

## Exam Questions 300-135

Troubleshooting and Maintaining Cisco IP Networks (TSHOOT)

<https://www.2passeasy.com/dumps/300-135/>



#### NEW QUESTION 1

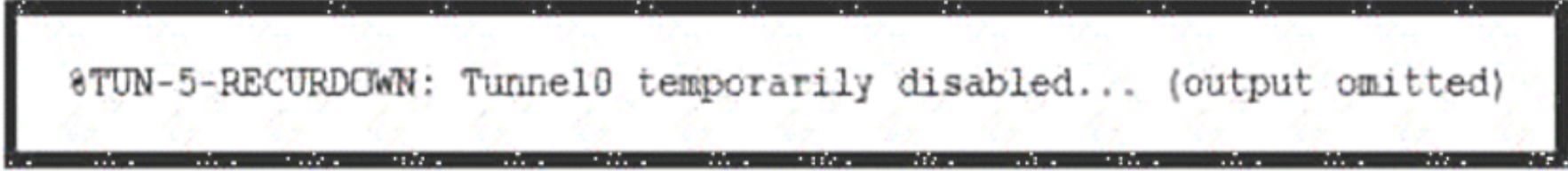
Which IPsec mode will encrypt a GRE tunnel to provide multiprotocol support and reduced overhead?

- A. 3DES
- B. multipoint GRE
- C. tunnel
- D. transport

**Answer:** D

#### NEW QUESTION 2

Refer to the exhibit.



```
%TUN-5-RECURDOWN: Tunnel0 temporarily disabled... (output omitted)
```

Which statement indicates a cause for Tunnel0's connection failure?

- A. The tunnel destination interface is flapping, which causes the tunnel to go up and down.
- B. The tunnel source interface is in an up/down state and the tunnel destination is recursively routing as a result
- C. The tunnel is configured with the wrong encapsulation
- D. The tunnel destination is intermittently reachable via multiple routing protocols

**Answer:** D

**Explanation:** Reference:

<https://www.cisco.com/c/en/us/support/docs/ip/enhanced-interior-gateway-routing-protocol-eigrp/22327-gre-fla>

#### NEW QUESTION 3

A user is able to log into the switch but cannot enable. What might be the reason?

- A. change authorization level
- B. change accounting
- C. change authentication
- D. change username password

**Answer:** A

#### NEW QUESTION 4

Which command securely encrypts the enable password on an IOS device?

- A. service password-encryption
- B. enable secret
- C. enable secure
- D. enable password

**Answer:** A

#### NEW QUESTION 5

For which two reasons might a GRE Tunnel interface enter an up/down state? (Choose two)

- A. The tunnel source is using a loopback interface.
- B. The tunnel mode is defined as transport.
- C. Keepalives are disabled on the interfaces
- D. The route to the destination is through the tunnel itself.
- E. The tunnel source interface is down.

**Answer:** DE

#### NEW QUESTION 6

You are performing a peer review on this implementation script, which is intended to enable AAA on a device.

```
username nmops privilege 15 secret Cisco 123
username nmeng privilege 15 secret 123Cisco
enable secret Str0ng34156732
aaa authentication login default group tacacs+ local
aaa authentication enable default group tacacs+
aaa authorization config-commands
aaa authourization exec default group tacacs+ if-authenticated
aaa accounting exec default start-stop group tacacs+
aaa accounting commands 5 default stop-only group tacacs+
aaa accounting commands 15 default start-stop group tacacs+
aaa accounting system default start-stop group tacacs+
```

If the script is deployed which two effects does it have on the device? (Choose two.)

- A. Part of the script is rejected.
- B. The device authenticates users against the local database first.
- C. The device fails to perform AAA because session-id common command is missing.
- D. The device authenticates all users except nmops and nmeng against the TACACS+ database.
- E. The device fails to perform AAA because the aaa new-model command is missing.

**Answer:** AE

**Explanation:** R1#sh run | sec aaa

R1(config)#aaa authentication ?

R1(config)#aaa authentication login default local

^

% Invalid input detected at '^' marker. Also when enabling AAA:

R1#sh run | sec aaa aaa new-model

aaa authentication login default local aaa session-id common

#### NEW QUESTION 7

You must connect two remote sites over the public internet. Multicast support, security, and simplicity are required. Which tunneling technology could you consider?

- A. MPLS
- B. GRE over IPsec
- C. GET VPN
- D. IPsec

**Answer:** B

#### NEW QUESTION 8

Which command can you enter to block SSH traffic from hosts on network 10.10.15.0/24?

- A. access-list 142 deny tcp any 10.10.15.0 0.0.0.0 any eq 22
- B. access-list 142 deny tcp any 10.10.15.0 0.0.0.255 eq 21
- C. access-list 142 deny tcp 10.10.15.0 0.0.0.255 any eq 23
- D. access-list 142 deny tcp 10.10.15.0 0.0.0.255 any eq 22

**Answer:** D

#### NEW QUESTION 9

If you execute a traceroute and it returns only an asterisk (\*), what does the result mean?

- A. The protocol is unreachable.
- B. The probe timed out.
- C. The destination port is unreachable.
- D. The destination server reported it is too busy.

**Answer:** B

#### NEW QUESTION 10

What debug command is used to identify and troubleshoot IP Fragmentation and Path Maximum Transmission Unit Discovery issues?

- A. debug ip icmp
- B. debug ip packet
- C. debug ip policy
- D. debug ip routing

**Answer:** B

**NEW QUESTION 10**

On which two topologies can you deploy a point-to-point GRE over IPsec design? (Choose two.)

- A. bus
- B. partial-mesh
- C. hub-and-spoke
- D. ring
- E. tree

**Answer:** BC

**NEW QUESTION 13**

You are troubleshooting a connection between a console port on one router and an AUX port on another router. Which cable type must be used for this connection?

- A. Crossover cable
- B. Straight cable
- C. Rollover cable
- D. DB-25 DCE cable

**Answer:** A

**NEW QUESTION 17**

Refer to the exhibit.

```
GW-RTR#show running-config
!
service password-encryption
!
hostname GW-RTR
!
line con 0
  exec-timeout 0 0
  password 7 0822455D0A16
  logging synchronous
line aux 0
  exec-timeout 0 0
  logging synchronous
line vty 0 4
  password 7 094F471A1A0A
  login
  transport input telnet
!
end
```

Which outcome regarding a telnet connection to the router is valid?

- A. Telnet fails because of the missing AAA on the router
- B. Telnet fails because of the missing username / password on the router.
- C. Telnet fails because of the missing enable secret on the router
- D. Telnet completes successfully

**Answer:** D

**NEW QUESTION 20**

Refer to the exhibit.



```

Internal#traceroute
Protocol [ip]:
Target IP address: cisco.com
Source address:
Numeric display [n]:
Timeout in seconds [3]:
Probe count [3]: 2
Minimum Time to Live [1]:
Maximum Time to Live [30]:
Port Number [33434]:
Loose, Strict, Record, Timestamp, Verbose[none]: Verbose
Loose, Strict, Record, Timestamp, Verbose[V]:
Type escape sequence to abort.
Tracing the route to cisco.com (72.163.4.162)
VRF info: (vrf in name/id, vrf out name/id)
 1 46.16.251.157 [AS 5713] 1 msec
   46.16.251.158 [AS 5713] 2 msec
 2 46.16.251.169 [AS 5713] 1 msec
   134.222.97.8 [AS 5713] 2 msec
 3 134.222.97.8 [AS 5713] 1 msec
   71.185.45.21 [AS 5713] 1 msec
 4 71.185.45.21 [AS 5713] 2 msec !H
    
```

Which two statements are correct? (Choose Two)

- A. The source device has name resolution configured.
- B. The source device is using two routes for the destination, learned from different protocols.
- C. A device on the path is introducing considerable delay.
- D. The source device is load balancing traffic.

**Answer:** AD

**Explanation:** Router traces domain name (cisco.com) and it gets ICMP answers, so name resolution has happened. Per hop output shows 2 lines, hence 2 active paths exist.

### NEW QUESTION 23

Which three keywords are supported in the ip header option?

- A. Timeout
- B. Type of service
- C. Validate
- D. Timestamp
- E. Record
- F. Strict

**Answer:** DEF

### NEW QUESTION 26

Refer to the exhibit.

```

Gateway-Router(config-cp)#service-policy input DOS_Stop
'Weighted Fair Queueing' not supported on control-plane
error: failed to install policy map DOS_Stop
    
```

A large number of TCP sessions attempting to connect to a router cause memory leakage and the router to hang. During troubleshooting the client configures a service policy and applies it to the control plane resulting in the error shown. What is the root cause of this error message?

- A. The router license is missing in order to configure the policy map
- B. The bandwidth command is not supported for policy maps configured for CoPP
- C. Cisco routers lack the support for protecting the control plane.
- D. The service policy should be configured for the output direction

**Answer:** A

### NEW QUESTION 31

Which two statements about extended ping options are true? (Choose two)

- A. You can select the UDP destination port
- B. You can use the Data pattern option to troubleshoot framing errors on serial hoes
- C. You can use the ToS bit to control fragmentation of the datagram
- D. You can change the minimum and maximum TTL
- E. You can use the Datagram size option to set the size of the ping packet in bytes

**Answer:** BD

### NEW QUESTION 33

R1 and R2 are directly connected using interface Ethernet0/0 on both sides. R1 and R2 were not becoming adjacent, so you have just configured R2 interface Ethernet0/0 as network type broadcast. Which two statements are true?

- A. Three OSPF routers are in the network segment connected to 192.168.1.0/24
- B. R1 installs a route to 2.2.2.2/32 as O.
- C. R2 is not an OSPF ABR.
- D. R1 interface Ethernet0/0 is configured as OSPF type point to point.
- E. R1 installs a route to 2.2.2.2/32 as O IA.
- F. both routers R1 and R2 are neighbors and R2 IS BDR.

**Answer:** EF

**Explanation:** -For the Answer 5 "R1 installs a route to 2.2.2.2/32 as O IA":

That because the route 2.2.2.2/32 belong to another area (area1).

-for the Answer 6 "both routers R1 and R2 are neighbors, and R2 IS BDR":

Here clearly the question, say that R1 and R2 are not adjacent, but that not mean they are not neighbors, from the output of "show ip ospf neighbor" command we can see clearly that routers R1 and R2 are neighbors, and actually the R2 is BDR.

There different between adjacent and neighbor, neighbors" and "adjacent". Two terminologies that doesn't mean the same thing, but can often be misused in a discussion. Neighbors in this case means "show up as neighbors while using the show ip ospf neighbors command". While "adjacent" means they are fully exchanging topology information.

For further information check the links below: <https://learningnetwork.cisco.com/message/564573#564573> <http://blog.ine.com/2008/01/08/understanding-ospf-network-types/>

### NEW QUESTION 35

When troubleshooting recursive routing issues with GRE tunnels, which three actions resolve the issue? (Choose 3 )

- A. Remove the configuration on the tunnel interface and reconfigure
- B. Perform shut and no shut commands on the tunnel interface.
- C. Add static routes for the tunnel source and destination
- D. Remove the network advertisements from the routing protocols.
- E. Change the tunnel source or destination interface.
- F. If using OSPF to peer across the tunnel use EIGRP instead

**Answer:** CDE

### NEW QUESTION 38

Which two statements about GRE tunnel keepalives are true? (Choose two)

- A. They are supported in point-to-point GRE tunnels.
- B. They are supported in multipoint GRE tunnels.
- C. They are supported in VRFs only if the fVRF and iVRF match.
- D. They are supported with IPsec tunnel protection.
- E. They are enabled by default.

**Answer:** AD

### NEW QUESTION 41

Which protocol does mGRE use to determine where packets are sent?

- A. CEF
- B. EIGRP
- C. NHRP
- D. DMVPN

**Answer:** A

**Explanation:** Reference:

<https://www.cisco.com/c/en/us/support/docs/security-vpn/ipsec-negotiation-ike-protocols/41940-dmvpn.html>

### NEW QUESTION 45

Which two conditions can be used to filter the output of the debug crypto condition command? (Choose two)

- A. encryption algorithm
- B. destination IP address
- C. front-door VRF name
- D. ISAKMP profile name
- E. routing event Filter

**Answer:** CD

### NEW QUESTION 47



```
SW3#sho run | sec vty
line vty 0 4
access-class 100 in
login
transport input ssh

SW3#sho access-list
Extended IP access list 100
10 deny tcp any any eq 22
20 permit ip any any
Extended IP access list 150
10 permit tcp any any eq telnet
20 deny tcp any any eq 22
30 permit ip any any
Extended IP access list 175
10 permit tcp any any eq 22
20 permit tcp any any eq telnet
```

Refer to the exhibit. Your company security policy states you must use SSH on your network devices. Your attempt to SSH into SW3 is unsuccessful. What action must you take to correct the issue?

- A. Change access-class 100 in to access-class 175 in.
- B. Change access-class 100 in to access-class 150 in.
- C. Change access-class 100 in to access-class 100 out.
- D. Change transport inut ssh to transport input telnet

**Answer: A**

#### NEW QUESTION 51

Which statement is true about an IPsec/GRE tunnel?

- A. The GRE tunnel source and destination addresses are specified within the IPsec transform set.
- B. An IPsec/GRE tunnel must use IPsec tunnel mode.
- C. GRE encapsulation occurs before the IPsec encryption process.
- D. Crypto map ACL is not needed to match which traffic will be protected.

**Answer: C**

#### NEW QUESTION 52

Refer to the Exhibit:

```
R4#debug ip ospf adj
OSPF adjacency events debugging is on
*Jan 1 00:23:51.363: OSPF: Cannot see ourself in hello from 192.168.1.3 on Serial0/0/0, state
INIT
*Jan 1 00:23:51.367: OSPF: Rcv DBD from 192.168.1.3 on Serial0/0/0 seq 0x17B opt 0x58 flag
0x7 len 32 mtu 1500 state INIT
*Jan 1 00:23:51.367: OSPF: 2 Way Communication to 192.168.1.3 on Serial0/0/0, state 2WAY
*Jan 1 00:23:51.371: OSPF: Rcv DBD from 192.168.1.3 on Serial0/0/0 seq 0x24EF opt 0x58 flag
0x2 len 112 mtu 1500 state_____
```

Which output is expected in the blank line for the OSPF adjacency process?

- A. DOWN
- B. EXSTART

- C. EXCHANGE
- D. LOADING

Answer: B

Explanation: You can check the output of "debug ip ospf adj" here:

## debug ip ospf adj (adjacency)

Cabrillo College

```
Router# debug ip ospf adj
04:19:46: OSPF: Rcv hello from 201.0.0.1 area 0 from FastEthernet0 192.168.20.1
04:19:46: OSPF: 2 Way Communication to 201.0.0.1 on FastEthernet0, state 2WAY
04:19:46: OSPF: End of hello processing
<text omitted>
04:20:22: OSPF: end of Wait on interface FastEthernet0
04:20:22: OSPF: DR/BDR election on FastEthernet0
04:20:22: OSPF: Elect BDR 200.0.0.1
04:20:22: OSPF: Elect DR 200.0.0.1
04:20:22: OSPF: Elect BDR 201.0.0.1
04:20:22: OSPF: Elect DR 200.0.0.1
04:20:22: DR: 201.0.0.1 (Id) BDR: 200.0.0.1 (Id)
04:20:23: OSPF: Rcv DBD from 201.0.0.1 on FastEthernet0 seq 0x2657 opt 0x2 flag
0x7 len 32 mtu 1500 state EXSTART
04:20:23: OSPF: NBR Negotiation Done. We are the SLAVE
04:20:23: OSPF: Send DBD to 201.0.0.1 on FastEthernet0 seq 0x2657 opt 0x2 flag 0 x2 len 92
04:20:23: OSPF: Rcv DBD from 201.0.0.1 on FastEthernet0 seq 0x2658 opt 0x2 flag
0x3 len 72 mtu 1500 state EXCHANGE
<text omitted>
04:20:23: OSPF: Synchronized with 201.0.0.1 on FastEthernet0, state FULL
```

- Displays adjacency information including Hello processing, DR/BDR election, authentication, and the “Steps to OSPF Operation.”

### NEW QUESTION 55

If you are troubleshooting a spanning-tree loop on a VLAN, which standard troubleshooting approach is most appropriate for identifying the cause of the loop?

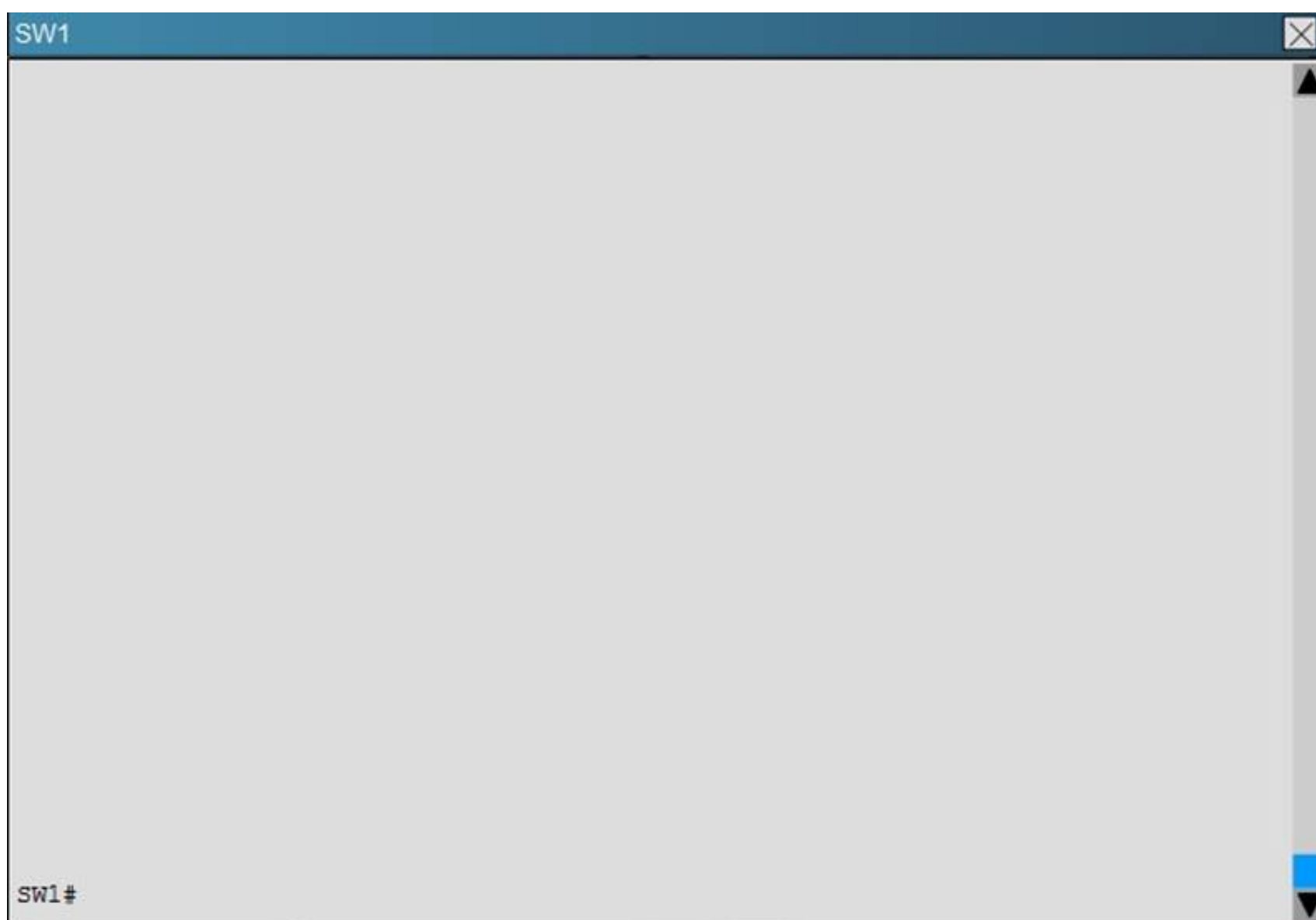
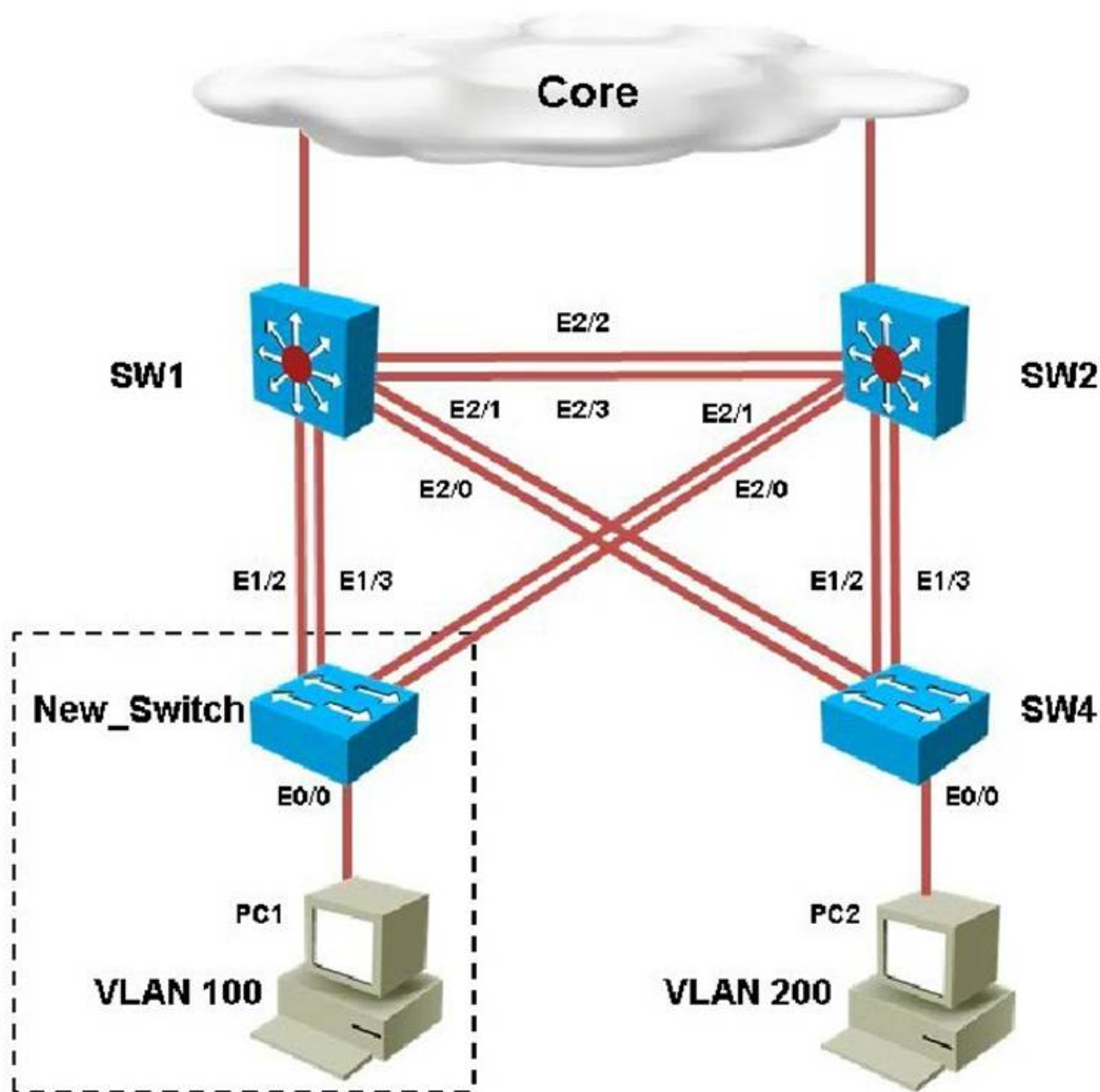
- A. divide and conquer
- B. top-down
- C. bottom-up
- D. follow-the-path

Answer: D

### NEW QUESTION 60

A customer network engineer has made configuration changes that have resulted in some loss of connectivity. You have been called in to evaluate a switch network and suggest resolutions to the problems.



