Cisco

Exam Questions 200-125

CCNA Cisco Certified Network Associate CCNA (v3.0)

NEW QUESTION 1
Which Type of ipv6 unicast ip address is reachable across the internet ?

A. Unique Local
B. Compatible
C. Link Local
D. Global

Answer: D

NEW QUESTION 2
Which utility can you use to identify redundant or shadow rules ?

A. The ACL trace tool in Cisco APIC-EM.
B. The ACL analysis tool in Cisco APIC-EM.
C. The Cisco APIC-EM automation scheduler.
D. The Cisco IWAN application.

Answer: B

NEW QUESTION 3
which three technical services support cloud computing ?

A. network-monitored power sources
B. layer 3 network routing
C. ip localization
D. redundant connections
E. VPN connectivity
F. extended SAN services

Answer: DEF

NEW QUESTION 4
Drag the cable type on the left to the purpose for which is it best suited on the right. (Not all options are used.)

Answer:

Explanation: Switch to router : rollover Switch to switch : crossover PM Com port: 9 - 25 pin

NEW QUESTION 5
which two types of information are held in the mac address table ?

A. destination ip addresses
B. protocols
C. port numbers
D. mac address
E. source ip address

Answer: CD

NEW QUESTION 6

Which command is used to show the interface status of a router?

A. show interface status
B. show ip interface brief
C. show ip route
D. show interface

Answer: B

NEW QUESTION 7
Which feature is configured by setting a variance that is at least two times the metric?

A. equal cost load balancing
B. unequal cost load balancing
C. Path selection
D. path count

Answer: B

NEW QUESTION 8
Which IPV6 function serves the same purpose as ARP entry verification on an IPv4 network?

A. interface ip address verification.
B. MAC address table verification
C. neighbor discovery verification
D. routing table entry verification

Answer: C

NEW QUESTION 9
Which type of MAC address is aged automatically by the switch?

A. automatic
B. manual
C. dynamic
D. static

Answer: C

NEW QUESTION 10
Which command can you use to test whether a switch supports secure connections and strong authentication?

A. Switch>ssh –v 1-I admin 10.1.1.1
B. Router#ssh –v1 –I admin 10.1.1.1
C. Router>ssh –V2 –I admin 10.1.1.1
D. Switch#ssh –I admin 10.1.1.1

Answer: C

NEW QUESTION 10
In which byte of an IP packet can traffic be marked ?

A. the Tos byte
B. the Qos byte
C. the Cos byte
D. the Dscp byte

Answer: A

Explanation: Reference:
http://flylib.com/books/2/686/1/html/2/images/1587051990/graphics/13fig01.gif

NEW QUESTION 12
Which WAN topology is most appropriate for a centrally located server farm with several satellite branches?

A. star
B. hub and spoke
C. point-to-point
D. full mesh

Answer: B

Explanation:
In a Hub-and-spoke Site-to-Site Wide Area Network (WAN) network topology, one physical site act as Hub (Example, Main Office), while other physical sites act as spokes. Spoke sites are connected to each other via Hub site. In Huband-spoke Wide Area Network (WAN) topology, the network communication between two

spokes always travels through the hub.

NEW QUESTION 13
Which command can you enter to determine the addresses that have been assigned on a DHCP Server?

A. Show ip DHCP database.
B. Show ip DHCP pool.
C. Show ip DHCP binding.
D. Show ip DHCP server statistic.

Answer: C

Explanation: Reference: http://www.aubrett.com/InformationTechnology/RoutingandSwitching/Cisco/CiscoRouters/ DHCPBindings.aspx
"Router#show ip dhcp binding
Bindings from all pools not associated with VRF: IP address Client-ID/ Lease expiration Type
10.16.173.1 24d9.2141.0ddd Jan 12 2013 03:42 AM Automatic"

NEW QUESTION 14
Where does a switch maintain DHCP snooping information?

A. in the CAM table
B. in the VLAN database
C. in the DHCP binding database
D. in the MAC address table

Answer: C

NEW QUESTION 17
which command can you enter to troubleshoot the failure of address assignment ?

A. sh ip dhcp database
B. sh ip dhcp pool
C. sh ip dhcp import
D. sh ip dhcp server statistics

Answer: B

NEW QUESTION 22
which functionality does split horizon provide ?

A. it Prevents routing loops in distance vector protocols
B. it Prevents switching loops in distance vector protocols
C. it Prevents switching loops in link-state protocols
D. it Prevents routing loops in link-state protocols

Answer: A

NEW QUESTION 26
which port security mode can assist with troubleshooting by keeping count of violations?

A. access.
B. protect.
C. restrict.
D. shutdown.

Answer: C

NEW QUESTION 27
Which VTP mode prevents you from making changes to VLANs?

A. server
B. off
C. client
D. transparent

Answer: C

NEW QUESTION 31
Which technology can provide security when connection multiple sites across the internet?

A. EBGP
B. DMVPN
C. Site-to-site vpn

D. MPLS

Answer: B

NEW QUESTION 36
which technology supports multiple dynamic secure connections an unsecure transport network ?

A. DMVPN
B. VPN
C. Site-to-site VPN
D. client VPN

Answer: A

NEW QUESTION 38
What command can you enter to configure the switch as an authoritative ntp server with site id : 15122473?

A. Switch(config)#ntp master 3
B. Switch(config)#ntp peer IP 193.168.2.2
C. Switch(config)#ntp server IP 193.168.22
D. Switch(config)#ntp source IP 193.168.2.2

Answer: A

NEW QUESTION 41
which configuration command can u apply to a HSRP router so that its local interface becomes active if all other routers in the group fail?

A. no additional config is required
B. standby 1 track ethernet
C. standby 1 preempt
D. standby 1 priority 250

Answer: A

NEW QUESTION 45
Which port security mode can assist with troubleshooting by keeping count of violations?

A. access.
B. protect.
C. restrict.
D. shutdown.

Answer: C

NEW QUESTION 48
which two options are the best reasons to use an ipv4 private ip space ?

A. to manage routing overhead
B. to implement nat
C. to connect applications
D. to enable intra-enterprise communication
E. to conserve global address space

Answer: AE

NEW QUESTION 50
which statement about snmpv2 is true ?

A. it requires password at least eight characters in length
B. it requires passwords to be encrypted
C. its privacy algorithms use md5 encryption by default
D. its authentic and privacy algorithms are enabled without default values

Answer: D

NEW QUESTION 53
Which Two options are features of the extended ping command?

A. it can send packets from a specified interface or ip address
B. it can resolve the destination host name
C. it can ping multiple hosts at the same time
D. it can count the number of hops to the remote host
E. it can send a specified number of packets

Answer: AE

NEW QUESTION 54
Which two statements about unique local IPv6 addresses are true?

A. They are identical to IPv4 private addresses.
B. They are defined by RFC 1884.
C. They use the prefix FEC0::/10
D. They use the prefix FC00::/7
E. They can be routed on the IPv6 global internet.

Answer: AD

NEW QUESTION 57
If you configure syslog messages without specifying the logging trap level, which log messages will the router send?

A. error conditions only
B. warning and error conditions only
C. normal but significant conditions only
D. all levels except debugging
E. informational messages only

Answer: E

NEW QUESTION 58
What are three advantages of vlans ?

A. They provide a method of conserving ip addresses in large networks
B. They provide a low latency internetworking alternative to routed networks
C. they utilize packet filtering to enhance network security
D. They establish broadcast domains in switched networks
E. They allow access to network services based on department not physical localtion
F. They can simplify adding moving or changing hosts on the network

Answer: DEF

NEW QUESTION 63
Which two command can you enter to display the current time sources statistics on devices ? (Choose TWO)

A. Show ntp associations.
B. Show clock details.
C. Show clock.
D. Show time.
E. Show ntp status.

Answer: AE

NEW QUESTION 65
To enable router on a stick on a router subinterface, which two steps must you perform ? choose two

A. configure full duplex and speed
B. configure a default to route traffic between subinterfaces
C. configure the subinterface with an ip address
D. configure encapsulation dot1q
E. configure an ip route to the vlan destination network

Answer: CD

NEW QUESTION 70
which layer of the osi model does PPP perform ?

A. Layer 2
B. Layer 3
C. Layer 5
D. Layer 1

Answer: A

NEW QUESTION 74
Which options are requirements for configuring RIPv2 on an IPv4 network router? (Choose two.)

A. enabling RIP on the router
B. allowing unicast updates for RIP
C. enabling RIP authentication
D. connecting RIP to a WAN interface
E. enabling automatic route summarrization

Answer:

AB

NEW QUESTION 79
Which type of attack can be mitigated by configuring the default native vlan to be unused ?

A. swich spoofing
B. cam table overflow
C. vlan hopping
D. MAC spoofing

Answer: C

NEW QUESTION 82
Which configuration command can you apply to a router so that its local interface becomes active if all other routers in the group fail?

A. Router(config)#standby 1 preempt
B. No additional configuration is required
C. Router(config)#standby 1 Priority 250
D. Router(config)#standby 1 track Ethernet

Answer: A

NEW QUESTION 86
which feature must you enable to distribute vlans automatically across multiple switch ?

A. configure NTP
B. Configure the native VLAN
C. Define Each vlan
D. configure VTP

Answer: D

NEW QUESTION 91
Which 2 statements about extended traceroute command is true?

A. it can send packets from specified interface or ip address
B. it can use a specified TTL value.
C. it can validate the reply data.
D. it can use a specificed TOS.
E. it can repeated automatically to a specified interval.

Answer: AB

Explanation: Reference:
http://www.cisco.com/c/en/us/support/docs/ip/routing-information-protocol-rip/13730-extpingtrace.
html#ext_troute
"This table lists the traceroute command field descriptions:
Source address: The interface or IP address of the router to use as a source address for the probes. The router normally picks the IP address of the outbound interface to use.
Minimum Time to Live [1]: The TTL value for the first probes. The default is 1, but it can be set to a higher value to suppress the display of known hops.
Maximum Time to Live [30]: The largest TTL value that can be used. The default is 30. The traceroute command terminates when the destination is reached or when this value is reached.

NEW QUESTION 93
Refer to the exhibit.

```
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C     192.168.12.0/24 is directly connected, FastEthernet0/0
C     192.168.13.0/24 is directly connected, FastEthernet0/1
C     192.168.14.0/24 is directly connected, FastEthernet1/0
      192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O        192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O        192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O        192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D        192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2  0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

If R1 receives a packet destined to 172.16.1.1, to which IP address does it send the packet ?

A. 192.168.14.4
B. 192.168.12.2
C. 192.168.13.3
D. 192.168.15.5

Answer: A

NEW QUESTION 94
What type of MAC address is aged automatically by the switch?

A. Dynamic
B. Manual
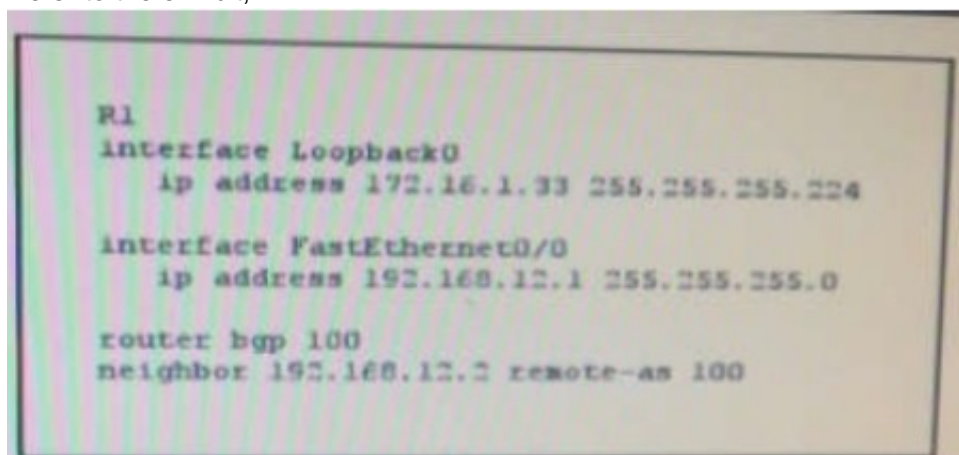C. Automatic
D. Static

Answer: A

Explanation: Reference:
http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus5000/sw/configuration/guide/cli/CLIConfigurationGuide/MACAddress.htm

NEW QUESTION 95
Refer to the exhibit,

```
R1
interface Loopback0
    ip address 172.16.1.33 255.255.255.224

interface FastEthernet0/0
    ip address 192.168.12.1 255.255.255.0

router bgp 100
neighbor 192.168.12.2 remote-as 100
```

which command do you enter so that R1 advertises the loopback0 interface to the BGP peers?

A. network 172.16.1.32 mask 255.255.255.224
B. network 172.16.1.0 0.0.0.255
C. network 172.16.1.32 255.255.255.224
D. network 172.16.1.33 mask 255.255.255.224
E. network 172.16.1.32 mask 0.0.0.31
F. network 172.16.1.32 0.0.0.31

Answer: A

NEW QUESTION 100
While troubleshooting a connection problem on a computer, you determined that the computer can ping a specific web server but it cannot connect to TCP port 80 on that server. Which reason for the problem is most likely true?

A. A VLAN number is incorrect.
B. A Route is missing
C. An ARP table entry is missing.
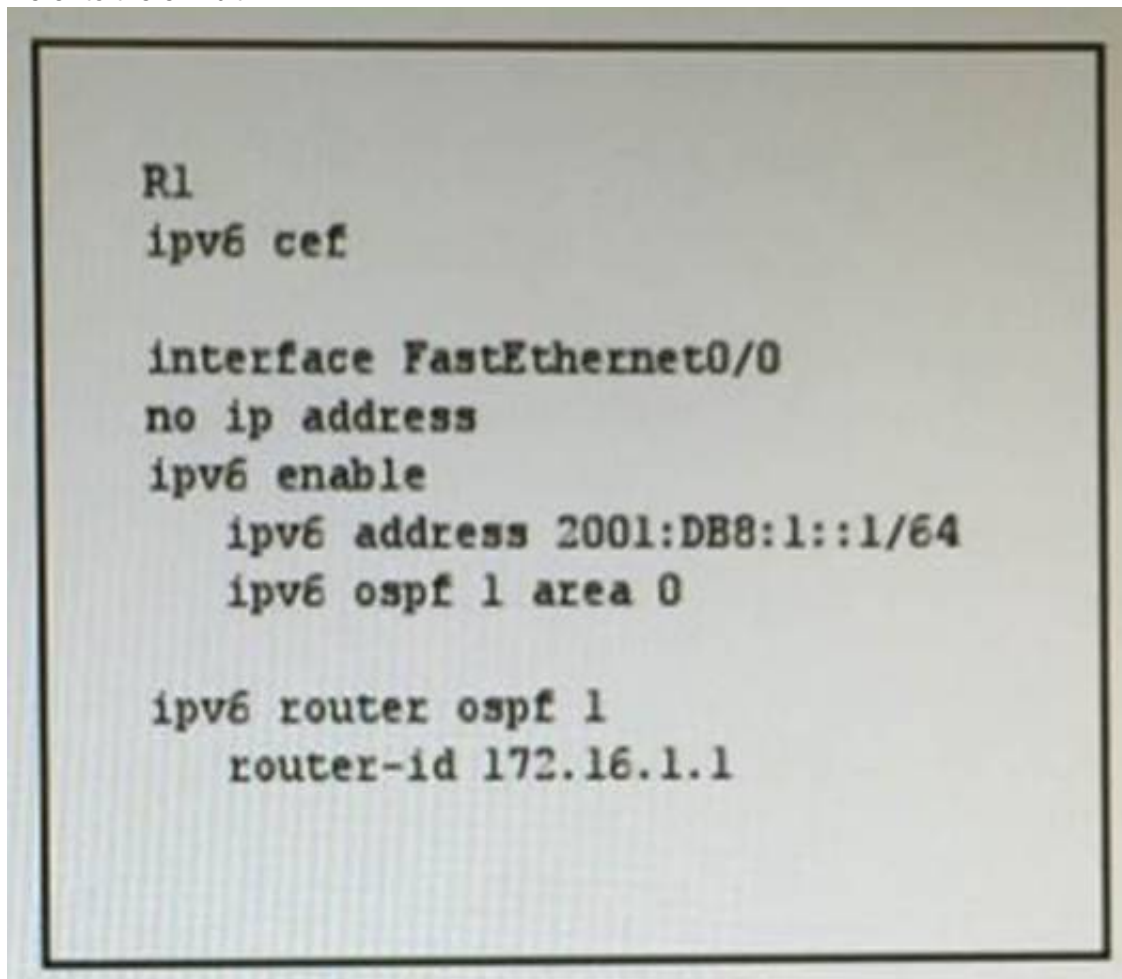D. An ACL is blocking the TCP port.

Answer: D

NEW QUESTION 104
Which option is the master redundancy scheme for stacked switches?

A. 1:N
B. 1:1
C. N:1
D. 1+N

Answer: A

NEW QUESTION 106
Refer to the exhibit.


```
R1
ipv6 cef

interface FastEthernet0/0
no ip address
ipv6 enable
    ipv6 address 2001:DB8:1::1/64
    ipv6 ospf 1 area 0

ipv6 router ospf 1
    router-id 172.16.1.1
```

After you apply the given configuration to R1, you notice that it failed to enable OSPF
Which action can you take to correct the problem?

A. Configure a loopback interface on R1
B. Enable IPv6 unicast routing on R1.
C. Configure an IPv4 address on interface F0/0.
D. Configure an autonomous system number on OSPF.

Answer: C

NEW QUESTION 108
which two statements about data vlans on access ports are true ?

A. they can be configured as trunk ports
B. 802.1Q encapsulation must be configured on the interface
C. Exactly one vlan can be configured on the interface
D. Two or more vlans can be configured on the interface
E. They can be configured as host ports

Answer: CE

NEW QUESTION 112
Which option is the main function of congestion management ?

A. providing long term storage of buffered data
B. queuing traffic based on priority
C. discarding excess traffic
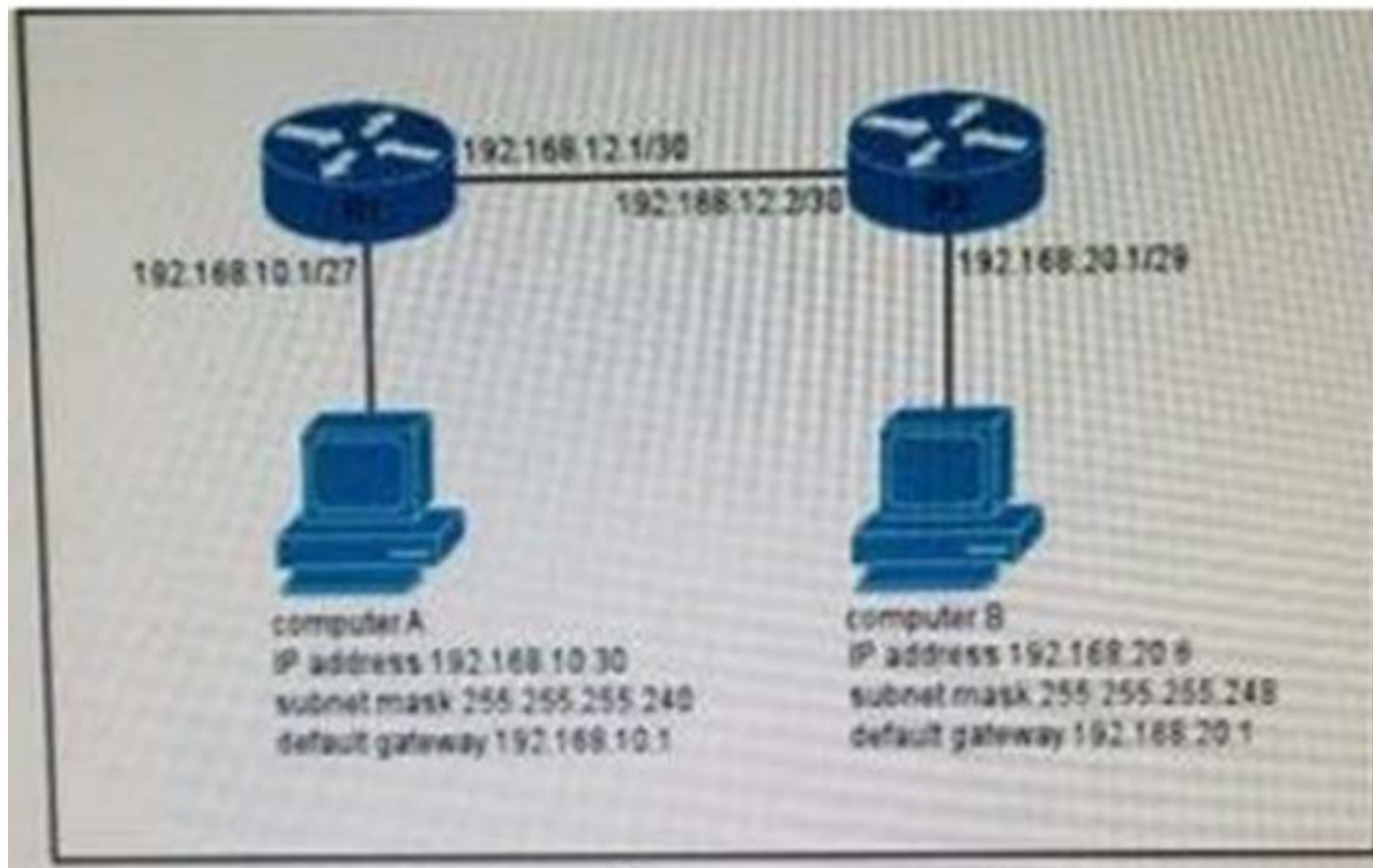D. classifying traffic

Answer: B

NEW QUESTION 115
ABPDU guard is configured on an interface that has PortFast Enable. Which state does the interface enter when it recives a BPDU?

A. Blocking.
B. Shutdown.
C. Listening.
D. Errdisable.

Answer: D

NEW QUESTION 117
Refer to the exhibit,

you determine that Computer A cannot ping Computer
Which reason for the problem is most likely true?

A. The Subnet mask for Computer A is incorrect
B. The subnet mask for computer B is incorrect
C. The default gateway address for Computer A is incorrect.
D. The default gateway address for computer B is incorrect.

Answer: A

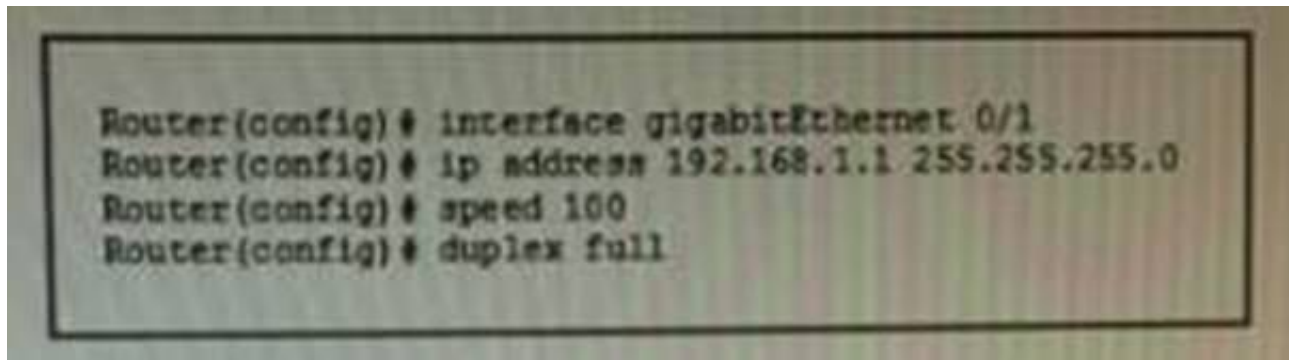**Explanation:**
255.255.255.224 =/27

NEW QUESTION 122
which value indicate the distance from the ntp authoritative time source?

A. Priority
B. Location
C. layer
D. Stratum

Answer: D

NEW QUESTION 125

Refer to exhibit.


