/0 line-protocol
!
!
!
!
interface Ethernet0/0
  description connection to 172.16.10.0/24 network
  ip address 172.16.10.2 255.255.255.0
  standby 1 ip 172.16.10.254
  standby 1 priority 130
  standby 1 preempt delay reload 180
  standby 1 mac-address 4000.0000.0010
  standby 1 track 1 decrement 40
!
```

R1 should be tracking the Eth 0/1 link, not 0/0 to achieve the desired affect.

## QUESTION 2

You have been asked by your customer to help resolve issues in their routed network. Their network engineer has deployed HSRP. On closer inspection HSRP doesn't appear to be operating properly and it appears there are other network problems as well. You are to provide solutions to all the network problems.

The following debug messages are noticed for HSRP group 2. But still neither R1 nor R2 has identified one of them as standby router. Identify the reason causing the issue.

**Note: only show commands can be used to troubleshoot the ticket.**

R1#

```
'Mar 26 11:17:39.234: HSRP: Et1/0 Grp 2 Hello out 172.16.20.2 Active pri 100 vIP 172.16.20.254
'Mar 26 11:17:40.034: HSRP: EtO/0 Grp 1 Hello out 172.16.10.2 Active prj 130 vIP 172.16.10.254
'Mar 26 11:17:40.364: HSRP: EtO/0 Grp 1 Hello in 172.16.10.1 Standby pri 100 vIP 172.16.10.254
'Mar 26 11:17:41.969: HSRP: Et1/0 Grp 2 Hello out 172.16.20.2 Active pri 100 vIP 172.16.20.254
'Mar 26 11:17:53.338: HSRP: EtO/0 Grp 1 Hello out 172.16.10.2 Active pri 130 vIP 172.16.10.254
'Mar 26 11:17:53.633: HSRP: EtO/0 Grp 1 Hello in 172.16.10.1 Standby pri 100 vIP 172.16.10.254
```

- A. HSRP group priority misconfiguration
- B. There is an HSRP authentication misconfiguration
- C. There is an HSRP group number mismatch
- D. This is not an HSRP issue: this is DHCP issue.
- E. The ACL applied to interface is blocking HSRP hello packet exchange

Answer: E

Explanation:

On R1 we see that access list 102 has been applied to the Ethernet 1/0 interface:

R1

```
no ip http server
!
access-list 102 deny ip any host 224.0.0.102
access-list 102 permit ip any any
!
!
```

R1

```
interface Ethernet1/0
 description connection to 172.16.20.0/24 network
 ip address 172.16.20.2 255.255.255.0
 ip access-group 102 in
 standby version 2
 standby 2 ip 172.16.20.254
 standby 2 authentication cisco123
!
```

This access list is blocking all traffic to the 224.0.0.102 IP address, which is the multicast address used by HSRP.

### QUESTION 3

You have been asked by your customer to help resolve issues in their routed network. Their network engineer has deployed HSRP. On closer inspection HSRP doesn't appear to be operating properly and it appears there are other network problems as well. You are to provide solutions to all the network problems.

Examine the configuration on R4. The routing table shows no entries for 172.16.10.0/24 and 172.16.20.0/24. Identify which of the following is the issue preventing route entries being installed on R4 routing table?.

- A. HSRP issue between R4 and R2.
- B. This is an OSPF issue between R4 and R2.
- C. This is a DHCP issue between R4 and R2.
- D. The distribute-list configured on R4 is blocking route entries.
- E. The ACL configured on R4 is blocking inbound traffic on the interface connected to R2.

Answer: D

Explanation:

If we look at the configuration on R4 we see that there is a distribute list applied to OSPF, which blocks the 172.16.20.0/24 and 172.16.10.0/24 networks.