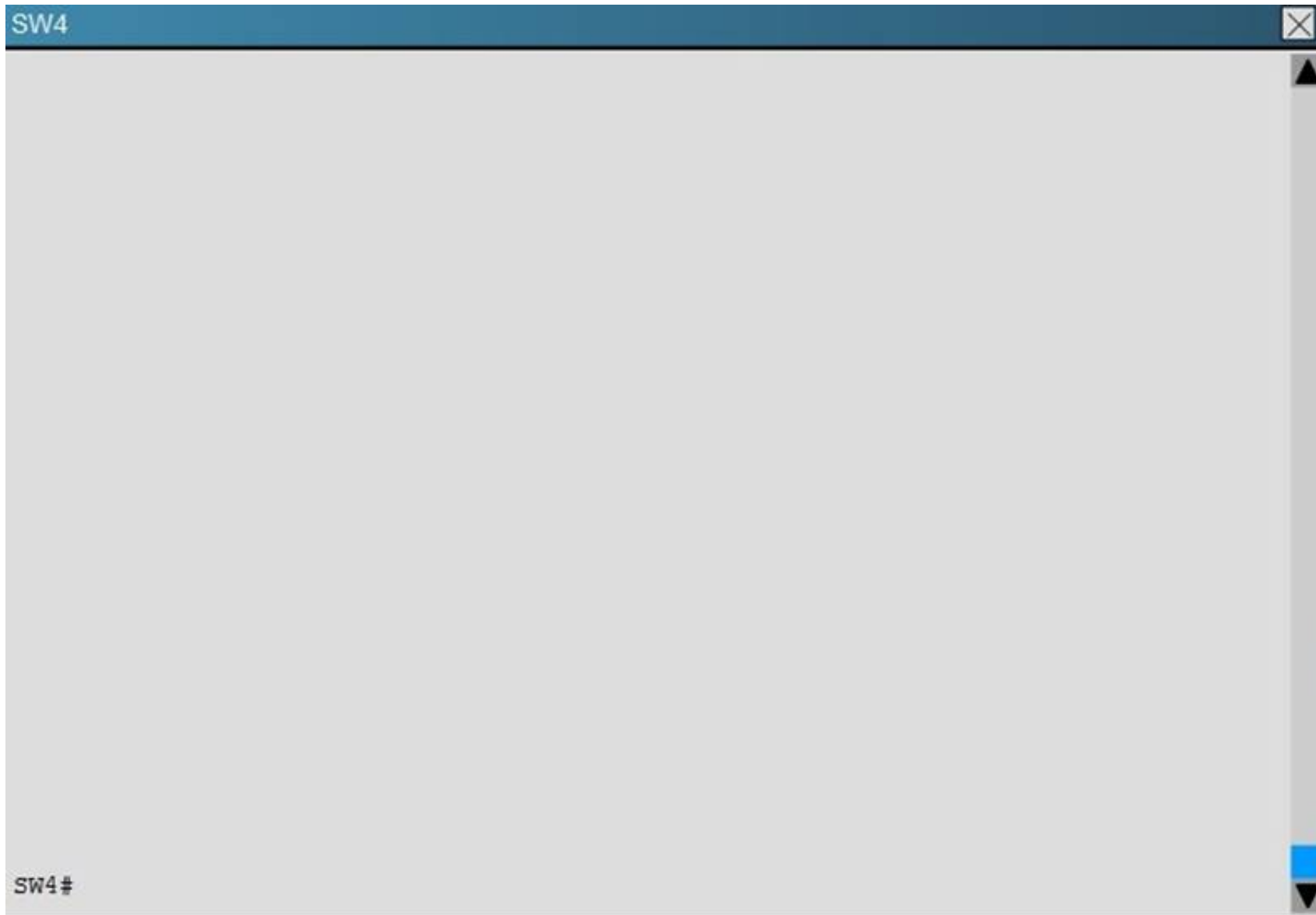


SW2

SW2#

New\_Switch

New\_Switch#



You have configured PVST+ load balancing between SW1 and the New\_Switch in such a way that both the links E2/2 and E2/3 are utilized for traffic flow, which component of the configuration is preventing PVST+ load balancing between SW1 and SW2 links

- A. Port priority configuration on SW1
- B. Port priority configuration on the New\_Switch
- C. Path cost configuration on SW1
- D. Path cost configuration on the New\_Switch

**Answer:** D

**Explanation:** Here is the configuration found on the New\_Switch:

```
New_Switch
!
interface Ethernet1/2
  switchport trunk encapsulation dot1q
  switchport mode trunk
  duplex auto
!
interface Ethernet1/3
  switchport trunk encapsulation dot1q
  switchport mode trunk
  duplex auto
  spanning-tree cost 250
!
```

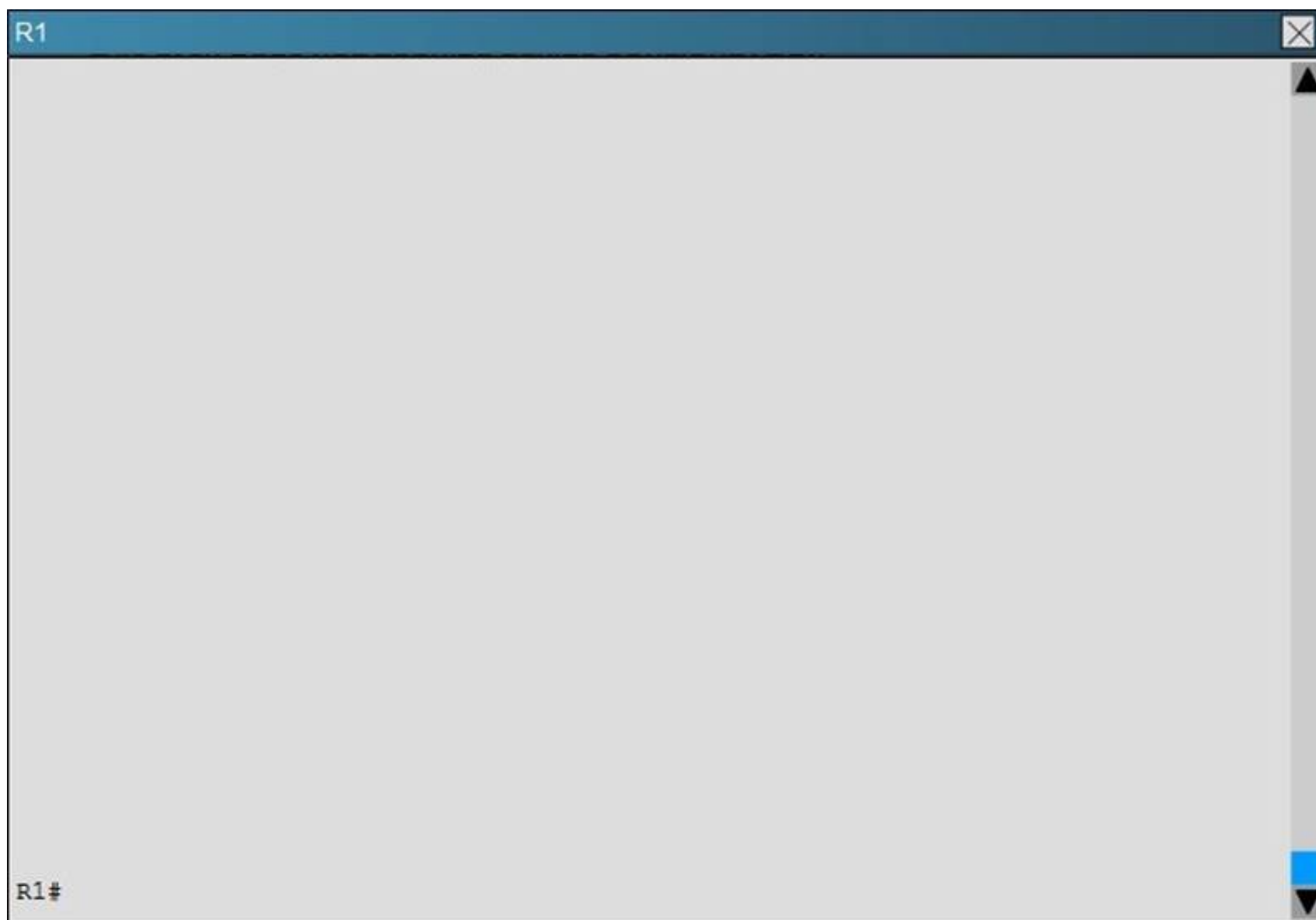
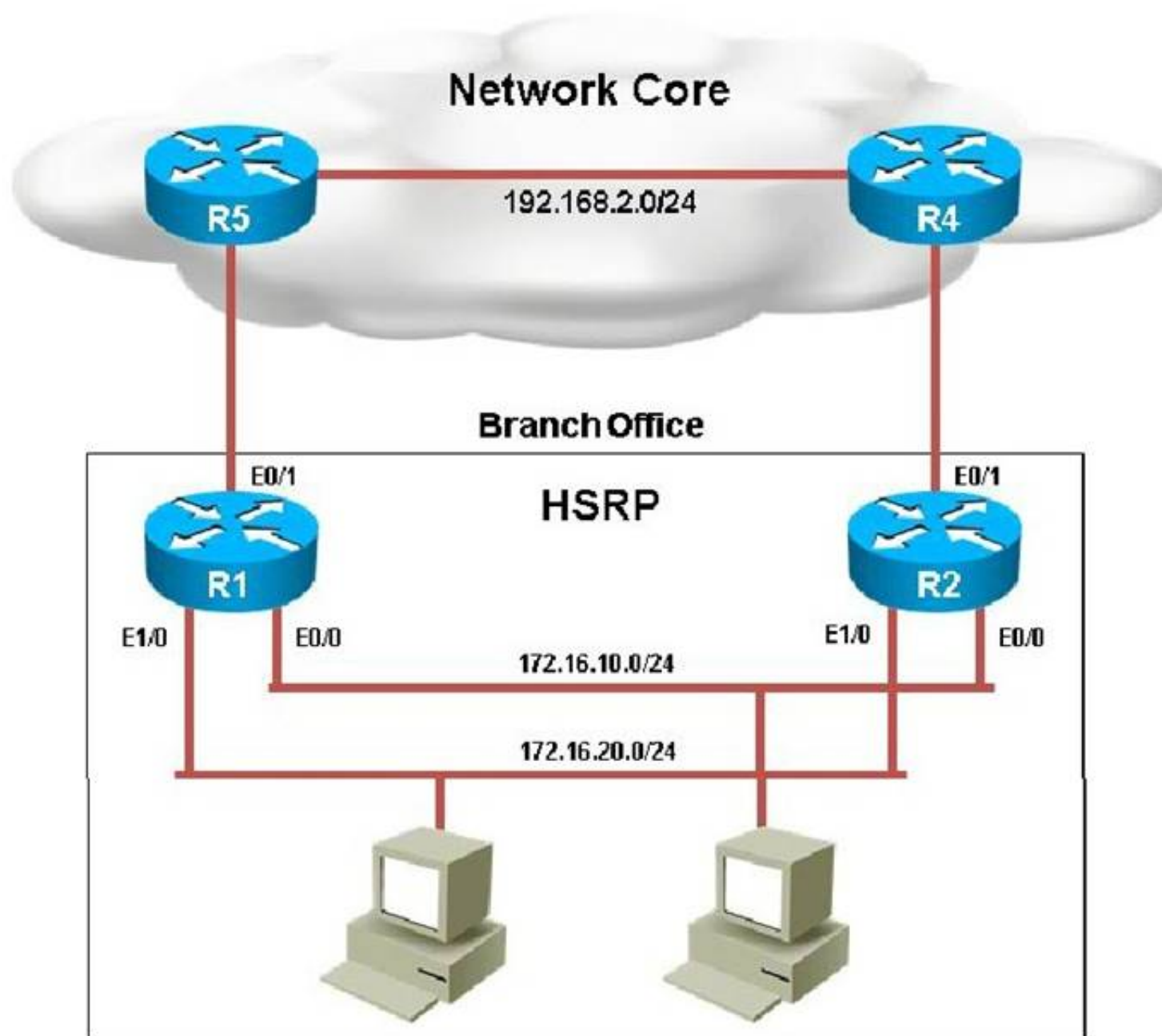
This causes the port cost for link eth 1/3 to increase the path cost to 250 for all VLANs, making that link less preferred so that only eth 1/2 will be used.

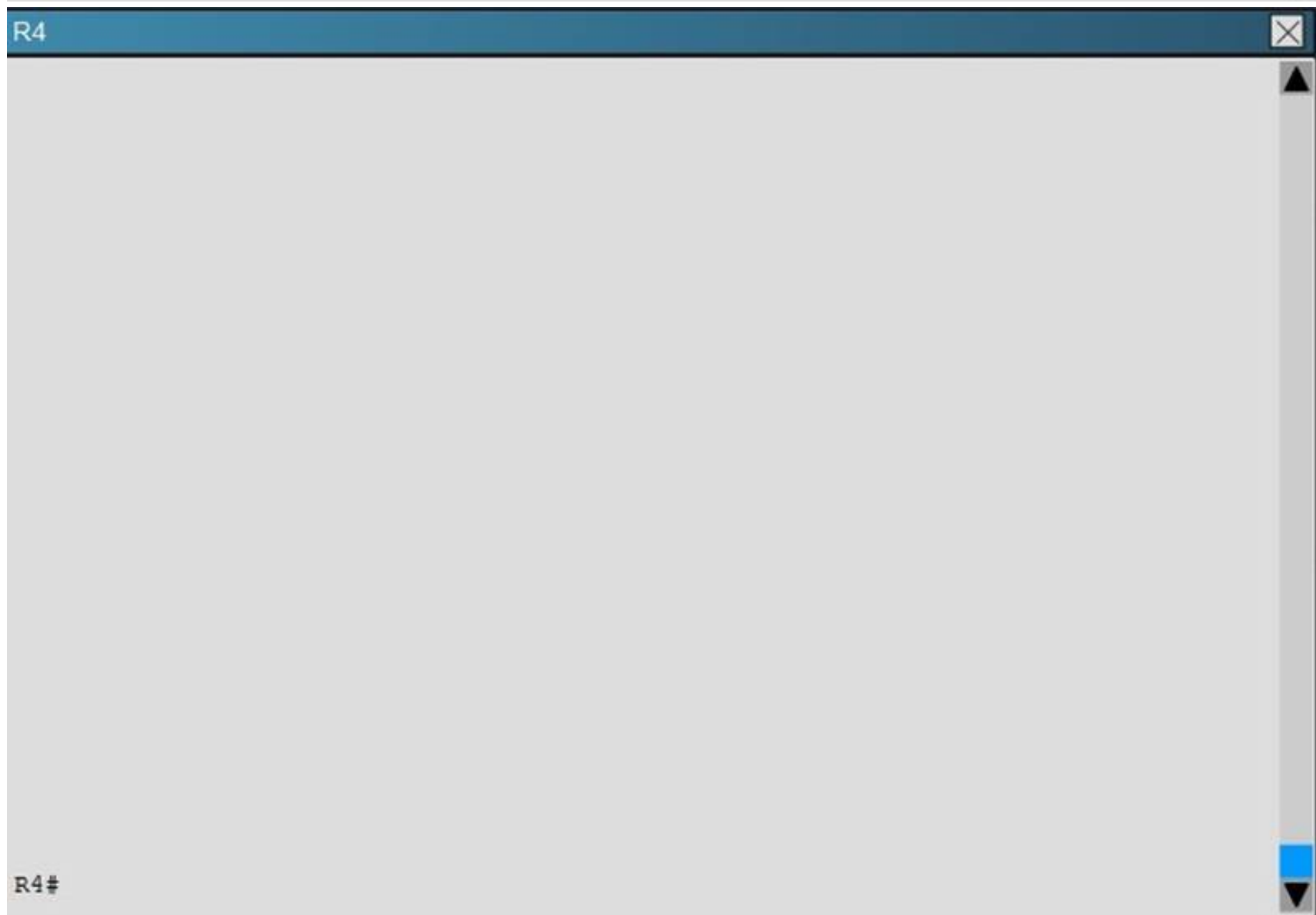
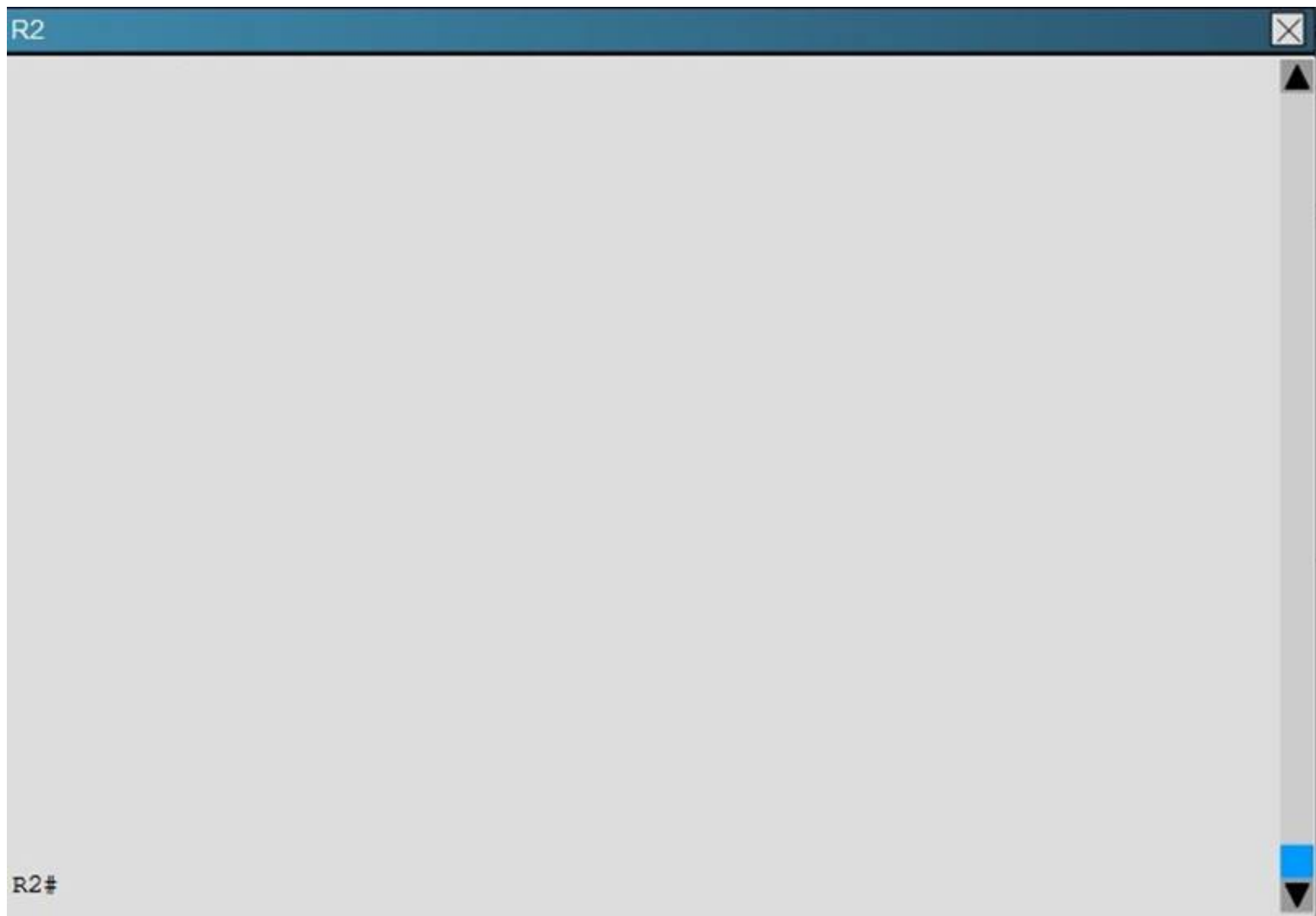
#### NEW QUESTION 61

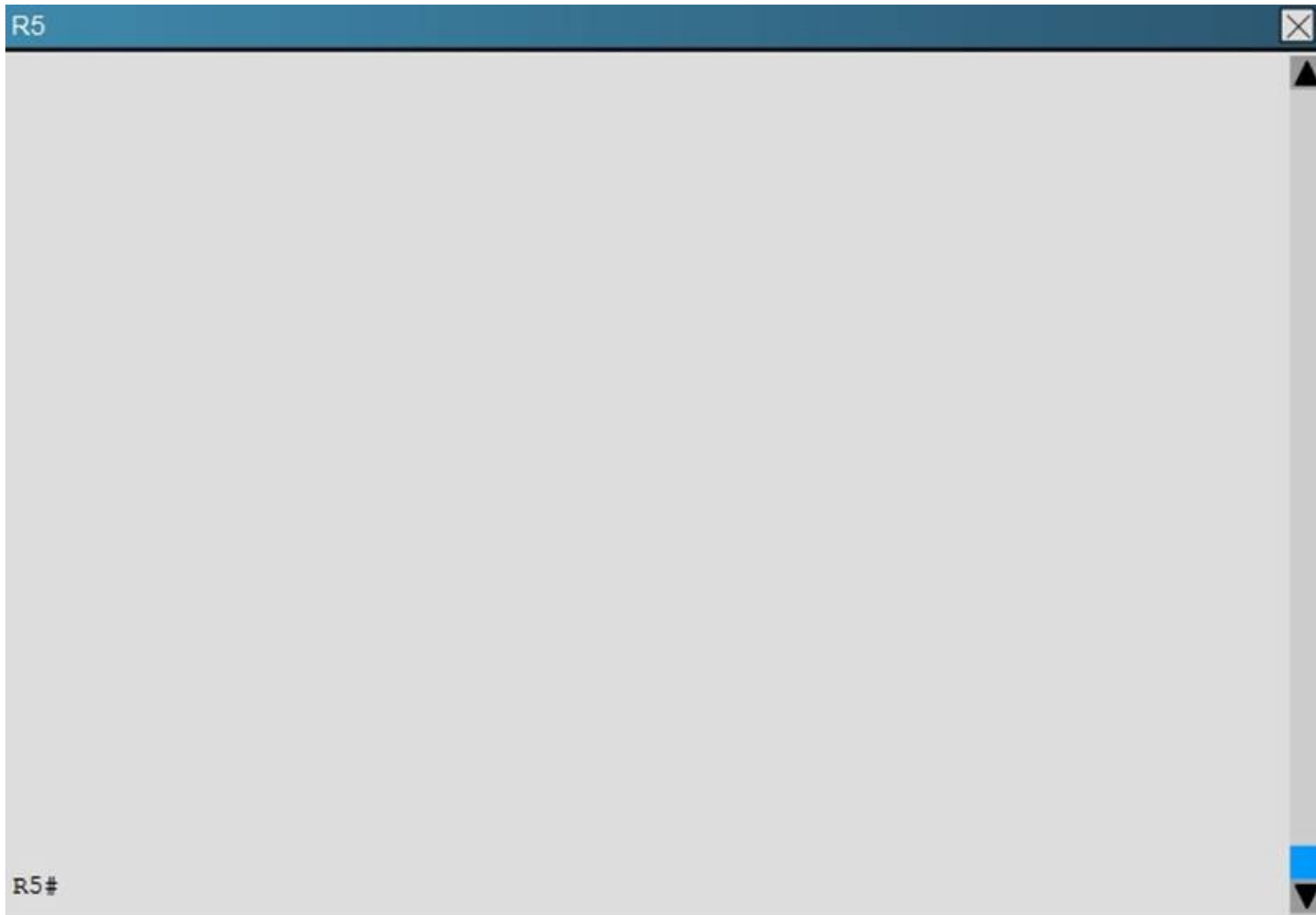
Scenario:

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.









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
!
interface Ethernet0/1

```

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

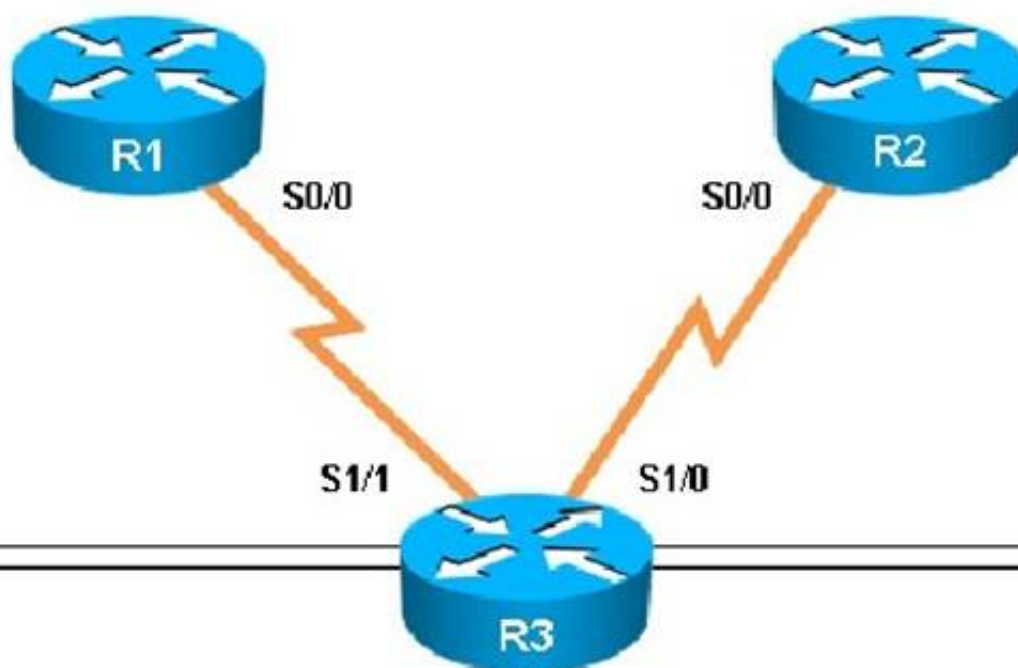
#### NEW QUESTION 63

Scenario:

A customer network engineer has edited their OSPF network configuration and now your customer is experiencing network issues. They have contacted you to resolve the issues and return the network to full functionality.

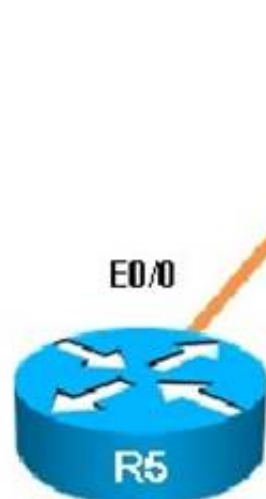


## Area 0

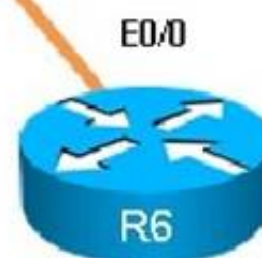


## Area 1

## Area 2



## Area 3



R1

R1#

R2

R2#

R3

R3#

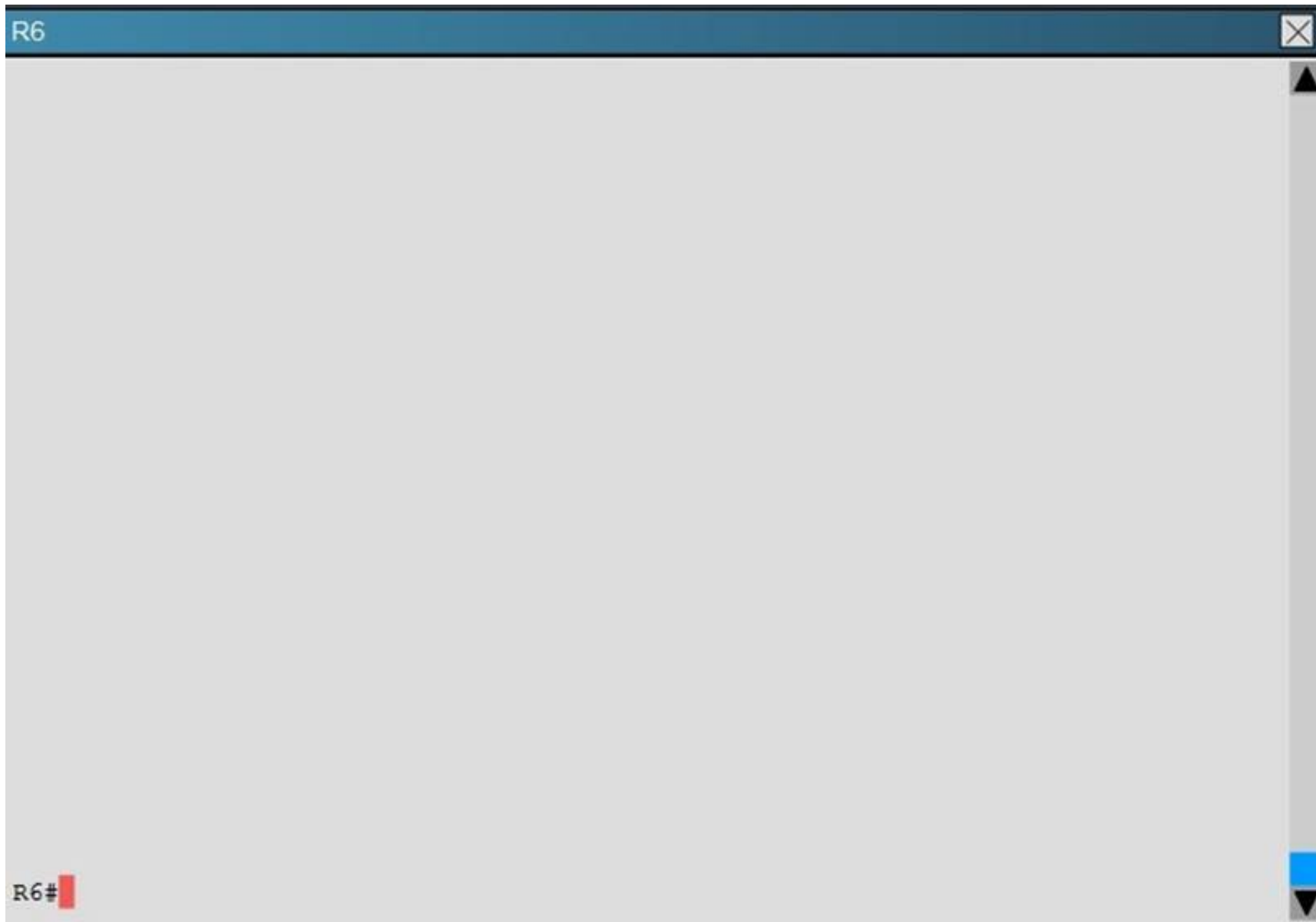
R4

R4#

R5

R5#





After resolving the issues between R3 and R4. Area 2 is still experiencing routing issues. Based on the current router configurations, what needs to be resolved for routes to the networks behind R5 to be seen in the company intranet?

- A. Configure R4 and R5 to use MD5 authentication on the Ethernet interfaces that connect to the common subnet.
- B. Configure Area 1 in both R4 and R5 to use MD5 authentication.
- C. Add ip ospf authentication-key 7 BEST to the R4 Ethernet interface that connects to R5 and ip ospf authentication-key 7 BEST to R5 Ethernet interface that connects to R4.
- D. Add ip ospf authentication-key CISCO to R4 Ethernet 0/1 and add area 2 authentication to the R4 OSPF routing process.

**Answer:** D

**Explanation:** Here, we see from the running configuration of R5 that OSPF authentication has been configured on the link to R4:

```
R5
interface Ethernet0/0
 ip address 192.168.45.5 255.255.255.0
 ip ospf authentication-key CISCO
!
interface Ethernet0/1
 no ip address
 shutdown
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
router ospf 100
 router-id 5.5.5.5
 auto-cost reference-bandwidth 3000
 area 2 authentication
 area 2 nssa
 area 2 range 5.5.0.0 255.255.252.0
 network 192.168.45.5 0.0.0.0 area 2
 distribute-list 45 in Ethernet0/1
```

However, this has not been done on the link to R5 on R4:

R4

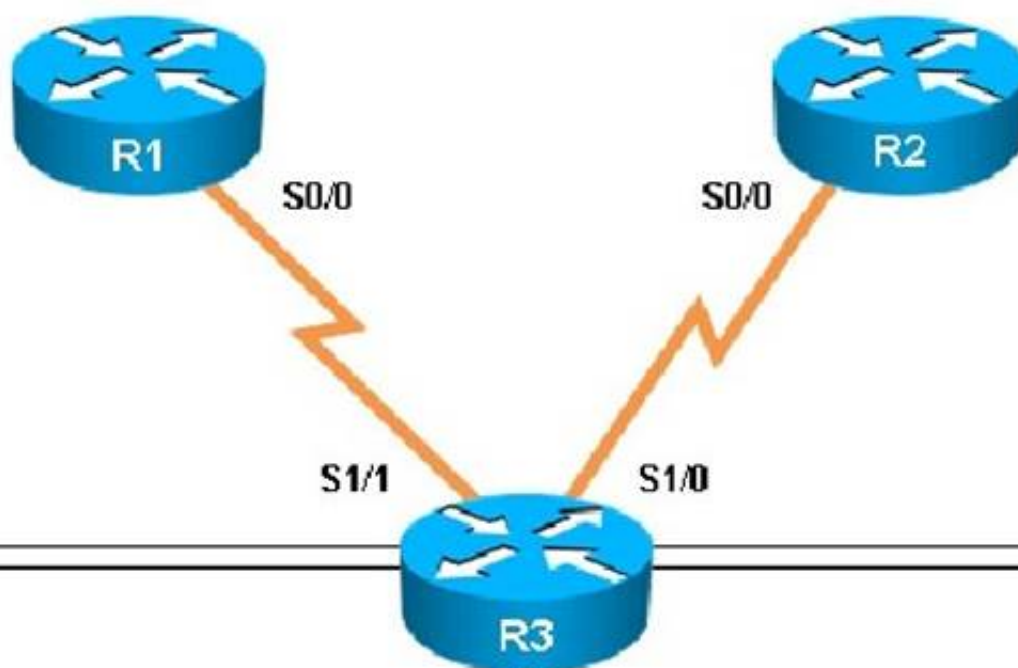
```
interface Ethernet0/1
 ip address 192.168.45.4 255.255.255.0
!
interface Ethernet0/2
 ip address 192.168.46.4 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router ospf 100
 router-id 4.4.4.4
 auto-cost reference-bandwidth 3000
 area 1 virtual-link 3.3.3.3
 area 2 nssa
 area 2 range 5.5.0.0 255.255.252.0
 area 3 stub no-summary
 network 4.4.4.4 0.0.0.0 area 1
 network 192.168.34.0 0.0.0.255 area 1
 network 192.168.45.0 0.0.0.255 area 2
 network 192.168.46.0 0.0.0.255 area 3
 distribute-list 1 in Ethernet0/0
 distribute-list 1 in Ethernet0/1
!
```

**NEW QUESTION 64**

Scenario:

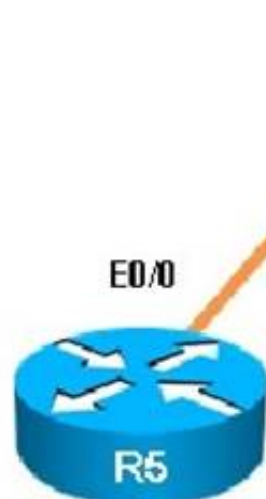
A customer network engineer has edited their OSPF network configuration and now your customer is experiencing network issues. They have contacted you to resolve the issues and return the network to full functionality.

## Area 0

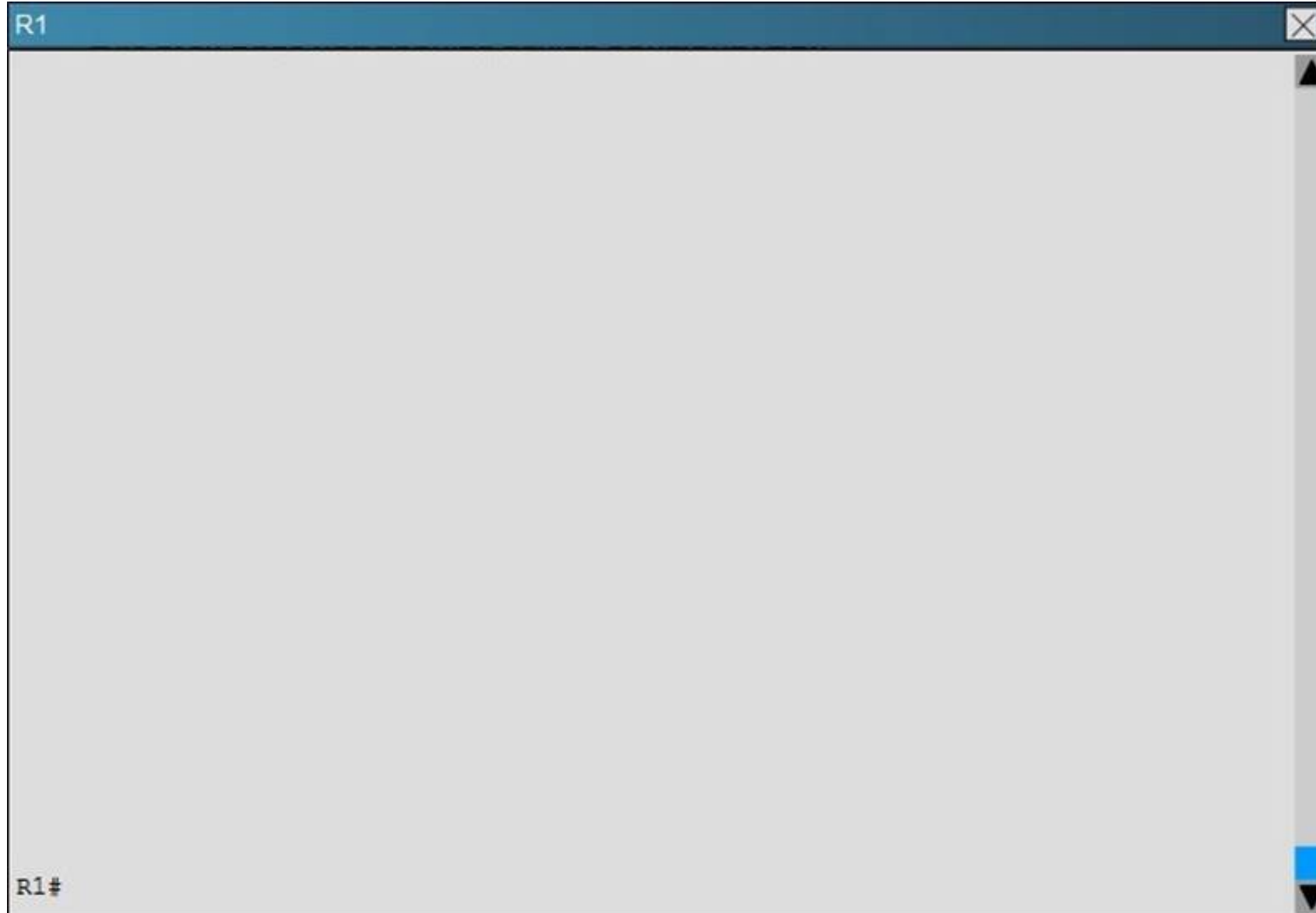
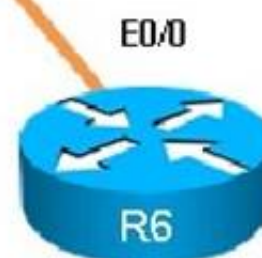


## Area 1

## Area 2



## Area 3





R2

R2#

R3

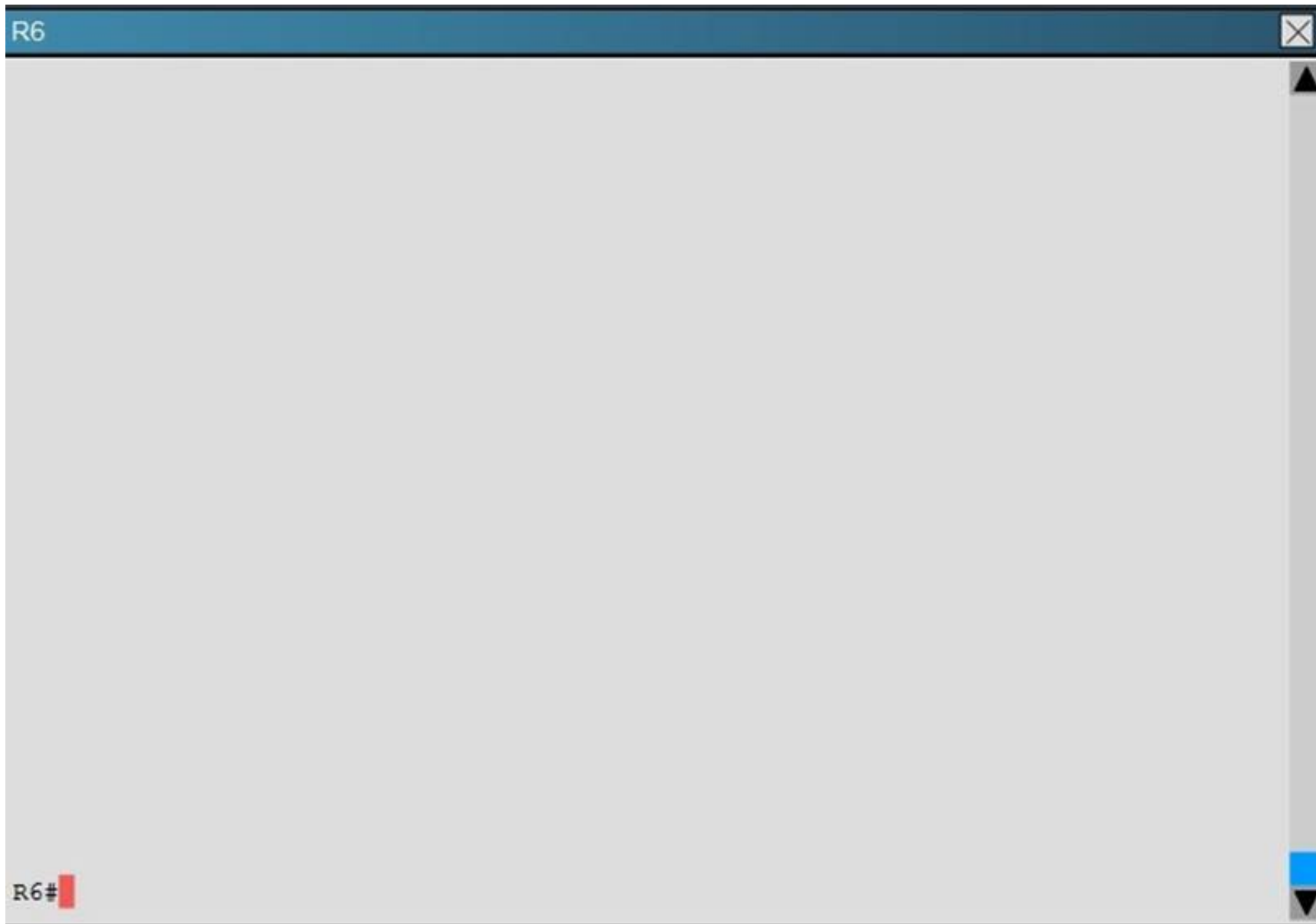
R3#

R4

R4#

R5

R5#

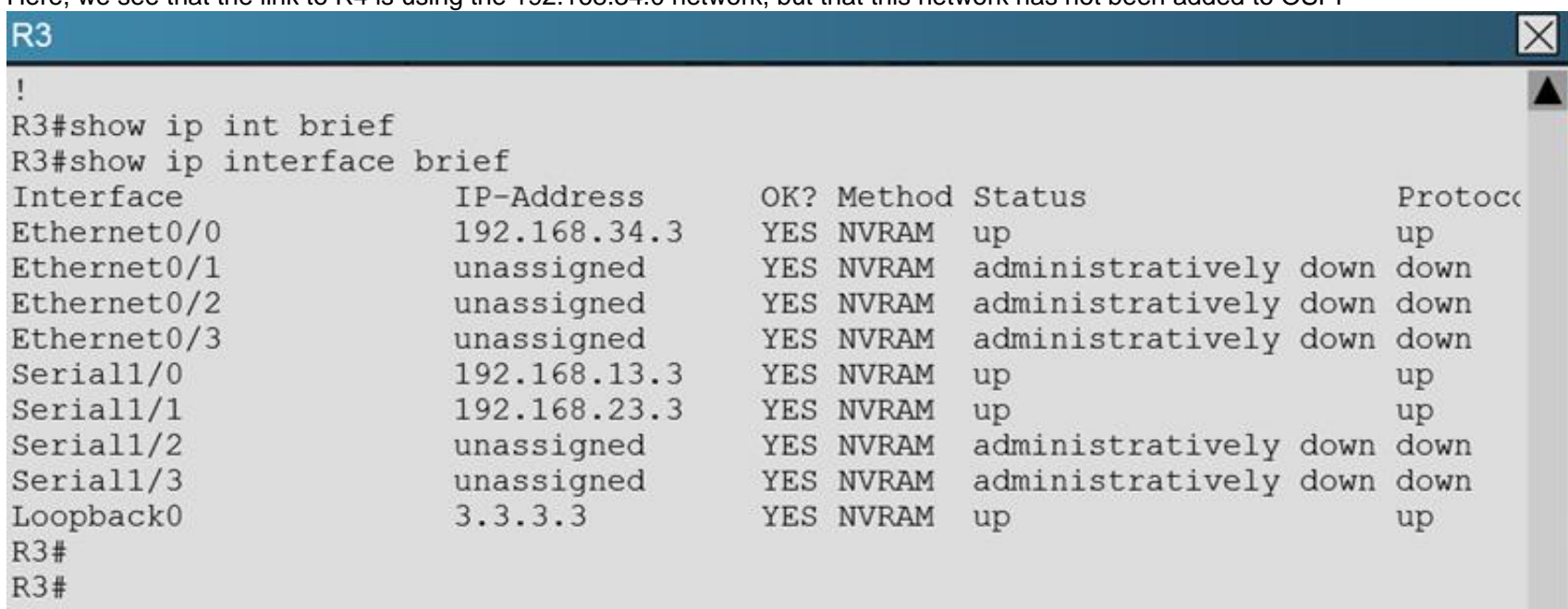


Connectivity from R3 to R4, R5 and R6 has been lost. How should connectivity be reestablished?

- A. Configure R4 with a virtual link to 192.168.13.2
- B. Change the R3 and R4 hello-interval and retransmit-interface timers to zero so the link won't go down.
- C. Add an OSPF network statement for 4.4.4.4 0.0.0.0 area 1 in R3
- D. Add an OSPF network statement for 192.168.34.3 0.0.0.255 area 2 in R3
- E. Add an OSPF network statement for 192.168.34.0 0.0.0.255 area 1 in R3

**Answer:** E

**Explanation:** Based on the network diagram, we know that a virtual link will need to be configured to logically connect area 2 to the back area 0. However, this is not the problem as we can see that R3 has been correctly configured to do this. It is, however, missing the network statement for the link to R4. Here, we see that the link to R4 is using the 192.168.34.0 network, but that this network has not been added to OSPF



R3

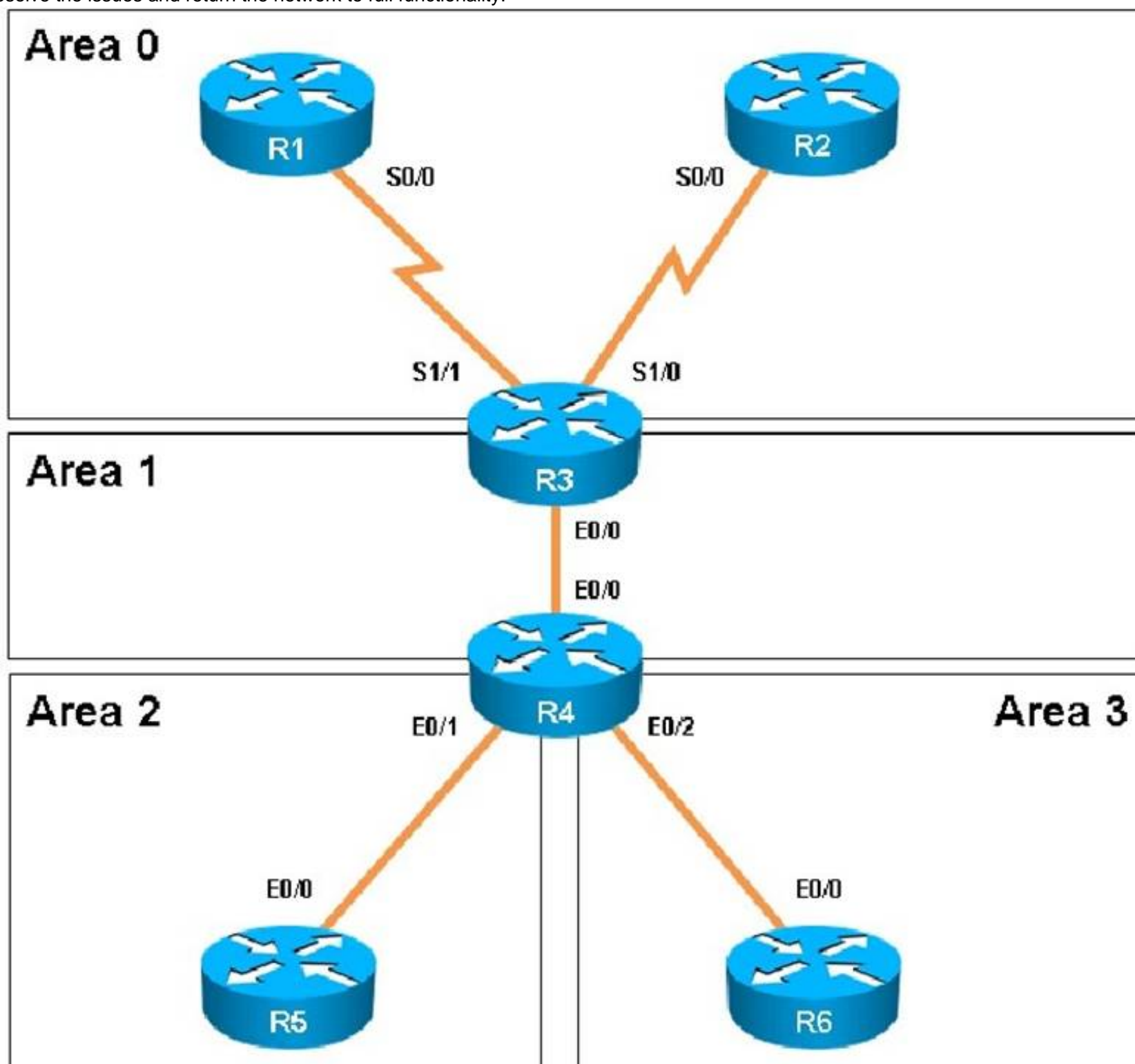
```
!  
router ospf 100  
  router-id 3.3.3.3  
  area 1 virtual-link 4.4.4.4  
  network 3.3.3.3 0.0.0.0 area 1  
  network 192.168.13.0 0.0.0.255 area 0  
  network 192.168.23.0 0.0.0.255 area 0  
  neighbor 192.168.13.1  
!
```

Based on the network diagram, this link should be added to Area 1, not Area 2.

**NEW QUESTION 65**

Scenario:

A customer network engineer has edited their OSPF network configuration and now your customer is experiencing network issues. They have contacted you to resolve the issues and return the network to full functionality.





R1

R1#

R2

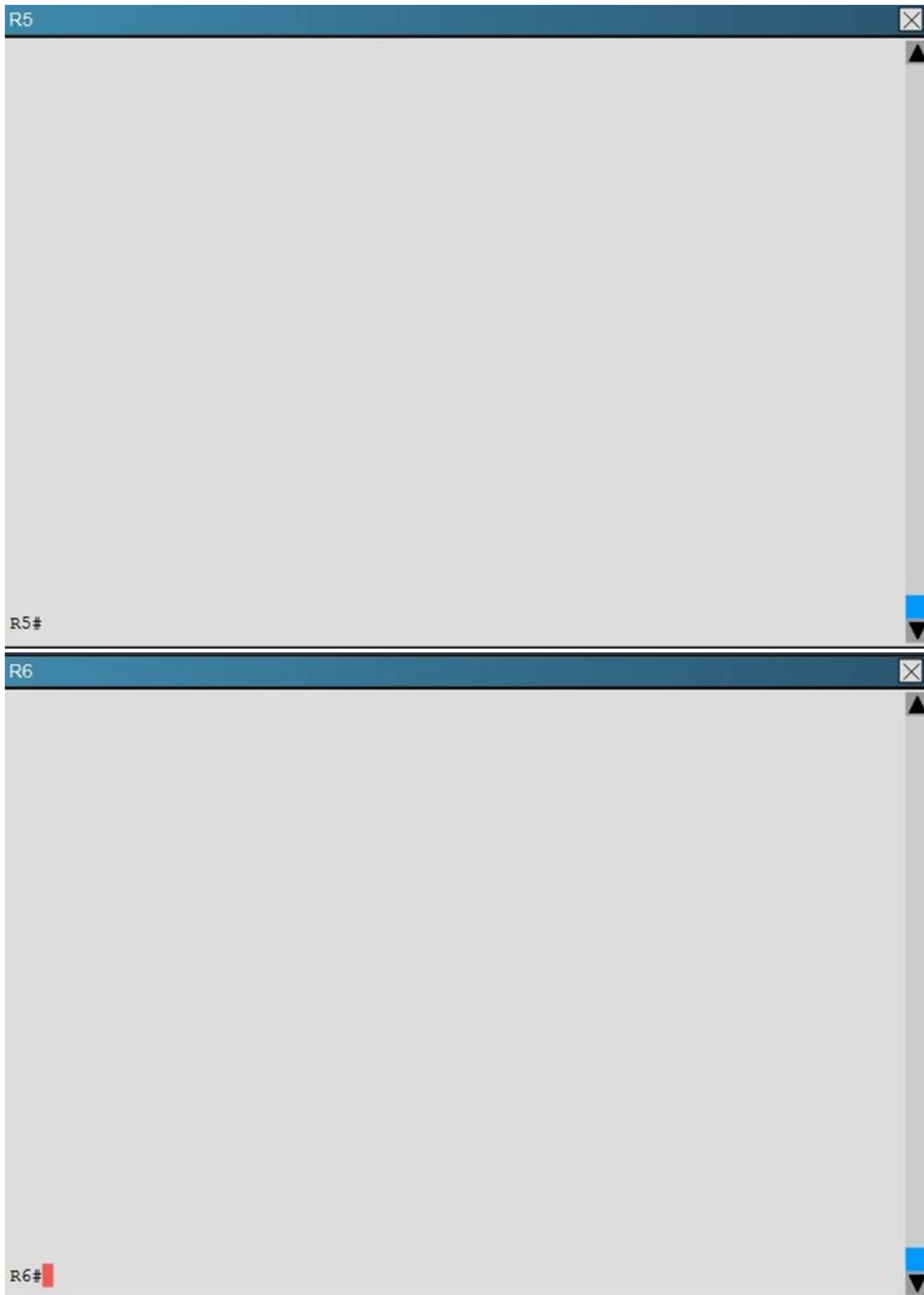
R2#

R3

R3#

R4

R4#



The OSPF neighbour relationship has been lost between R1 and R3. What is causing this problem?

- A. The serial interface in R1 should be taken out of the shutdown state.
- B. A neighbor statement needs to be configured in R1 and R3 pointing at each other.
- C. The R1 network type should be changed to point-to-multipoint non-broadcast.
- D. The hello, dead and wait timers on R1 need to be reconfigured to match the values on R3.

**Answer:** C

**Explanation:** In order for two OSPF routers to become neighbors, they must have matching network types across the links. In this case, we see that R1 has been configured as non-broadcast and R3 is using point to point non-broadcast.

R1