```
Router(config)# interface gigabitEthernet 0/1
Router(config)# ip address 192.168.1.1 255.255.255.0
Router(config)# speed 100
Router(config)# duplex full
```

Which command can you enter to verify link speed and duplex setting on the interface?

A. router#show ip protocols
B. router#show startup-config
C. router#show line
D. router#show interface gig 0/1

Answer: D

NEW QUESTION 128
Which value is used to determine the active router in an HSRP default configuration ?

A. router tracking number
B. router IP address
C. router priority
D. router loopback address

Answer: C

NEW QUESTION 133
which command can you enter to create a NAT Pool of 6 addresses ?

A. Router(config)#ip nat pool test 175.17.12.69 175.17.12.74 prefix-length 24
B. Router(config)#ip nat pool test 175.17.12.66 175.17.12.72 prefix-length 8
C. Router(config)#ip nat pool test 175.17.12.69 175.17.12.74 prefix-length 16
D. Router(config)#ip nat pool test 175.17.12.69 175.17.12.76 prefix-length 8

Answer: B

NEW QUESTION 134
Refer to the exhibit:
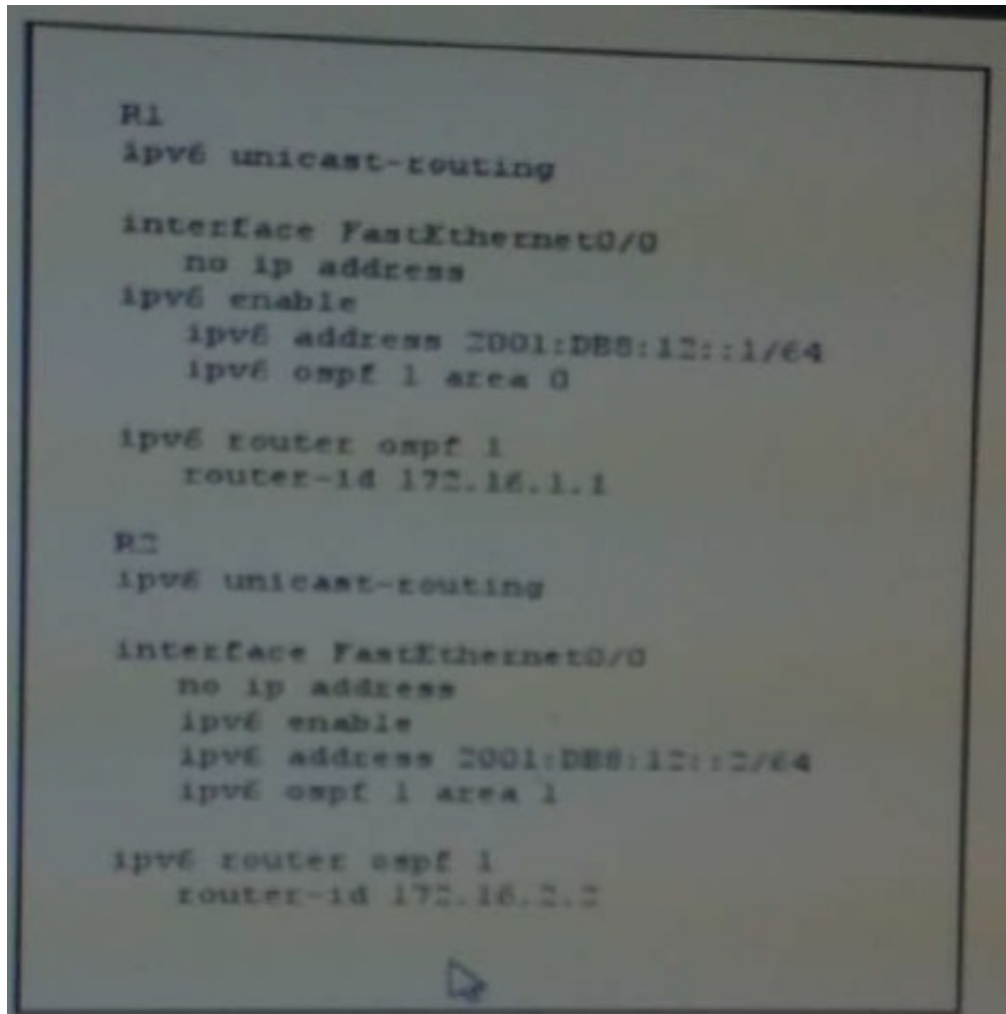
after you apply the give configurations to R1 and R2 you notice that OSPFv3 fails to start
Which reason for the problem is most likely true ?

A. The area numbers on R1 and R2 are mismatched
B. The IPv6 network addresses on R1 and R2 are mismatched
C. The autonomous system numbers on R1 and R2 are mismatched
D. The router ids on R1 and R2 are mismatched

Answer: A

NEW QUESTION 136
Under normal operations, cisco recommends that you configure switch ports on which vlan ?

A. on the default vlan
B. on the management vlan
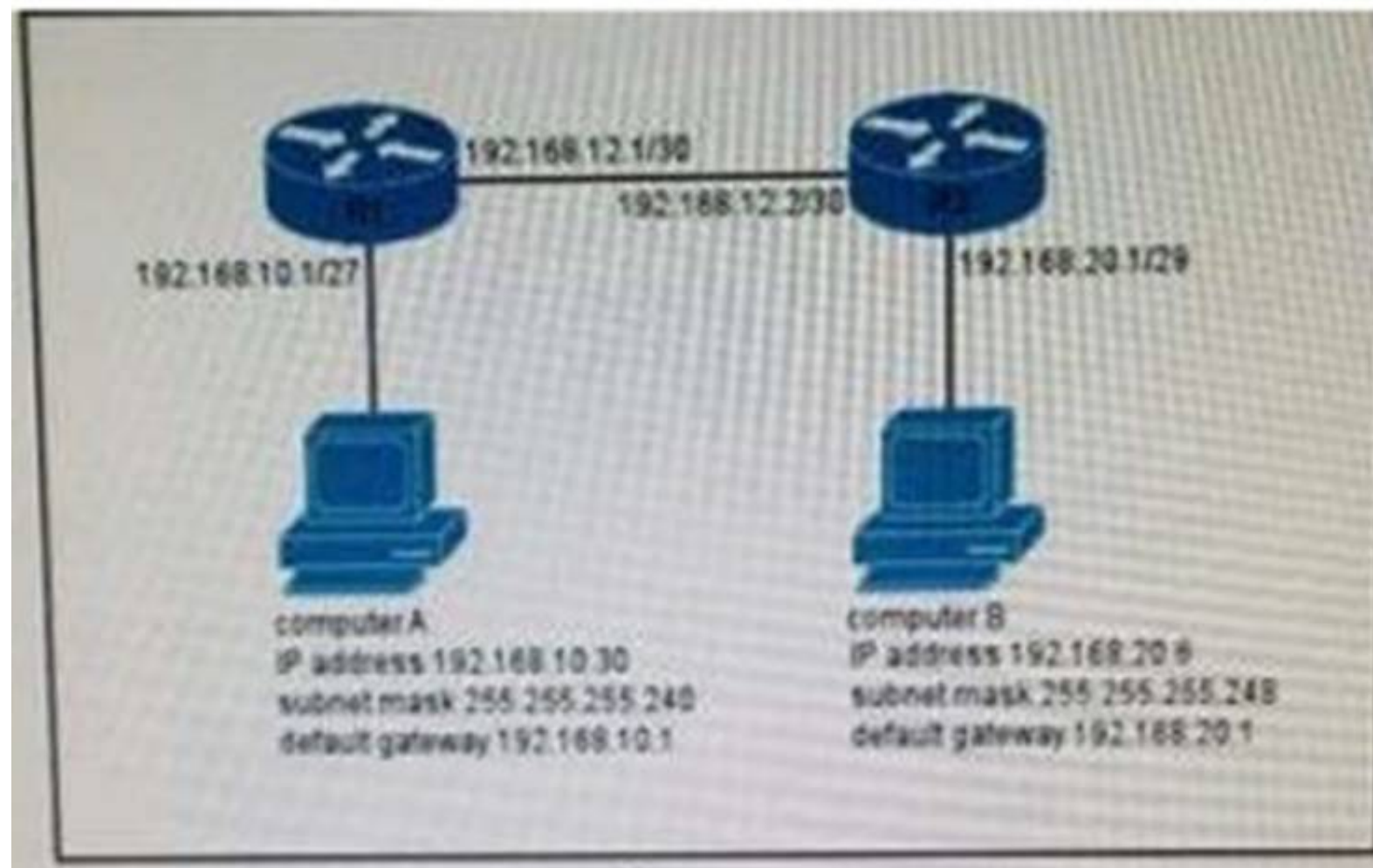C. on the native vlan
D. on any vlan except the default vlan

Answer: D

Explanation: Reference:
http://www.cisco.com/c/en/us/support/docs/switches/catalyst-6500-series-switches/24330-185.html

NEW QUESTION 139
Refer to the exhibit, you determine that Computer A cannot ping Computer Which reason for the problem is most likely true?

you determine that Computer A cannot ping Computer. Which reason for the problem is most likely true?

A. The Subnet mask for Computer A is incorrect.
B. The default gateway address for Computer A is incorrect.
C. The subnet mask for computer B is incorrect.
D. The default gateway address for computer B is incorrect.

Answer: A

Explanation: 255.255.255.224 =/27

NEW QUESTION 143
which two statements about vtp are true ?

A. all switches must be configured with the same VTP domain name
B. all switches must be configured with a unique vtp domain name
C. all switches must be configured to perform trunk negotiation
D. all switches must use the same VTP Version
E. The VTP Server must have the highest revision number in the domain

Answer: AD

NEW QUESTION 146
Which major component of the network virtualization architecture isolates users according to policy?

A. network services virtualization
B. access control.
C. path isolation
D. policy enforcement

Answer: A

NEW QUESTION 148
Which header field is new in IPv6?

A. Hop Limit
B. Flow Label
C. Version
D. Traffic Class

Answer: A

NEW QUESTION 153
which six-byte field in a basic ethernet frame must be an individual address ?

A. FCS
B. SOF
C. SA
D. DA

Answer: C

NEW QUESTION 157
Which two statements about MPLS are true?

A. it encapsulates all traffic in an ipv4 header
B. it provides automatic authentication
C. it uses labels to separate and forward customer traffic
D. it can carry multiple protocols, including ipv4 and ipv6
E. it tags customer traffic using 802.1q

Answer: CD

NEW QUESTION 162
Which definition of default route is true?

A. A route that is manually configured.
B. A route used when a destination route is missing.
C. A route to the exact /32 destination address
D. Dynamic route learned from the server.

Answer: C

NEW QUESTION 164
Which two statements about firewalls are true ?

A. They can be used with an intrusion prevention system.
B. They can limit unauthorized user access to protect data.
C. Each wireless access point requires its own firewall.
D. They must be placed only at locations where the private network connects to the internet.
E. They can prevent attacks from the internet only.

Answer: AB

NEW QUESTION 167
What is true about Cisco Discovery Protocol ?

A. it discovers the routers, switches and gateways.
B. it is network layer protocol
C. it is physical and data link layer protocol
D. it is Cisco proprietary protocol

Answer: D

NEW QUESTION 169
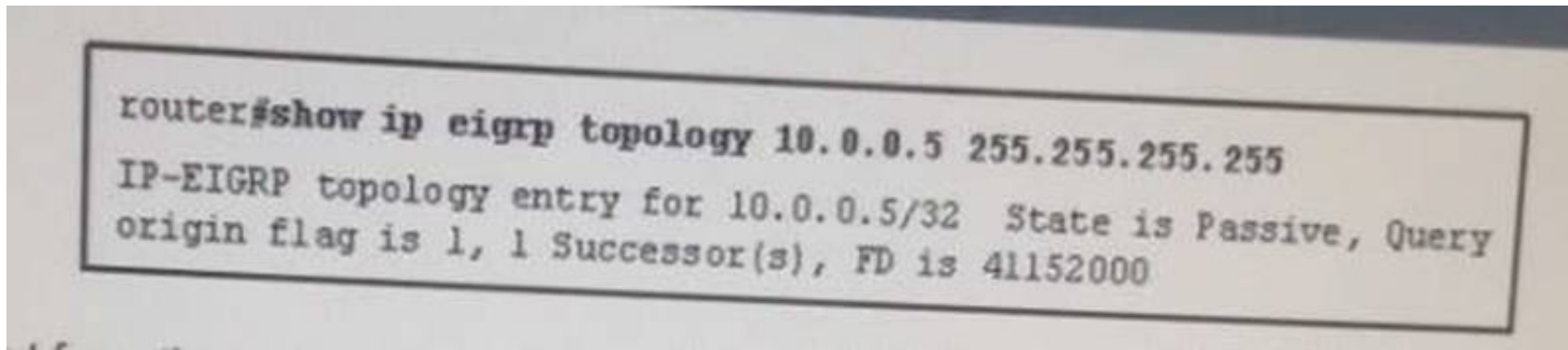which command can you enter in a network switch configuration so that learned mac addresses are saved in configuration as they connect ?

A. Switch(config-if)#Switch port-security
B. Switch(config-if)#Switch port-security Mac-address sticky
C. Switch(config-if)#Switch port-security maximum 10
D. Switch(config-if)#Switch mode access

Answer: B

NEW QUESTION 170
Refer to the exhibit.

```
router#show ip eigrp topology 10.0.0.5 255.255.255.255

IP-EIGRP topology entry for 10.0.0.5/32   State is Passive, Query
origin flag is 1, 1 Successor(s), FD is 41152000
```

Given the output from the show ip eigrp topology command, which router is the feasible successor?

A. 10.1.0.1 (Serial0), from 10.1.0.1, Send flag is 0x0 Composite metric is (46152000/41640000), Route is Internal Vector metric:Minimum bandwidth is 64 Kbit Total delay is 45000 Microseconds Reliability is 255/255Load is 1/255 Minimum MTU is 1500 Hop count is 2
B. 10.0.0.2 (Serial0.1), from 10.0.0.2, Send flag is 0x0 Composite metric is (53973248/128256), Route is Internal Vector Metric:Minimum bandwidth is 48 Kbit Total delay is 25000 Microseconds Reliability is 255/255Load is 1/255 Minimum MTU is 1500 Hop count is 1
C. 10.1.0.3 (Serial0), from 10.1.0.3, Send flag is 0x0 Composite metric is (46866176/46354176), Route is Internal Vector metric:Minimum bandwidth is 56 Kbit Total delay is 45000 microseconds Reliability is 255/255Load is 1/255 Minimum MTU is 1500 Hop count is 2
D. 10.1.1.1 (Serial0.1), from 10.1.1.1, Send flag is 0x0Composite metric is (46763776/46251776), Route is External Vector metric:Minimum bandwidth is 56 Kbit Total delay is 41000 microseconds Reliability is 255/255Load is 1/255 Minimum MTU is 1500 Hop count is 2

Answer: B

NEW QUESTION 172
Which networking Technology is currently recognized as the standard for computer networking?

A. System network architecture
B. Transmission control protocol/Internet protocol
C. Open system Interconnect
D. Open network architecture

Answer: B

NEW QUESTION 173
Which two statements about TACACS+ are true? (Choose two.)

A. It can run on a UNIX server.
B. It authenticates against the user database on the local device.
C. It is more secure than AAA authentication.
D. It is enabled on Cisco routers by default.
E. It uses a managed database.

Answer: AE

NEW QUESTION 178
Which two protocols can detect native vlan mismatch errors?

A. STP
B. Cisco Discovery Protocol
C. VTP
D. DTP
E. PAgP

Answer: BC

NEW QUESTION 182
which value must you configure on a device beforee EIGRP For IPV6 Can start Running ?

A. Process ID
B. Router ID
C. Public IP Address
D. Loopback interface

Answer: B

NEW QUESTION 187
Which address block identifies all link-local address

A. fc00::/7
B. fc00::/8
C. fe80::/10

Answer: C

NEW QUESTION 188
If three devices are plugged into one port on a switch and two devices are plugged into a different port, how many collision domains are on the switch?

A. 2
B. 4
C. 5
D. 6

Answer: C

NEW QUESTION 191
Which two steps must you perform on each device that is configured for ipv4 routing before you implement OSPFv3? (chooose two)

A. configure an autonomous system number
B. configure a loopback interface
C. configure a router ID
D. enable IPv6 on an interface
E. enable IPv6 unicast routing

Answer: CE

NEW QUESTION 192
Which statement about recovering a password on a cisco router is true ?

A. it requires physical access to the router
B. the default reset password is cisco
C. a factory reset is required if you forget the password
D. it requires a secure SSL/VPN connection

Answer: A

NEW QUESTION 196
Which DTP switch port mode allows the port to create a trunk link if the neighboring port is in trunk mode, dynamic desirable mode, or desirable auto mode?

A. trunk
B. access
C. dynamic desirable
D. dynamic auto

Answer: C

NEW QUESTION 197
Which function allows EIGRP peers to receive notice of implementing topology changes?

A. successors
B. advertised changes
C. goodbye messages
D. expiration of the hold timer

Answer: C

NEW QUESTION 198
Which statement about upgrading a cisco ios device with TFTP is True ?

A. The Cisco IOS device must be on the same lan as the TFTP server
B. The operation is performed in passive mode
C. The operation is performed in an unencrypted format
D. The operation is performed in active mode

Answer: A

NEW QUESTION 201
Which statement about spanning tree root bridge election is true ?

A. every root bridge must reside on the root switch
B. it is always performed automatically
C. every VLAN must use the same root bridge
D. Each VLAN must have its own root bridge

Answer: D

NEW QUESTION 206
When a router is unable to find a known route in the routing table, how does it handle the packet?

A. It discards the packet
B. It sends the packet over the route with the best metric
C. It sends the packet to the next hop address
D. It sends the packet to the gateway of last resort

Answer: D

NEW QUESTION 211
Which MAC protocol sets a random timer to reattempt communication?

A. IEEE 802.1x
B. RARP
C. CSMA/CA
D. CSMA/CD

Answer: D

NEW QUESTION 216
What is the benefit of point-to-point leased line ?

A. Low cost
B. Full-mesh capability
C. Flexibillity of design
D. Simply configuration

Answer: D

NEW QUESTION 220
Drag each IPv6 prefix on the left to its use on the right.

FF02::1	all EIGRPv6 routers
FF02::5	all link-local nodes on a segment
FF02::6	all OSPFv3 routers
FF02::A	all PIM routers
FF02::D	all site-local routers
FF05::2	OSPFv3 designated routers

Answer:

Explanation: FF02::1 = All link-local nodes on a segment FF02::5 = all OSPFv3 routers
FF02::6 = OSPFv3 designated routers FF02::A = all EIGRPv6 routers FF02::D = All PIM routers
FF05::2 = all site local routers

NEW QUESTION 224
Where does the configuration reside when a helper address is configured to support DHCP ?

A. on the switch trunk interface.
B. on the router closest to the client.
C. on the router closest to the server.
D. on every router along the path.

Answer: B

NEW QUESTION 227
which NTP type designates a router without an external referee clock as an authoritative time source ?

A. Client
B. Server
C. peer
D. master

Answer: D

NEW QUESTION 230
Which VTP mode prevents you from making changes to vlans?

A. Server.
B. Client.
C. Transparent.
D. Off

Answer: B

Explanation:
VTP Client
· VTP clients function the same way as VTP servers, but you cannot create, change, or delete VLANs on a VTP client.
· A VTP client only stores the VLAN information for the entire domain while the switch is on.
· A switch reset deletes the VLAN information.
· You must configure VTP client mode on a switch.

NEW QUESTION 233
Which three describe the reasons large OSPF networks use a hierarchical design? (Choose Three)

A. to speed up convergence
B. to reduce routing overhead
C. to lower costs by replacing routers with distribution layer switches
D. to decrease latency by increasing bandwidth
E. to confine network instability to single areas of the network
F. to reduce the complexity of router configuration

Answer: ABE

NEW QUESTION 234
Which type of cable must you use to connect two device with mdi interfaces ?

A. rolled
B. crosseover
C. crossed
D. straight through

Answer: C

NEW QUESTION 239
When is a routing table entry identified as directly connected?

A. when the local router is in use as the network default gateway
B. when the network resides on a remote router that is physically connected to the local router
C. when an interface on the route is configure with an ip address and enabled
D. when the route is statically assigned to reach a specific network

Answer: C

NEW QUESTION 244
While troubleshooting a DCHP client that is behaving erratically, you discover that the client has been assigned the same IP address as a printer that is a staticIP address. Which option is the best way to resolve the problem?

A. Configure static route to the client.
B. Assign the client the same IP address as the router.
C. Move the client to another IP subnet
D. Move the printer to another IP subnet.
E. Reserve the printer IP address.

Answer: E

NEW QUESTION 247
which command can you enter to re enable cisco discovery protocol on a local router after it has been disabled ?

A. Router (config)# cdp run
B. Router (config-if)# cdp run
C. Router (config)# cdp enable
D. Router (config-if)# cdp enable

Answer: A

NEW QUESTION 248
Which type of secure MAC address must be configured manually?

A. static
B. dynamic
C. sticky
D. bia

Answer: A

NEW QUESTION 253
Which RPVST+ port state is excluded from all STP operations?

A. learning
B. forwarding
C. blocking
D. disabled

Answer: D

NEW QUESTION 257
Refer to the exhibit.


```
RTR01(config #router eigrp 103
RTR01(config-router)#network 10.4.3.0
RTR01(config-router)#network 172.16.4.0
RTR01(config-router)#network 192.168.2.0
RTR01(config-router)#auto-summary
```
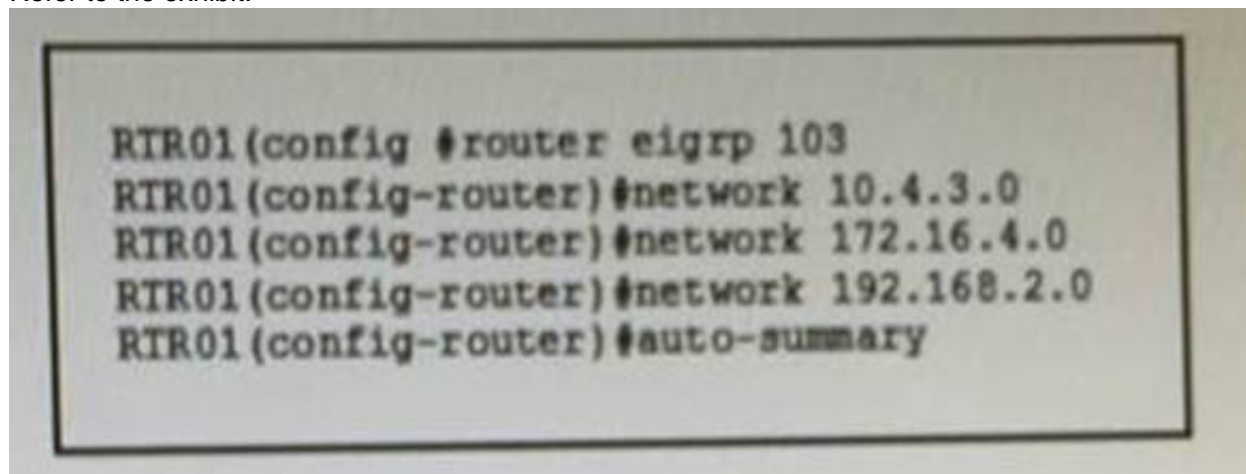
If RTR01 as configured as shown, which three addresses will be received by other routers that are running EIGRP on the network? (Choose three.)

A. 172.16.4.0
B. 10.0.0.0
C. 172.16.0.0
D. 192.168.2.0
E. 192.168.0.0
F. 10.4.3.0

Answer: ACD

NEW QUESTION 259
Which three options are the major components of a network virtualization architecture? (Choose three.)

A. virtual network services
B. authentication services
C. network access control
D. network resilience
E. path isolation
F. policy enforcement

Answer: ACE

NEW QUESTION 263
Under which circumstance is a router on a stick most appropriate?

A. When the router must route a single across multiple physical links.
B. When the router must route multiple subnets across multiple physical links.
C. When the router must route a single across single physical links.
D. When the router must route multiple subnets across single physical links.

Answer: B

NEW QUESTION 267
Which action can change the order of entries in a named access list?

A. opening the access list in Notepad.
B. resequercing
C. removing an entry
D. adding an entry

Answer: B

NEW QUESTION 270

How many bits represent network id in a IPv6 address?

A. 32
B. 48
C. 64
D. 128

Answer: C

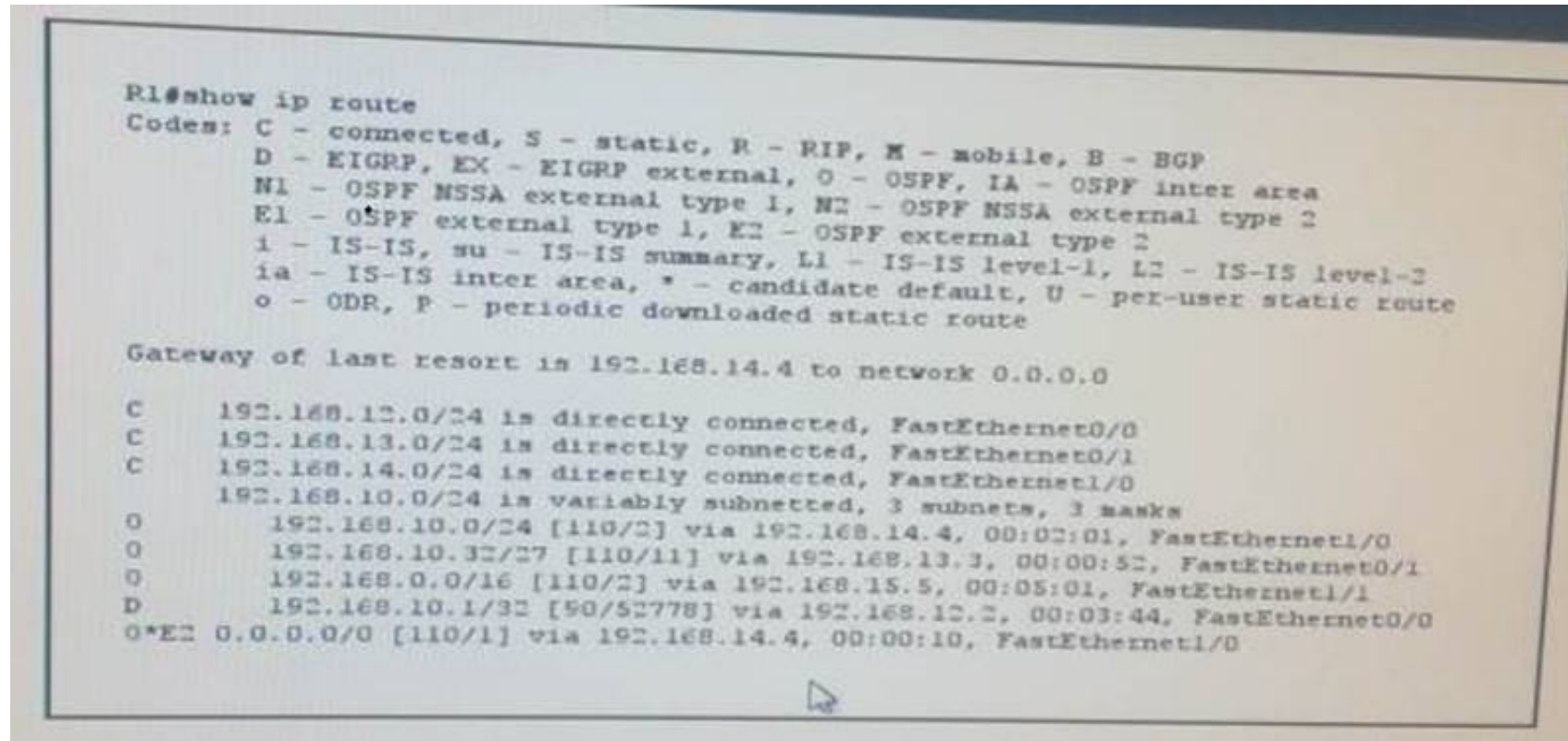**Explanation:** http://networkengineering.stackexchange.com/questions/30836/calculate-networking-bits-for-ipv6
64 bits for Network ID and 64 bits for Interface ID 64+64=128

NEW QUESTION 273
Refer to the exhibit.