```
R4
!
router ospf 10
 network 0.0.0.0 255.255.255.255 area 0
 distribute-list 1 in
!
!
!
no ip http server
!
access-list 1 permit 172.18.30.0
access-list 1 deny 172.16.20.0
access-list 1 permit 172.18.20.0
access-list 1 permit 172.18.10.0
access-list 1 deny 172.16.10.0
access-list 1 permit any
!
|
```

#### QUESTION 4

You have been asked by your customer to help resolve issues in their routed network. Their network engineer has deployed HSRP. On closer inspection HSRP doesn't appear to be operating properly and it appears there are other network problems as well. You are to provide solutions to all the network problems.

Examine the configuration on R5. Router R5 do not see any route entries learned from R4; what could be the issue?

- A. HSRP issue between R5 and R4
- B. There is an OSPF issue between R5 and R4
- C. There is a DHCP issue between R5 and R4
- D. The distribute-list configured on R5 is blocking route entries
- E. The ACL configured on R5 is blocking traffic for the subnets advertised from R4.

Answer: B

Explanation:

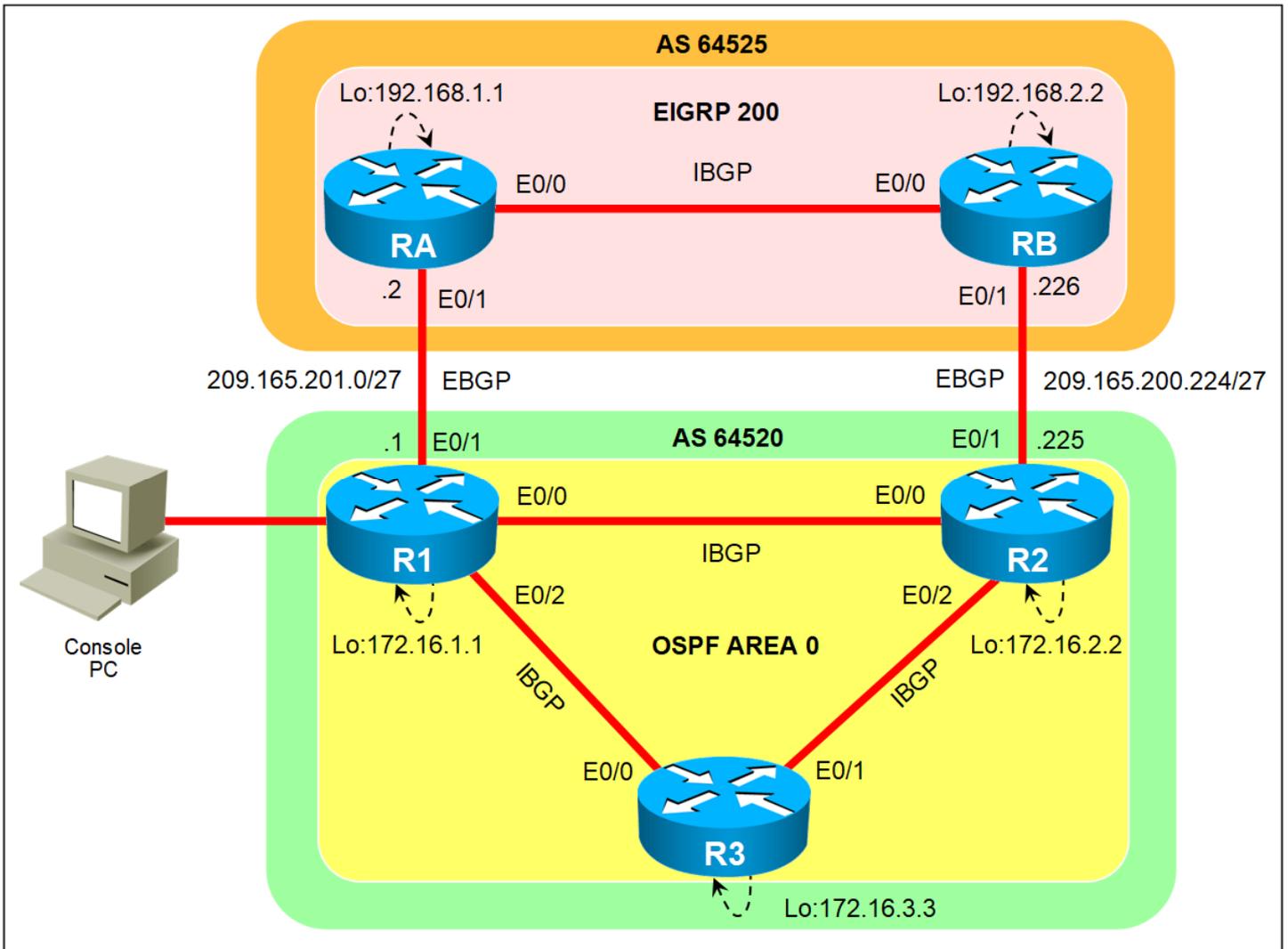
If we issue the “show ip route” and “show ip ospf neighbor” commands on R5, we see that there are no learned OSPF routes and he has no OSPF neighbors.