```
interface Loopback0
 ip address 1.1.1.1 255.255.255.255
!
interface Serial0/0
 ip address 192.168.13.1 255.255.255.0
 ip ospf network non-broadcast
 no fair-queue
 serial restart-delay 0
!
```

R3

```
!
interface Serial1/0
 ip address 192.168.13.3 255.255.255.0
 ip ospf network point-to-multipoint non-broadcast
 no fair-queue
 serial restart-delay 0
!
```

This can be seen by issuing the “show running-config” command on each router, or the “show ip ospf interface” command:

R1

```
Serial0/0 is up, line protocol is up
 Internet Address 192.168.13.1/24, Area 0, Attached via Network Statement
 Process ID 100, Router ID 1.1.1.1, Network Type NON_BROADCAST, Cost: 1943
 Topology-MTID      Cost      Disabled      Shutdown      Topology Name
      0              1943         no            no            Base
 Transmit Delay is 1 sec, State DR, Priority 1
 Designated Router (ID) 1.1.1.1, Interface address 192.168.13.1
 Backup Designated router (ID) 3.3.3.3, Interface address 192.168.13.3
 Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
   oob-resync timeout 120
   Hello due in 00:00:01
 Supports Link-local Signaling (LLS)
 Cisco NSF helper support enabled
 IETF NSF helper support enabled
 Index 1/1, flood queue length 0
 Next 0x0(0)/0x0(0)
 Last flood scan length is 1, maximum is 9
 Last flood scan time is 0 msec, maximum is 0 msec
 Neighbor Count is 1, Adjacent neighbor count is 1
   Adjacent with neighbor 3.3.3.3 (Backup Designated Router)
 Suppress hello for 0 neighbor(s)
```

R1#

```

R3
Serial1/0 is up, line protocol is up
  Internet Address 192.168.13.3/24, Area 0, Attached via Network Statement
  Process ID 100, Router ID 3.3.3.3, Network Type POINT_TO_MULTIPOINT, Cost: 64
  Topology-MTID      Cost      Disabled      Shutdown      Topology Name
        0             64         no           no           Base
  Transmit Delay is 1 sec, State POINT_TO_MULTIPOINT
  Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
    oob-resync timeout 120
    Hello due in 00:00:19
  Supports Link-local Signaling (LLS)
  Cisco NSF helper support enabled
  IETF NSF helper support enabled
  Index 2/3, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 7
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 1.1.1.1
  Suppress hello for 0 neighbor(s)
OSPF_VL0 is down, line protocol is down
  Internet Address 0.0.0.0/0, Area 0, Attached via Not Attached
  Process ID 100, Router ID 3.3.3.3, Network Type VIRTUAL_LINK, Cost: 65535
  Topology-MTID      Cost      Disabled      Shutdown      Topology Name
        0             65535      no           no           Base
  
```

# Topic 6, Ticket 1: Switch Port Trunk

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits.

This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

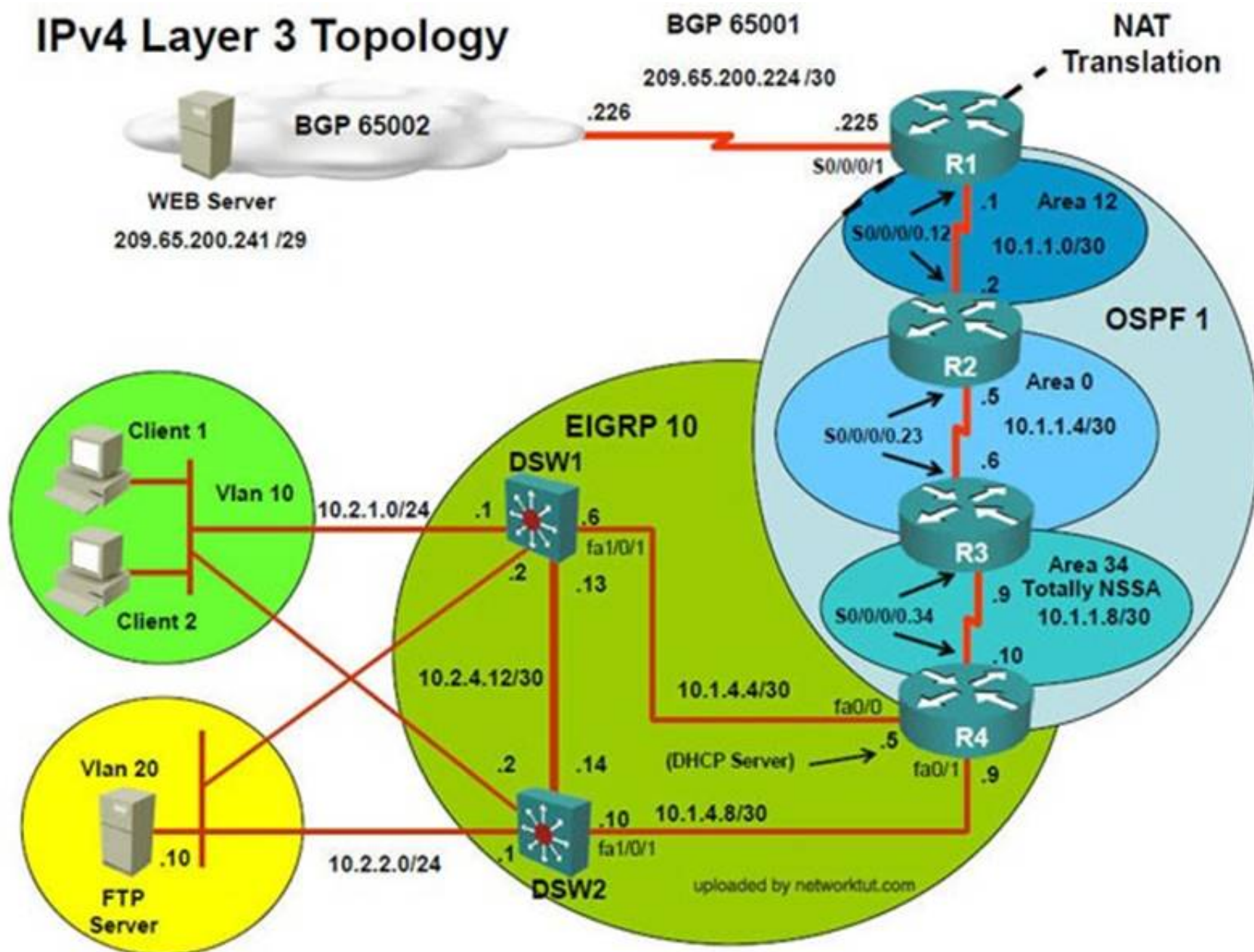
Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

Question-2 Fault condition is related to,

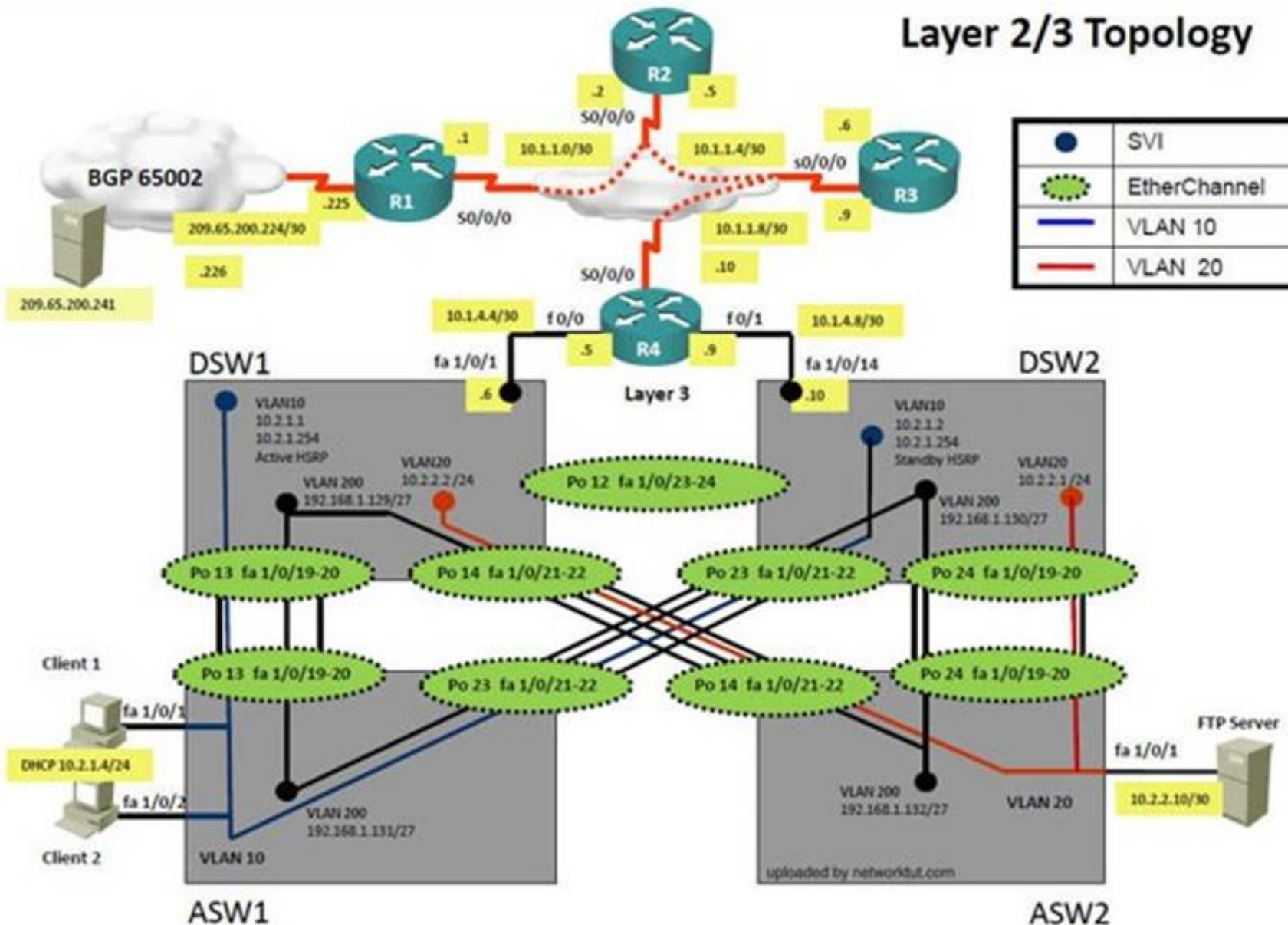
Question-3 What exact problem is seen & what needs to be done for solution



## IPv4 Layer 3 Topology



## Layer 2/3 Topology



Client is unable to ping IP 209.65.200.241

Solution

Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 Ipconfig ----- Client will be getting 169.X.X.X

On ASW1 port Fa1/0/1 & Fa1/0/2 access port VLAN 10 was assigned which is using IP address 10.2.1.0/24

Sh run ----- & check for running config of int fa1/0/1 & fa1/0/2

```
interface FastEthernet1/0/1switchport mode accessswitchport access vlan 10interface FastEthernet1/0/2switchport mode accessswitchport access vlan 10
```

We need to check on ASW 1 trunk port the trunk Po13 & Po23 were receiving VLAN 20 & 200 but not VLAN 10 so that switch could not get DHCP IP address and



was failing to reach IP address of Internet

Port	Mode	Encapsulation	Status	Native vlan
Pol3	on	802.1q	trunking	1
Po23	auto	802.1q	trunking	1

Port	Vlans allowed on trunk
Pol3	20,200
Po23	20,200

Port	Vlans allowed and active in management domain
Pol3	200
Po23	200

Port	Vlans in spanning tree forwarding state and not pruned
Pol3	200
Po23	none

Change required: On ASW1 below change is required for switch-to-switch connectivity..

int range portchannel13,portchannel23 switchport trunk allowed vlan none switchport trunk allowed vlan 10,200

#### NEW QUESTION 70

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, and FHRP services, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to the fault condition?

- A. In Configuration mode, using the interface port-channel 13 command, then configure switchport trunk allowed vlan none followed by switchport trunk allowed vlan 20,200 commands.
- B. In Configuration mode, using the interface port-channel 13, port-channel 23, then configure switchport trunk none allowed vlan none followed by switchport trunk allowed vlan 10,200 commands.
- C. In Configuration mode, using the interface port-channel 23 command, then configure switchport trunk allowed vlan none followed by switchport trunk allowed vlan 20,200 commands.
- D. In Configuration mode, using the interface port-channel 23, port-channel, then configure switchport trunk allowed vlan none followed by switchport trunk allowed vlan 10,20,200 commands.

**Answer: B**

**Explanation:** We need to allow VLANs 10 and 200 on the trunks to restore full connectivity. This can be accomplished by issuing the "switchport trunk allowed vlan 10,200" command on the port channels used as trunks in DSW1.

#### NEW QUESTION 75

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, and FHRP services, a trouble ticket has been operated indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to Isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer: G**

**Explanation:** Since the Clients are getting an APIPA we know that DHCP is not working. However, upon closer examination of the ASW1 configuration we can see that the problem is not with DHCP, but the fact that the trunks on the port channels are only allowing VLANs 1-9, when the clients belong to VLAN 10. VLAN 10 is not traversing the trunk on ASW1, so the problem is with the trunk configuration on ASW1.

Topic 7, Ticket 2 : ACCESS VLAN

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several

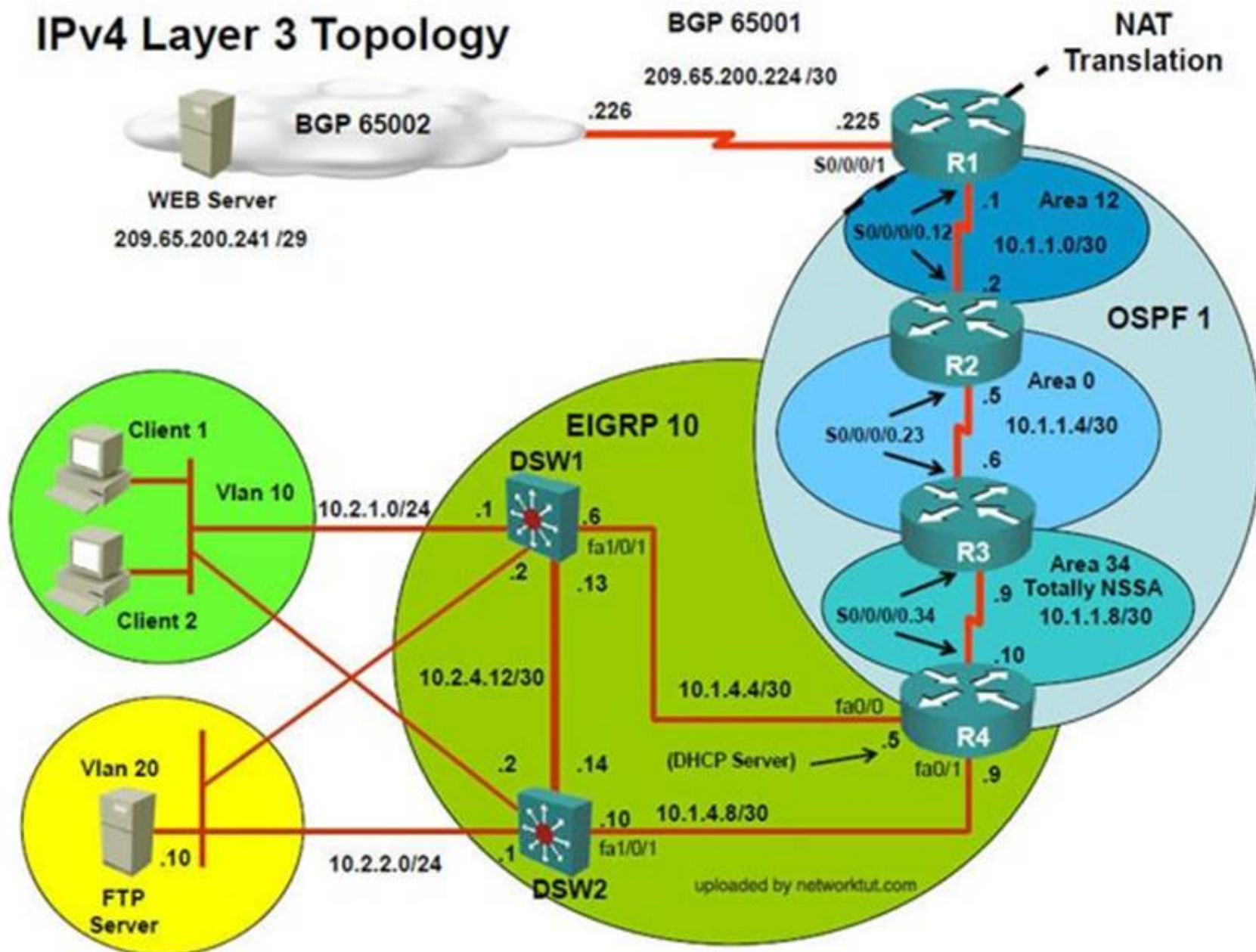
implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

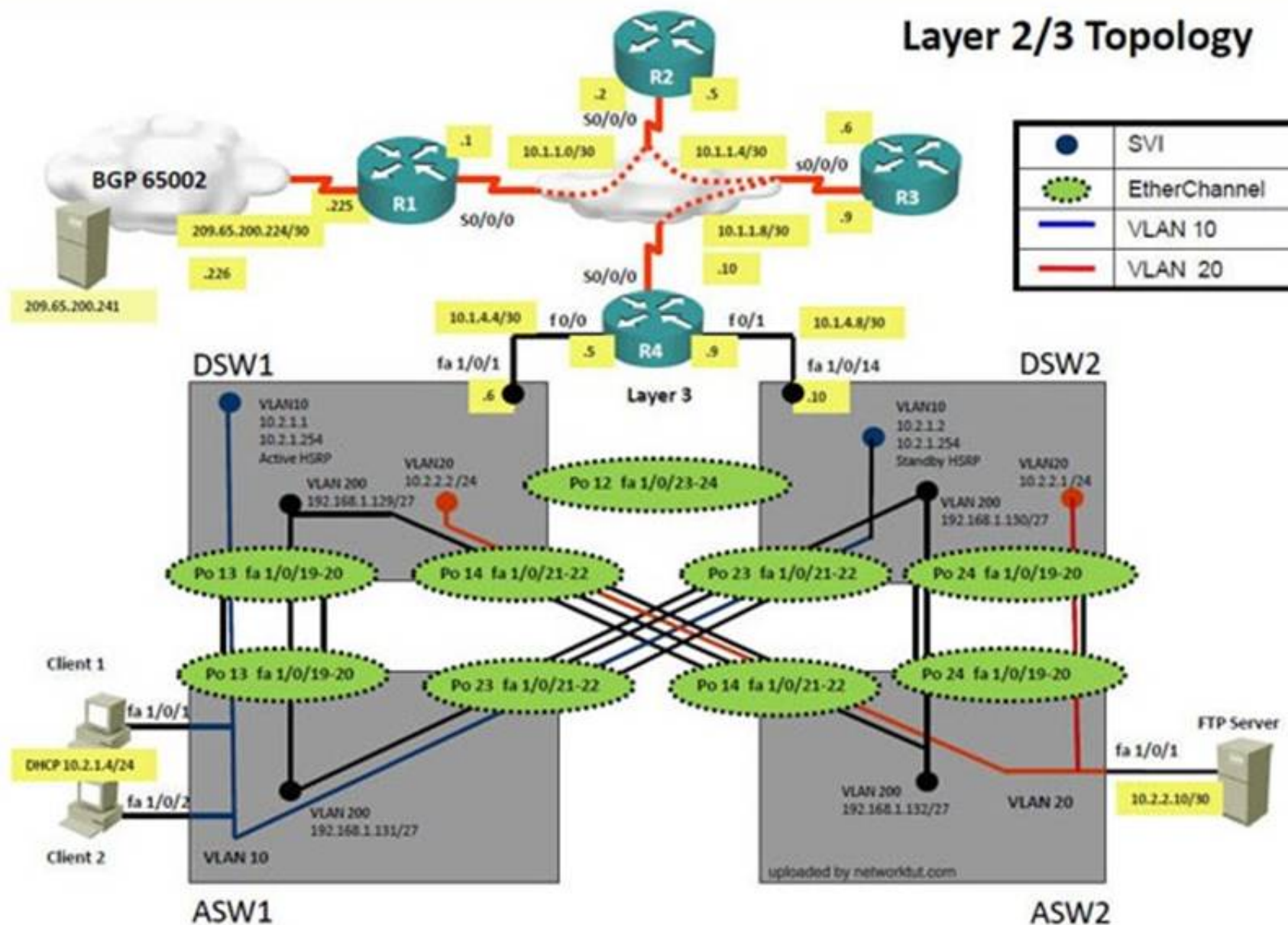
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution





## Layer 2/3 Topology



Client is unable to ping IP 209.65.200.241

Solution

Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 Ipconfig ----- Client will be getting 169.X.X.X

On ASW1 port Fa1/0/ 1 & Fa1/0/2 access port VLAN 10 was assigned which is using IP address 10.2.1.0/24

Sh run ----- & check for running config of int fa1/0/1 & fa1/0/2

```
interface FastEthernet1/0/1
description link to Client 1
switchport mode access
switchport nonegotiate
spanning-tree portfast