```
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
C    192.168.13.0/24 is directly connected, FastEthernet0/1
C    192.168.14.0/24 is directly connected, FastEthernet1/0
     192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

IF R1 sends traffic to 192.168.101.45 the traffic is sent through which interface?

A. FastEthernet0/1
B. FastEthernet0/0
C. FastEthernet1/0
D. FastEthernet1/1

Answer: C

NEW QUESTION 276
which three options are fields in a basic ethernet data frame ?

A. preamble
B. time to live
C. version
D. header checksum
E. length type
F. frame check sequence

Answer: AEF

NEW QUESTION 278
which WAN topology provides a direct conntection from each site to all other sites on the network ?

A. single-homed
B. full mesh
C. point-to-point
D. hub-and-spoke

Answer: B

NEW QUESTION 283
How does a router handle an incoming packet whose destination network is missing from the routing table?

A. it discards the packet.
B. it broadcasts the packet to each network on the router.
C. it routes the packet to the default route.
D. it broadcasts the packet to each interface on the router.

Answer: C

NEW QUESTION 287
Which statement about IPv6 link-local addresses is true ?

A. they must be configured on all IPv6 interface
B. They must be globally unique
C. They must be manually configured
D. They are advertised globally on the network

Answer: B

NEW QUESTION 289
Which Command can you enter on a switch to display the ip address associated with connected devices?

A. Show cdp neighbors
B. Show cdp neighbors detail
C. show cdp traffic
D. show cdp interface

Answer: B

NEW QUESTION 293
Which two statements about IPv6 address 2002:ab10:beef::/48 are true?(choose two)

A. The embedded IPv4 address can be globally routed.
B. It is used for an ISATAP tunnel
C. The embedded IPv4 address is an RFC 1918 address
D. The MAC address 20:02:b0:10:be:ef is embedded into the IPv6 address
E. It is used for a 6to4 tunnel

Answer: AE

NEW QUESTION 295
DRAG DROP

Answer:

Explanation:

Topic 2, New Pool Exam B

NEW QUESTION 297
In which two circumstances are private IPv4 addresses appropriate? (Choose two)

A. on internal hosts that stream data solely to external resources
B. on hosts that communicates only with other internal hosts
C. on the public-facing interface of a firewall
D. on hosts that require minimal access to external resources
E. to allow hosts inside an enterprise to communicate in both directions with hosts outside the enterprise

Answer: AB

NEW QUESTION 300
What is the most efficient subnet mask for a point to point ipv6 connection?

A. /127
B. /128
C. /64
D. /48
E. /32

Answer: B

Explanation: ref : https://tools.ietf.org/html/rfc6164

NEW QUESTION 304
You have configured the host computers on a campus LAN to receive their DHCP addresses from the local router to be able to browse their corporate site. Which statement about the network environment is true?

A. It supports a DNS server for use by DHCP clients.
B. Two host computers may be assigned the same IP address.
C. The DNS server mustbe configured manually on each host.
D. The domain name must be configured locally on each host computer.

Answer: A

NEW QUESTION 305
Which set of conditions comprises a successful ping attempt between two connected routers configured with IP addresses on the same subnet?

A. The destination host receives an echo reply from the source host within one second and the source host receives an echo request from the destination host.
B. The destination host receives an echo request from the source host within one second.
C. The destination host receives an echo replyfrom the source host within one second and the source host receives an echo reply from the destination host within two seconds.
D. The destination host receives an echo request from the source host and the source host receives an echo request from the destination host within one second.
E. The destination host receives an echo request from the source host and the source host receives an echo reply from the destination host within two seconds.

Answer: E

NEW QUESTION 307
Which Ethernet interface command is present when you boot a new Cisco router for the first time?

A. speed 100
B. shutdown
C. ip address 192.168.1.1 255.255.255.0
D. duplex half

Answer: B

NEW QUESTION 311
Which IPv6 routing protocol uses multicast group FF02::9 to send updates?

A. static
B. RIPng
C. OSPFv3
D. IS-IS for IPv6

Answer: B

NEW QUESTION 313
Which two statements about fiber cable are true? (Choose two)

A. Single-mode fiber supports SC and LC connectors only.
B. Multimode cable supports speeds between 100 Mbps and 9.92 Gbps.
C. Single-mode cable is most appropriate for installations longer than 10 km.
D. Fiber cable is relatively inexpensive and supports a higher data rate than coaxial cable.
E. Mulitimode cable supports speeds between 100 Mbps and 100 Gpbs.

Answer: CD

NEW QUESTION 316
How does a Cisco switch respond if you boot it without a valid configuration in the NVRAM?

A. it enters setup mode.
B. it uses the running –configuration
C. It prompts you to restore the startup configuration
D. it enters user EXEC mode.

Answer: B

NEW QUESTION 319
Which APIC-EM tool allows an administrator to verify ACLs throughout the network?

A. Cisco Intelligent WAN application
B. traceroute
C. Network Topology

D. Path Trace

Answer: D

Explanation: One of the most important features of the APIC-EM controller is the capability to manage policies across the entire network. APIC-EM ACL Analysis and Path Trace provide tools to allow the administrator to analyze and understand ACL policies and configurations. Administrators are hesitant to change ACLs, for fear of breaking them and causing new problems. Together, ACL Analysis and Path Trace enable the administrator to easily visualize traffic flows and discover any conflicting, duplicate, or shadowed ACL entries.

NEW QUESTION 320
After you configure a new router to connect to a host through the GigabitEthernet0/0 port of the router, you log in to the router and observe that the new link is down. Which action corrects the problem?

A. Use a crossover cable between the host and R1.
B. Use a straight through cable between the host and R1.
C. Configure the host to use R1 as the default gateway.
D. Use a rollover cable between the host and R1.

Answer: A

NEW QUESTION 323
Which command do you enter to enable an interface to support PPPoE on a client?

A. Dev1(config)# bba-group pppoe bba1
B. Dev1(config-if)# pppoe-client dial-pool-number1
C. Dev1(config-if)# pppoe enable group bba1
D. Dev1(config-if)# pppoe enable

Answer: D

NEW QUESTION 327
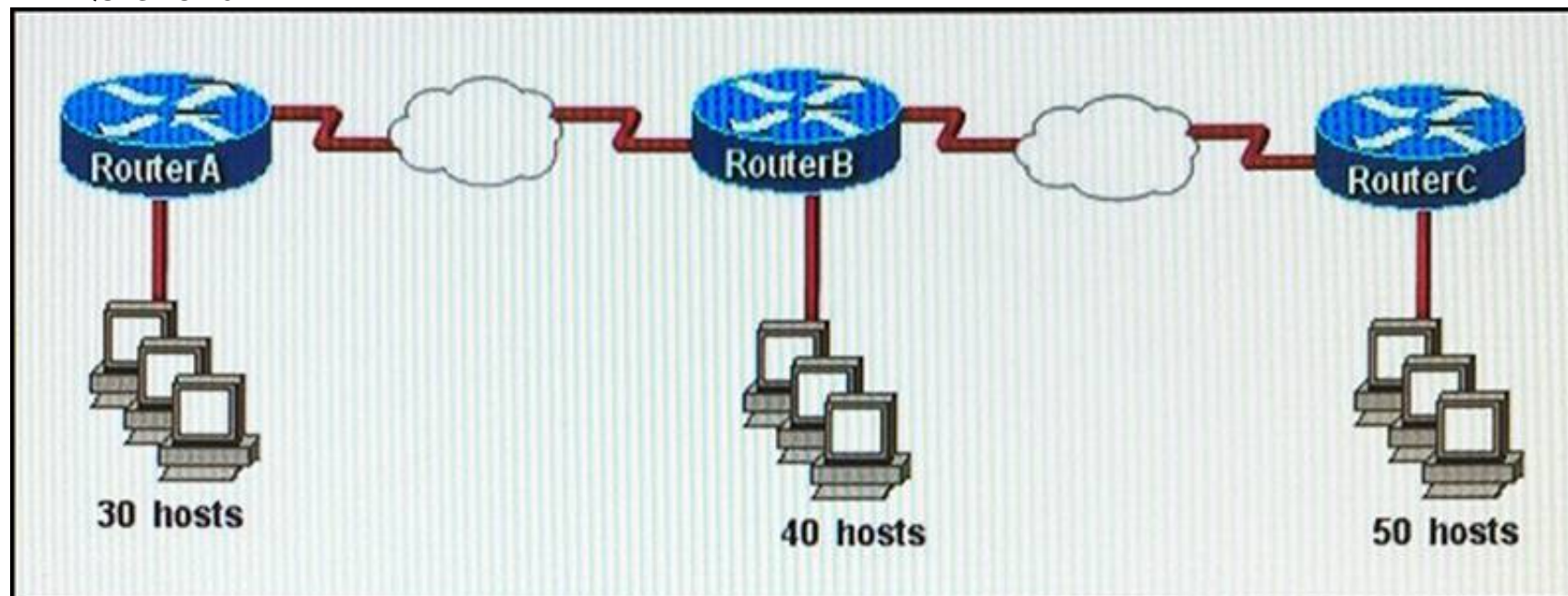
Refer to the exhibit. The enterprise has decided to use the network address 172.16.0.0. The network administrator needs to design a classful addressing scheme to accommodate the three subnets, with 30, 40, and 50 hosts, as shown. Which subnet mask would accommodate this network?

A. 255.255.255.224
B. 255.255.255.240
C. 255.255.255.252
D. 255.255.255.248
E. 255.255.255.192

Answer: E

NEW QUESTION 328
Refer to the exhibit.
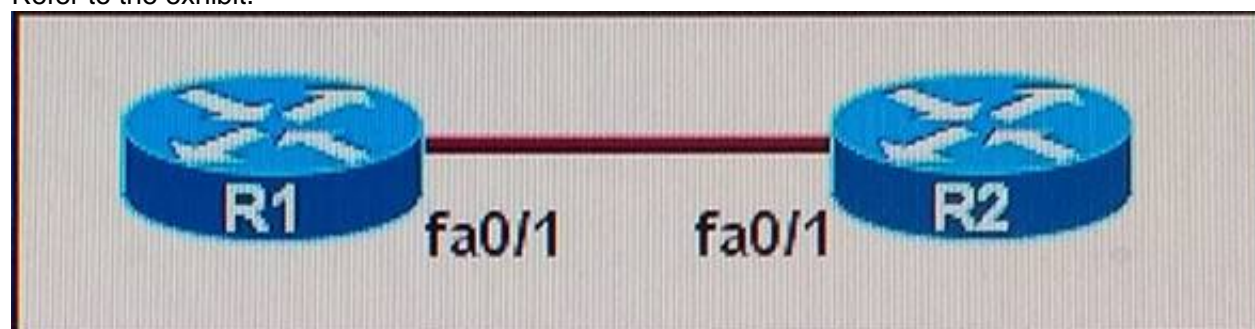
The two routers have had their startup configurations cleared and have been restarted. At a minimum, which option below must the administrator do to enable CDP to exchange information between R1 and R2?

A. Configure the router with thecdp enablecommand.
B. Configure IP addressing andno shutdowncommands on both the R1 and R2 fa0/1 interfaces.

C. Configure IP addressing and no shutdown commands on either of the R1 or R2 fa0/1 interfaces.
D. Enter no shutdown commands on the R1 and R2 fa0/1 interfaces.

Answer: D

NEW QUESTION 331
If a host experiences intermittent issues that relate to congestion within a network while remaining connected, which option could cause congestion on this LAN?

A. multicasting
B. network segmentation
C. broadcast storms
D. half-duplex operation

Answer: C

NEW QUESTION 336
Which adverse situation can occur if an Ethernet cable is too long?

A. late collisions
B. giants
C. interface resets
D. runts

Answer: A

NEW QUESTION 340
Which three checks must you perform when troubleshooting EIGRPv6 adjacencies? (Choose three.)

A. Verify that IPv6 enabled.
B. Verify that the network command has been configured.
C. Verify that auto summary is enabled.
D. Verify that the interface is up.
E. Verify that an IPv4 address has been configured.
F. Verify that the router ID has been configured.

Answer: ADF

NEW QUESTION 344
Which statement about VLAN configuration is true?

A. The switch must be in config-vlan mode before you configure an extended VLAN.
B. Dynamic inter-VLAN routing is supported on VLAN 2 through VLAN 4064.
C. A switch in VTP transparent mode saves the VLAN database to the running configuration only.
D. The switch must be in VTP server or transparent mode before you configure a VLAN.

Answer: D

NEW QUESTION 349
Which network configuration can you use to segregate broadcast traffic for two different departments in your organization?

A. Configure two VTP domains and configure the switches in transparent mode.
B. Enable spanning-tree load balancing.
C. Implement switch port security on designated ports.
D. Configure a separate VLAN for each department.

Answer: D

NEW QUESTION 354
For which two reasons was RFC 1918 address space define (Choose two)

A. to preserve public IPv4 address space
B. to reduce the occurrence of overlapping IP addresses
C. to preserve public IPv6 address space
D. reduce the size of ISP routing tables
E. to support the NAT protocol

Answer: AE

NEW QUESTION 356
Drag and drop the extended traceout option from the left onto the correct description on the right.

maximum time to live	A value that, when reached, terminates the traceroute command.
minimum time to live	IP header options.
numeric display	Overrides the router's selection of an outbound interface.
source address	Sets the interval for which the probe will wait for a response.
timeout	Suppresses the display of known hops.
timestamp, verbose	Suppresses the display of hostnames.

Answer:

Explanation: https://www.cisco.com/c/en/us/support/docs/ip/routing-information-protocol-rip/13730-ext-ping-trace.html

NEW QUESTION 357
Which two statements about eBGP neighbor relationships are true? (Choose two)

A. The two devices must reside in different autonomous systems
B. Neighbors must be specifically declared in the configuration of each device
C. They can be created dynamically after the network statement is configured.
D. The two devices must reside in the same autonomous system
E. The two devices must have matching timer settings

Answer: AB

NEW QUESTION 360
Refer to the exhibit.
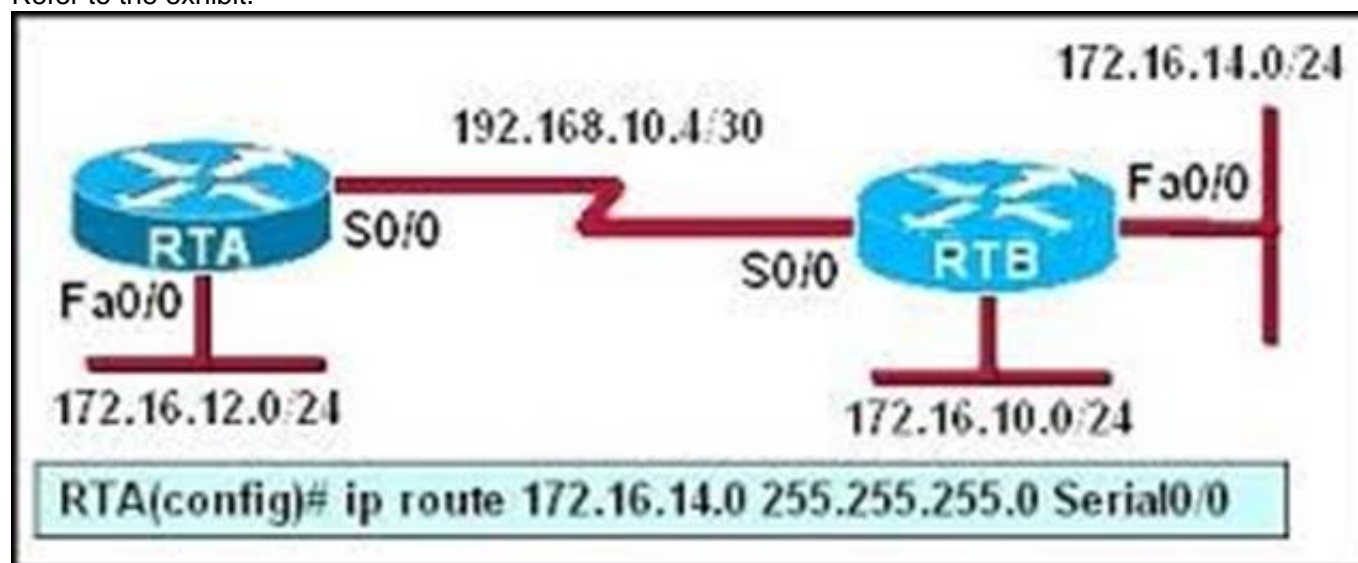
RTA is configured with a basic configuration. The link between the two routers is operational and no routing protocols are configured on either router. The line shown in the exhibit is then added to router RTA. Should interface Fa0/0 on router RTB shut down, what effect will the shutdown have on router RTA?

A. A route to 172.16.14.0/24 will remain in the RTA routing table.
B. Because router RTB will send a poison reverse packet to router RTA, RTA will remove the route.
C. Router RTA will send an ICMP packet to attempt to verify the route.
D. A packet to host 172.16.14.225 will be dropped by router R.

Answer: A

NEW QUESTION 361
Which command must you enter to enable OSPFv2 in an IPv4 network ?

A. ip ospf hello-interval seconds
B. router ospfv2 process-id
C. router ospf value

D. router ospf process-id

Answer: D

NEW QUESTION 365
Under which two circumstances is network traffic most likely to use an Exterior Gateway Routing Protocol? (Choose two)

A. When an employee connects to an employer branch office in a different city.
B. When network traffic is routing to a different building on a corporate campus.
C. When an employee is browsing the public internet.
D. When an employee checks email while working onsite at the data center.
E. When a user browsing the web site of a business partner.

Answer: AD

NEW QUESTION 368
Drag and drop the BGP components from the left onto the correct descriptions on the right.

autonomous system number	device that is running BGP
BGP Speaker	neighbor device that shares the same AS number as the local device
eBGP Peer	neighbor that located outside of administrative domain of the local device
BGP Peer	Value that identifies an administrative domain
Prefix	value that is advertised with the network keyword.

Answer:

Explanation: BGP speaker: device that is running BGP
+ Prefix = Value that is advertised with the network keyword.
eBGP Peer = neighbor that located outside of administrative domain of the local device. BGP Peer = neighbor device that shares the same AS number as the local device. Autonomous system number = Value that identifies an administrative domain

NEW QUESTION 369
Refer to the exhibit.
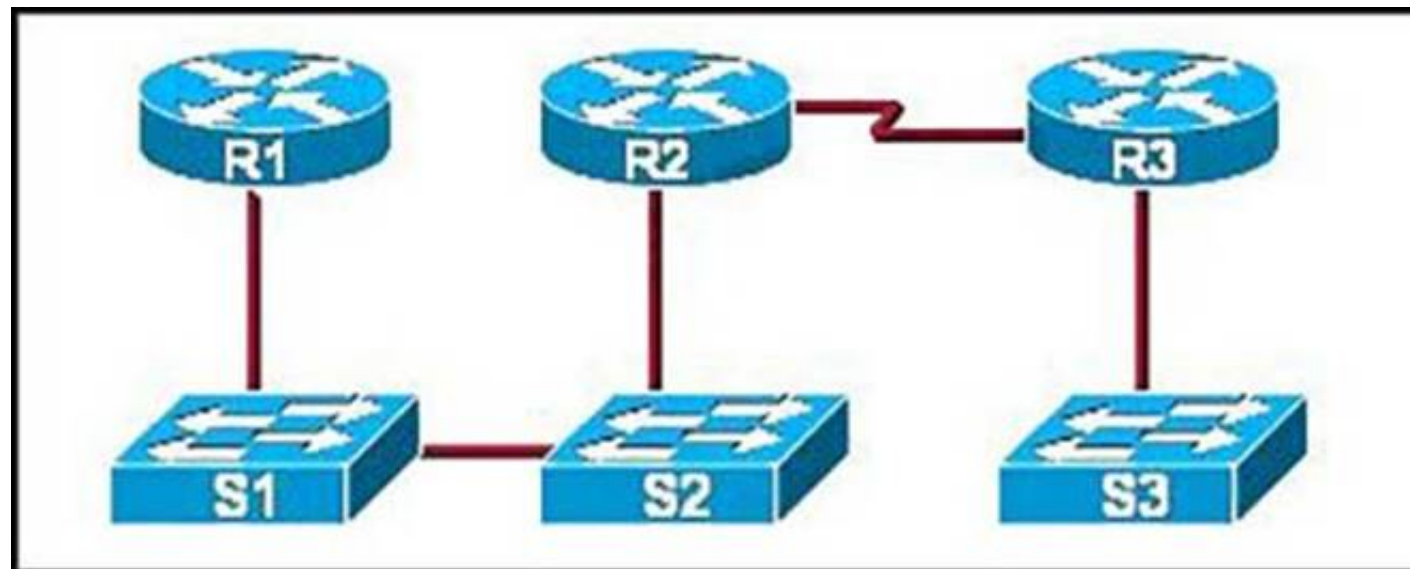
If CDP is enabled on all devices and interfaces, which devices will appear in the output of a show cdp neighbors command issued from R2?