```
R5
R5#show ip route
R5#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

 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.10.10.0/24 is directly connected, Loopback0
L       10.10.10.1/32 is directly connected, Loopback0
 172.18.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.18.40.0/24 is directly connected, Ethernet0/0
L       172.18.40.2/32 is directly connected, Ethernet0/0
R5#show ip ospf
R5#show ip ospf ne
R5#show ip ospf neighbor
R5#show ip ospf neighbor
R5#
R5#
```

## BGP 實驗配置題



### Scenario

You work as Network Engineer for RADO Network Ltd company. Your colleague has setup POC lab simulating customer network to study about the behavior of BGP protocol when routes are exchanged between two different autonomous systems.

Review the topology. You need to identify and fix IGBP and EBGPs issues on R1 router.

### Topology Details

#### AS64520

- R1, R2 and R3 are three routers on AS64520 and OSPF is IGP routing protocol configured between them.
- IBGP configured between R1, R2 and R3 routers using peer group.
- Loopback0 address is used for IBGP peering, Loopback0 address configured on R1, R2 and R3 are advertised into BGP domain on AS64525.

#### AS64525

- RA and RB are two routers on AS 64525 and EIGRP is IGP routing protocol configured between them.

- Loopback0 address is used for IBGP peering, Loopback0 address configured on RA and RB advertised into BGP domain on AS64525.
- R1 and RA form EBGP neighbor relationship using physical interface address.
- R2 and RB form EBGP neighbor relationship using physical interface address.

### Simulation requirements

- Identify and fix EBGP neighbor relationship issue between R1 and RA routers.
- Identify and fix IBGP neighbor relationship issue between R1 and R2, R1 and R3.
- You are allowed to remove any misconfiguration or incorrect configuration to only fix the issue and other initial configurations that not impacting the issues should not be changed.
- The final BGP table after fixing two issues on R1 router should display as shown below.

R1# show ip bgp

	Network	Next Hop	Metric	LocPrf	Weight	Path
*>	172.16.1.1/32	0.0.0.0	0		32768	i
r>i	172.16.2.2/32	172.16.2.2	0	100	0	i
r>i	172.16.3.3/32	172.16.3.3	0	100	0	i
*>	192.168.1.1/32	209.165.201.2	0		0	64525 i
*i		172.16.2.2	0	100	0	64525 i

在 R1 上 `show run` 可以看到下面配置

--output omitted--

**router bgp 64520**

**network 172.16.1.1 mask 255.255.255.255**

**neighbor IBGP peer-group**

**neighbor IBGP remote-as 64550 <--- 錯誤 AS**

**neighbor IBGP update-source loopback0**

**neighbor 172.16.2.2 peer-group IBGP**

**neighbor 172.16.3.3 peer-group IBGP**

**neighbor 209.165.200.2 remote-as 64525 <--- 錯誤 IP**

--output omitted--