interface FastEthernet1/0/2
description link to Client 2
switchport mode access
switchport nonegotiate
spanning-tree portfast
```

Here we are not able to see access Vlan10 configured for Port Fa1/0/1 & Fa1/0/2

Change required: On ASW1, for configuring Access Vlan under interface fa1/0/1 & 1/0/2 we have to enable command switchport access vlan 10

### NEW QUESTION 80

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to the fault condition?

- A. Enable OSPF authentication on the s0/0/0 interface using the ip ospf authentication message-digest command
- B. Enable OSPF routing on the s0/0/0 interface using the network 10.1.1.0 0.0.0.255 area 12 command.
- C. Enable OSPF routing on the s0/0/0 interface using the network 209.65.200.0 0.0.0.255 area 12 command.
- D. Redistribute the BGP route into OSPF using the redistribute BGP 65001 subnet command.

Answer: A

Explanation: On R1, for IPV4 authentication of OSPF the command is missing and required to configure----- ip ospf authentication message-digest

Topic 9, Ticket 4 : BGP Neighbor

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP



BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be

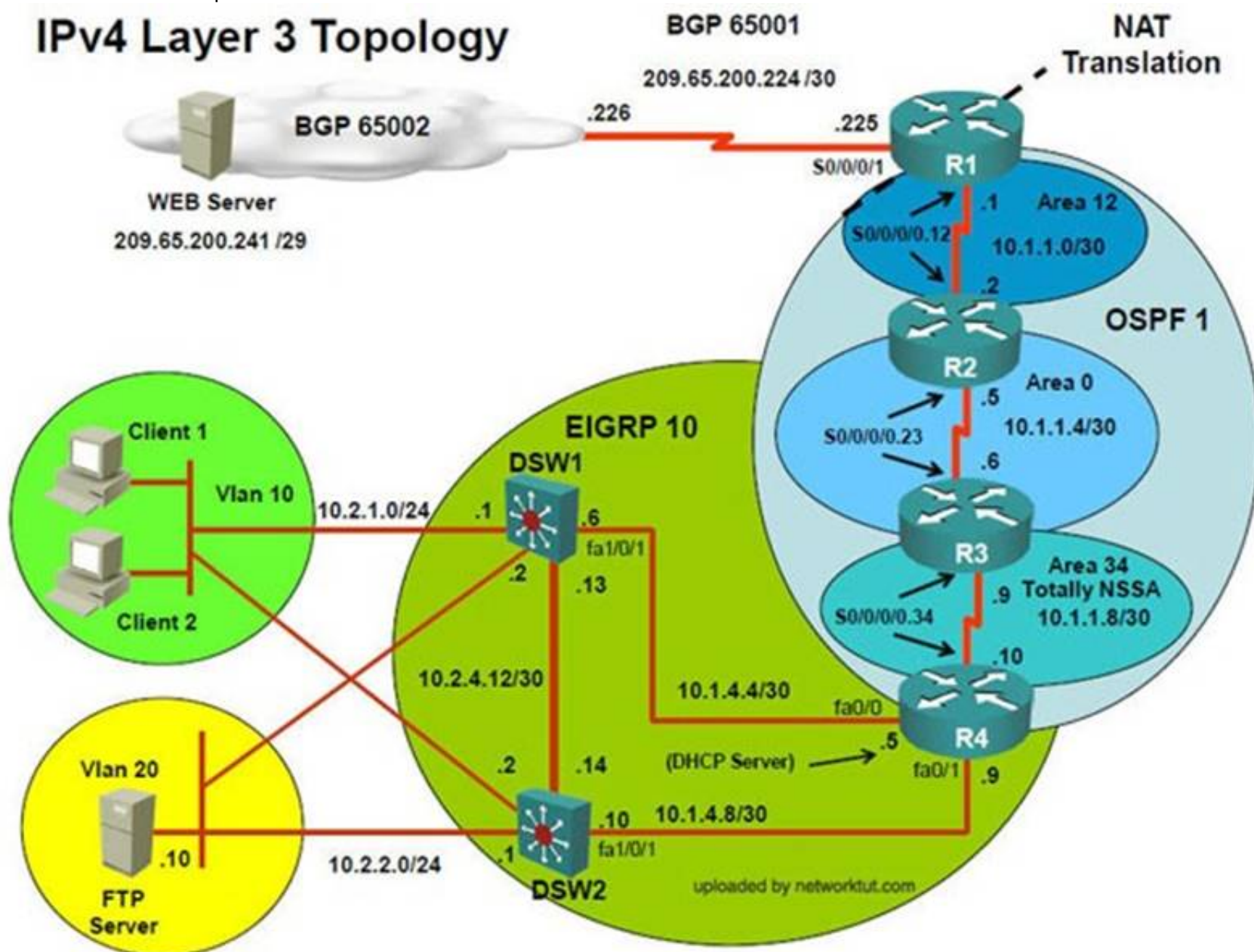
presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

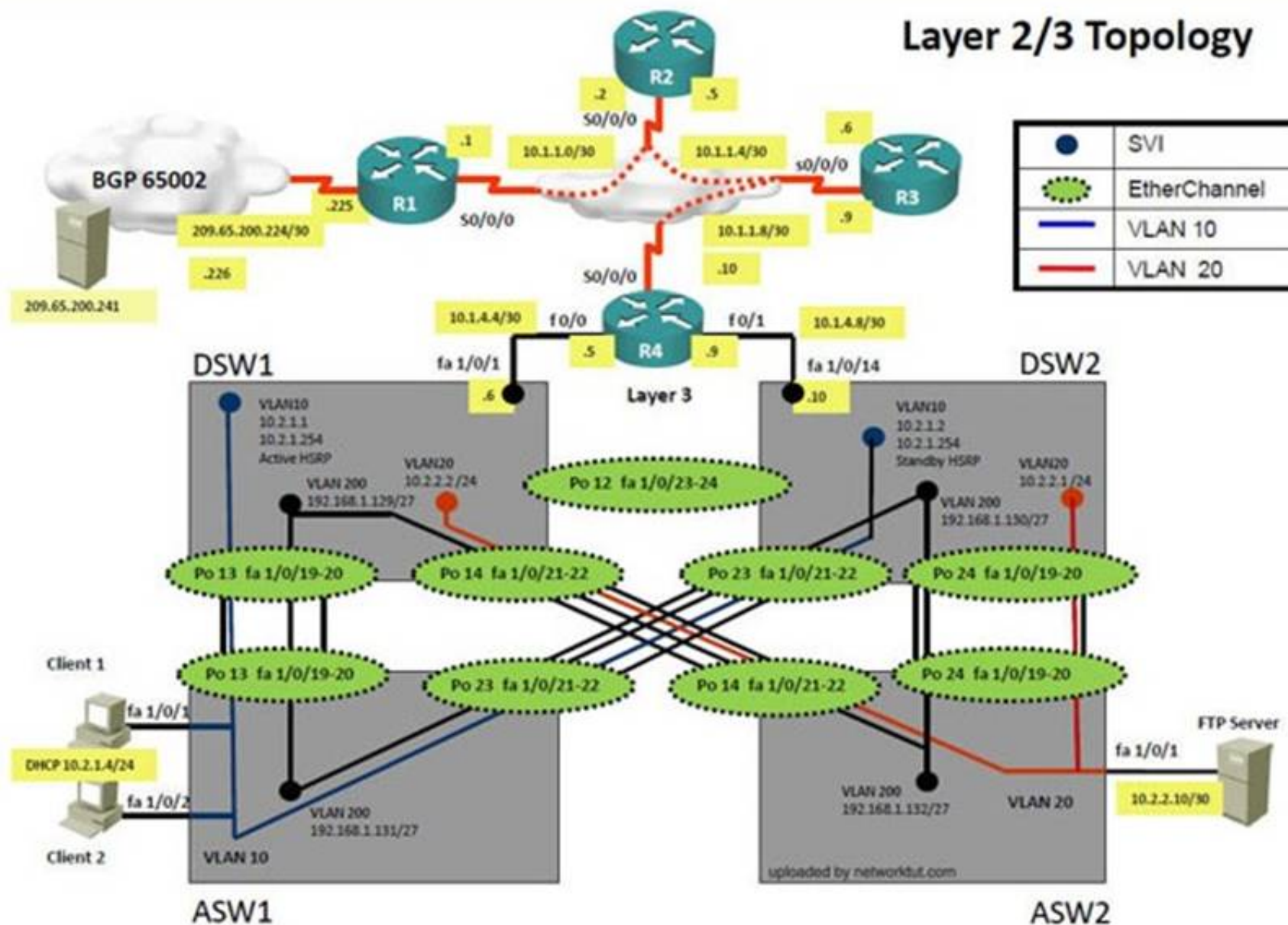
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution





## Layer 2/3 Topology



Client is unable to ping IP 209.65.200.241

Solution

Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be receiving IP address 10.2.1.3

IP 10.2.1.3 will be able to ping from R4, R3, R2, R1

Look for BGP Neighbourship

Sh ip bgp summary ----- No O/P will be seen

Check for interface IP & ping IP 209.65.200.225 ---- Reply will be received from Webserver interface

Look for peering IP address via sh run on R1 interface serial 0/0/1

```
interface Serial0/0/1
description Link to ISP
ip address 209.65.200.225 255.255.255.252
ip nat outside
ip virtual-reassembly
ntp broadcast client
ntp broadcast key 1
```

```
router bgp 65001
no synchronization
bgp log-neighbor-changes
neighbor 209.56.200.226 remote-as 65002
no auto-summary
```

Since we are receiving icmp packets from Webserver interface on R1 so peering IP address under router BGP is configured wrong IP but with correct AS nos. Change required: On R1 under router BGP Change neighbor 209.56.200.226 remote-as 65002 statement to neighbor 209.65.200.226 remote-as 65002

## NEW QUESTION 82

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1

**Answer:** A

**Explanation:** The BGP neighbor statement is wrong on R1.

#### NEW QUESTION 85

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address. Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to the fault condition?

- A. Under the BGP process, enter the bgp redistribute-internal command.
- B. Under the BGP process, bgp confederation identifier 65001command.
- C. Deleted the current BGP process and reenter all of the command using 65002 as the AS number.
- D. Under the BGP process, delete the neighbor 209.56.200.226 remote-as 65002 command and enter the neighbor 209.65.200.226 remote-as 65002 command.

**Answer:** D

**Explanation:** On R1 under router BGP change neighbor 209.56.200.226 remote-as 65002 statement to neighbor 209.65.200.226 remote-as 65002

#### NEW QUESTION 90

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address. Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to the fault condition?

- A. Under the interface Serial0/0/1 enter the ip access-group edge\_security out command.
- B. Under the ip access-list extended edge\_security configuration add the permit ip 209.65.200.224 0.0.0.3 any command.
- C. Under the ip access-list extended edge\_security configuration delete the deny ip 10.0.0.0.0 0.255.255.255 any command.
- D. Under the interface Serial0/0/0 configuration delete the ip access-group edge\_security in command and enter the ip access-group edge\_security out command.

**Answer:** B

**Explanation:** On R1, we need to permit IP 209.65.200.222/30 under the access list.

Topic 12, Ticket 7 : Port Security

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

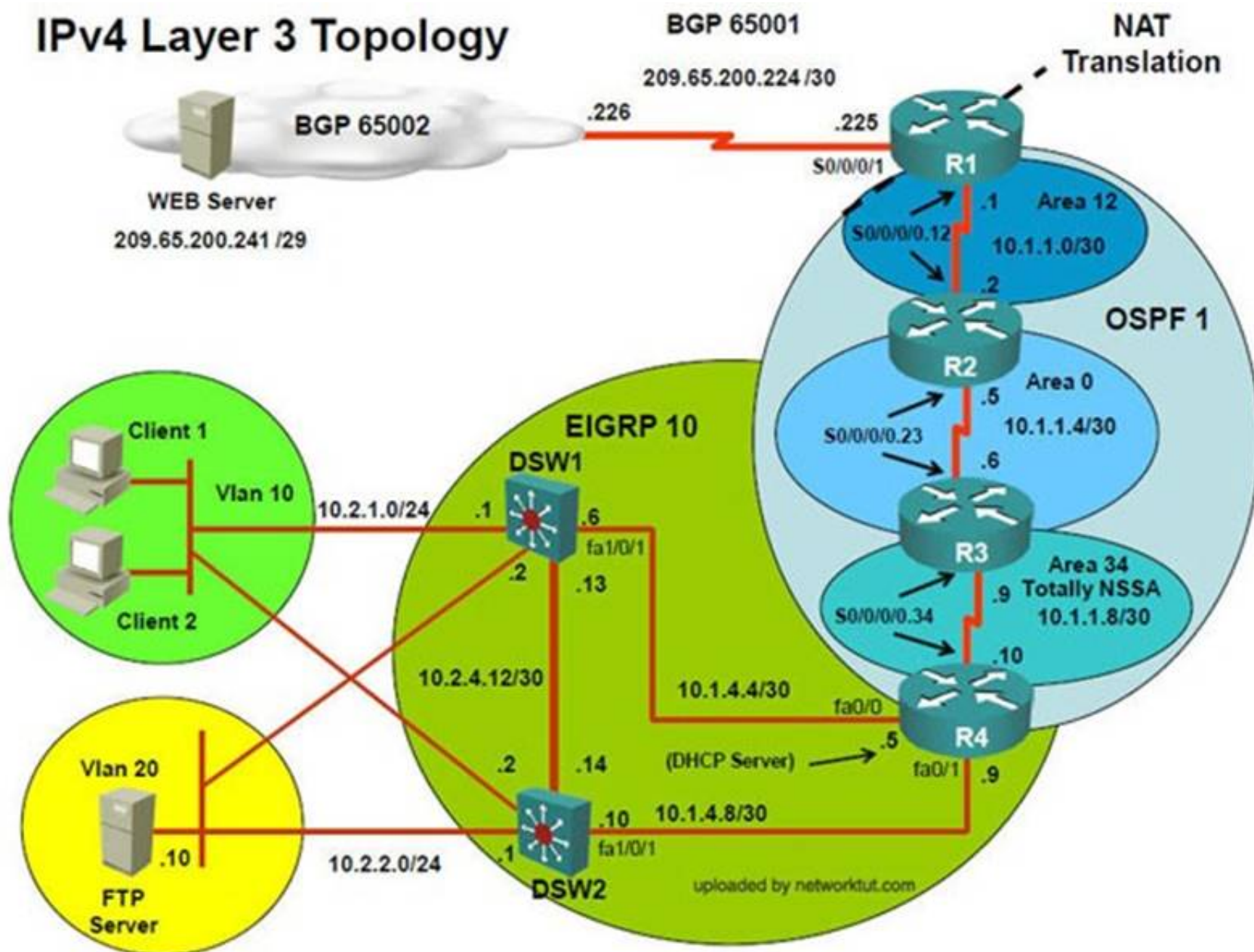
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

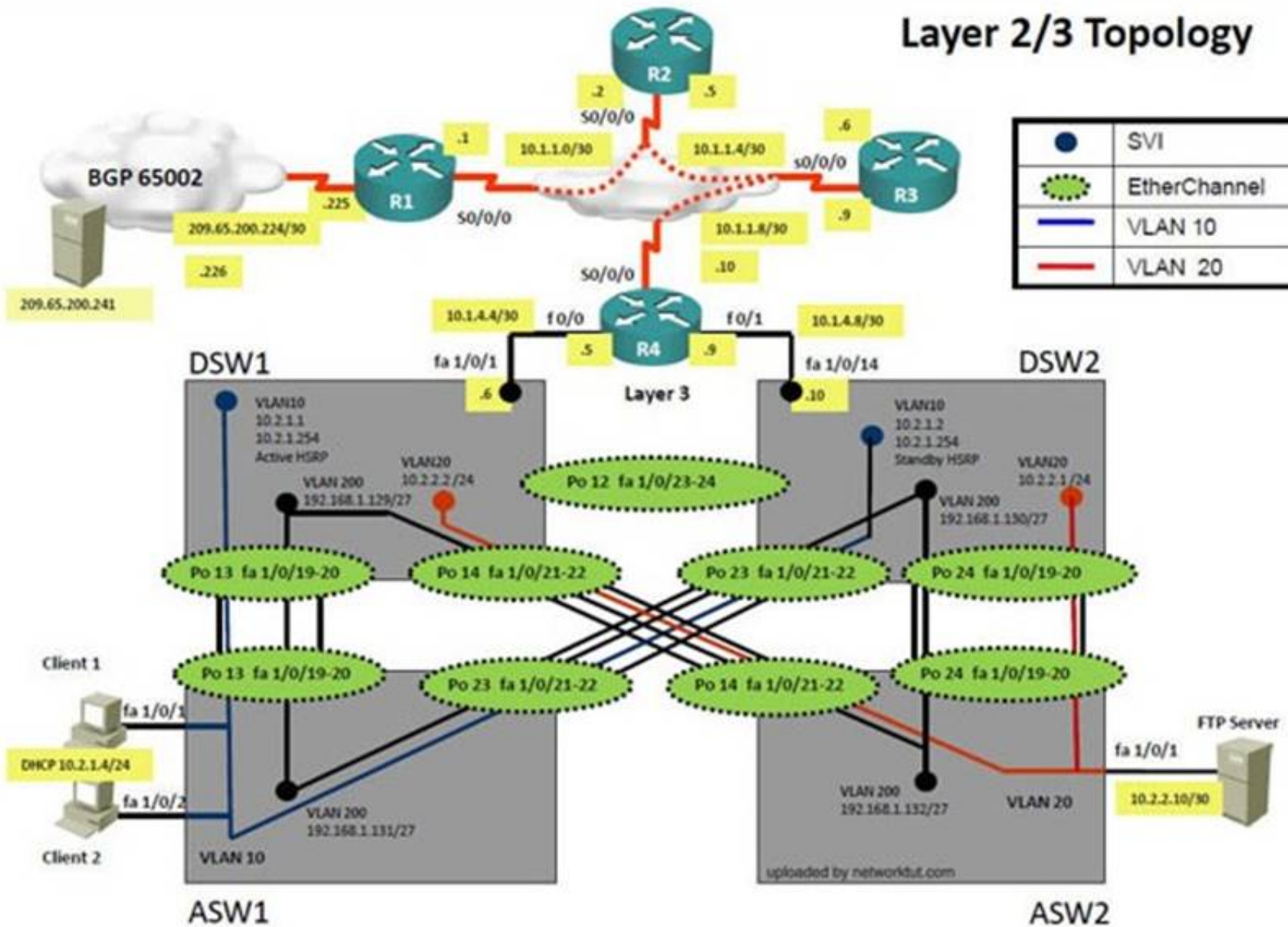
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## IPv4 Layer 3 Topology



## Layer 2/3 Topology



Client is unable to ping IP 209.65.200.241

Solution

Steps need to follow as below:-

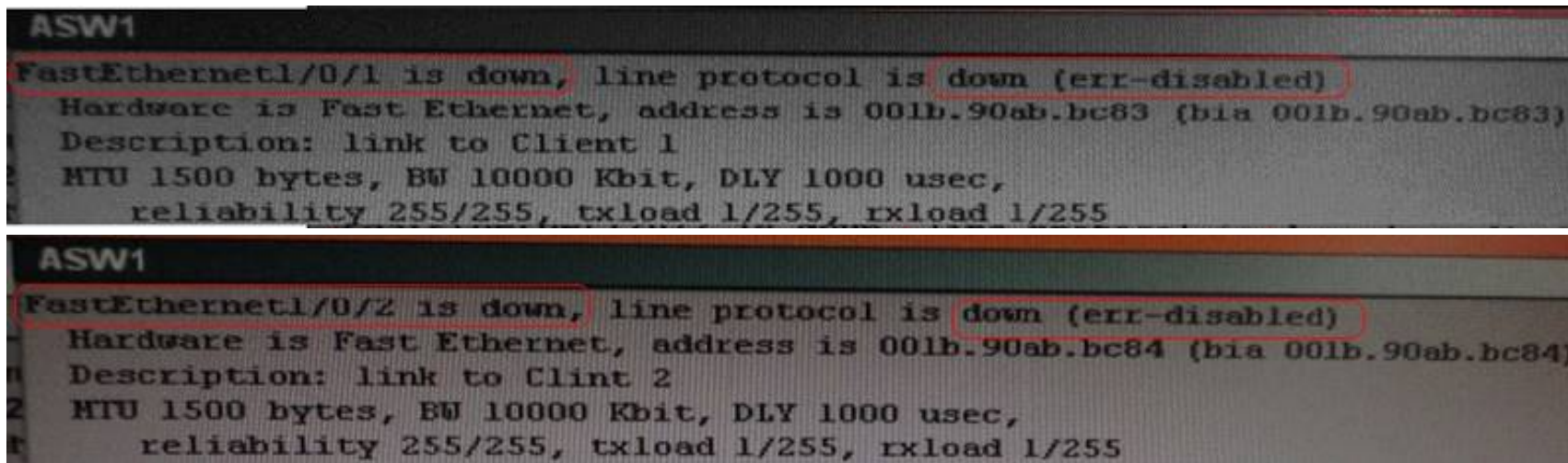
When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be getting 169.X.X.X

On ASW1 port Fa1/0/ 1 & Fa1/0/2 access port VLAN 10 was assigned but when we checked interface it was showing down

Sh run ----- check for running config of int fa1/0/1 & fa1/0/2 (switchport access Vlan 10 will be there with switch

port security command). Now check as below Sh int fa1/0/1 & sh int fa1/0/2





As seen on interface the port is in err-disable mode so need to clear port.

Change required: On ASW1, we need to remove port-security under interface fa1/0/1 & fa1/0/2.

## NEW QUESTION 92

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer:** G

**Explanation:** port security needs is configured on ASW1.

## NEW QUESTION 94

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. Switch-to-Switch Connectivity
- C. Access Vlans
- D. Port Security
- E. VLAN ACL / Port ACL
- F. Switch Virtual Interface

**Answer:** D

**Explanation:** Port security is causing the connectivity issues. On ASW1, we need to remove port-security under interface fa1/0/1 & fa1/0/2.

Topic 13, Ticket 8 : Redistribution of EIGRP to OSPF

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.



Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

## BGP 65001



### Layer 2/3 Topology

The diagram illustrates a Layer 2/3 topology. It features a central core with four routers (R1, R2, R3, R4) and two distribution switches (DSW1, DSW2). The core is connected to two access switches (ASW1, ASW2). The topology includes various VLANs (VLAN 10, VLAN 20, VLAN 200) and interfaces (fa 1/0/1, fa 1/0/2, fa 1/0/14, fa 1/0/23-24, fa 1/0/21-22). A legend indicates: SVI (blue dot), EtherChannel (green dashed oval), VLAN 10 (blue line), and VLAN 20 (red line).

### Solution



Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be receiving IP address 10.2.1.3

IP 10.2.1.3 will be able to ping from R4, but cannot ping from R3, R2, R1

This clearly shows problem at R4 since EIGRP is between DSW1, DSW2 & R4 and OSPF protocol is running between R4, R3, R2, R1 so routes from R4 are not propagated to R3, R2, R1

Since R4 is able to ping 10.2.1.3 it means that routes are received in EIGRP & same needs to be advertised in OSPF to ping from R3, R2, R1.

Need to check the routes are being advertised properly or not in OSPF & EIGRP vice-versa.

```
!
router eigrp 10
 redistribute ospf 1 route-map OSPF_to_EIGRP
 network 10.1.4.0 0.0.0.255
 network 10.1.10.0 0.0.0.255
 network 10.1.21.128 0.0.0.3
 default-metric 100000 100 100 1 1500
 auto-summary
!
router ospf 1
 log-adjacency-changes
 area 34 nssa
 summary-address 10.2.0.0 255.255.0.0
 redistribute eigrp 10 subnets route-map EIGRP->OSPF
 network 10.1.1.0 0.0.0.255 area 34
 network 10.1.2.0 0.0.0.255 area 34
```

```
!
route-map EIGRP->OSPF deny 10
 match tag 110
!
route-map EIGRP->OSPF permit 20
 set tag 90
!
route-map OSPF->EIGRP deny 10
 match tag 90
!
route-map OSPF->EIGRP permit 20
```

From above snap shot it clearly indicates that redistribution done in EIGRP is having problem & by default all routes are denied from ospf to EIGRP... so need to change route-map name.

Change required: On R4, in the redistribution of EIGRP routing protocol, we need to change name of route-map to resolve the issue. It references route-map OSPF\_to\_EIGRP but the actual route map is called OSPF->EIGRP.

#### NEW QUESTION 98

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. IP DHCP Server
- C. IPv4 OSPF Routing
- D. IPv4 EIGRP Routing
- E. IPv4 Route Redistribution
- F. IPv6 RIP Routing
- G. IPv6 OSPF Routing
- H. IPv4 and IPv6 Interoperability
- I. IPv4 layer 3 security

**Answer:** E

**Explanation:** On R4, in the redistribution of EIGRP routing protocol, we need to change name of route-map to resolve the issue. It references route-map OSPF\_to\_EIGRP but the actual route map is called OSPF->EIGRP.

#### NEW QUESTION 102

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to the fault condition?

- A. Disable auto summary on the EIGRP process
- B. Enable EIGRP on the FastEthernet0/0 and FastEthernet0/1 interface using the no passive-interface command.
- C. Change the AS number on the EIGRP routing process from 1 to 10 to much the AS number used on DSW1 and DSW2.
- D. Under the EIGRP process, delete the network 10.1.4.0 0.0.0.255 command and enter the network 10.1.4.4 0.0.0.252 and 10.1.4.8 0.0.0.252 commands.

**Answer:** C

**Explanation:** On R4, IPV4 EIGRP Routing, need to change the EIGRP AS number from 1 to 10 since DSW1 & DSW2 is configured to be in EIGRP AS number 10.

=====

#### NEW QUESTION 106

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer:** D

**Explanation:** The EIGRP AS number configured on R4 is wrong.

#### NEW QUESTION 108

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. IP DHCP Server
- C. IPv4 OSPF Routing
- D. IPv4 EIGRP Routing
- E. IPv4 Route Redistribution
- F. IPv6 RIP Routing
- G. IPv6 OSPF Routing
- H. IPv4 and IPv6 Interoperability
- I. IPv4 layer 3 security

**Answer:** D

**Explanation:** On R4, IPV4 EIGRP Routing, need to change the EIGRP AS number from 1 to 10 since DSW1 & DSW2 is configured to be in EIGRP AS number 10.

Topic 15, Ticket 10 : VLAN Access Map

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

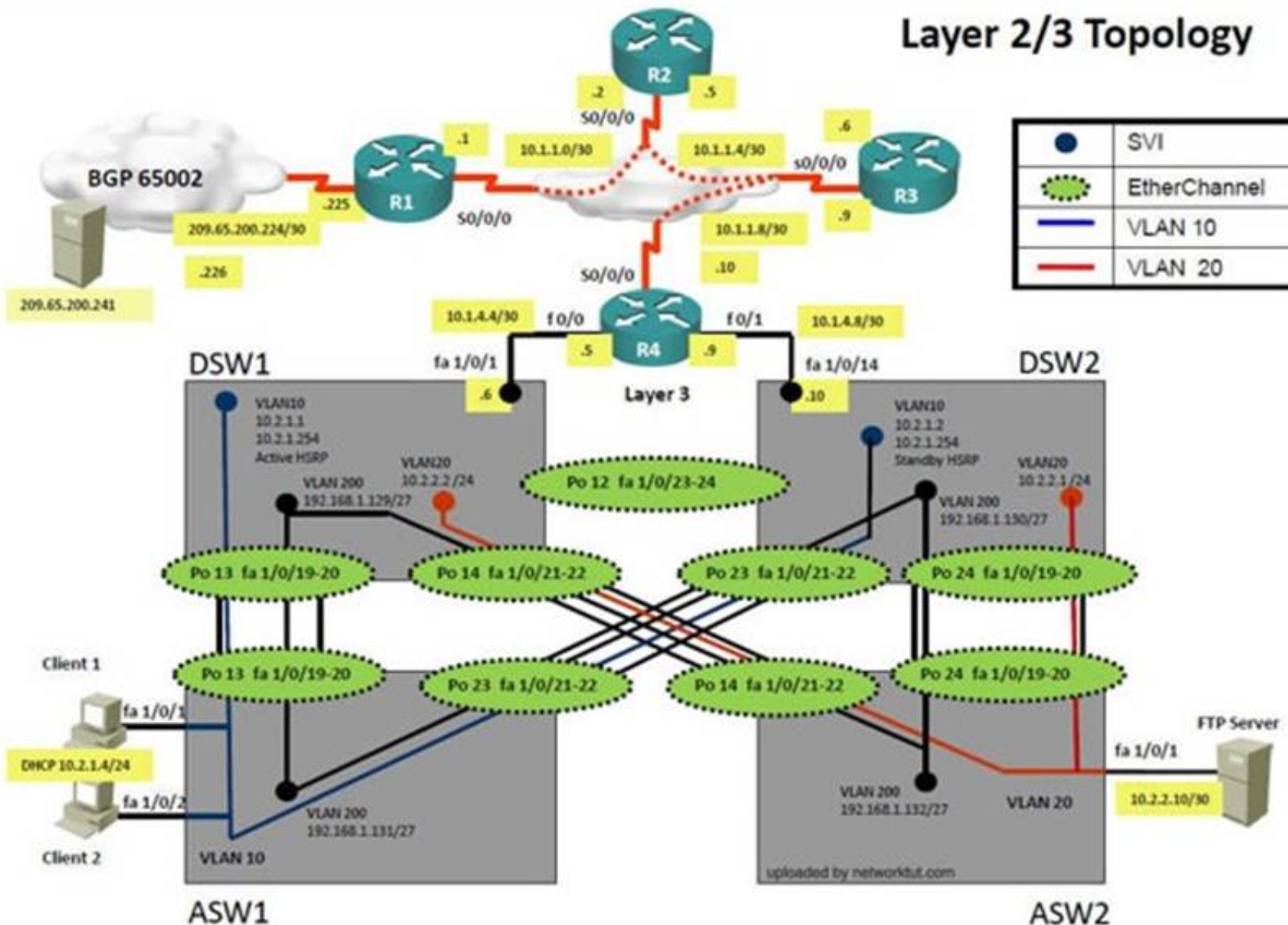
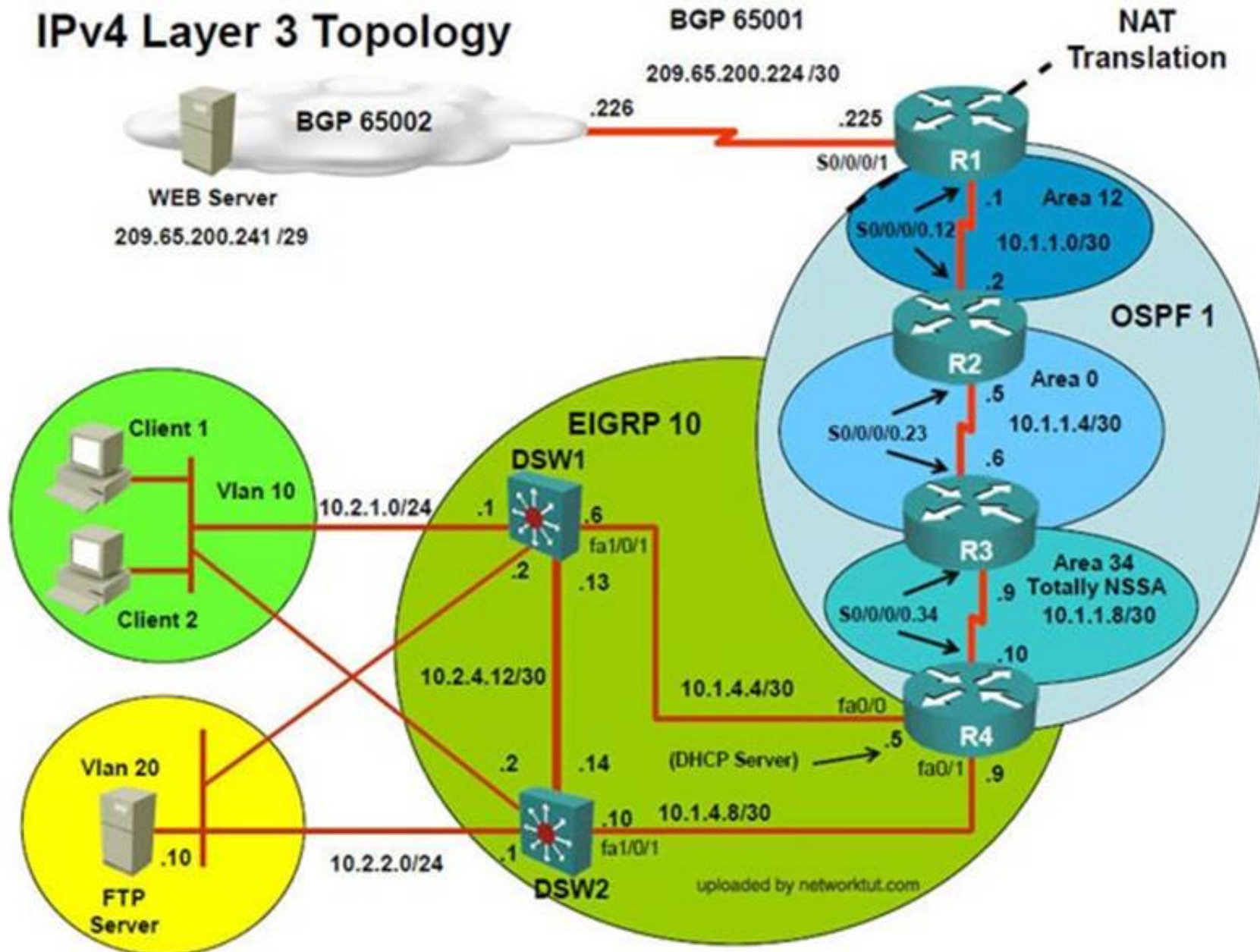
The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistrution is enabled where necessary.



Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,  
 Question-2 Fault condition is related to,  
 Question-3 What exact problem is seen & what needs to be done for solution



Client 1 is unable to ping IP 209.65.200.241  
 Solution



Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be receiving IP address 10.2.1.3

From Client PC we can ping 10.2.1.254....

But IP 10.2.1.3 is not able to ping from R4, R3, R2, R1