A. R1, S1, S2, R3 and S3
B. R2 and R3
C. R3 and S2
D. R1 and R3
E. R1, S1, S2, and R3

Answer: C

NEW QUESTION 371
Which benefit of implementing a dual-homed WAN connection instead of a single homed connection is true?

A. Only dual-homed connections support recursive routing
B. Only dual-homed connections support split horizon with EIGRP
C. Only dual-homed connections enable an individual router to tolerate the loss of a network link
D. Only dual-homed connections support OSPF in conjunction with BGP

Answer: C

NEW QUESTION 375
Which tunneling mechanism embeds an IPv4 address within an IPv6 address?

A. Teredo
B. 6to4
C. 4to6
D. GRE
E. ISATAP

Answer: B

Explanation: ref :https://tools.ietf.org/html/rfc6052#section-2

NEW QUESTION 379
Which statement is a Cisco best practice for switch port security?

A. Vacant switch ports must be shut down.
B. Empty ports must be enabled in VLAN 1.
C. VLAN 1 must be configured as the native VLAN.
D. Err-disabled ports must be configured to automatically re-enable.

Answer: A

NEW QUESTION 382
Which protocol does ipv6 use to discover other ipv6 nodes on the same segment?

A. CLNS
B. TCPv6
C. NHRP
D. NDP
E. ARP

Answer: D

Explanation: ref : https://tools.ietf.org/html/rfc4861

NEW QUESTION 386
Which two statements about the spanning-tree bridge ID are true? (Choose two.)

A. It is composed of a 4-bit bridge priority and a 12-bit system ID extension.
B. The bridge ID is transmitted in the IP header to elect the root bridge.
C. Thesystem ID extension is a value between 1 and 4095.
D. It is composed of an 8-bit bridge priority and a 16-bit system ID extension.
E. The bridge priority must be incremented in blocks of 4096.

Answer: AE

NEW QUESTION 390
Which VLAN bridge priority value will make a switch as root for a given VLAN from the below options by the spanning-tree vlan vlan-id root command?

A. 16384
B. 8192
C. 28672
D. 32768

Answer: B

NEW QUESTION 393
Which two functions can be performed by a local DNS server? (Choose two)

A. transferring spirt horizon traffic between zones
B. Forwarding name resolution requests to an external DNS server
C. assigning IP addresses to local clients
D. resolving names locally
E. copying updatedIOS images to Cisco switches

Answer: BD

NEW QUESTION 394
Why would a network administrator configure port security on a switch?

A. to limit the number of Layer 2 broadcasts on a particular switch port
B. to prevent unauthorized Telnet access to a switch port
C. to prevent unauthorized hosts from accessing the LAN

D. block unauthorized access to the switch management interfaces

Answer: C

NEW QUESTION 397
Which two statements describe the operation of the CSMA/CD access method? (Choose two.)

A. After a collision, all stations run a random backoff algorith
B. When the backoff delay period has expired, all stations have equal priority to transmit data.
C. In a CSMA/CDcollision domain, multiple stations can successfully transmit data simultaneously.
D. After a collision, the station that detected the collision has first priority to resend the lost data.
E. The use of hubs to enlarge the size of collision domain is one way to improve the operation of the CSMA/CD access method.
F. After a collision, all stations involved run an identical backoff algorithm and then synchronize with each other prior to transmitting data.
G. In a CSMA/CD collision domain, stations must wait until media is not in use before transmitting.

Answer: AF

NEW QUESTION 398
Which VLAN bridge priority value is assigned by the set spantree root command?

A. 8192
B. 16384
C. 28672
D. 32768

Answer: A

NEW QUESTION 402
Which command can you enter in a network switch configuration so that learned mac addresses are saved in configuration as they connect ?

A. Switch(confg-if)#Switch port-security
B. Switch(confg-if)#Switch port-security Mac-address sticky
C. Switch(confg-if)#Switch port-security maximum 10
D. Switch(confg-if)#Switch mode access

Answer: B

NEW QUESTION 407
How many bits represent the network ID in iPv6?

A. 32
B. 48
C. 64
D. 128

Answer: C

NEW QUESTION 410
Which two statements about access points are true? (Choose Two)

A. They can provide access within enterprises and to the public.
B. in Most cases, they are physically connected to other network devices to provide network connectivity.
C. They can proterct a network from internal and external threats.
D. Most access points provide Wi-Fi and Bluetooth connectivity.
E. They must be hardwired to a modem.

Answer: CD

NEW QUESTION 414
Drag and drop the DNS lookup components from the left onto the correct functions on the right.

cache	local database of address mappings that improves name-resolution performance
DNS	service that maps hostnames to IP addresses
domain	disables DNS services on a Cisco device
name resolver	in response to client requests, queries a name server for IP address information
no ip domain-lookup	component of a URL that indicates the location or organization type, such as .com or .edu

Answer:

Explanation:

cache	cache
DNS	DNS
domain	no ip domain-lookup
name resolver	name resolver
no ip domain-lookup	domain

NEW QUESTION 417
Which table displays the MAC addresses that are learned on a switch?

A. FIB
B. ARP
C. TCAM
D. CAM

Answer: D

NEW QUESTION 422
Which two IP SLA operations can you use to measure the end-to-end response time for all IP traffic between a Cisco router and an end device?

A. ICMP path echo
B. UDP echo
C. ICMP path jitter
D. UDP jitter
E. TCP connect
F. ICMP echo

Answer: AF

NEW QUESTION 427
Which statement describes the effect of the overload keyword in the ip nat inside source list 90 interface ethernet 0/0 overload command?

A. Addresses that match access listinsideare translated to the IP address of the Ethernet 0/0 interface.
B. Hosts that match access listinsideare translated to an address in the Ethernet 0/0 network.
C. Hosts on the Ethernet 0/0 LAN are translated to the address pool in access list90.
D. Addressesthat match access list90are translated through PAT to the IP address of the Ethernet 0/0 interface.

Answer: D

NEW QUESTION 431
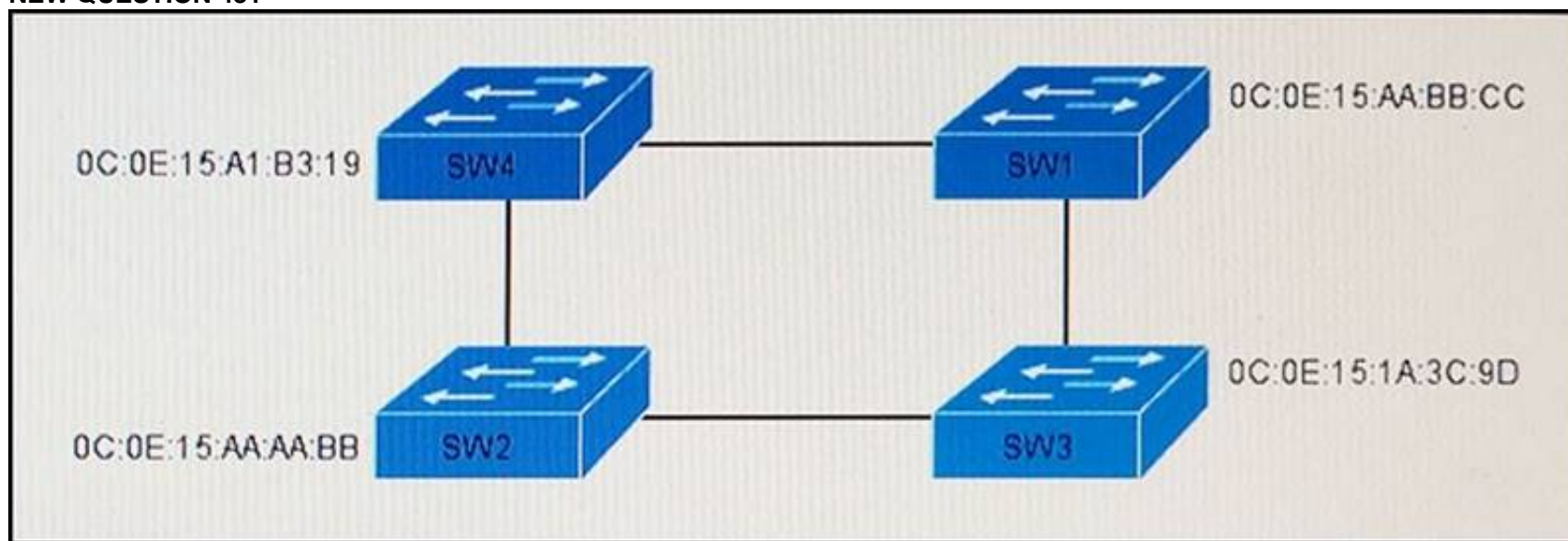
Refer to the exhibit. Which switch in this configuration becomes the root bridge?

A. SW1
B. SW2
C. SW3
D. SW4

Answer: C

NEW QUESTION 436
Drag and drop the characteristics of a cloud environment from the left onto the correct examples on the right

Answer:

Explanation:

NEW QUESTION 439

Refer to the exhibit.


```
Router1# telnet 192.168.9.2
    Trying 192.168.9.2 ... Open
    User Access Verification
        Password:
Router2> <Ctrl-Shift-6>x
Router1#
```
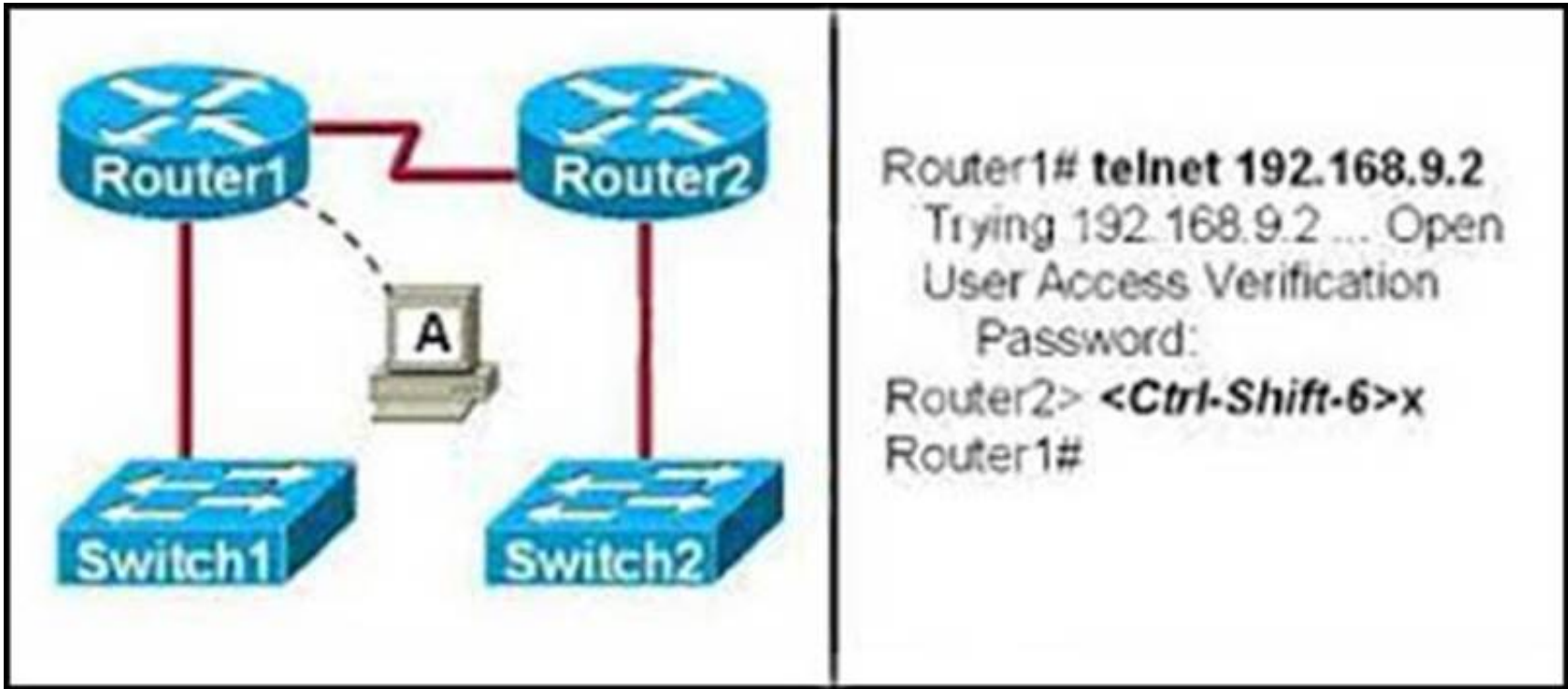
If the resume command is entered after the sequence that is shown in the exhibit, which router prompt will be displayed?

A. Router2#
B. Router2>
C. Router1#
D. Router1>

Answer: B

NEW QUESTION 441


```
Sw12#show vlan brief

VLAN  Name                  Status    Ports
----  --------------------  --------  -------------------------------
1     default               active
10    Marketing             active    Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                      Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                      Fa0/14, Fa0/15
15    Accounting            active    Fa0/16, Fa0/18, Fa0/19, Fa0/20
                                      Fa0/21, Fa0/22, Fa0/24
20    Admin                 active    Fa0/2, Fa0/3, Fa0/4, Fa0/5
1002  fddi-default          active
1003  token-ring-default    active
1004  fddinet-default       active
1005  trnet-default         active
Sw12#
```
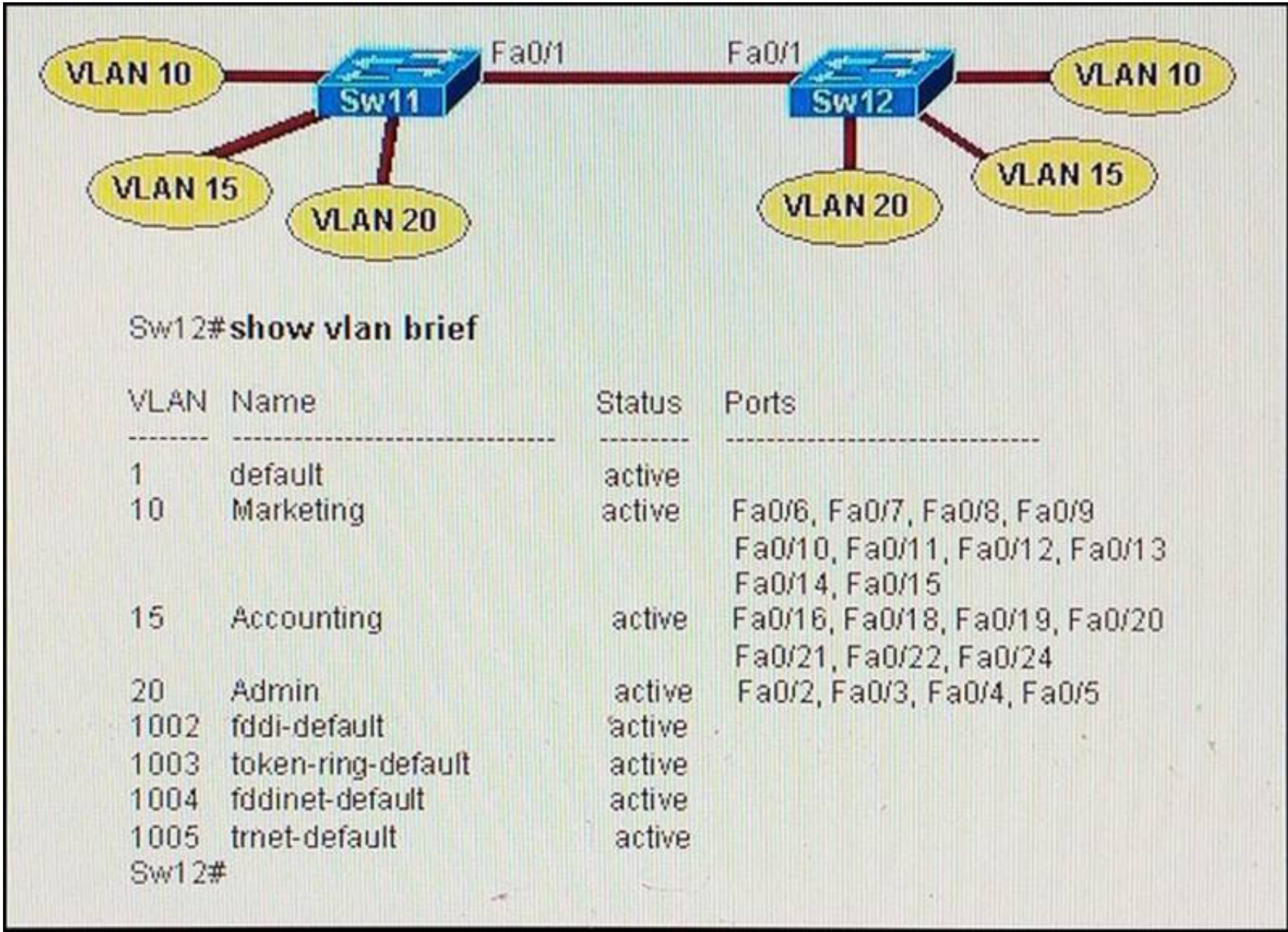
Refer to the exhibit. A technician has configured the FastEthernet0/1 interface on Sw11 as an access link in VLAN 1. Based on the output from the show vlan brief command issued on Sw12, what will be the result of making this change on Sw11?

A. Hosts will not be able to communicate between the two switches.
B. The hosts in all VLANs on the two switches will be able to communicate with each other.
C. Only the hosts in VLAN10 and VLAN 15 on the two switches will be able to communicate with each other.
D. Only the hosts in VLAN 1 on the two switches will be able to communicate with each other.

Answer: A

NEW QUESTION 446
Which option must occur before a workstation can exchange HTTP packets with a web server?

A. An ICMP connection must be established between the workstation and the web server.
B. A UDP connection must be established between the workstation and its default gateway.
C. A TCP connection must be established between the workstation and its default gateway.
D. A UDP connection must be established between the workstation and the web server.
E. An ICMP connection must be established between the workstation and its default gateway.
F. A TCP connection must be established between the workstation and the web server.

Answer: F

NEW QUESTION 450


```
Branch# ping 192.168.2.167

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.167, timeout is 2 seconds:
..!!!
Success rate is 60 percent (3/5), round-trip min/avg/max = 1/2/4 ms

Branch# ping 192.168.2.167

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.167, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
Branch#
```
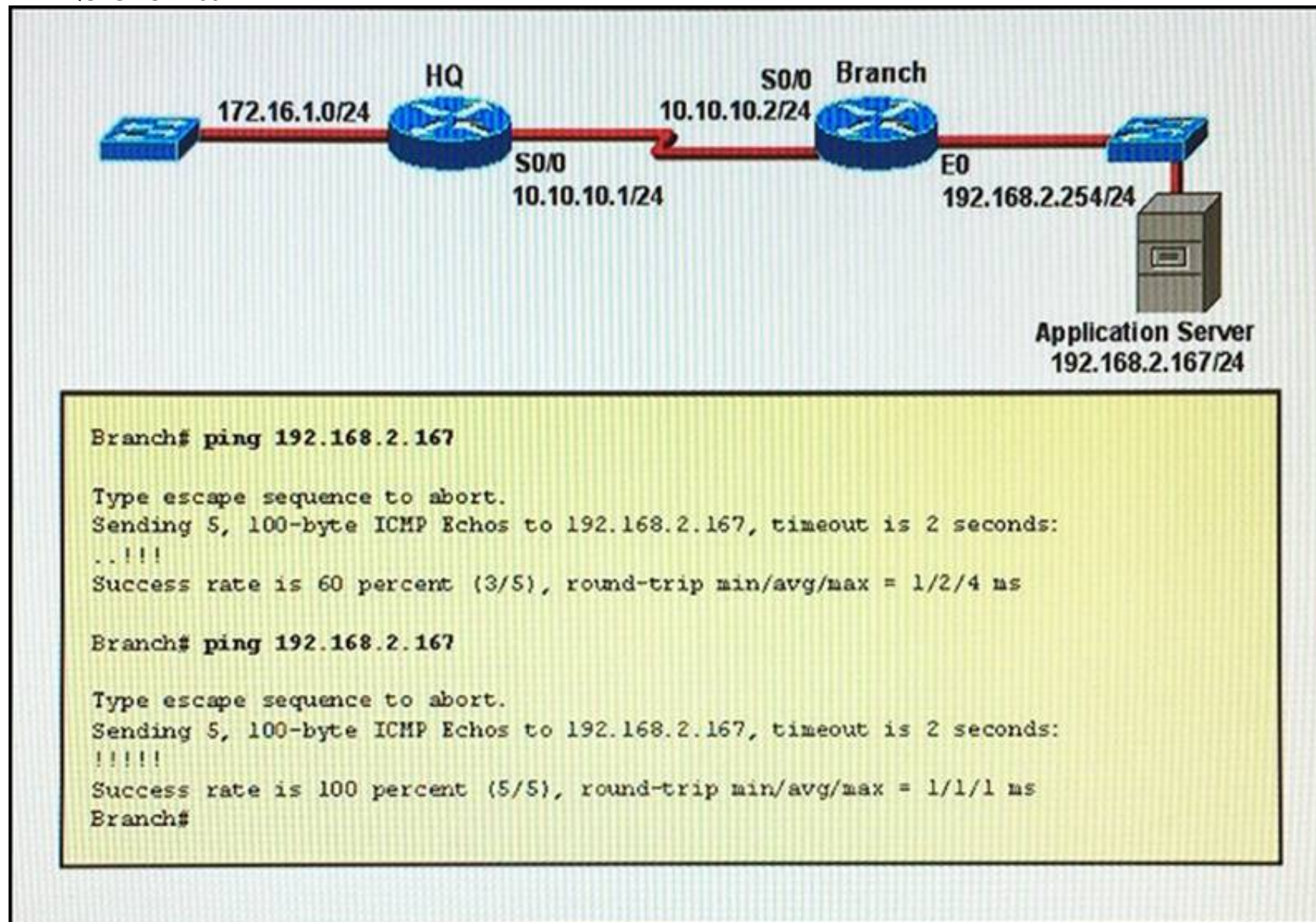
Refer to the exhibit. The network administrator is testing connectivity from the branch router to the newly installed application server. Which reason is the most likely for the first ping having a success rate of only 60 percent?

A. The branch router LAN interface should be upgraded to FastEthernet.
B. The branch router had to resolve the application server MAC address.
C. The network is likely to be congested, with the result that packets are being intermittently dropped.
D. There is a short delay while NAT translates the server IP address.

Answer: B

NEW QUESTION 454
If two OSPF neighbors have formed complete adjacency and are exchanging link-state advertisements, which state have they reached?

A. Exstart
B. 2-Way
C. FULL
D. Exchange

Answer: C

Explanation: https://www.google.com/search?q=state+ospf&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjg7ebXjtLVAh

NEW QUESTION 455
Which command can you enter to assign an interface to the default VLAN?

A. Switch(config-if)# switchport access vlan 1
B. Switch(config-if)# switchport trunk native vlan 1
C. Switch(config-if)# vlan 1
D. Switch(config)# int vlan 1

Answer: A

NEW QUESTION 456

CCNA.com has a small network that is using EIGRP as its IGP. All routers should be running an EIGRP AS number of 12. Router MGT is also running static routing to the ISP.
CCNA.com has recently added the ENG router. Currently, the ENG router does not have connectivity to the ISP router. All over interconnectivity and Internet access for the existing locations of the company are working properly.
The task is to identify the fault(s) and correct the router configuration(s) to provide full connectivity between the routers.
Access to the router CLI can be gained by clicking on the appropriate host.
All passwords on all routers are cisco.
IP addresses are listed in the chart below.
MGT
Fa0/0 – 192.168.77.33
S1/0 – 198.0.18.6
S0/0 – 192.168.27.9
S0/1 – 192.168.50.21
ENG
Fa0/0 – 192.168.77.34
Fa1/0 – 192.168.12.17
Fa0/1 – 192.168.12.1
Parts1
Fa0/0 – 192.168.12.33
Fa0/1 – 192.168.12.49
S0/0 – 192.168.27.10
Parts2
Fa0/0 – 192.168.12.65
Fa0/1 – 192.168.12.81
S0/1 – 192.168.50.22
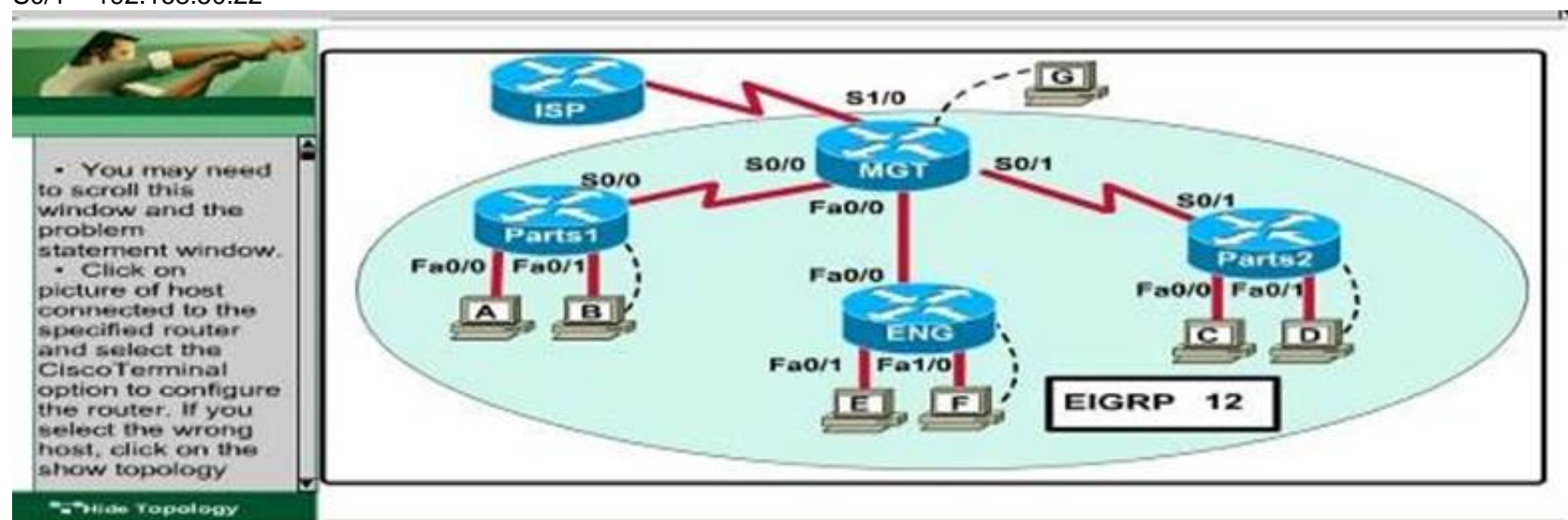
Answer:

Explanation: On the MGT Router: Config t
Router eigrp 12
Network 192.168.77.0

NEW QUESTION 459
Which command do you enter to view EIGRPv6 adjacencies?

A. show ipv6 eigrp 1 interface
B. show ipv6 route eigrp
C. showipv6 eigrp neighbors
D. show running-configuration eigrp

Answer: C

NEW QUESTION 464
Which IPsec security protocol should be used when confidentiality is required?

A. MD5
B. PSK
C. AH
D. ESP

Answer: D

NEW QUESTION 468
Which three statements are typical characteristics of VLAN arrangements? (Choose three.)

A. VLANscannot span multiple switches.
B. VLANs typically decrease the number of collision domains.
C. Connectivity between VLANs requires a Layer 3 device.
D. Each VLAN uses a separate address space.
E. A new switch has no VLANs configured.

F. A switch maintainsa separate bridging table for each VLAN.

Answer: CDF

NEW QUESTION 472
Which command do use we to see SNMP version

A. show snmp pending
B. show snmp engineID
C. snmp-server something

Answer: A

Explanation: ref: https://www.cisco.com/c/en/us/td/docs/ios/12_2/configfun/command/reference/ffun_r/frf014.html#wp1053304

NEW QUESTION 477
Which command can you enter to configure an IPv6 static route?

A. router(config)#ipv6 route FE80:0202::/32 serial 0/1 1
B. router(config)#ipv6 route FE80:0202::/32 serial 0/1 201
C. router(config)#ipv6 route ::/0 serial 0/1
D. router(config)#ipv6 route static resolve default

Answer: B

NEW QUESTION 479
Which command can you enter on a switch to determine the current SNMP security model ?

A. Show snmp pending
B. show snmp group
C. snmp server contact
D. show snmp engineID

Answer: B

Explanation: show snmp group
To display the names of groups on the router and the security model, the status of the different views, and the storage type of each group, use the show snmp group show snmp group
EXEC command.
https://www.cisco.com/c/en/us/td/docs/ios/12_2/configfun/command/reference/ffun_r/frf014.html

NEW QUESTION 480
You work as a network engineer for SASCOM Network Ltd company. On router HQ, a provider link has been enabled and you must configure an IPv6 default route on HQ and make sure that this route is advertised in IPv6 OSPF process. Also, you must troubleshoot another issue. The router HQ is not forming an IPv6 OSPF neighbor relationship with router BR.
Topology Details
Two routers HQ and BR are connected via serial links.
Router HQ has interface Ethernet0/1 connected to the provider cloud and interface Ethernet 0/0 connected to RA1
Router BR has interface Ethernet 0/0 connected to another router RA2.
IPv6 Routing Details
Ail routers are running IPv6 OSPF routing with process ID number 100 Refer to the topology diagram for information about the OSPF areas The Loopback 0 IPv4 address is the OSPF router ID on each router
Configuration requirements
• Configure IPv6 default route on router HQ with default gateway as 2001:DB8:B:B1B2::1.
• Verify by pinging provider test IPv6 address 2001 :DB8:0:1111:1 after configuring default route on HQ.
• Make sure that the default route is advertised in IPv6 OSPF on router HQ This default route should be advertised only when HQ has a default route in its routing table.
• Router HQ is not forming IPv6 OSPF neighbor with BR. You must troubleshoot and resolve this issue Special Note: To gain the maximum number of points, you must complete the necessary configurations and fix
IPv6 OSPF neighbor issue with router BR IPv6 OSPFv3 must be configured without using address families.
Do not change the IPv6 OSPF process ID.
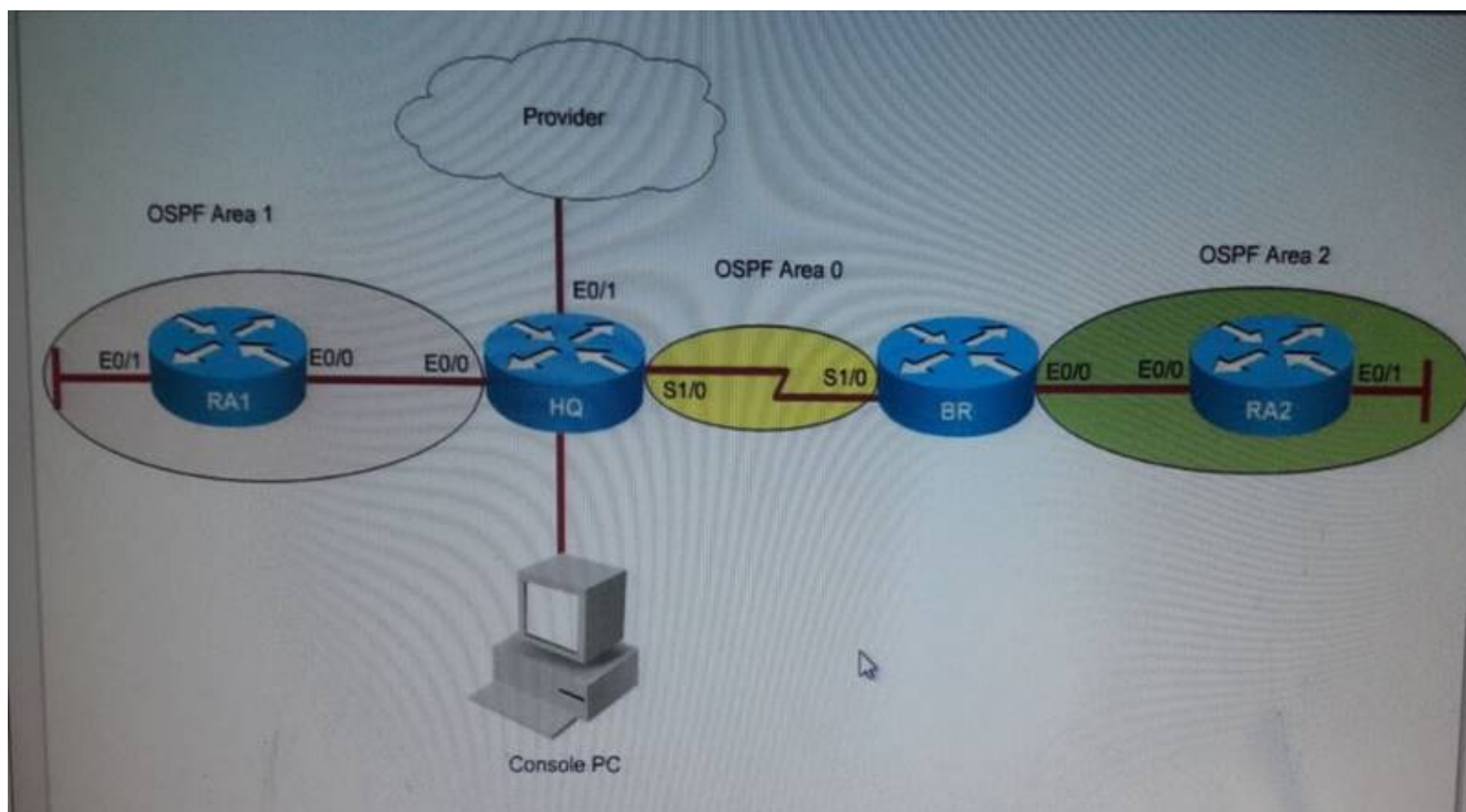
Answer:

Explanation: 1- configure default route on router HQ : ipv6 unicast-routing ipv6 route ::/0 2001:DB8:B:B1B2::1
2- advertise this route under ospfv3
Ipv6 router ospf 100
Default-information originate
3- fix adjacency problem if a area mismatches We need to enter in s1/0
Ipv6 ospf 100 area 0

NEW QUESTION 482
Which feature can validate address requests and filter out invalid messages?

A. IP Source Guard
B. port security
C. DHCP snooping
D. dynamic ARP inspection

Answer: C

NEW QUESTION 486
How does a Layer 2 switch differ from a hub?

A. A switch tracks MAC addresses of directly-connected devices.
B. A switch always induces latency into the frame transfer time.
C. A switch operates at a lower, more efficient layer of the OSI model.
D. A switchdecreases the number of collision domains.

Answer: A

NEW QUESTION 490
Which information is used to install the best route to a destination in IP routing table?

A. the tunnel ID
B. the prefix length
C. the interface number
D. the autonomous system

Answer: B

NEW QUESTION 493
Which purpose of the network command in OSPF configuration mode is true?

A. It defines a wildcard mask to identify the sizeof the network.
B. It defines the area ID.
C. It defines the network by its classful entry.
D. It defines which networks are used for virtual links.

Answer: A

NEW QUESTION 498
In which CLI configuration mode can you configure the hostname of a device?

A. line mode
B. interface mode
C. global mode
D. router mode

Answer: C

NEW QUESTION 500
After you configure a default route to the Internet on a router, the route is missing from the routing table. Which option describes a possible reason for the problem?

A. The next-hop address is unreachable.
B. The default route was configured on a passive interface.
C. Dynamic routing is disabled.
D. Cisco Discovery Protocol is disabled on the interface used to reach the next hop.

Answer: A

NEW QUESTION 505
Drag and drop each advantage of static or dynamic routing from the left onto the correct routing type on the right.

Answer:

Explanation:

NEW QUESTION 507
An administrator is working with the 192.168.4.0 netwrok, which has been subnetted with a /26 mask. Which two addresses can be assigned to hosts within the same subnet? (Choose two.)

A. 192.168.4.67
B. 192.168.4.61
C. 192.168.4.128
D. 192.168.4.132
E. 192.168.4.125
F. 192.168.4.63

Answer: AE

NEW QUESTION 511
Refer to the exhibit.
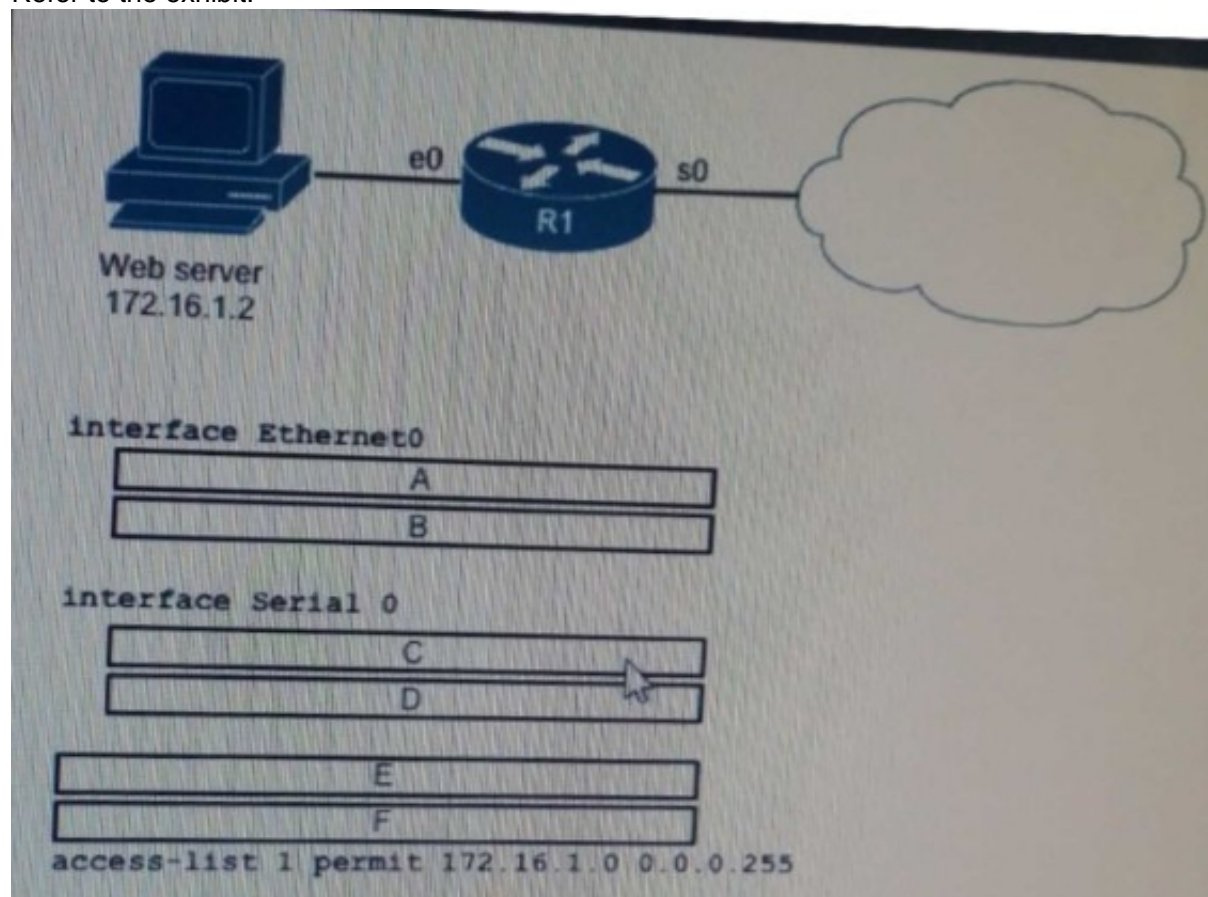
You are configuring the router to provide Static NAT for the web server. Drag and drop the configuration commands from left onto the letters that correspond to its position in the configuration on the right.

Answer:

Explanation:

ip address 172.16.1.1 255.255.255.0	ip address 172.16.1.1 255.255.255.0
ip address 45.83.2.214 255.255.255.240	ip nat inside
ip nat inside	ip address 45.83.2.214 255.255.255.240
ip nat inside source lst 1 interface s0 overload	ip nat outside
ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable	ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable
ip nat outside	ip nat inside source lst 1 interface s0 overload

NEW QUESTION 514
Which three features are represented by the letter A in AAA authentication? (Choose three.)

A. authorization
B. accountability
C. authority
D. authentication
E. accounting
F. accessibility

Answer: ADE

NEW QUESTION 516
Which subnet address is for the IP address 172.19.20.23/28?

A. 172.19.20.20
B. 172.19.20.0
C. 172.19.20.32
D. 172.19.20.15
E. 172.19.20.16

Answer: E

NEW QUESTION 521
Refer to the exhibit.
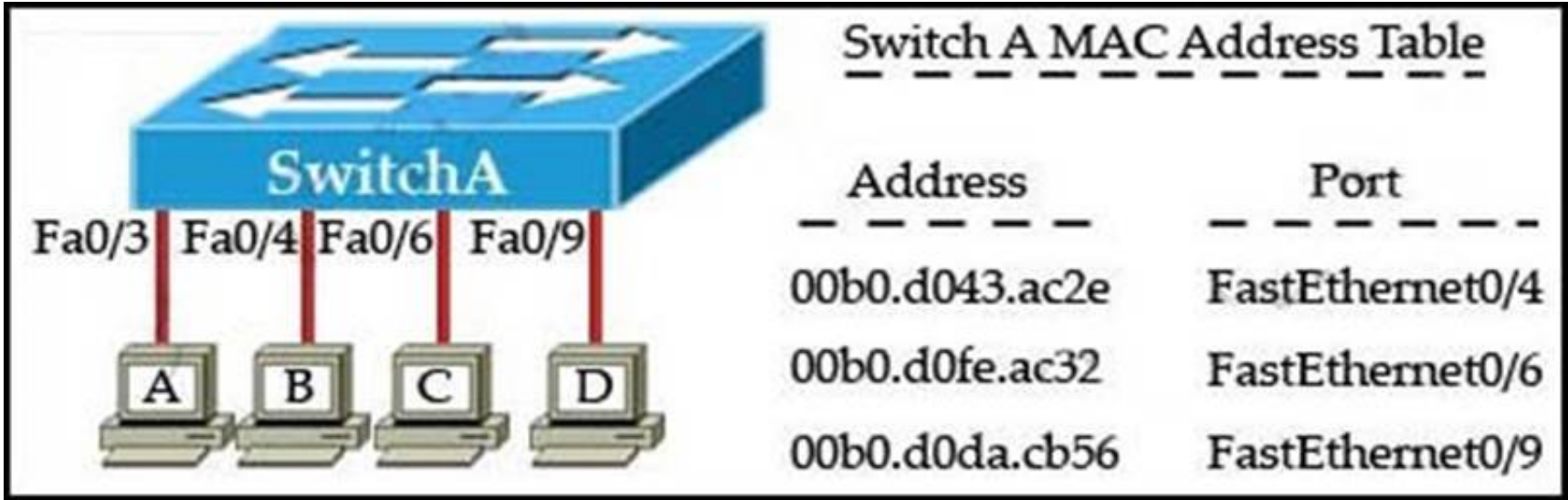
The exhibit is showing the topology and the MAC address table. Host A sends a data frame to host D. Which option describes what the switch will do when it receives the frame from host A?

A. The switch will flood the frame out of all ports except for port Fa0/3.
B. The switch will add the destination address of the frame to the MAC address table and forward theframe to host D.
C. The switch will add the source address and port tothe MAC address table and forward the frame to host D.
D. The switch will discard the frame and send an error message back to host A.

Answer: C

NEW QUESTION 524
Refer to the exhibit.

```
192.168.10.64/26

                192.168.10.8/30

       DTE          DCE
   R1                   R2
                         192.168.10.192/26

R1#show controllers serial 0/0
HD unit 0, idb=0xD21B4, driver struture 0xD7640
Buffer size 1524 HD Unit 0,
V.35 cable
RX ring with 16 entries at 0x622800
<<Output omitted>>
TX ring with 16 entries at 0x623000
<<Output omitted>>
```
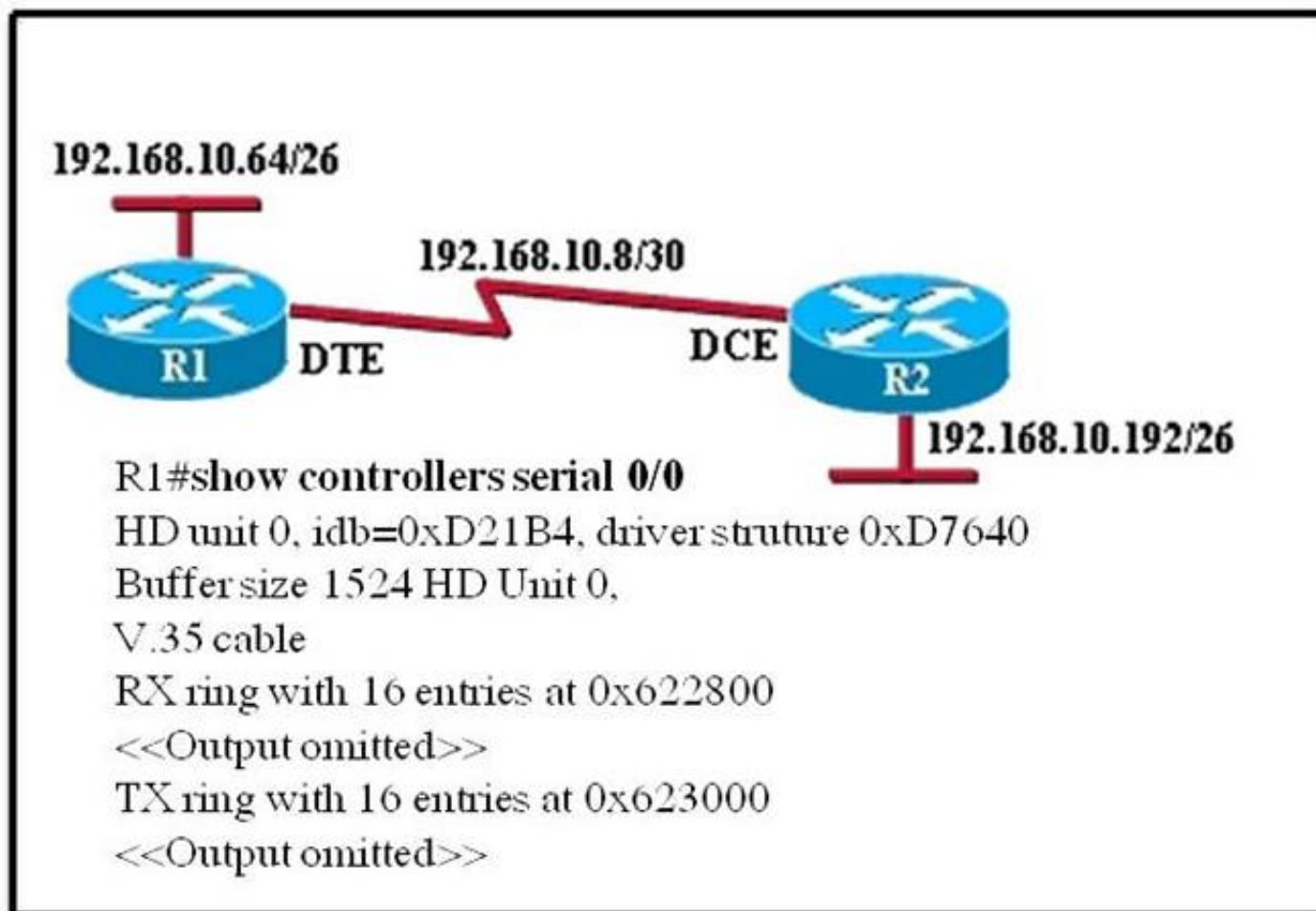
An administrator cannot connect from R1 to R2. To troubleshoot this problem, the administrator has entered the command shown in the exhibit. Based on the output shown, what could be the problem?

A. The serial interface is configured for the wrong frame size.
B. The serial interface does not have a cable attached.
C. The serial interface has the wrong type of cable attached.
D. The serialinterface has a full buffer.
E. The serial interface is configured for half duplex.

Answer: C

NEW QUESTION 529
Which task must you perform to enable an IOS device to use DNS services?