```
DSW1
vlan access-map test1 10
  action drop
  match ip address 10
vlan access-map test1 20
  action drop
  match ip address 20
vlan access-map test1 30
  action forward
  match ip address 30
vlan access-map test1 40
  action forward
!
vlan filter test1 vlan-list 10
vlan internal allocation policy ascending
```

```
!
access-list 10 permit 10.2.1.3
access-list 20 permit 10.2.1.4
access-list 30 permit 10.2.1.0 0.0.0.255
```

Change required: On DSW1, VALN ACL, Need to delete the VLAN access-map test1 whose action is to drop access-list 10; specifically 10.2.1.3

#### NEW QUESTION 109

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer:** E

**Explanation:** On DSW1, VALN ACL, Need to delete the VLAN access-map test1 whose action is to drop access-list 10; specifically 10.2.1.3

#### NEW QUESTION 113

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. IP DHCP Helper
- C. IPv4 EIGRP Routing
- D. IPv6 RIP Routing
- E. IPv4 layer 3 security
- F. Switch-to-Switch Connectivity
- G. Loop Prevention
- H. Access Vlans
- I. Port Security
- J. VLAN ACL / Port ACL
- K. Switch Virtual Interface

**Answer:** J

**Explanation:** On DSW1, VALN ACL, Need to delete the VLAN access-map test1 whose action is to drop access-list 10; specifically 10.2.1.3

#### NEW QUESTION 114

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing scheme, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. Under the global configuration mode enter no access-list 10 command.
- B. Under the global configuration mode enter no access-map vlan 10 command.
- C. Under the global configuration mode enter no vlan access-map test1 10 command.
- D. Under the global configuration mode enter no vlan filter test1 vlan-list 10 command.

**Answer: C**

**Explanation:** On DSW1, VALN ACL, Need to delete the VLAN access-map test1 whose action is to drop access-list 10; specifically 10.2.1.3

Topic 16, Ticket 11 : IPV6 OSPF

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistrution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several

implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

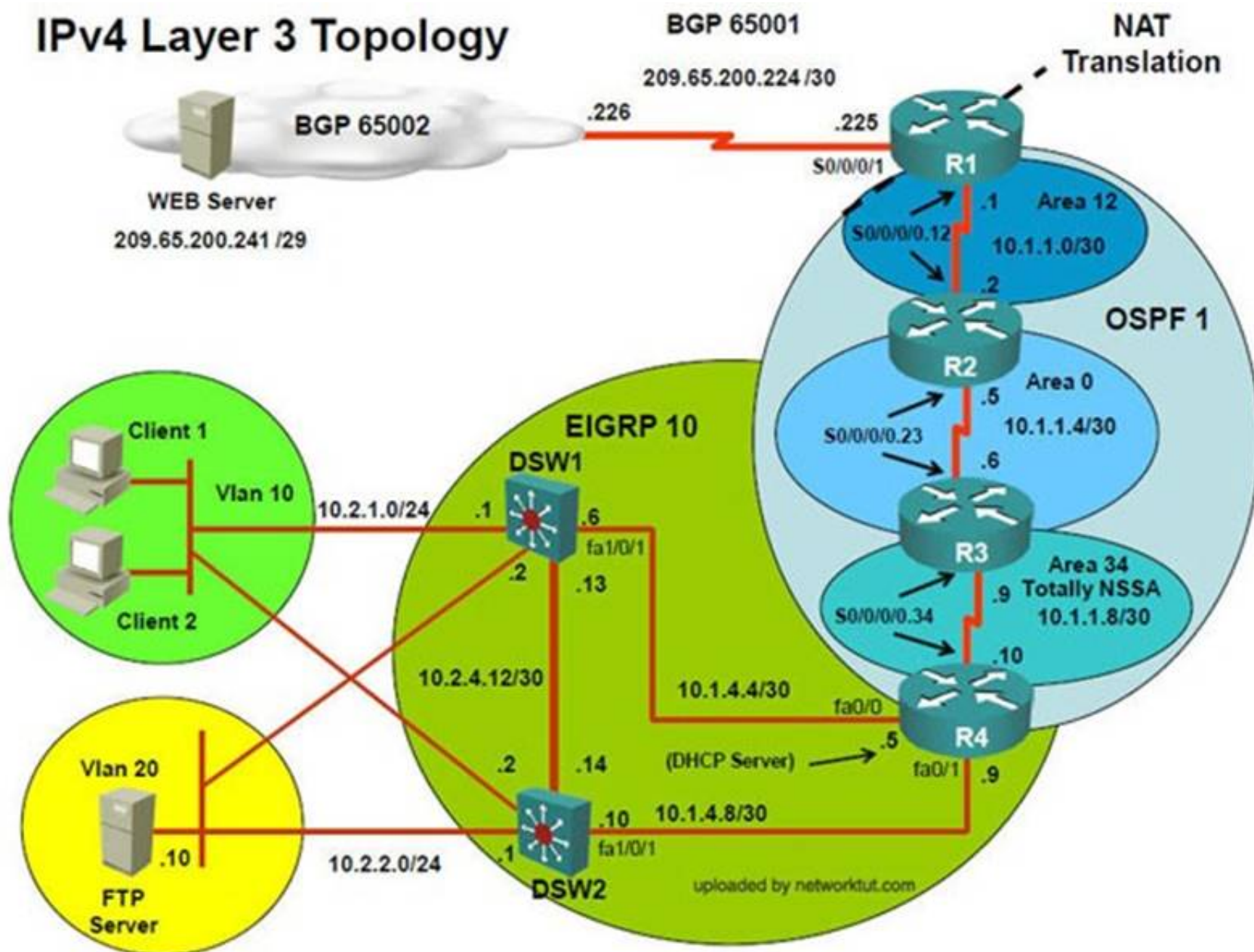
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

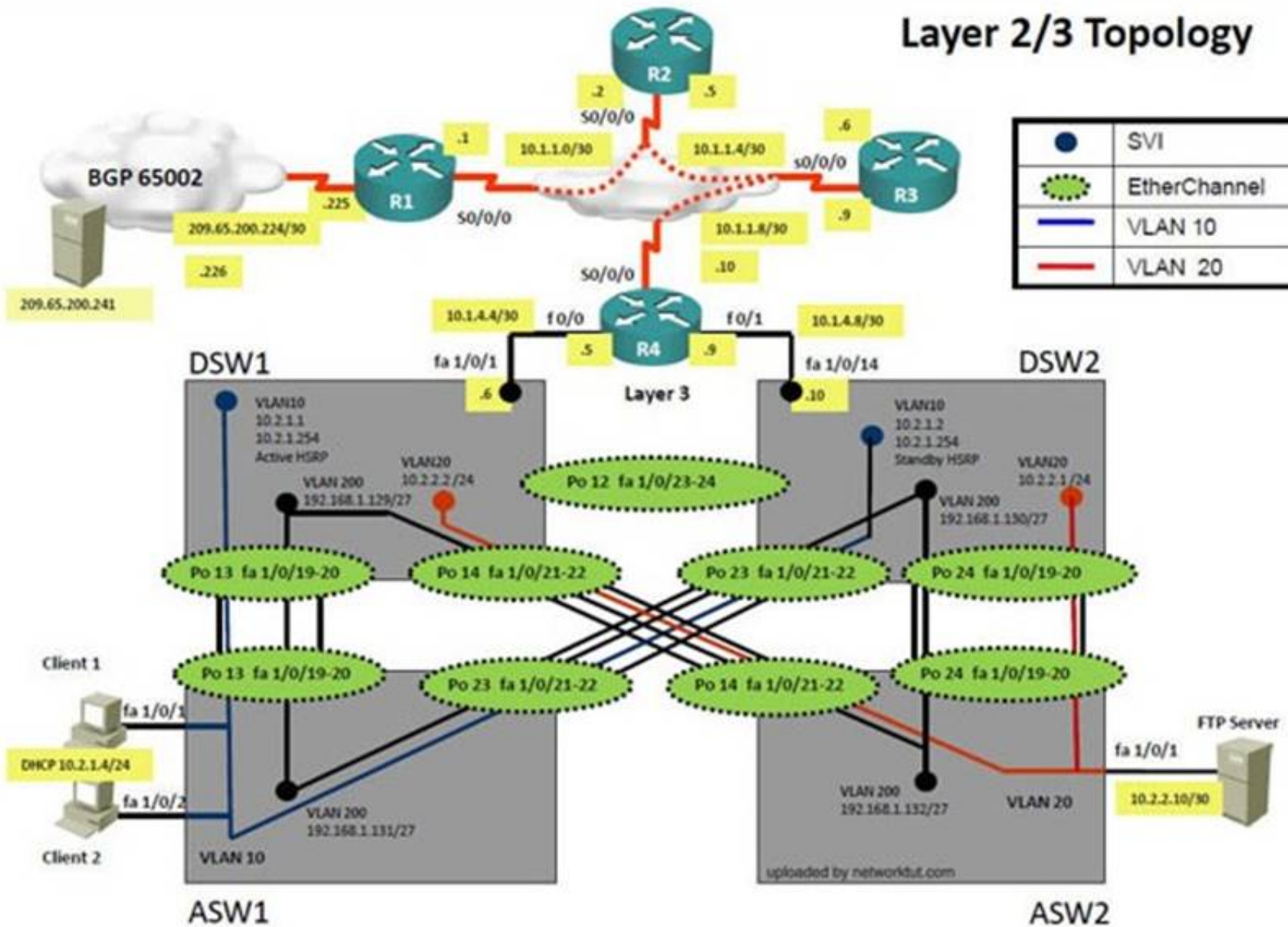
=====



## IPv4 Layer 3 Topology



## Layer 2/3 Topology



The implementation group has been using the test bed to do an IPv6 'proof-of-concept'. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1).

### Solution

Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be receiving IP address 10.2.1.3

From Client PC we can ping 10.2.1.254....

But IP 10.2.1.3 is able to ping from R4, R3, R2, R1.

Since the problem is R1 (2026::111:1) is not able to ping loopback of DSW2 (2026::102:1).



Kindly check for neighbourhood of routers as IPV6.... As per design below neighbourhood should be present for IPV6  
R1 ---R2 --- R3 --- R4--- DSW1 & DSW2 ----- Neighbourship between devices of IPV6

```
R2#sh ipv6 ospf nei
Neighbor ID      Pri   State           Dead Time   Interface ID  Interface
10.1.10.1        1     FULL/ -         00:00:32    6             Serial0/0/0.12
R2#
```

R2 IPV6 OSPF neighbourship is with R1

```
R3>sh ipv6 ospf ne
R3>sh ipv6 ospf neighbor
Neighbor ID      Pri   State           Dead Time   Interface ID  Interface
10.1.21.129      1     FULL/ -         00:00:31    15            Tunnel134
R3>
```

R3 IPV6 OSPF neighbourship is with R4

```
interface Serial0/0/0.23 point-to-point
description Link to R3
ip address 10.1.1.5 255.255.255.252
ipv6 address 2026::1:1/123
frame-relay interface-dlci 302
!
```

```
!
interface Serial0/0/0.23 point-to-point
ip address 10.1.1.6 255.255.255.252
ipv6 address 2026::1:2/122
ipv6 ospf 6 area 0
frame-relay interface-dlci 203
!
```

As per above snapshot we cannot see IPV6 neighbourship between R2 & R3 when checked interface configuration ipv6 ospf area 0 is missing on R2 which is connected to R3

Change required: On R2, IPV6 OSPF routing, Configuration is required to add ipv6 ospf 6 area 0 under interface serial 0/0/0.23

#### NEW QUESTION 116

The implementations group has been using the test bed to do a 'proof-of-concept'. After several changes to the network addressing, routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2(2026::102:1). Use the supported commands to isolated the cause of this fault and answer the following questions. What is the solution to fault condition?

- A. Under the interface Serial 0/0/0.23 configuration enter the ipv6 ospf 6 area 0 command.
- B. Under the interface Serial0/0/0.12 configuration enter the ipv6 ospf 6 area 12 command.
- C. Under ipv6 router ospf 6 configuration enter the network 2026::1:1/122 area 0 command.
- D. Under ipv6 router ospf 6 configuration enter no passive-interface default command.

**Answer:** A

**Explanation:** On R2, IPV6 OSPF routing, configuration is required to add ipv6 ospf 6 area 0 under interface serial 0/0/0.23

#### NEW QUESTION 119

The implementations group has been using the test bed to do a 'proof-of-concept'. After several changes to the network addressing, routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2(2026::102:1). Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. IPv4 OSPF Routing
- C. IPv6 OSPF Routing
- D. IPv4 layer 3 security

**Answer:** C

**Explanation:** On R2, IPV6 OSPF routing, configuration is required to add ipv6 ospf 6 area 0 under interface serial 0/0/0.23

Topic 17, Ticket 12 : HSRP Issue

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

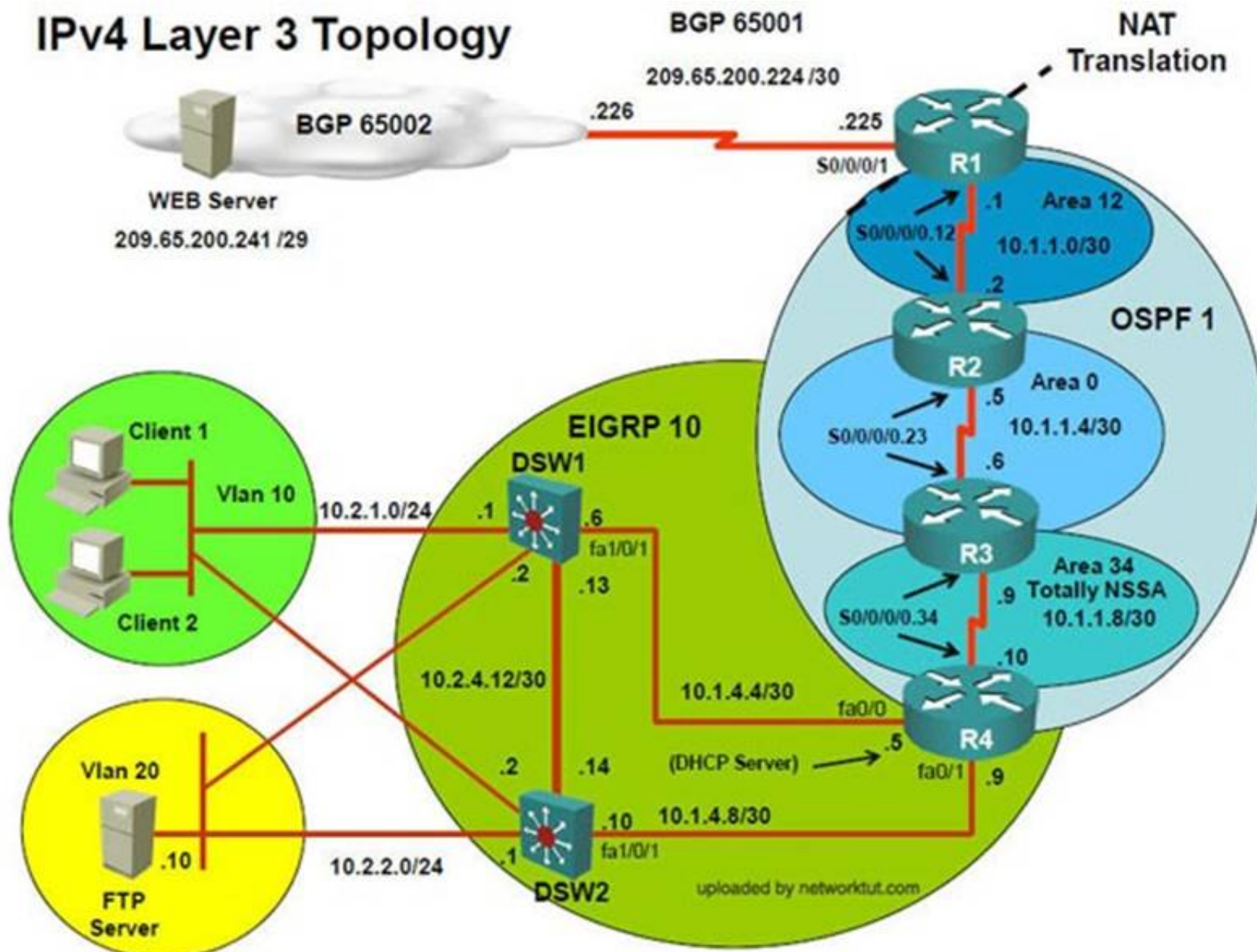
Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

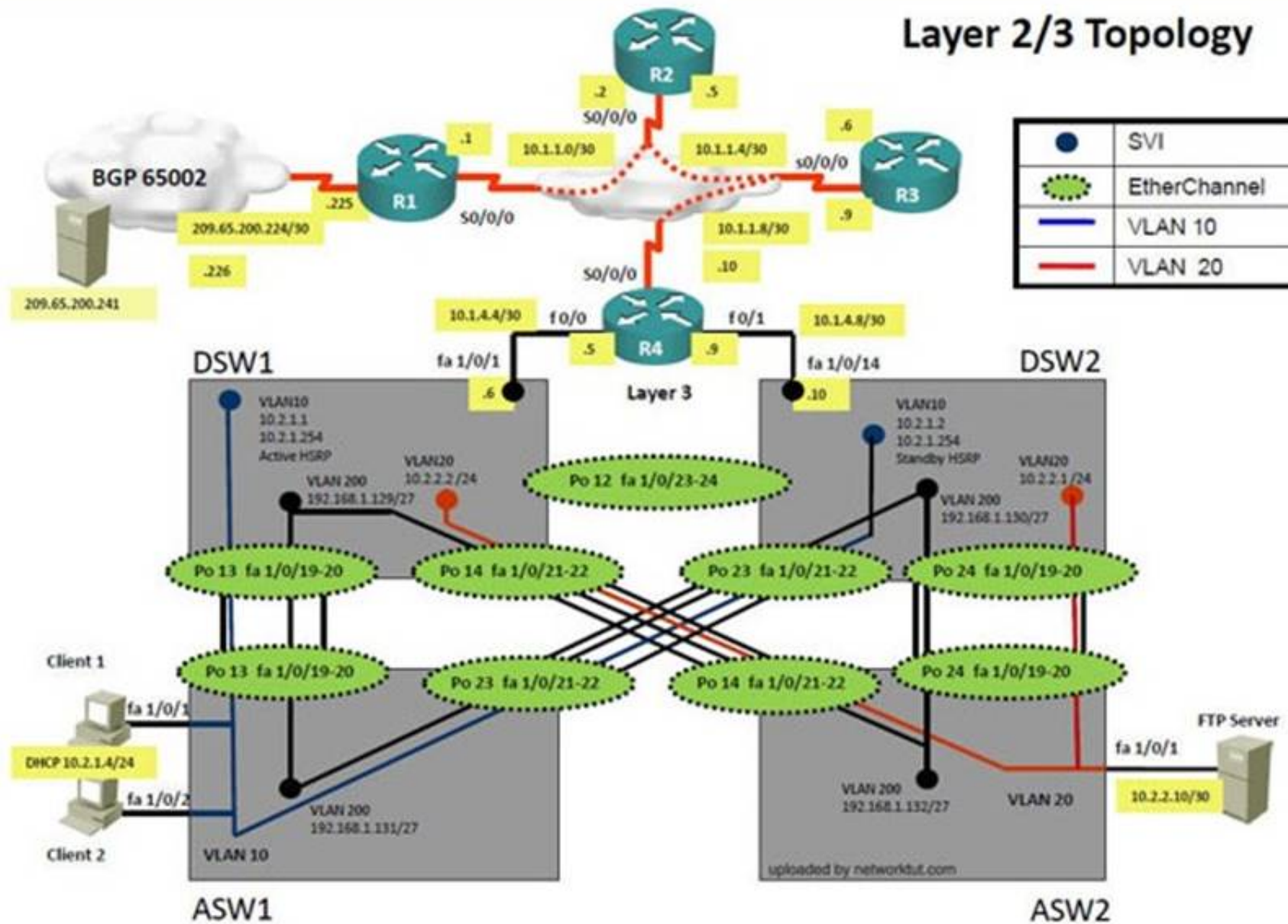
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution





## Layer 2/3 Topology



The implementation group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, FHRP services, and, device security, a trouble ticket has been opened indicating DSW1 will not become the active router for HSRP group 10.

Solution

Steps need to follow as below:-

Since the problem is raised that DSW1 will not become active router for HSRP group 10 we will check for the HSRP configuration...

**DSW1**

```
track 1 ip route 10.2.21.128 255.255.255.224 metric threshold
threshold metric up 1 down 2
track 10 ip route 10.1.21.128 255.255.255.224 metric threshold
threshold metric up 61 down 62
no ip subnet-zero
ip routing
```

```
interface Vlan10
ip address 10.2.1.1 255.255.255.0
ip helper-address 10.1.21.129
standby 10 ip 10.2.1.254
standby 10 priority 200
standby 10 preempt
standby 10 track 1 decrement 60
```

**DSW2**