A. Configure manual bindings
B. Configure a name server
C. Configure the relay agent information option.
D. Configure a relay agent information reforwarding policy

Answer: B

Explanation: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_dns/configuration/15-mt/dns-15-mt-book/dns-config-

NEW QUESTION 530
Drag and drop the MAC address types from the left onto the correct descriptions on the right?

dynamic secure MAC address	cleared from the CAM table when the switch reboots
nonsecure MAC address	configured with the switchport port-security mac-address command
static secure MAC address	dynamically learned addresses that can be retained permanently
sticky MAC address	requires access VLAN configuration only

Answer:

Explanation:
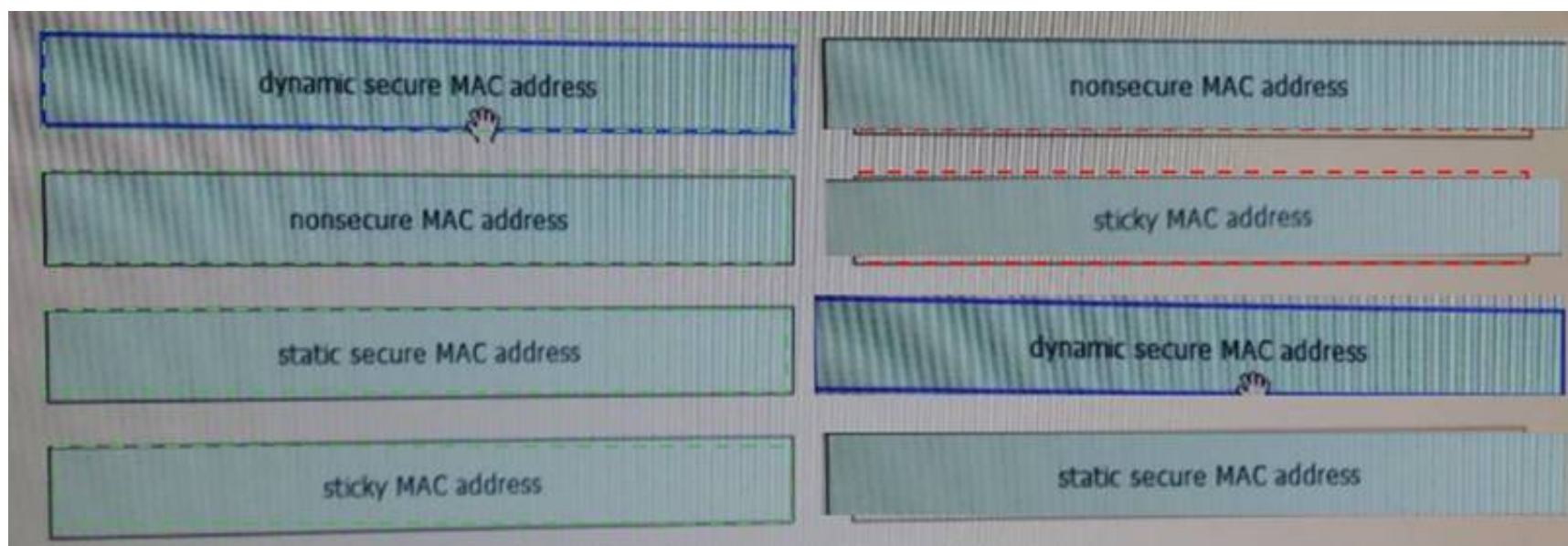
NEW QUESTION 532
What is the subnet address of 192.168.1.42 255.255.255.248?

A. 192.168.1.16/28
B. 192.168.1.32/27
C. 192.168.1.40/29
D. 192.168.1.8/29
E. 192.168.1.48/29

Answer: C

NEW QUESTION 537
Routers R1 and R2 are on the same network segment, and both routers use interface GigabitEthernet0/0. If R1 loses communication to R2, which two items should you check as you begin troubleshooting? (Choose two.)

A. Verify that R2 is using 802.1q encapsulation.
B. Verify that the GigabitEthernet0/0 interfaces on R1 and R2 are configured with the same subnetmask.
C. Verify that the R1 GigabitEthernet0/0 interface is up and the line protocol is down.
D. Verify that R1 and R2 both are using HDLC encapsulation.
E. Verify that the R1 GigabitEthernet0/0 interface is up and the line protocol is up.

Answer: BE

NEW QUESTION 538
In which two ways can you prevent recursive routing in a tunneled environment? (Choose two)

A. Configure routes through the tunnel with a lower metric than other routes.
B. Configure route filtering to prevent the tunnel endpoints from learning each other through the tunnel.
C. Enable QoS on the link.
D. Configure routes through the tunnel with a higher metric than other routes.
E. configure GRE keepalives on the tunnel interface.

Answer: BD

NEW QUESTION 541
On a live network, which two commands will verify the operational status of router interfaces? (Choose two.)

A. Router# show ip interface brief
B. Router# debug interface
C. Router# show ip protocols
D. Router# show interfaces
E. Router# show start

Answer: AD

NEW QUESTION 543
Which option is the industry-standard protocol for etherChannel?

A. Cisco Discovery protocol
B. PAgp
C. LACP
D. DTP

Answer: B

Explanation: http://www.omnisecu.com/cisco-certified-network-associate-ccna/etherchannel-pagp-and-lacp-modes.php

NEW QUESTION 548
Drag and drop the steps to configure a basic GRE tunnel from the left into the correct sequence on the right (Not all options are used)

Create a logical tunnel interface

Specify the carrier protocol

Install a point to point link between the tunnel source and destination

Specify the cryptograhic protocol

Specify the source and destination address for the tunnel endpoints

Specify the passenger Protocol.

Answer:

Explanation: Create a logical tunnel interface Specify the carrier protocol Specify the passenger protocol
Specify the source and destination address for the tunnel endpoints.

NEW QUESTION 549
Drag and drop the route source codes in a routing table from the left onto the correct meanings on the right.

C		directly connected network
D		manually configured static route
I		route learned dynamically by EIGRP
i		route learned dynamically by IGRP
O		route learned dynamically by IS-IS
S		route learned dynamically by OSPF

Answer:

Explanation:
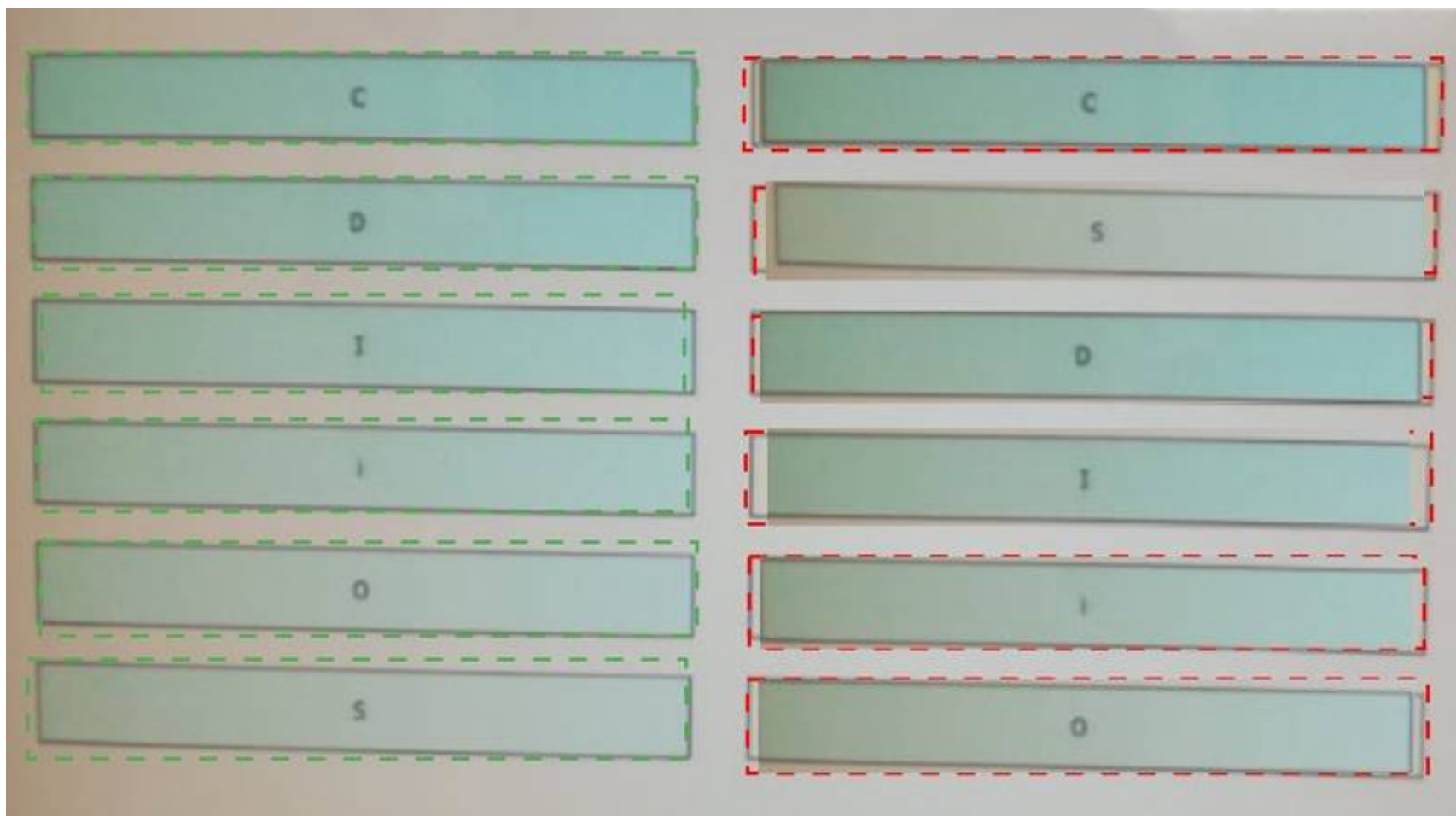
NEW QUESTION 554
On a Cisco switch, which protocol determines if an attached VoIP phone is from Cisco or from another vendor?

A. CDP
B. RTP
C. UDP
D. TCP

Answer: A

NEW QUESTION 557
At which layer of the OSI model does the protocol that provides the information that is displayed by the show cdp neighbors command operate?

A. data link
B. application
C. network
D. transport
E. physical

Answer: A

NEW QUESTION 561
Which value can you modify to configure a specific interface as the preferred forwarding interface?

A. the VLAN priority
B. the hello time
C. the port priority
D. the interface number

Answer: C

NEW QUESTION 562
Which statement about 6to4 tunneling is true?

A. One tunnel endpoint must be configured with IPv4 only.
B. Both tunnel endpoint must be configured with IPv4 only.
C. It establishes a point-to-point tunnel.
D. Both tunnel endpoints must support IPv4 and IPv6.

Answer: D

NEW QUESTION 566
Which technique can you use to route IPv6 traffic over an IPv4 infrastructure?

A. NAT
B. 6to4 tunneling
C. L2TPv3
D. dual-stack

Answer: B

NEW QUESTION 570
Drag and drop the PDUs from the left onto the correct TCP/IP layers on the right.

bits		application layer
data		data link layer
frames		network layer
packets		physical layer
segments		transport layer

Answer:

Explanation: http://knutsonco.tripod.com/id9.html
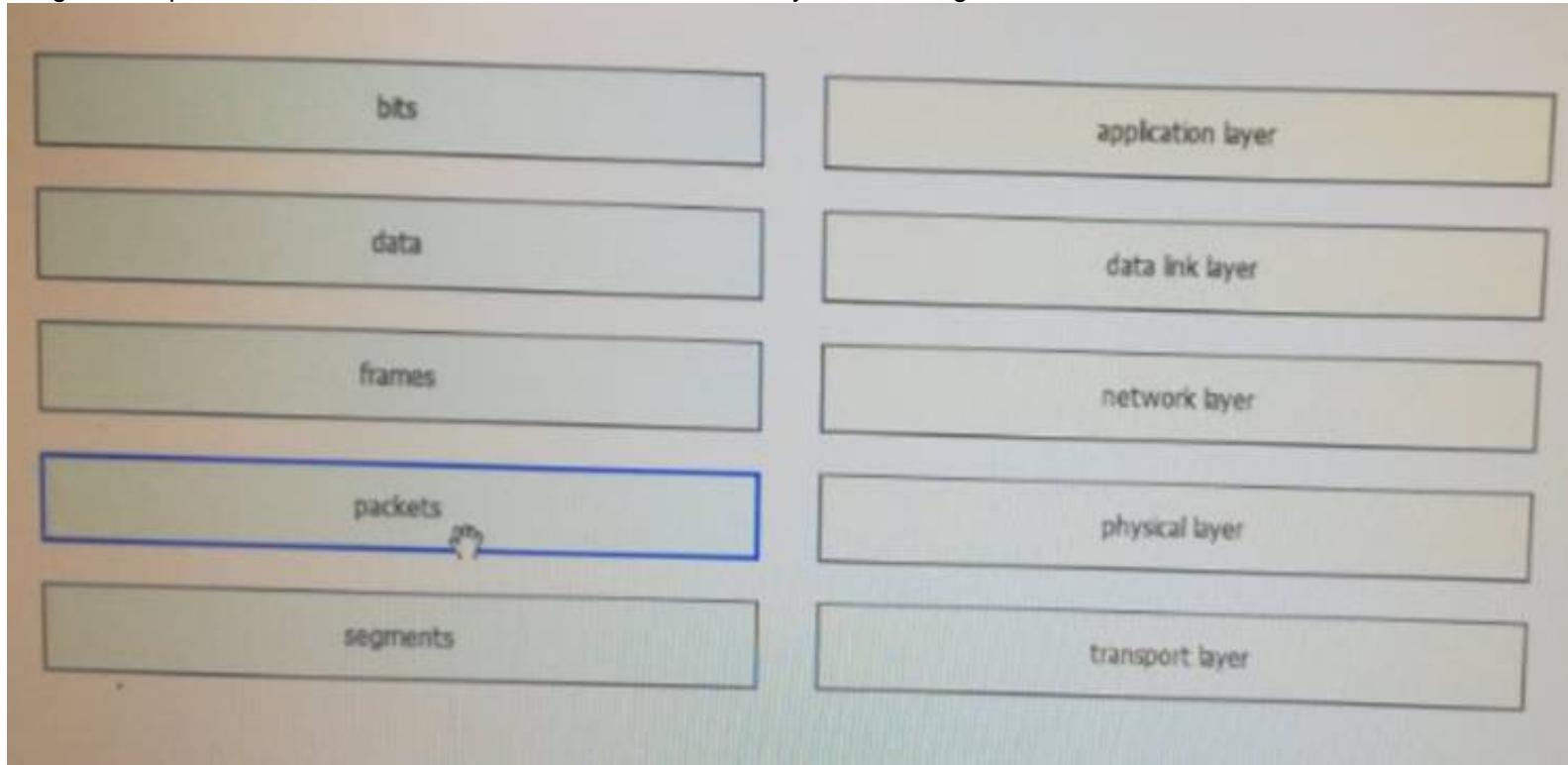
Here, is a table constructed to show you how OSI compares with TCP/IP, and how they both corrospond with Encapsulation units (PDUs).

OSI #	OSI Layer Name	TCP/IP #	TCP/IP Layer Name	TCP/IP protocols at each TCP/IP Layer	TCP Utilities	Encapsulation Units (PDUs)
7	Application	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
6	Presentation	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
5	Session	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
4	Transport	3	Transport	TCP	NONE	Segment
3	Network	2	Internet	IP	Ping Trace	Packet
2	Datalink	1	Network Access	NONE	NONE	Frames
1	Physical	1	Network Access	NONE	NONE	Bits

NEW QUESTION 574
Which statement describes the effect of the exec-timeout 30 command?

A. The router maintains a user session indefinitely after it is active for 30 seconds.
B. The router disconnects the user session if it is inactive for 30 minutes.
C. The router maintains a user session indefinitely after it is active for 30 minutes.
D. The router disconnects a user session if it is inactive for 30 seconds.

Answer: B

NEW QUESTION 576
From which PPPoE server configuration does a PPPoE client get an IP address?

A. AAA authentication
B. DHCP
C. dialer interface
D. virtual-template interface

Answer: D
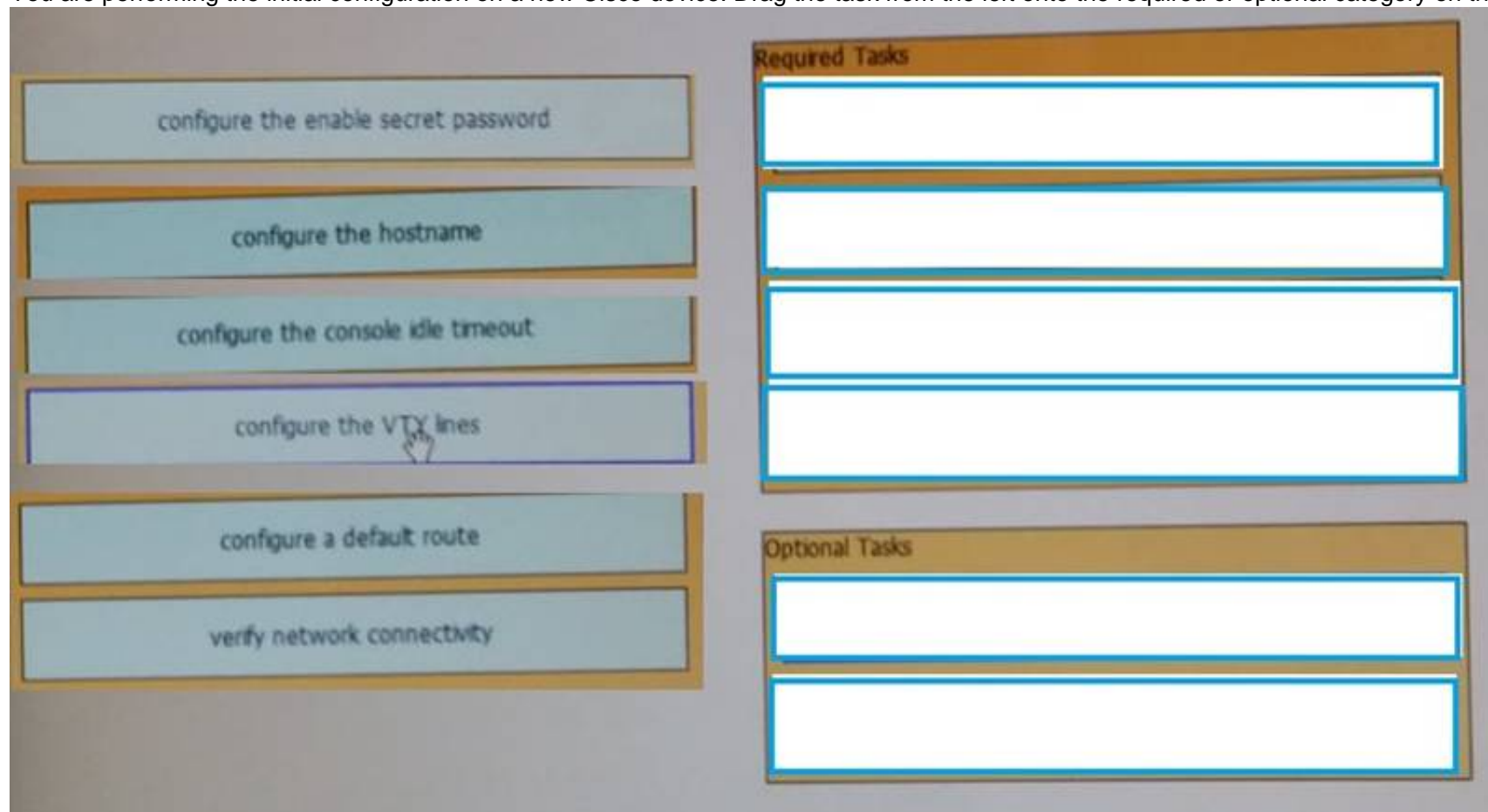
NEW QUESTION 580
Which NAT command can be applied to an interface?

A. ip nat inside
B. ip nat inside test access-list-number pool pool-name
C. ip nat inside source static 10.10.10.010.10.10.50
D. ip nat pool test 10.10.10.0 10.10.10.50 255.255.255.0

Answer: A

NEW QUESTION 584
You are performing the initial configuration on a new Cisco device. Drag the task from the left onto the required or optional category on the right.

Answer:

Explanation: https://www.cisco.com/c/en/us/td/docs/routers/access/1900/software/configuration/guide/Software_Configuratio

NEW QUESTION 586
A network associate is adding security to the configuration of the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.
The task is to create and apply an access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.
Access to the router CLI can be gained by clicking on the appropriate host. All passwords have been temporarily set to "cisco".
The Core connection uses an IP address of 198.18.196.65.
The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 - 192.168.33.254
host A 192.168.33.1
host B 192.168.33.2
host C 192.168.33.3
host D 192.168.33.4
The servers in the Server LAN have been assigned addresses of 172.22.242.17 - 172.22.242.30. The Finance Web Server is assigned an IP address of 172.22.242.23.
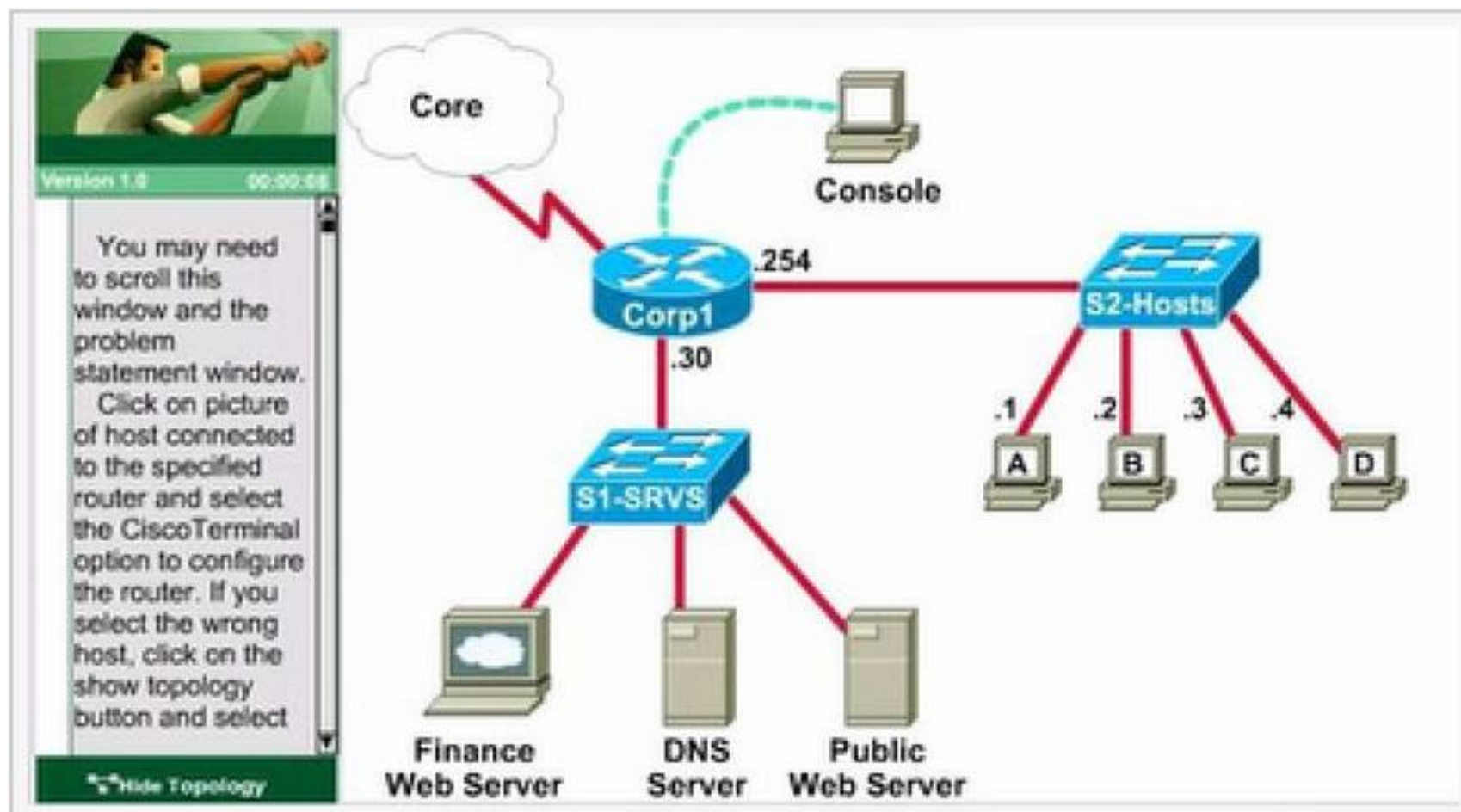
Answer:

Explanation: Select the console on Corp1 router
Configuring ACL
Corp1>enable
Corp1#configure terminal
comment: To permit only Host C (192.168.33.3){source addr} to access finance server address (172.22.242.23) {destination addr} on port number 80 (web)
Corp1(config)#access-list 100 permit tcp host 192.168.33.3 host 172.22.242.23 eq 80
comment: To deny any source to access finance server address (172.22.242.23) {destination addr} on port number 80 (web)
Corp1(config)#access-list 100 deny tcp any host 172.22.242.23 eq 80
comment: To permit ip protocol from any source to access any destination because of the implicit deny any any statement at the end of ACL.
Corp1(config)#access-list 100 permit ip any any Applying the ACL on the Interface
comment: Check show ip interface brief command to identify the interface type and number by checking the IP address configured.
Corp1(config)#interface fa 0/1
If the ip address configured already is incorrect as well as the subnet mask. This should be corrected in order ACL to work
type this commands at interface mode :
no ip address 192.x.x.x 255.x.x.x (removes incorrect configured ipaddress and subnet mask) Configure Correct IP Address and subnet mask:
ip address 172.22.242.30 255.255.255.240 (range of address specified going to server is given as 172.22.242.17 - 172.22.242.30)
Comment: Place the ACL to check for packets going outside the interface towards the finance web server. Corp1(config-if)#ip access-group 100 out
Corp1(config-if)#end
Important: To save your running config to startup before exit. Corp1#copy running-config startup-config
Verifying the Configuration:
Step1: show ip interface brief command identifies the interface on which to apply access list.
Step2: Click on each host A, B, C, & D. Host opens a web browser page, Select address box of the web browser and type the ip address of finance web server (172.22.242.23) to test whether it permits /deny access to the finance web Server.
Step 3: Only Host C (192.168.33.3) has access to the server. If the other host can also access then maybe something went wrong in your configuration. Check whether you configured correctly and in order.
Step 4: If only Host C (192.168.33.3) can access the Finance Web Server you can click on NEXT button to successfully submit the ACL SIM.

NEW QUESTION 587
Which statement about NTP is true?

A. The default authentication key number is 1.
B. The default source address of an NTP message is the interface connected to the next-hop for the server peer address.
C. The default stratum number is 5.
D. Each device is enabled as a server by default and propagates NTP messages to all peers on its default LAN.

Answer: B

NEW QUESTION 589
A corporation wants to add security to its network. The requirements are:
Host C should be able to use a web browser (HTTP) to access the Finance Web Server.
 Other types of access from host C to the Finance Web Server should be blocked.
 All access from hosts in the Core or local LAN to the Finance Web Server should be blocked.
 All hosts in the Core and on local LAN should be able to access the Public Web Server.
You have been tasked to create and apply a numbered access list to a single outbound interface. This access list can contain no more than three statements that meet these requirements.
Access to the router CLI can be gained by clicking on the appropriate host.
 All passwords have been temporarily set to "cisco".
 The Core connection uses an IP address of 198.18.209.65.

The computers in the Hosts LAN have been assigned addresses of 192.168.78.1 – 192.168.78.254.
host A 192.168.78.1
host B 192.168.78.2
host C 192.168.78.3
host D 192.168.78.4
The Finance Web Server has been assigned an address of 172.22.146.17.
The Public Web Server in the Server LAN has been assigned an address of 172.22.146.18.

CiscoTerminal

Corp1 con0 is now available

Press RETURN to get started.
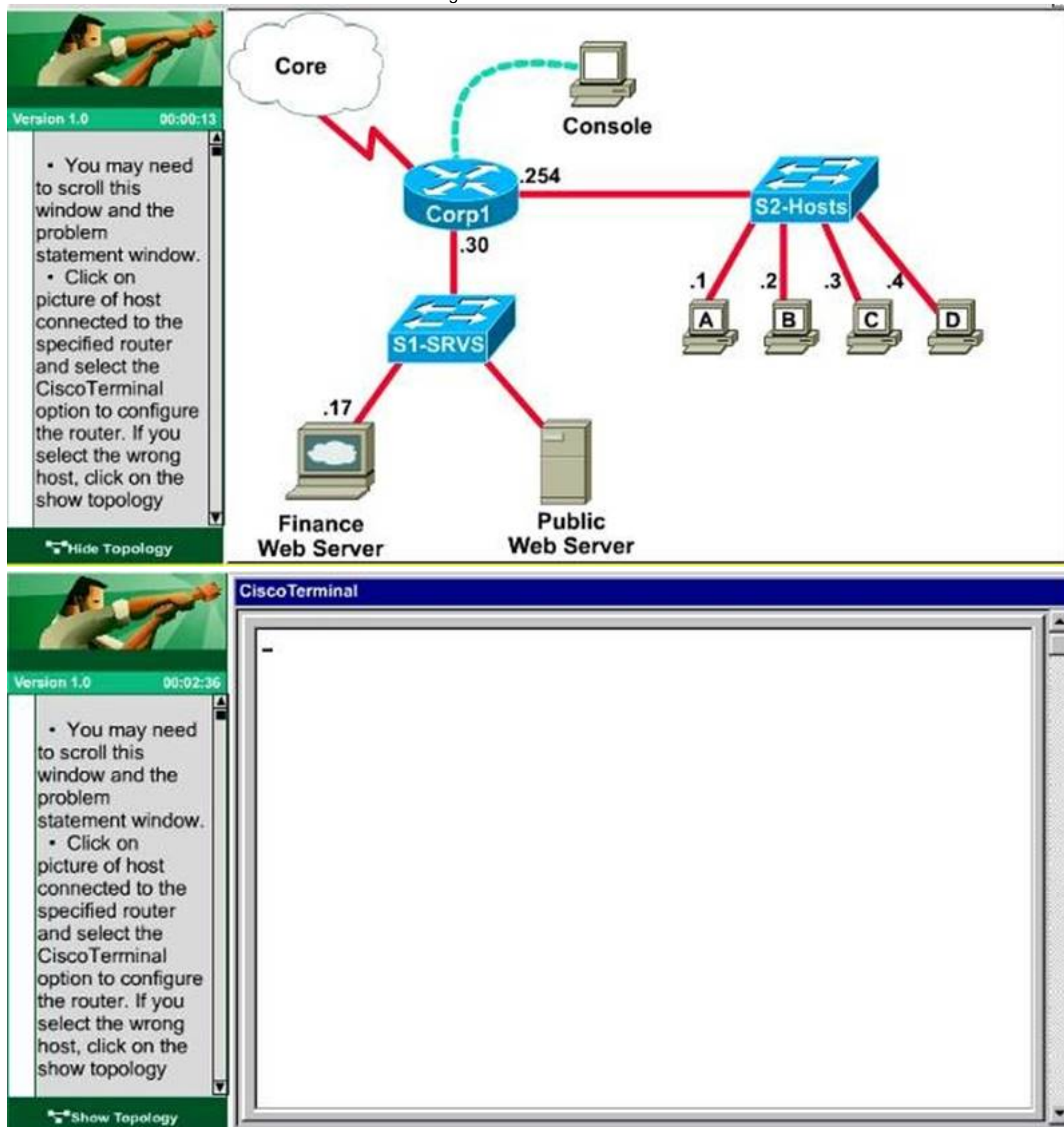
Version 1.0   00:03:33

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Show Topology

Version 1.0   00:08:11

- To access a host, simply click on picture of host that you want to use and configure it. Certain hosts have dotted lines that represent the serial "console" cables.
- The help command does not display all commands of the help system. The help supports the first level of help

Hide Topology

Core

Console

Corp1 .254

.30

S2-Hosts

.1 .2 .3 .4

A B C D

S1-SRVS

.17

Finance Web Server

Public Web Server

File Edit View Favorites Tools Help

Back

Click on the "X" button on the top right corner to close the browser window and view the Topology.

Address http://   Go

Version 1.0   00:04:

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Hide Topology

Done   Internet

File Edit View Favorites Tools Help

Click on the "X" button on the top right corner to
close the browser window and view the Topology.

Address http://   Go

Version 1.0   00:04:3

• You may need to scroll this window and the problem statement window.
• Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Hide Topology   Done   Internet

File Edit View Favorites Tools Help

Click on the "X" button on the top right corner to
close the browser window and view the Topology.

Address http://   Go

Version 1.0   00:06:

• To access a host, simply click on picture of host that you want to use and configure it. Certain hosts have dotted lines that represent the serial "console" cables.
• The help command does not display all commands of the help system. The help supports the first level of help

Hide Topology   Done   Internet

File Edit View Favorites Tools Help

Click on the "X" button on the top right corner to
close the browser window and view the Topology.

Address http://   Go

Version 1.0   00:06:

• To access a host, simply click on picture of host that you want to use and configure it. Certain hosts have dotted lines that represent the serial "console" cables.
• The help command does not display all commands of the help system. The help supports the first level of help

Hide Topology   Done   Internet

Answer:

Explanation: We should create an access-list and apply it to the interface that is connected to the Server LAN because it can filter out traffic from both S2 and Core networks. To see which interface this is, use the "show ip int brief" command:

```
Corp1#show ip int brief
Interface                IP-Address       OK? Method Status              Protocol
Fastethernet0/0          192.168.125.254  YES manual    up                  up
Fastethernet0/1          172.22.109.30    YES manual    up                  up
Serial0/0                192.168.94.65    YES manual    up                  up
Corp1#
```

From this, we know that the servers are located on the fa0/1 interface, so we will place our numbered access list here in the outbound direction.
Corp1#configure terminal
Our access-list needs to allow host C – 192.168125.3 to the Finance Web Server 172.22.109.17 via HTTP (port 80), so our first line is this:
Corp1(config)#access-list 100 permit tcp host 192.168.125.3 host 172.22.109.17 eq 80
Then, our next two instructions are these:
 Other types of access from host C to the Finance Web Server should be blocked.
 All access from hosts in the Core or local LAN to the Finance Web Server should be blocked.
This can be accomplished with one command (which we need to do as our ACL needs to be no more than 3
lines long), blocking all other access to the finance web server:
Corp1(config)#access-list 100 deny ip any host 172.22.109.17
Our last instruction is to allow all hosts in the Core and on the local LAN access to the Public Web Server (172.22.109.18)
Corp1(config)#access-list 100 permit ip host 172.22.109.18 any Finally, apply this access-list to Fa0/1 interface (outbound direction) Corp1(config)#interface fa0/1
Corp1(config-if)#ip access-group 100 out
Notice: We have to apply the access-list to Fa0/1 interface (not Fa0/0 interface) so that the access-list can filter traffic coming from both the LAN and the Core networks.
To verify, just click on host C to open its web browser. In the address box type http://172.22.109.17
to check
if you are allowed to access Finance Web Server or not. If your configuration is correct then you can access it.
Click on other hosts (A, B and D) and check to make sure you can't access Finance Web Server from these hosts. Then, repeat to make sure they can reach the public server at 172.22.109.18. Finally, save the configuration
Corp1(config-if)#end
Corp1#copy running-config startup-config

NEW QUESTION 591
In which circumstance is static routing most useful?

A. on a stub network
B. on a network with frequent routingchanges
C. on a network that experiences frequent link failures
D. on a large network that must share routes quickly between routers

Answer: A

NEW QUESTION 593
What are types of IPv6 static routes? (Choose Three)

A. Recursive Static routes
B. Directly connected static routes
C. Fully specified static routes
D. Dynamically specified static routes
E. injected static routes
F. Redistributed static routes

Answer: ABC

Explanation: Static Routes
 Directly Attached Static Routes
 Recursive Static Routes
 Fully Specified Static Routes
 Floating Static Routes

NEW QUESTION 595
A network associate is adding security to the configuration of the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.
The task is to create and apply an access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.

is permitted.

Core

Console

.254

Corp1

S2-Hosts

.30

You may need to scroll this window and the problem statement window. Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology button and select
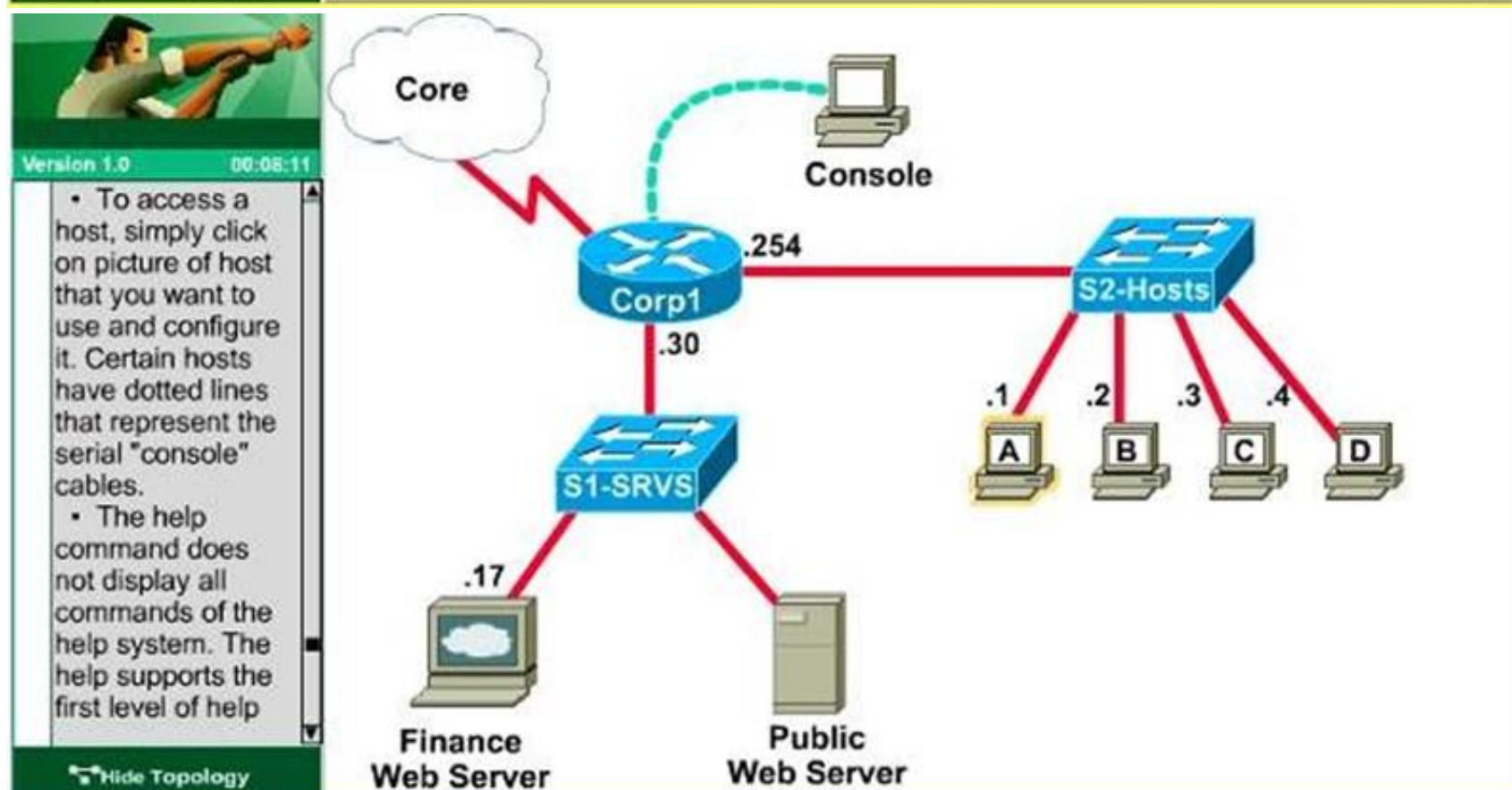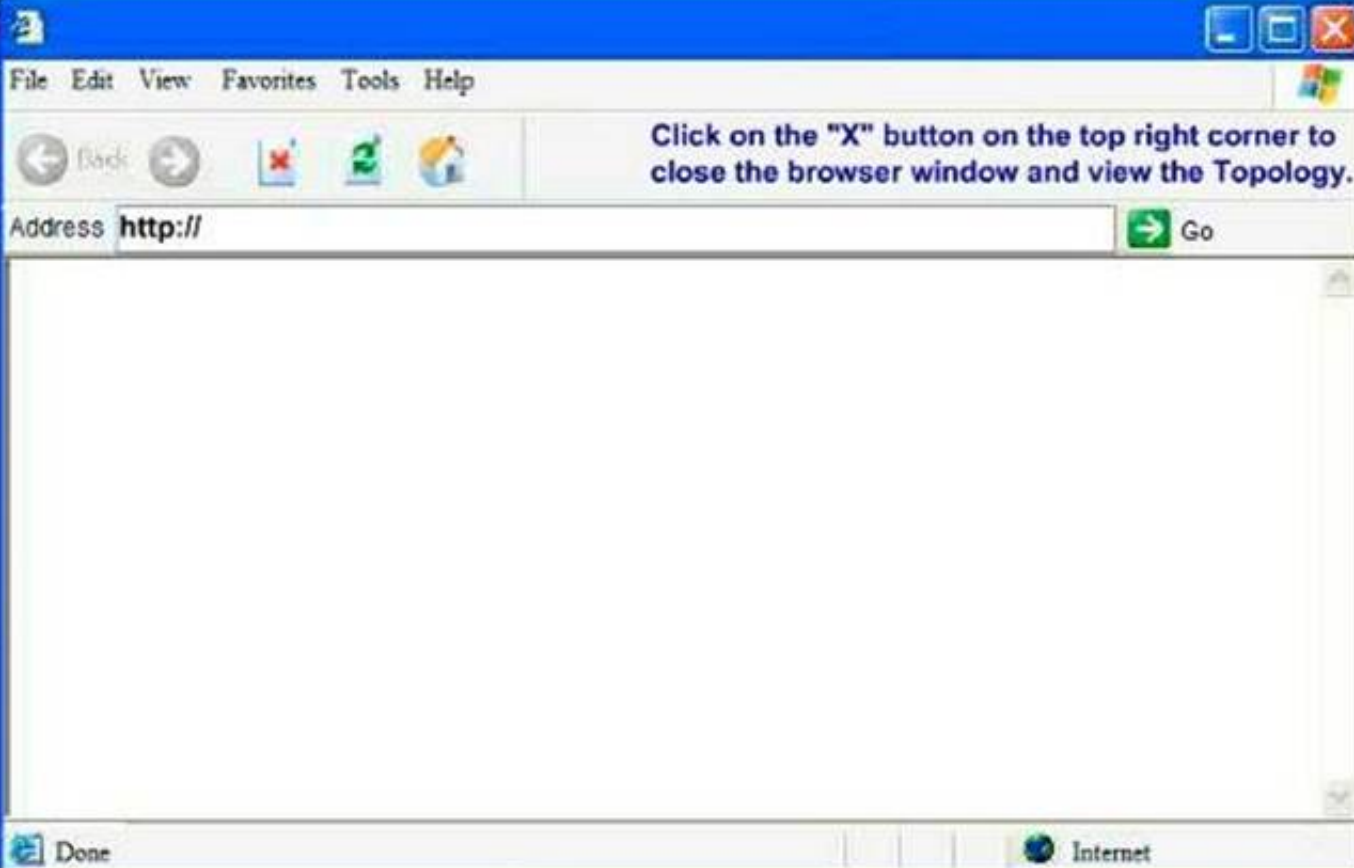
Hide Topology

S1-SRVS

.1   .2   .3   .4
A   B   C   D

Finance Web Server

DNS Server

Public Web Server

Access to the router CLI can be gained by clicking on the appropriate host. All passwords have been temporarily set to "cisco".
The Core connection uses an IP address of 198.18.247.65
The computers in the Hosts LAN have been assigned addresses of 192.168.240.1 - 192.168.240.254
host A 192.168.240.1
host B 192.168.240.2
host C 192.168.240.3

Answer:

Explanation: Corp1#conf t
Corp1(config)# access-list 128 permit tcp host 192.168.240.1 host 172.22.141.26 eq www Corp1(config)# access-list 128 deny tcp any host 172.22.141.26 eq www
Corp1(config)# access-list 128 permit ip any any Corp1(config)#int fa0/1
Corp1(config-if)#ip access-group 128 out Corp1(config-if)#end
Corp1#copy run startup-config

NEW QUESTION 598
Which statement about using MPLS for WAN connectivity is true?

A. it cannot be deployed using a single carrier.
B. It can be deployed in redundant and nonredundant topologies.
C. It can be deployed using LAN aggregation.
D. It must be deployed in a redundant topology.

Answer: A

NEW QUESTION 602
Which Cisco SDN controller supports existing enterprise network devices?

A. APIC-EM
B. OpenFlow
C. Open SDN
D. ACI

Answer: C

NEW QUESTION 604
Which two things does a router do when it forwards a packet? (Choose two.)

A. determines the next hop on the path
B. switches the packet to the appropriate outgoing interfaces
C. computes the destination host address
D. forwards ARP requests
E. updates the destination IP address

Answer: AB

NEW QUESTION 607
Which two characteristics are representatives of a link-state routing protocol? (Choose two.)

A. provides common view of entire topology
B. exchanges routing tables for it own routes with neighbors
C. calculates feasible path
D. utilizes event-triggered updates
E. utilizes frequent periodic updates

Answer: AD

NEW QUESTION 610
Which two statements about RIPv2 are true? (Choose two)

A. It must be manually enabled after RIP is configured as the routing protocol
B. It uses multicast address 224.0.0.2 to share routing information between peers
C. its default administrative distances 120
D. It is a link-state routing protocol
E. It is an EGP routing protocol

Answer: AC

NEW QUESTION 615
For which two protocols can PortFast alleviate potential host startup issues? (Choose two.)

A. DHCP
B. DNS
C. OSPF
D. RIP
E. CDP

Answer: AE

NEW QUESTION 618
ip dhcp pool my pool***
network 192.168.10.0/27
domain name cisco.com
****name server some ip***
Dhcp client in the back can not communicate with hosts in the outside of their subnet ?

A. need to activate dhcp pool
B. need to configure default gateway
C. other option
D. other option

Answer: B

NEW QUESTION 620
Router R1 has a static router that is configured to a destination network. A directly connected inference is configured with an ip address in the same destination network . which statement about R1 is true ?

A. R1 refuses to advertise the dynamic route to other neighbors
B. R1 sends a withdrawal signal to the neighboring router
C. R1 disables the routing protocol
D. R1 prefers the directly connected interface

Answer: D

NEW QUESTION 625
Drag and drop the descriptions of performing an initial device configuration from the left onto the correct features or compnents on the right.

Answer:

Explanation:

NEW QUESTION 627
Which three commands are required to enable NTP authentication on a Cisco router? (Choose three)

A. ntp peer
B. ntp max-associations
C. ntp authenticate
D. ntp trusted-key
E. ntp authentication-key
F. ntp refclock

Answer: CDE

Explanation: http://blog.ine.com/2007/12/28/how-does-ntp-authentication-work/

NEW QUESTION 629
Which feature can you use to restrict SNMP queries to a specific OID tree?

A. server group
B. a community
C. a view record
D. an access group

Answer: C

NEW QUESTION 632
Which statement about the default switch configuration for remote access managements is true?

A. The system name is set to Cisco.
B. The Telnet password is set to cisco.
C. No default gateway is defined.
D. One IP address is preconfigured.

Answer: C

NEW QUESTION 634
Which three are the possible trunking modes for a switch port? (Choose three.)