```
interface Vlan10
ip address 10.2.1.2 255.255.255.0
ip helper-address 10.1.21.129
standby 10 ip 10.2.1.254
standby 10 priority 150
standby 10 preempt
```

From snapshot we see that the track command given needs to be changed under active VLAN10 router

Change Required: On DSW1, related to HSRP, under vlan 10 change the given track 1 command to instead use the track 10 command.

#### NEW QUESTION 121

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened DSW1 will not become the active router for HSRP group 10. Use the supported commands to isolated the cause of this fault and answer the following questions. On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer:** E

**Explanation:** DSW references the wrong track ID number.

#### NEW QUESTION 126

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened DSW1 will not become the active router for HSRP group 10. Use the supported commands to isolated the cause of this fault and answer the following questions. The fault condition is related to which technology?

- A. NTP
- B. HSRP
- C. IP DHCP Helper
- D. IPv4 EIGRP Routing
- E. IPv6 RIP Routing
- F. IPv4 layer 3 security
- G. Switch-to-Switch Connectivity
- H. Loop Prevention
- I. Access Vlans
- J. Port Security
- K. VLAN ACL/Port ACL
- L. Switch Virtual Interface

**Answer:** B

**Explanation:** On DSW1, related to HSRP, under VLAN 10 change the given track 1 command to instead use the track 10 command.

Topic 18, Ticket 13: DHCP Issue

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistrution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be

presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

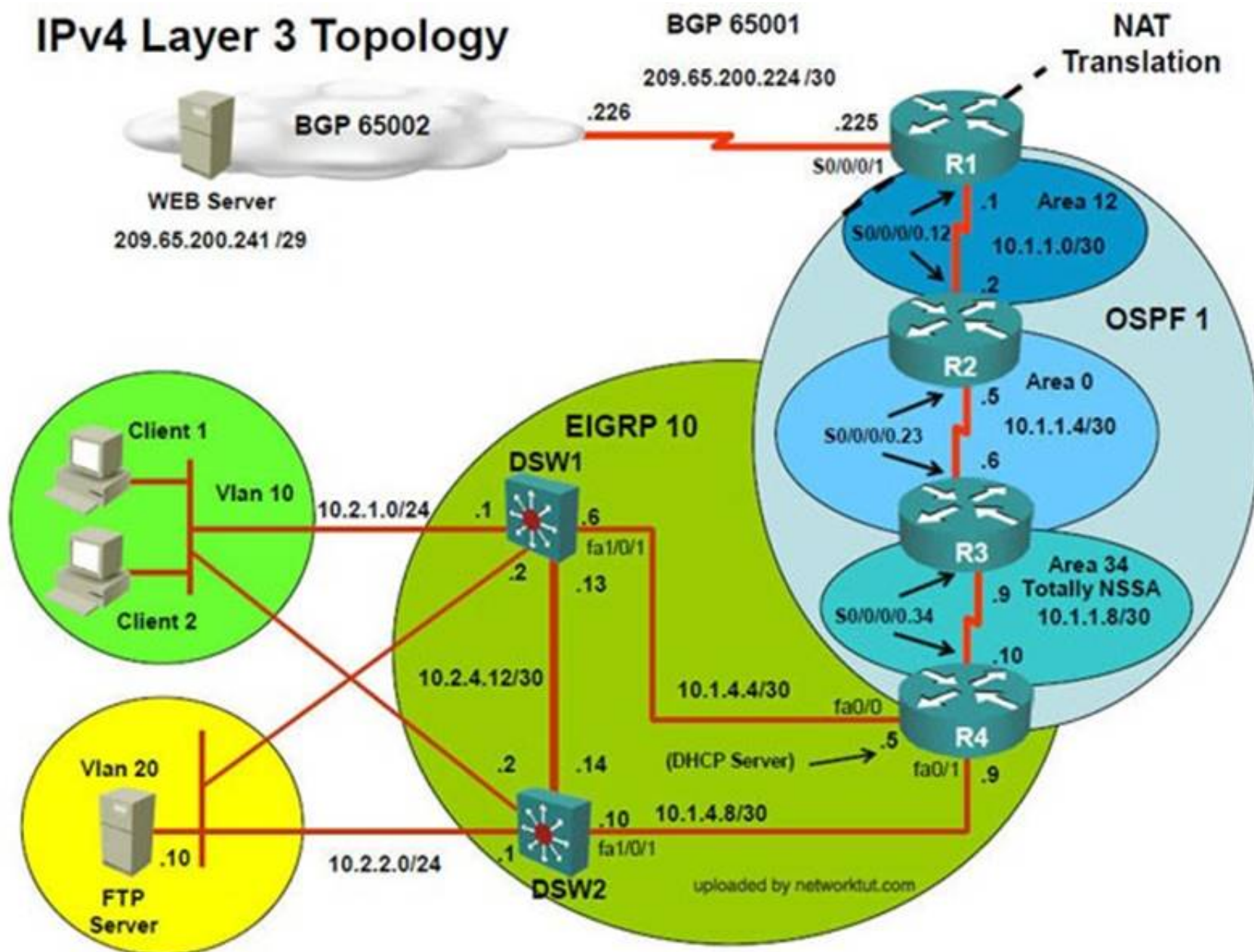
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

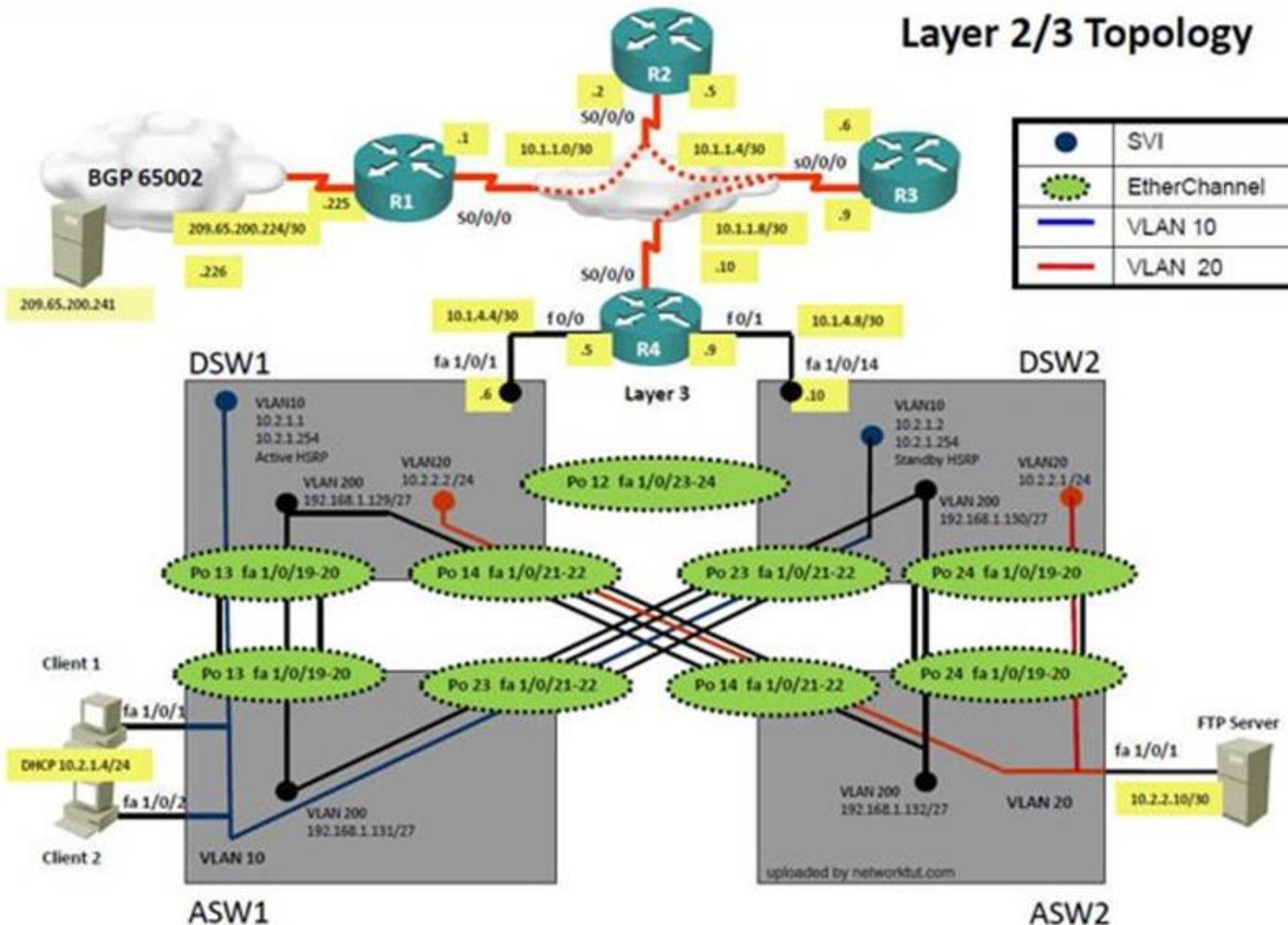
=====



## IPv4 Layer 3 Topology



## Layer 2/3 Topology



The implementation group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, HSRP services, and, device security, a trouble ticket has been opened indicating DSW1 will not become the active router for HSRP group 10.

### Solution

Steps need to follow as below:-

When we check on client 1 & Client 2 desktop we are not receiving DHCP address from R4 ipconfig ----- Client will be receiving Private IP address 169.254.X.X  
From ASW1 we can ping 10.2.1.254....

On ASW1 VLAN10 is allowed in trunk & access command will is enabled on interface but DHCP IP address is not recd.

On R4 the DHCP IP address is not allowed for network 10.2.1.0/24 which clearly shows the problem lies on R4 & the problem is with DHCP

#### NEW QUESTION 129

The implementations group has been using the test bed to do a 'proof-of-concept' that requires both Client 1 and Client 2 to access the WEB Server at 209.65.200.241. After several changes to the network addressing, routing schemes, DHCP services, NTP services, layer 2 connectivity, FHRP services, and device security, a trouble ticket has been opened indicating that Client 1 cannot ping the 209.65.200.241 address.

Use the supported commands to isolate the cause of this fault and answer the following question. The fault condition is related to which technology?

- A. NTP
- B. IP DHCP Server
- C. Ipv4 OSPF Routing
- D. Ipv4 EIGRP Routing.
- E. Ipv4 Route Redistribution.
- F. Ipv6 RIP Routing
- G. Ipv6 OSPF Routing
- H. Ipv4 and Ipv6 Interoperability
- I. Ipv4 layer 3 security.

**Answer:** B

**Explanation:** On R4 the DHCP IP address is not allowed for network 10.2.1.0/24 which clearly shows the problem lies on R4 & the problem is with DHCP

#### NEW QUESTION 134

The implementation group has been using the test bed to do an IPv6 'proof-of-concept1. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1).

Use the supported commands to isolate the cause of this fault and answer the following question.

On which device is the fault condition located?

- A. R1
- B. R2
- C. R3
- D. R4
- E. DSW1
- F. DSW2
- G. ASW1
- H. ASW2

**Answer:** B

**Explanation:** Start to troubleshoot this by pinging the loopback IPv6 address of DSW2 (2026::102:1). This can be pinged from DSW1, R4, and R3, which leads us to believe that the issue is with R2. Going further, we can see that R2 only has an IPV6 OSPF neighbor of R1, not R3:

Screen Shot 2015-03-11 at 10

```
R2>show ipv6 ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Interface ID	Interface
10.1.10.1	1	FULL/ -	00:00:32	6	Serial0/0/0.12

```
R2>
```

We can then see that OSPFv3 has not been enabled on the interface to R3: Screen Shot 2015-03-11 at 10



```
!
interface Serial0/0/0.12 point-to-point
description Link to R1
ip address 10.1.1.2 255.255.255.252
ip ospf authentication message-digest
ip ospf message-digest-key 1 md5 TSHOOT
ipv6 address 2026::12:2/122
ipv6 address FE80::2 link-local
ipv6 ospf 6 area 12
frame-relay interface-dlci 304
!
interface Serial0/0/0.23 point-to-point
description Link to R3
ip address 10.1.1.5 255.255.255.252
ipv6 address 2026::1:1/123
frame-relay interface-dlci 302
!
interface Serial0/0/1
```

So the problem is with R2, related to IPV6 Routing, and the fix is to enable the "ipv6 ospf 6 area 0" command under the serial 0/0/0.23 interface.

#### NEW QUESTION 139

The implementation group has been using the test bed to do an IPv6 'proof-of-concept'. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1). Use the supported commands to isolate the cause of this fault and answer the following question. What is the solution to the fault condition?

- A. Under the interface Serial0/0/0.23 configuration enter the ipv6 ospf 6 area 0 command.
- B. Under the interface Serial0/0/0.12 configuration enter the ipv6 ospf 6 area 12 command.
- C. Under ipv6 router ospf 6 configuration enter the network 2026::1:1/122 area 0 command.
- D. Under ipv6 router ospf 6 configuration enter the no passive-interface default command

**Answer:** A

**Explanation:** As explained in question one of this ticket, we can then see that OSPFv3 has not been enabled on the interface to R3:  
 Screen Shot 2015-03-11 at 10



```
!
interface Serial0/0/0.12 point-to-point
description Link to R1
ip address 10.1.1.2 255.255.255.252
ip ospf authentication message-digest
ip ospf message-digest-key 1 md5 TSHOOT
ipv6 address 2026::12:2/122
ipv6 address FE80::2 link-local
ipv6 ospf 6 area 12
frame-relay interface-dlci 304
!
interface Serial0/0/0.23 point-to-point
description Link to R3
ip address 10.1.1.5 255.255.255.252
ipv6 address 2026::1:1/123
frame-relay interface-dlci 302
!
interface Serial0/0/1
```

So the problem is with R2, related to IPV6 Routing, and the fix is to enable the "ipv6 ospf 6 area 0" command under the serial 0/0/0.23 interface. We need to enable this interface for area 0 according to the topology diagram.

Topic 20, Ticket 15: IPv6 Routing Issue 2

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be

presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

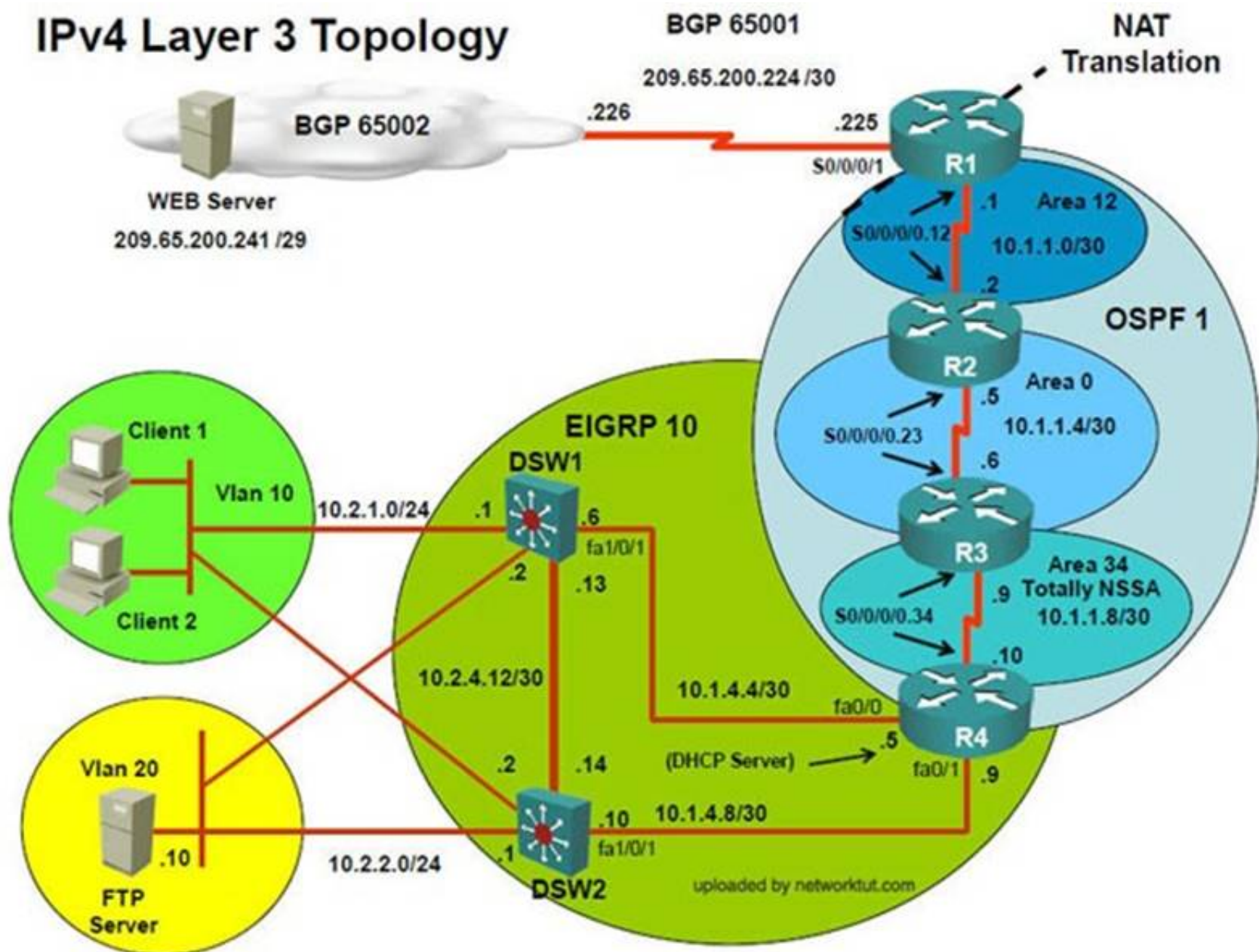
Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

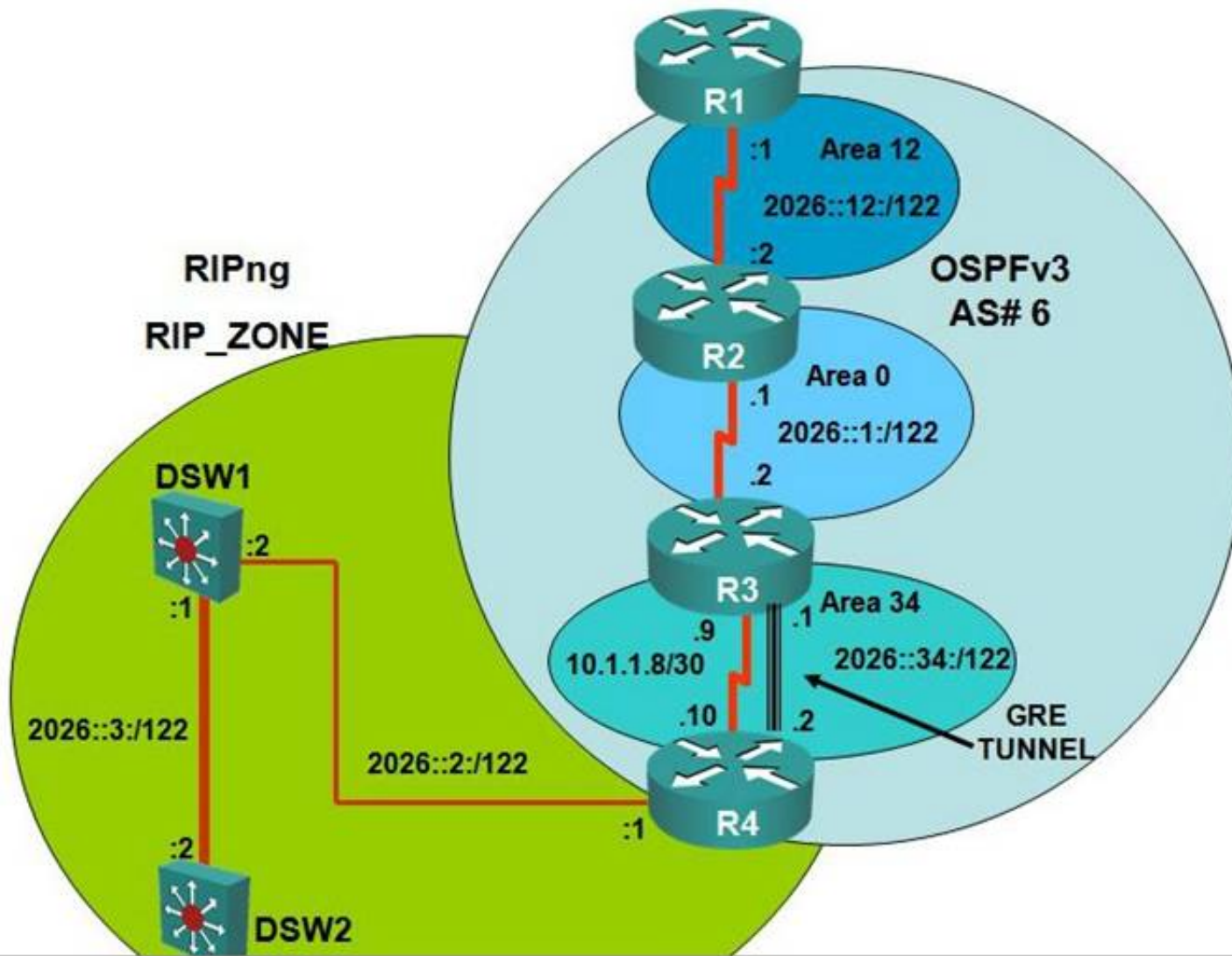
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## IPv4 Layer 3 Topology



Topology

## IPv6 Layer 3 Topology









Debug ip cef packet	802.1Q traffic issue
Debug ip mpacket	all ipv6 information
Debug ip packet	hsrp issues
Debug ipv6 packet	hardware routed packets
Debug standby errors	multicast packet
Debug vlan packets	all ipv4 information

Answer:

**Explanation:** Debug ip cef packet → hardware routed packets  
Debug ip mpacket → multicast packet  
Debug ip packet → all ipv4 information  
Debug ipv6 packet → all ipv6 information  
Debug standby errors → hsrp issues  
Debug vlan packets → 802.1Q traffic issue

NEW QUESTION 145

Drag and drop the extended ping options from the left onto the troubleshooting functions they perform on the right.

data pattern	detects framing errors
df-bit	prevents packet segmentation when set
hop count	troubleshoots QoS issues
ToS	verifies routing metrics
validate reply	verifies that a packet was received

Answer:

**Explanation:** Data pattern = detects framing errors  
Df-bit = Verify routing metrics  
Hop count = prevents packet segmentation when set  
ToS = Troubleshoots QoS issues  
Validate Reply = verify that a packet was received

NEW QUESTION 150

Drag the properties from the left onto their corresponding Unicast Reverse Path Forwarding mode on the right. Not all properties are used.

Source address must appear in routing table	<b>Strict Mode</b> <div>1</div> <div>2</div>
Source packet must be received on the interface that will forward the return traffic	
Configured on layer-2 switches	<b>Loose Mode</b> <div>1</div> <div>2</div> <div>3</div>
Configured on internet router outside interfaces	
Default route can be used in the source verification process	
Configured on internet router inside interface	

Answer:

Explanation:

Source address must appear in routing table	<b>Strict Mode</b> <div>Source packet must be received on the interface that will forward the return traffic</div> <div>Configured on internet router inside interface</div>
Source packet must be received on the interface that will forward the return traffic	
Configured on layer-2 switches	<b>Loose Mode</b> <div>Source address must appear in routing table</div> <div>Configured on internet router outside interfaces</div> <div>Default route can be used in the source verification process</div>
Configured on internet router outside interfaces	
Default route can be used in the source verification process	
Configured on internet router inside interface	

#### NEW QUESTION 153

Drag and drop the required GRE tunnel as below.



TCP MSS	Required Component	
Tunnel Destination Address		
Tunnel IP Address		
Tunnel Key	Optional Component	
Tunnel Mode		
Tunnel Source Address		

Answer:

Explanation:

TCP MSS	Required Component	Tunnel Destination Address
Tunnel Destination Address		Tunnel IP Address
Tunnel IP Address		Tunnel Source Address
Tunnel Key	Optional Component	TCP MSS
Tunnel Mode		Tunnel Key
Tunnel Source Address		Tunnel Mode

**NEW QUESTION 155**  
Drag and drop the GRE header fields from the left into the correct categories on the right.



checksum	GRE Header
key	
protocol type	
reserved0	
sequence number	GRE Header Extension
version	

Answer:

**Explanation:** Gre header  
Reserved 0 Version Protocol Checksum  
GRE header extension  
Key  
Sequence number

NEW QUESTION 160

The implementation group has been using the test bed to do an IPv6 'proof-of-concept1. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1). The fault condition is related to which technology?

- A. NTP
- B. IP DHCP Server
- C. IPv4 OSPF Routing
- D. IPv4 EIGRP Routing
- E. IPv4 Route Redistribution
- F. IPv6 RIP Routing
- G. IPv6 OSPF Routing
- H. IPV4 and IPV6 Interoperability
- I. IPv4 layer 3 security

Answer: G

**Explanation:** As explained earlier, the problem is with route redistribution on R4 of not redistributing RIP routes into OSPF for IPV6.

NEW QUESTION 162

Drag and drop the valid tunnel modes from the left into the Valid Column on the right. Order does not matter and not all options are used.

6to4	Valid
MGRE	Valid
GRE IP	Valid
IPv6ip	Valid
NHRP	
ISATAP	

**Answer:**

**Explanation:** 6to4 GRE IP IPV6 IP ISATAP

**NEW QUESTION 163**  
Drag the SSH configuration commands in order from the left onto the correct sequence number on the right. Not all commands are used.

Core-Switch (config)# line vty 0 4 Core-Switch (config-line)#transport input ssh	1
Core-Switch (config)#ip ssh version 2	2
Core-Switch (config)# line console 0 Core-Switch (config-line)# transport input ssh	3
Core-Switch(config)# crypto key generate rsa	4
Core-Switch(config)#ip domain-name crrdp.com	

**Answer:**

**Explanation:**

```
Core-Switch (config)# line vty 0 4
Core-Switch (config-line)#transport input ssh
```

```
Core-Switch(config)#ip domain-name crrdp.com
```

```
Core-Switch (config)#ip ssh version 2
```

```
Core-Switch(config)# crypto key generate rsa
```

```
Core-Switch (config)# line console 0
Core-Switch (config-line)# transport input ssh
```

```
Core-Switch (config)#ip ssh version 2
```

```
Core-Switch(config)# crypto key generate rsa
```

```
Core-Switch (config)# line vty 0 4
Core-Switch (config-line)#transport input ssh
```

```
Core-Switch(config)#ip domain-name crrdp.com
```

Topic 21, Ticket 16: IPv6 Routing Issue 3

Topology Overview (Actual Troubleshooting lab design is for below network design)

Client Should have IP 10.2.1.3

EIGRP 100 is running between switch DSW1 & DSW2

OSPF (Process ID 1) is running between R1, R2, R3, R4

Network of OSPF is redistributed in EIGRP

BGP 65001 is configured on R1 with Webserver cloud AS 65002

HSRP is running between DSW1 & DSW2 Switches

The company has created the test bed shown in the layer 2 and layer 3 topology exhibits. This network consists of four routers, two layer 3 switches and two layer 2 switches.

In the IPv4 layer 3 topology, R1, R2, R3, and R4 are running OSPF with an OSPF process number 1. DSW1, DSW2 and R4 are running EIGRP with an AS of 10. Redistribution is enabled where necessary.

R1 is running a BGP AS with a number of 65001. This AS has an eBGP connection to AS 65002 in the ISP's network. Because the company's address space is in the private range.

R1 is also providing NAT translations between the inside (10.1.0.0/16 & 10.2.0.0/16) networks and outside (209.65.0.0/24) network.

ASW1 and ASW2 are layer 2 switches.

NTP is enabled on all devices with 209.65.200.226 serving as the master clock source.

The client workstations receive their IP address and default gateway via R4's DHCP server.

The default gateway address of 10.2.1.254 is the IP address of HSRP group 10 which is running on DSW1 and DSW2.

In the IPv6 layer 3 topology R1, R2, and R3 are running OSPFv3 with an OSPF process number 6. DSW1, DSW2 and R4 are running RIPng process name RIP\_ZONE.

The two IPv6 routing domains, OSPF 6 and RIPng are connected via GRE tunnel running over the underlying IPv4 OSPF domain. Redistribution is enabled where necessary.

Recently the implementation group has been using the test bed to do a 'proof-of-concept' on several implementations. This involved changing the configuration on one or more of the devices. You will be

presented with a series of trouble tickets related to issues introduced during these configurations.

Note: Although trouble tickets have many similar fault indications, each ticket has its own issue and solution.

Each ticket has 3 sub questions that need to be answered & topology remains same. Question-1 Fault is found on which device,

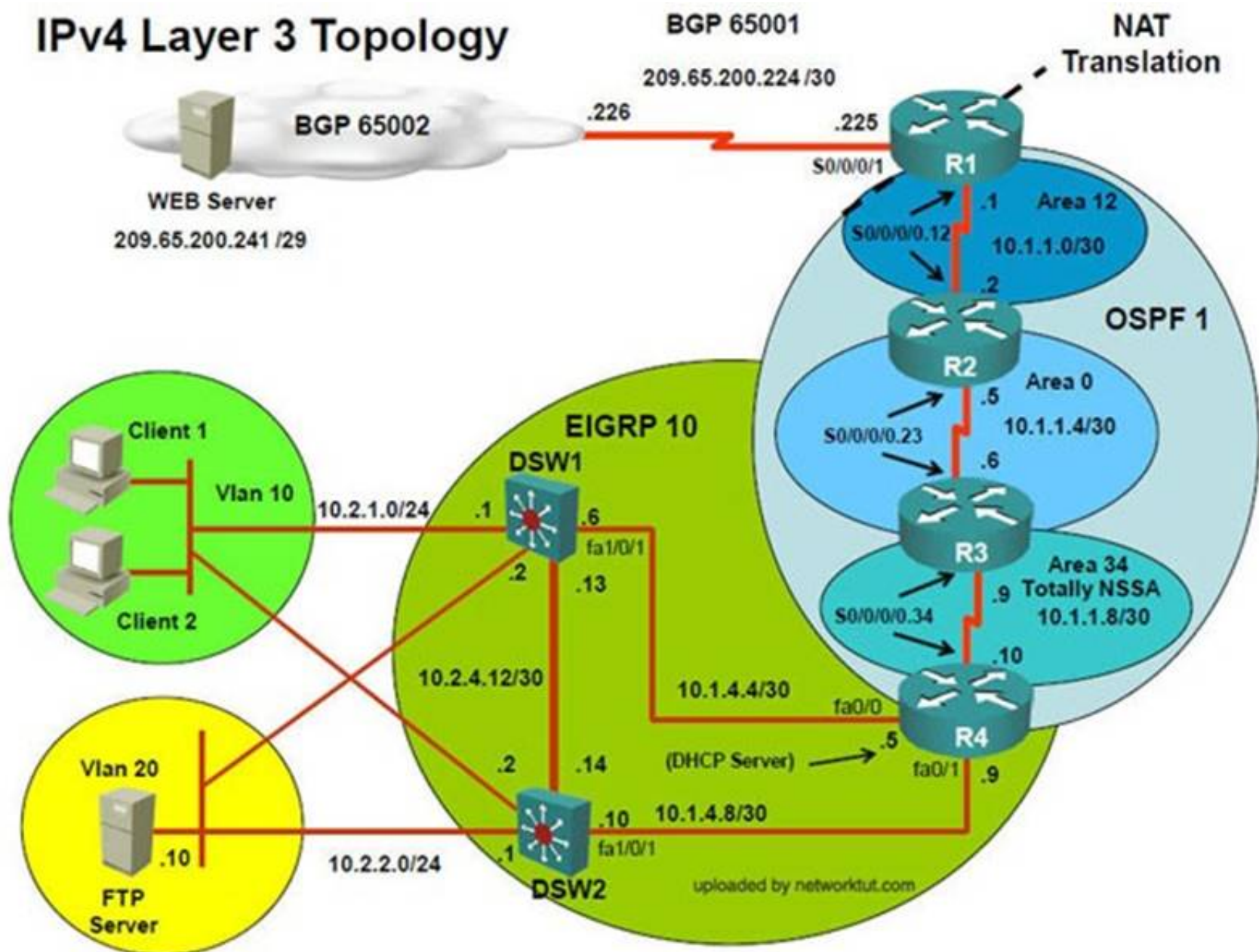
Question-2 Fault condition is related to,

Question-3 What exact problem is seen & what needs to be done for solution

=====

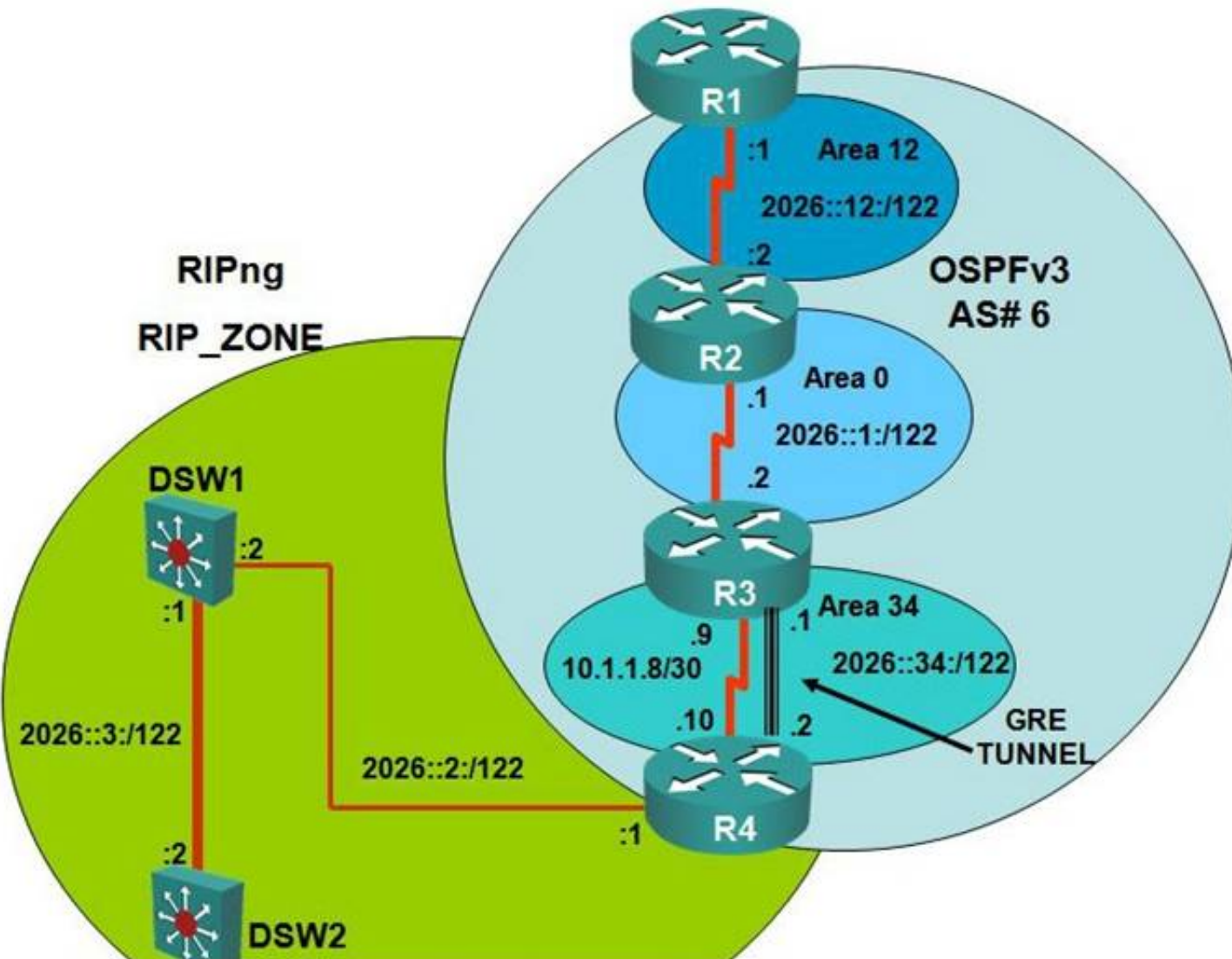


## IPv4 Layer 3 Topology

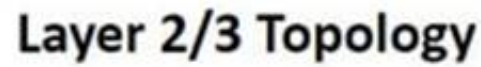


Topology

## IPv6 Layer 3 Topology







The implementation group has been using the test bed to do an IPv6 'proof-of-concept'. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1).

Using the supported commands to isolate the cause of this fault and answer the following questions.

The implementation group has been using the test bed to do an IPv6 'proof-of-concept'. After several changes to the network addressing and routing schemes, a trouble ticket has been opened indicating that the loopback address on R1 (2026::111:1) is not able to ping the loopback address on DSW2 (2026::102:1). Use the supported commands to isolate the cause of this fault and answer the following question. On which device is the fault condition located?

- Answer: C**

Screen Shot 2015-03-11 at 4

```
R3>ping 2026::102:1
```

```
Translating "2026::102:1"
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::102:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R3>show ipv6 ospf ne
```

```
R3>show ipv6 ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Interface ID	Interface
10.1.10.2	1	FULL/ -	00:00:30	16	Serial0/0/0.23

```
R3>
```

This is due to mismatched tunnel modes between R3 and R4: Screen Shot 2015-03-11 at 4



R4

```
!
!
!
interface Loopback0
 ip address 10.1.10.3 255.255.255.255
!
interface Loopback1
 ip address 10.1.2.65 255.255.255.224
 ip ospf network point-to-point
!
interface Loopback6
 no ip address
 ipv6 address 2026::333:1/122
 ipv6 ospf network point-to-point
 ipv6 ospf 6 area 0
!
interface Tunnel34
 no ip address
 ipv6 address 2026::34:1/122
 ipv6 ospf 6 area 34
 tunnel mode ipv6
 tunnel source Serial0/0/0.34
 tunnel destination 10.1.1.10
!
```

```
!
!
!
!
!
interface Loopback0
 ip address 10.1.10.4 255.255.255.255
!
interface Loopback1
 ip address 10.1.21.129 255.255.255.224
 ip ospf network point-to-point
!
interface Loopback6
 no ip address
 ipv6 address 2026::444:1/122
 ipv6 rip RIP_ZONE enable
 ipv6 ospf 6 area 34
!
interface Tunnel34
 no ip address
 ipv6 address 2026::34:2/122
 ipv6 ospf 6 area 34
 tunnel source Serial0/0/0.34
 tunnel destination 10.1.1.9
!
```

Problem is with R3, and to resolve the issue we should delete the "tunnel mode ipv6" under interface Tunnel 34.

#### NEW QUESTION 170

Which of the following commands can be used to gather information about the AS-PATH of a BGP route? (Choose all that apply.)

- A. show ip bgp neighbors
- B. debug ip bgp updates
- C. show ip route bgp
- D. show ip bgp
- E. show ip bgp summary
- F. sh ip bgp database

**Answer:** BD

**Explanation:** Incorrect:

show ip bgp summary: The command show ip bgp summary does not presents informations about routes.

#### NEW QUESTION 173

FCAPS is a network maintenance model defined by ISO. It stands for which of the following?

- A. Fault Management
- B. Action Management
- C. Configuration Management
- D. Protocol Management

E. Security Management

**Answer:** ACE

**Explanation:** The FCAPS maintenance model consists of the following:

FCAPS Maintenance Tasks:

- Fault – collect info from routers and switches, email at threshold limits, respond to trouble tickets
- Configuration – log changes to network h/w or s/w. alert relevant folks of planned changes
- Accounting – invoice users
- Performance – monitor network performance and deploy QoS
- Security – deploy firewall, VPN, IPS, create security policy, use AAA to validate credentials, etc.

#### NEW QUESTION 175

The following command is issued on a Cisco Router: Router(configuration)#logging console warnings Which alerts will be seen on the console?

- A. Warnings only
- B. debugging, informational, notifications, warnings
- C. warnings, errors, critical, alerts, emergencies
- D. notifications, warnings, errors
- E. warnings, errors, critical, alerts

**Answer:** C

**Explanation:** Cisco routers prioritize log messages into 8 levels (0-7), as shown below:

Level	Level Name	Description
0	Emergencies	System is unusable
1	Alerts	Immediate action needed
2	Critical	Critical conditions
3	Errors	Error conditions
4	Warnings	Warning conditions
5	Notifications	Informational messages
6	Informational	Normal but significant conditions
7	Debugging	Debugging messages

When you enable logging for a specific level, all logs of that severity and greater (numerically less) will be logged. In this case, when you enable console logging of warning messages (level 4), it will log levels 0-4, making the correct answer warnings, errors, critical, alerts, and emergencies.

#### NEW QUESTION 176

Which of the following statements concerning IGMP are correct? (Choose all that apply.)

- A. With IGMPv1, queries are sent to a specific group.
- B. Hosts issuing IGMPv1 requests will be correctly interpreted by IGMPv2 hosts due to backward compatibility.
- C. An IGMPv2 router will ignore IGMPv2 leave messages when IGMFVI hosts are present.
- D. With IGMFV2, a leave message is supported.
- E. An IGMPv2 host will send an IGMFVI report on an IGMFVI router.
- F. An IGMPv2 router can only allow IGMPv2 hosts to execute a join request.

**Answer:** CDE

#### NEW QUESTION 179

Which of the following characteristics describe the BPDU Guard feature? (Choose all that apply.)

- A. ABPDU Guard port should only be configured on ports with PortFast enabled.
- B. BPDU Guard and PortFast should not be enabled on the same port.
- C. BPDU Guard is used to ensure that superior BPDUs are not received on a switch port.
- D. ABPDU Guard port receiving a BPDU will go into err-disable state.
- E. ABPDU Guard port receiving a BPDU will be disabled.
- F. BPDU Guard can be enabled on any switch port.

**Answer:** ADE

**Explanation:** Option A is, obviously, valid, since BPDUGuard is a enhancement of thePortFast feature. Reference: Spanning Tree PortFast BPDU Guard Enhancement

[http://www.cisco.com/en/US/tech/tk389/tk621/technologies\\_tech\\_note09186a008009482f.shtml](http://www.cisco.com/en/US/tech/tk389/tk621/technologies_tech_note09186a008009482f.shtml)

#### NEW QUESTION 184

Which of the following is an unlikely reason for the ARP process to fail?

- A. CEF switching is disabled on the switch
- B. The source device and destination device are in different VLANs
- C. The VLAN is excluded from the trunk
- D. The host is connected to the switch through an IP phone
- E. A faulty cable from host to switch or between switches
- F. The trunking encapsulation type is inconsistent on the two ends of the link

**Answer:** AD

#### NEW QUESTION 188

Which of the following commands provides data plane information required to forward a packet to a specific ip address?

- A. sh ip route
- B. sh ip cef <ip\_address>
- C. sh adjacency <ip\_address>
- D. sh ip route <ip\_address\$>
- E. sh ip adjacency </p\_address>
- F. sh ip cef <mac\_addrQss> <ip\_address>

**Answer:** B

#### NEW QUESTION 193

Which of the following are byproducts of a structured maintenance plan? (Choose all that apply.)

- A. Predictable security vulnerabilities
- B. Economies of scale
- C. Improved expenditure forecasts
- D. Increased downtime
- E. Predictable equipment obsolescence
- F. Consumption of fewer resources

**Answer:** ABCEF

#### NEW QUESTION 195

Which of the following are shared distribution tree characteristics? (Choose all that apply.)

- A. Memory requirements are higher for shared distribution tree than for source distribution tree.
- B. Creates a tree from a central RP to all last-hop routers.
- C. Uses a rendezvous point.
- D. An optimal path is created between each source router and each last-hop router.
- E. Place (S,G) entry in each router's multicast routing table.
- F. Place (\*,G) entry in a router's multicast routing to table.

**Answer:** CF

#### NEW QUESTION 196

Given the multicast IP address of 224.193.5.10, what would the corresponding multicast MAC address be?

- A. 00-00-0c-c0-05-0a
- B. 00-00-0c-cl-05-0a
- C. 01-00-5e-00-00-0c
- D. 01-00-5e-41-05-0a
- E. 00-00-0c-01-00-5e
- F. 01-00-5e-cl-05-0a

**Answer:** F

**Explanation:** First three octets are 01-00-05e for every single multicast address. Last three octets are the hexadecimal version of the last three octets of the IP address, in this case 193.5.10 is translated to c1-05-0a.  
Reference:

#### NEW QUESTION 197

Which of the following is an accurate description of the command copy startup-config ftp://kevin:cisco@192.168.1.74?

- A. The configuration on the FTP server is copied to RAM.
- B. The command is not valid on a Cisco router.
- C. The configuration file in RAM is copied to an FTP server.
- D. The configuration file in NVRAM is copied to an FTP server.
- E. The configuration on the FTP server is copied to NVRAM.
- F. The configuration will be copied from NVRAM to an FTP server with a filename of Kevin.

**Answer:** D

#### NEW QUESTION 202

The following commands are issued on a Cisco Router: Router(configuration)#access-list 199 permit tcp host 10.1.1.1 host 172.16.1.1  
Router(configuration)#access-list 199 permit tcp host 172.16.1.1 host 10.1.1.1 Router(configuration)#exit  
Router#debug ip packet 199  
What will the debug output on the console show?

- A. All IP packets passing through the router
- B. Only IP packets with the source address of 10.1.1.1
- C. All IP packets from 10.1.1.1 to 172.16.1.1
- D. All IP Packets between 10.1.1.1 and 172.16.1.1

**Answer:** D

**Explanation:** In this example, the “debug ip packet” command is tied to access list 199, specifying which IP packets should be debugged. Access list 199 contains two lines, one going from the host with IP address 10.1.1.1 to



172.16.1.1 and the other specifying all TCP packets from host 172.16.1.1 to 10.1.1.1.

#### NEW QUESTION 205

You have the followings commands on your Cisco Router: ip ftp username admin

ip ftp password backup

You have been asked to switch from FTP to HTTP. Which two commands will you use to replace the existing commands?

- A. ip http username admin
- B. ip http client username admin
- C. ip http password backup
- D. ip http client password backup
- E. ip http server username admin
- F. ip http server password backup

**Answer:** BD

#### **Explanation:** Configuring the HTTP Client

Perform this task to enable the HTTP client and configure optional client characteristics.

The standard HTTP 1.1 client and the secure HTTP client are always enabled. No commands exist to disable the HTTP client. For information about configuring optional characteristics for the HTTPS client, see the HTTPS-HTTP Server and Client with SSL 3.0, Release 12.2(15)T, feature module.

#### SUMMARY STEPS

1. <http://www.cisco.com/en/US/i/templates/blank.gif#enable>
  2. <http://www.cisco.com/en/US/i/templates/blank.gif#configure-terminal>
  3. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-cache {ager interval minutes | memory {file file-size-limit | pool pool-size-limit}}](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-cache)
  4. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-connection {forceclose | idle timeout seconds | retry count | timeout seconds}](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-connection)
  5. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-password password](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-password)
  6. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-proxy-server proxy-name proxy-port port-number](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-proxy-server)
  7. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-response-timeout seconds](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-response-timeout)
  8. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-source-interface type number](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-source-interface)
  9. [http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-username username](http://www.cisco.com/en/US/i/templates/blank.gif#ip-http-client-username)
- Reference: HTTP 1.1 Web Server and Client.  
[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_http\\_web.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_http_web.html)

#### NEW QUESTION 207

You examine the port statistics on a Cisco Catalyst switch and notice an excessive number of frames are being dropped. Which of the following are possible reasons for the drops?

- A. Unknown destination MAC address
- B. Bad cabling
- C. MAC forwarding table is full
- D. Port configured for half duplex
- E. Port configured for full duplex
- F. Network congestion

**Answer:** BF

#### NEW QUESTION 210

Which of the following would provide good baseline documentation to have on hand when analyzing potential problems? (Choose all that apply.)

- A. User authentication ID and password
- B. User profile
- C. Output of debug
- D. Output of show interface
- E. Result of ping
- F. Output of show process cpu

**Answer:** CDEF

#### NEW QUESTION 215

Which of the following is not an essential prerequisite for AutoQoS to be correctly applied to an interface? (Choose all that apply.)

- A. The interface must be configured as a Multilink PPP interface.
- B. The correct bandwidth should be configured on the interface.
- C. A QoS policy must not be currently attached to the interface.
- D. CEF must be enabled.
- E. AutoQoS must be enabled globally before it can be enabled on the interface.
- F. An IP address must be configured on the interface if its speed is equal to or less than 768 kbps.

**Answer:** AE

#### NEW QUESTION 220

Several troubleshooters are about to work on the same problem. Which of the following troubleshooting methods would be most appropriate to make the best use of the troubleshooters' time?

- A. Bottom up
- B. Component swapping
- C. Top down
- D. Shoot from the hip
- E. Divide and conquer
- F. Follow the traffic path

**Answer:** E

#### NEW QUESTION 224

A new router is added to an existing HSRP standby group. One of the existing routers is in an active state, the other is in a standby state. Under what circumstance will the new router become the active router?

- A. The new router will become active immediately because it's the newest router introduced into the group.
- B. The new router can become active only when the existing active router and the existing standby router become unavailable.
- C. The new router has a lower priority value.
- D. The new router will never become active unless the existing active router becomes unavailable.
- E. The new router has preempt configured and a higher priority
- F. The new router has a higher priority value.

**Answer:** E

#### NEW QUESTION 228

Which of the following characteristics describe the Root Guard feature? (Choose all that apply.)

- A. The port must be put into forwarding state manually after root-inconsistent state has been corrected.
- B. A Root Guard port receiving superior BPDU goes into a root-inconsistent state.
- C. A Root Guard port receiving inferior BPDU goes into a root-inconsistent state.
- D. While the port is in a root-inconsistent state no user data is sent across that port.
- E. The port returns to a forwarding state if inferior BPDUs stop.
- F. It should be applied to all switch ports.

**Answer:** BD

**Explanation:** Reference: Spanning Tree Protocol Root Guard Enhancement[http://www.cisco.com/en/US/tech/tk389/tk621/technologies\\_tech\\_note09186a00800ae96b.shtml](http://www.cisco.com/en/US/tech/tk389/tk621/technologies_tech_note09186a00800ae96b.shtml)

#### NEW QUESTION 229

Which of the following are TACACS+ characteristics? (Choose all that apply.)

- A. Cisco proprietary
- B. Standards-based protocol
- C. Provides separate services for authentication, authorization, and accounting
- D. Encrypts only the password
- E. Uses UDP for a transport layer
- F. Encrypts the entire packet

**Answer:** ACF

#### NEW QUESTION 232

Which of the following is not a valid reason for a packet to be punted?

- A. The TCAM has reached capacity
- B. An unknown destination MAC address
- C. A packet being discarded due to a security violation
- D. A Telnet packet from a session being initiated with the switch
- E. Routing protocols sending broadcast traffic
- F. A packet belonging to a GRE tunnel

**Answer:** C

**Explanation:** Not A:

Reference: CCNP TSHOOT Certification Guide: Advanced Cisco CatalystSwitch Troubleshooting

#### NEW QUESTION 237

You have 2 NTP servers in your network - 10.1.1.1 and 10.1.1.2. You want to configure a Cisco router to use 10.1.1.2 as its NTP server before falling back to 10.1.1.1. Which commands will you use to configure the router?

- A. ntp server 10.1.1.1 ntp server 10.1.1.2
- B. ntp server 10.1.1.1ntp server 10.1.1.2 primary
- C. ntp server 10.1.1.1ntp server 10.1.1.2 prefer
- D. ntp server 10.1.1.1 fallback ntp server 10.1.1.2

**Answer:** C

**Explanation:**

#### Preferred server

A router can be configured to prefer an NTP source over another. A preferred server's responses are discarded only if they vary dramatically from the other time sources. Otherwise, the preferred server is used for synchronization without consideration of the other time sources. Preferred servers are usually specified when they are known to be extremely accurate. To specify a preferred server, use the prefer keyword appended to the ntp server command. The following example tells the router to prefer TimeServerOne over TimeServerTwo:

Router#config terminal

Enter configuration commands, one per line. End with CNTL/Z. Router(config)#ntp server TimeServerOne prefer Router(config)#ntp server TimeServerTwo

Router(config)#^Z

Reference: Hardening Cisco Routers By Thomas Akin February 2002 0-596-00166-5, Chapter 10, NTP.

#### NEW QUESTION 238

Which of the following are not true OSPF LSA rules?

- A. OSPF LSA type 5 triggers an LSA type 7 at an ABR between an NSSA and the backbone area.
- B. OSPF LSA type 1 triggers an LSA type 3 at an ABR.
- C. OSPF LSA type 7 triggers an LSA type 5 at an ABR between an NSSA and the backbone area.
- D. OSPF LSA type 3 triggers an LSA type 4 at an ABR.
- E. OSPF LSA type 5 triggers an LSA type 7 at an A5BR but only in N5SAs.
- F. OSFP LSA type 2 triggers an LSA type 3 at an ABR.

**Answer:** ADE

#### NEW QUESTION 240

Which of the following pieces of information will the command show interface provide? (Choose all that apply.)

- A. Layer 1 status
- B. Output queue drops
- C. Interface CPU utilization
- D. Cable type connected to interface
- E. Layer 2 status
- F. Input queue drops

**Answer:** ABEF

#### NEW QUESTION 244

Which of the following is not a characteristic of fast switching?

- A. Fast switching reduces a routers CPU utilization, compared to process switching.
- B. All packets of a flow, except for the first packet, use the information in the fast cache.
- C. It can be enabled with the interface command ip route-cache.
- D. Fast switching uses a fast cache maintained in a router's control plane.
- E. The fast cache contains information about how traffic from different data flows should be forwarded.
- F. Even though the fast switching is enabled, the first packet of a flow is still process switched.

**Answer:** D

#### NEW QUESTION 249

Which of the following are valid modes of packet switching on most routers? (Choose all that apply.)

- A. Cisco Express Forwarding
- B. FIB switching
- C. Cache switching
- D. Optimized switching
- E. Process switching
- F. Fast switching

**Answer:** AEF

#### NEW QUESTION 251

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