A. forwarding
B. desirable
C. transparent
D. Auto
E. on
F. off

Answer: BDE

NEW QUESTION 635
Refer to the exhibit.
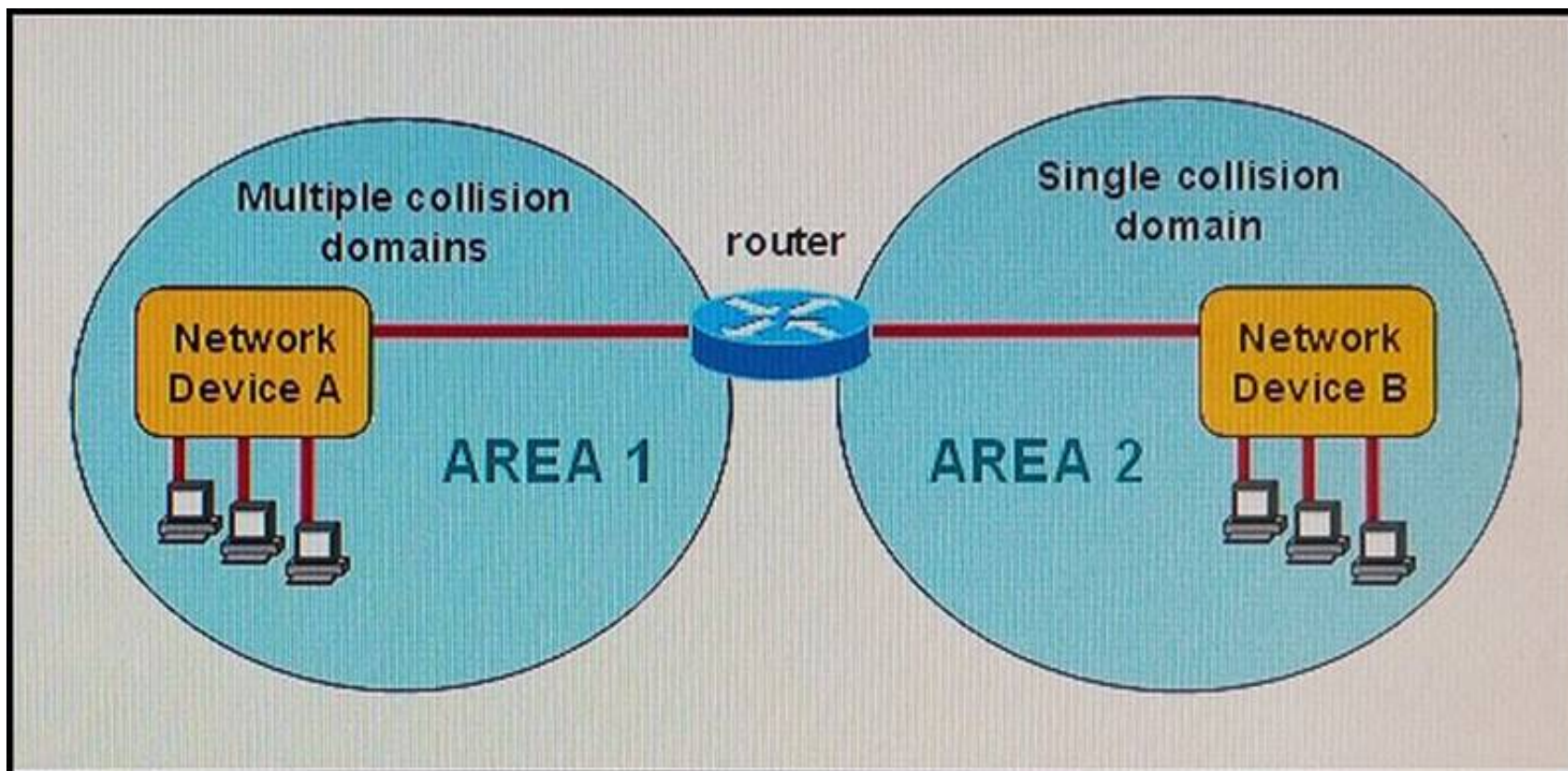
A network has been planned as shown. Which three statements accurately describe the areas and devices in the network plan? (Choose three.)

A. Area 2 contains a Layer 2 device.
B. Network DeviceB is a hub.
C. Network Device A is a hub.
D. Network Device A is a switch.
E. Area 1 contains a Layer 2 device.
F. Network Device B is a switch.

Answer: BDE

NEW QUESTION 638
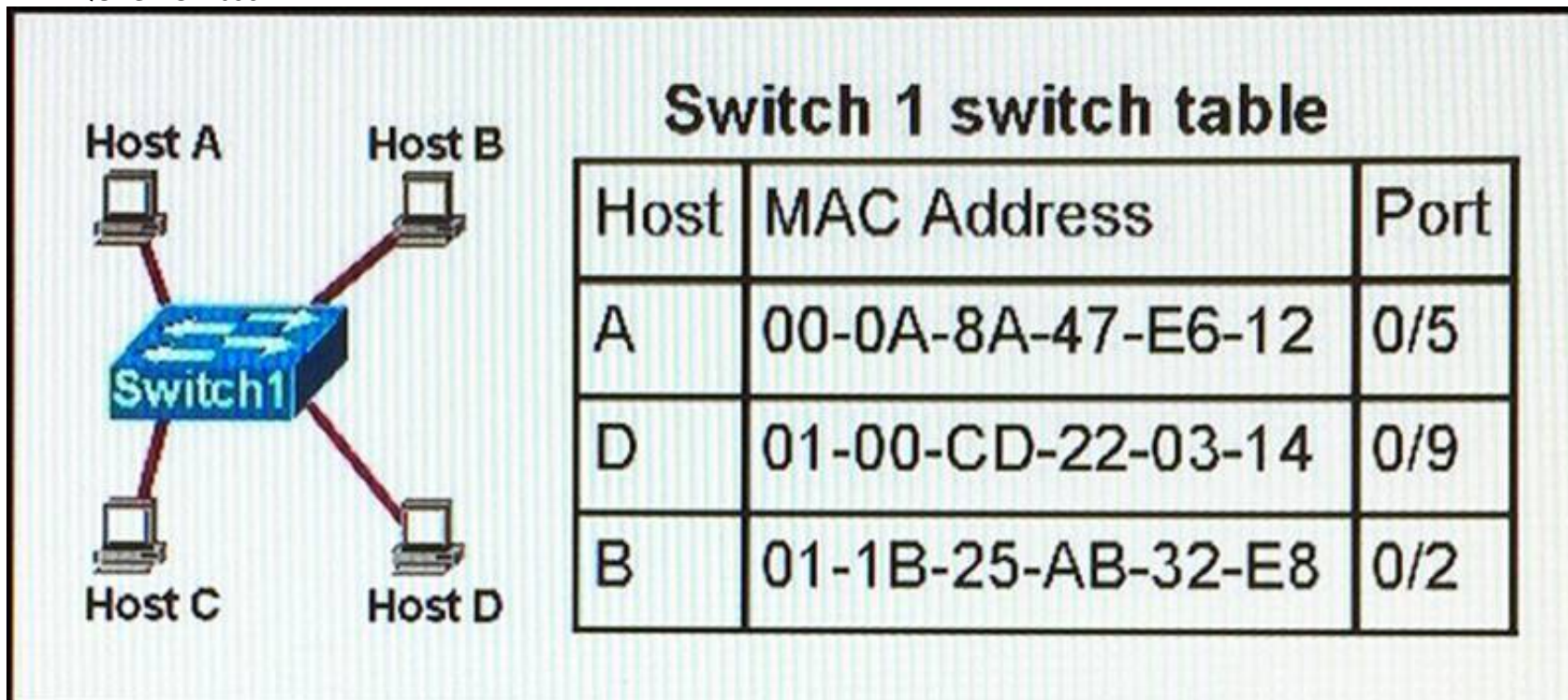
Refer to the topology and switching table shown in the graphic. Host B sends a frame to Host C. Which option describes what the switch will do with the frame?

A. send an ICMP Host Unreachable message to Host B
B. return the frame to Host B
C. drop the frame
D. send the frame out all ports except port 0/2
E. record the destination MAC address in the switching tableand send the frame directly to Host C
F. send an ARP request for Host C

Answer: D

NEW QUESTION 640
Which feature automatically disables Cisco Express Forwarding when it is enabled?

A. multicast
B. IP redirects
C. RIB
D. ACL logging

Answer: D

Explanation: If you enable CiscoExpress Forwarding and then create an access list that uses the logkeyword, the packets that match the access list are not Cisco Express Forwarding switched. They are process switched. Logging disables Cisco Express Forwarding.

NEW QUESTION 645
Refer to the exhibit.
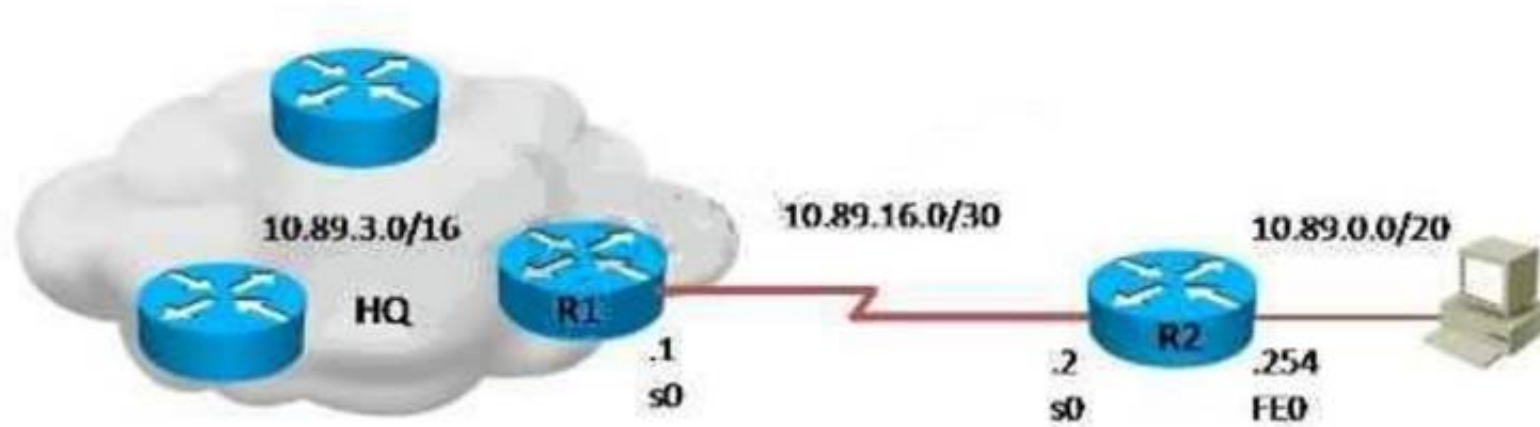
Which command is simplest to configure routing between the regional office network 10.89.0.0/20 and the corporate network?

A. router2(config)#ip route 0.0.0.0 0.0.0.0 10.89.16.1
B. router2(config)#ip route 10.89.3.0 255.255.0.0 10.89.16.2
C. router1(config)#ip route 10.89.0.0 255.255.240.0 10.89.16.1
D. router1(config)#ip route 10.89.0.0 255.255.240.0 10.89.16.2

Answer: A

NEW QUESTION 647
Which protocol verifies connectivity between two switches that are configured with IP addresses in the same network?

A. ICMP
B. STP
C. VTP
D. HSRP

Answer: A

NEW QUESTION 649
Which of the following correctly describe steps in the OSI data encapsulation process? (Choose two)

A. The transport layer divides a data stream into segments and may add reliability and flow control information.
B. The data link layer adds physical source and destination addresses and an FCS to the segment.
C. Packets are created when the network layer encapsulates a frame with source and destination host addresses and protocol-related control information.
D. Packets are created when the network layer adds Layer 3 addresses and control information to a segment.
E. The presentation layer translates bits into voltages for transmission across the physical link.

Answer: AD

Explanation:
The transport layer segments data into smaller pieces for transport. Each segment is assigned a sequence number, so that the receiving device can reassemble the data on arrival.
The transport layer also use flow control to maximize the transfer rate while minimizing the requirements to retransmit. For example, in TCP, basic flow control is implemented by acknowledgment by the receiver of the receipt of data; the sender waits for this acknowledgment before sending the next part.

NEW QUESTION 654
Refer to the exhibit.

```
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
C    192.168.13.0/24 is directly connected, FastEthernet0/1
C    192.168.14.0/24 is directly connected, FastEthernet1/0
     192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

What is the metric for the route from R1 to 192.168.10.1?

A. 2
B. 90
C. 110
D. 52778

Answer: D

NEW QUESTION 657
What value is primarily used to determine which port becomes the root port on each nonroot switch in a spanning-tree topology?

A. path cost
B. lowest port MAC address
C. VTP revision number
D. highest port priority number
E. port priority number and MAC address

Answer: A

Explanation: The path cost to the root bridge is the most important value to determine which port will become the root port on each non-root switch. In particular, the port with lowest cost to the root bridge will become root port (on non-root switch).

NEW QUESTION 661
Which three circumstances can cause a GRE tunnel to be in an up/down state for site id:28254851? (Choose three.)

A. The tunnel interface IP address is misconfigured.
B. The tunnel source interface is down.
C. A valid route to the destination address is missing from the routing table.
D. The tunnel address is routed through the tunnel itself.
E. The ISP is blocking the traffic.
F. An ACL is blocking the outbound traffic.

Answer: BCD

NEW QUESTION 665
An administrator is trying to ping and telnet from SwitchC to RouterC with the results shown below.

```
SwitchC>
SwitchC> ping 10.4.4.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.4.4.3, timeout is 2 seconds:
U.U.U
Success rate is 0 percent (0/5)
SwitchC>
SwitchC> telnet 10.4.4.3
Trying 10.4.4.3 ...
% Destination unreachable; gateway or host down
SwitchC>
```

Click the console connected to RouterC and issue the appropriate commands to answer the questions.

Topology

RouterC

```
Press RETURN to get started!
RouterC>
```

```
<output omitted>

interface Loopback1
  ip address 172.16.4.1.255.255.255.0
!
interface Loopback2
  ip address 10.145.145.1  255.255.255.0
  ipv6 address 2001:410:2:3::/64 eui-64
!
interface FastEthernet0/0
  ip address 10.4.4.3.255.255.255.0
  ip access-group 106 in
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
speed auto
!
interface Serial0/0/0
  bandwidth 64
  no ip address
  ip access-group 102 out
  encapsulation frame-relay
  ip ospf authentication
  ip ospf authentication
  ip ospf authentication-key san-fran
!
interface Serial0/0/0.1 point-to-point
  ip address 10.140.3.2 255.255.255.0
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  frame-relay interface-dlci 120
!
interface Serail0/0/1
  bandwidth 64
  ip address 10.45.45.1 255.255.255.0
  ip access-group 102 in
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
```

```
router eigrp 100
  network 10.0.0.0
  network 172.16.0.0
  network 192.168.2.0
  not auto-summary
!
router ospf 100
  log-adjacency-changes
  network 10.4.4.3 0.0.0.0 area 0
  network 10.45.45.1 0.0.0.0 area 0
  network 10.140.3.2 0.0.0.0 area 0
  network 192.168.2.62 0.0.0.0 area 0
!
router rip
  version 2
  network 10.0.0.0
  network 172.16.0.0
!
ip default-gateway 10.1.1.2
!
!
ip http server
no ip http secure-server
!
```

```
access-list 102 permit tcp any any eq ftp
access-list 102 permit tcp any any eq ftp-data
access-list 102 deny tcp any any eq telnet
access-list 102 deny icmp any any echo-reply
access-list 102 permit ip any any

access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 deny icmp any any echo-reply
access-list 104 permit ip any any

access-list 106 permit tcp any any eq ftp
access-list 106 permit tcp any any ftp-data
access-list 106 deny tcp any any eq telnet
access-list 106 permit icmp any any echo-reply
access-list 110 permit udp any any eq domain
access-list 110 permit udp any eq domain any
access-list 110 permit tcp any any eq domain
access-list 110 permit tcp any eq domain any
access-list 110 permit tcp any any

access-list 114 permit ip 10.4.4.0.0.0.0.255 any

access-list 115 permit ip 0.0.0.0 255.255.255.0 any

access-list 122 deny tcp any any
access-list 122 deny imp any any echo-reply
access-list 122 permit ip any any
!
<output omitted>
```

What would be the effect of issuing the command ip access-group 115 in on the s0/0/1 interface?

A. No host could connect to RouterC through s0/0/1.
B. Telnet and ping would work but routing updates would fail.
C. FTP, FTP-DATA, echo, and www would work but telnet would fail.
D. Only traffic from the 10.4.4.0 network would pass through the interface.

Answer: A

Explanation: First let's see what was configured on interface S0/0/1:

```
interface Serial0/0/1
 bandwidth 64
 ip address 10.45.45.1 255.255.255.0
 ip access-group 102 in
```

NEW QUESTION 667
Which Layer 2 protocol encapsulation type supports synchronous and asynchronous circuits and has built-in security mechanisms?

A. HDLC
B. PPP
C. X.25
D. Frame Relay

Answer: B

Explanation: PPP: Provides router-to-router and host-to-network connections over synchronous and asynchronous circuits. PPP was designed to work with several network layer protocols, including IP. PPP also has built-in security mechanisms, such as Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP).

NEW QUESTION 671
Which type of address is the public IP address of a NAT device?

A. outside global
B. outside local
C. inside global
D. inside local
E. outside public
F. inside public

Answer: C

NEW QUESTION 674
Drag and drop the QoS features from the left onto the correct descriptions on the right

Answer:

Explanation: Best effort = service level that provides basic connectivity without differentiation CAR = Polices traffic based on its bandwidth allocation
Hard Qos = service level that provides reserved network resources NBAR = identification tool ideal for handling web application PBR = uses route maps to match traffic criteria
Soft Qos = service level that provides preferred handling
http://docwiki.cisco.com/wiki/Quality_of_Service_Networking#CAR:_Setting_IP_Precedence

NEW QUESTION 675
Which two address are defined as private ip addresses ? (Choose two.)

A. 192.169.32.10
B. 10.172.76.200
C. 172.15.2.250
D. 12.17.1.20
E. 172.31.255.100

Answer: BE

NEW QUESTION 678
Which command would you configure globally on a Cisco router that would allow you to view directly connected Cisco devices?

A. enable cdp
B. cdp enable
C. cdp run
D. run cdp

Answer: C

Explanation: CDP is enabled on Cisco routers by default. If you prefer not to use the CDP capability, disable it with the no cdp run command. In order to reenable CDP, use the cdp run command in global configuration mode. The "cdp enable" command is an interface command, not global.

NEW QUESTION 682
Drag and Drop the PPPoE message types from the left into the sequence in which PPPoE messages are sent on the right.

PADI		1
PADO		2
PADR		3
PADS		4
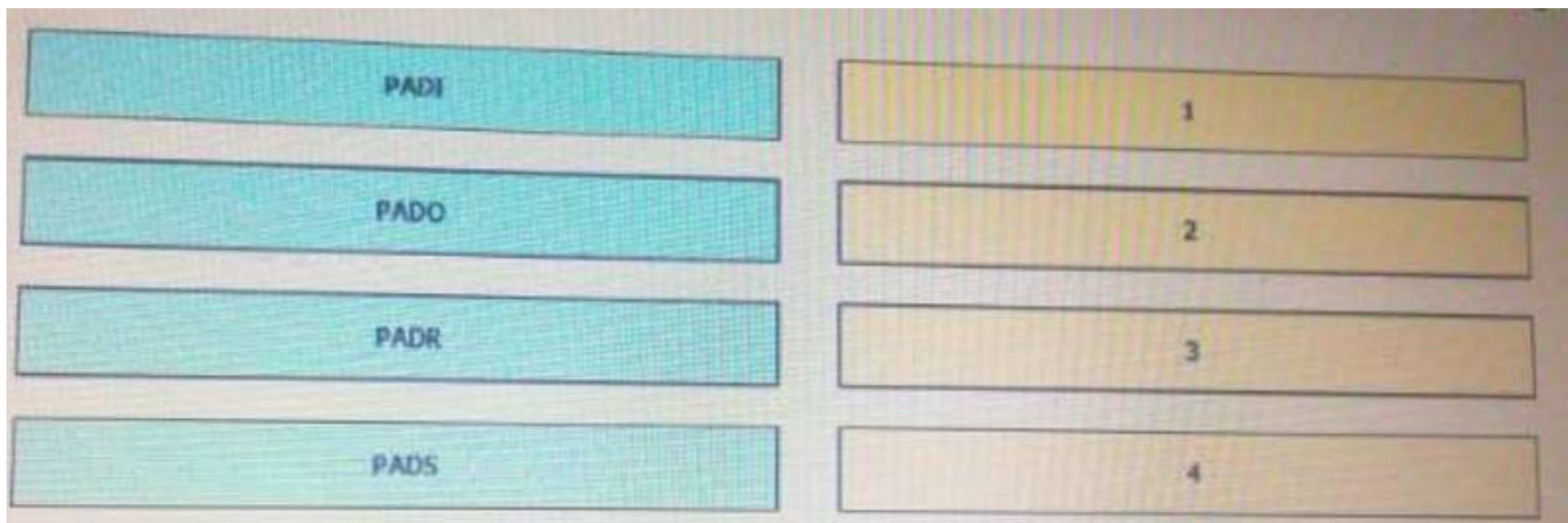
Answer:

Explanation: PADI PADO PADR PADS

NEW QUESTION 683
Scenario
Refer to the topology. Your company has connected the routers R1, R2, and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.
The EIGRP routing protocol is configured.
You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.

Topology

EIGRP AS 1

R4   SW1   R2
e0/0   e0/0   S2/1

R1
S1/3

S1/1
e0/0

R5   SW2   R3
e0/0   e0/0   S2/1

e0/0

R6

R1 ✕

R1#

R2 ✕

R2#

R3 ✕

R3#

R4

R4#

R5

R5#

R6

R6#

SW1

SW1#

SW2

SW2#
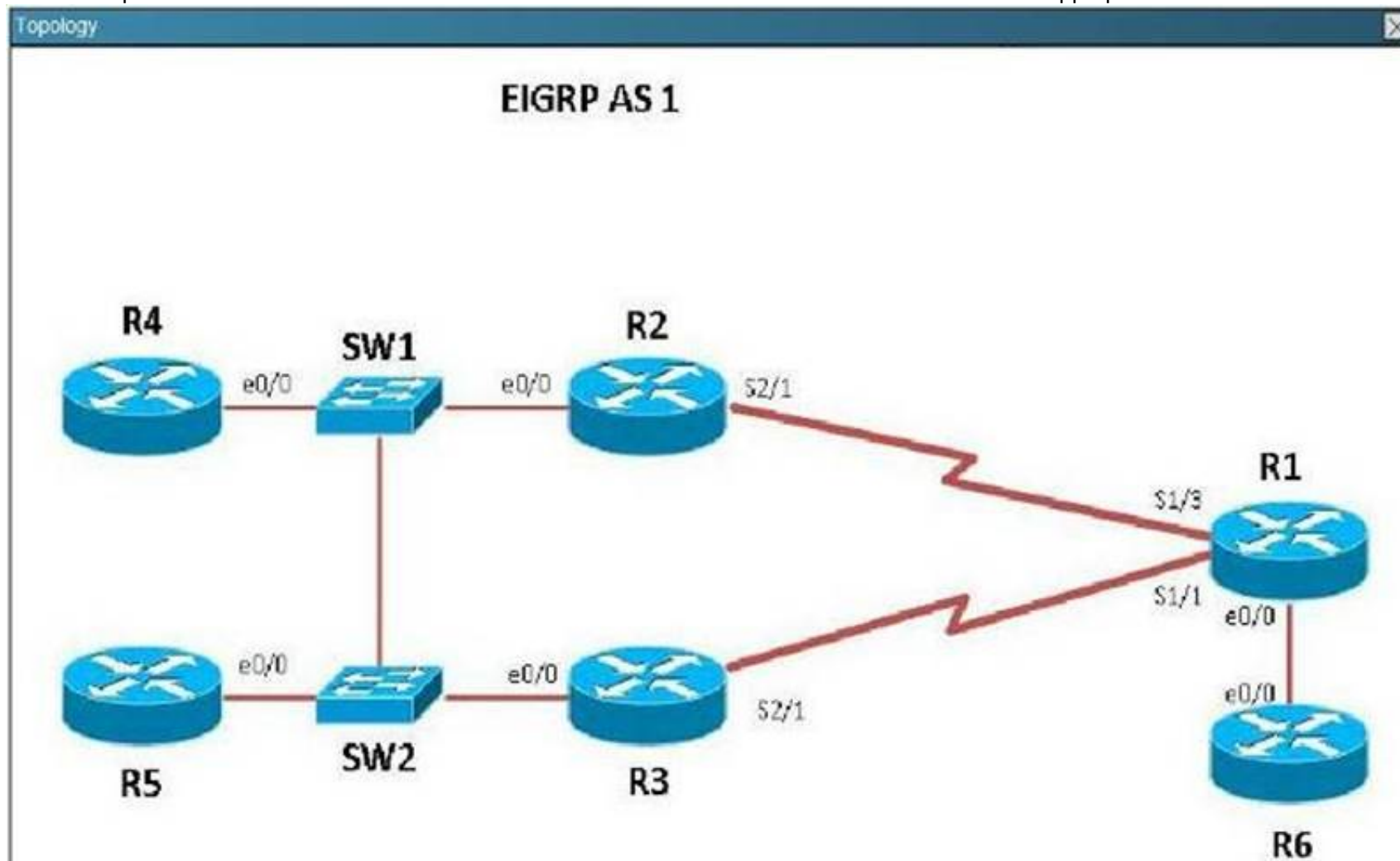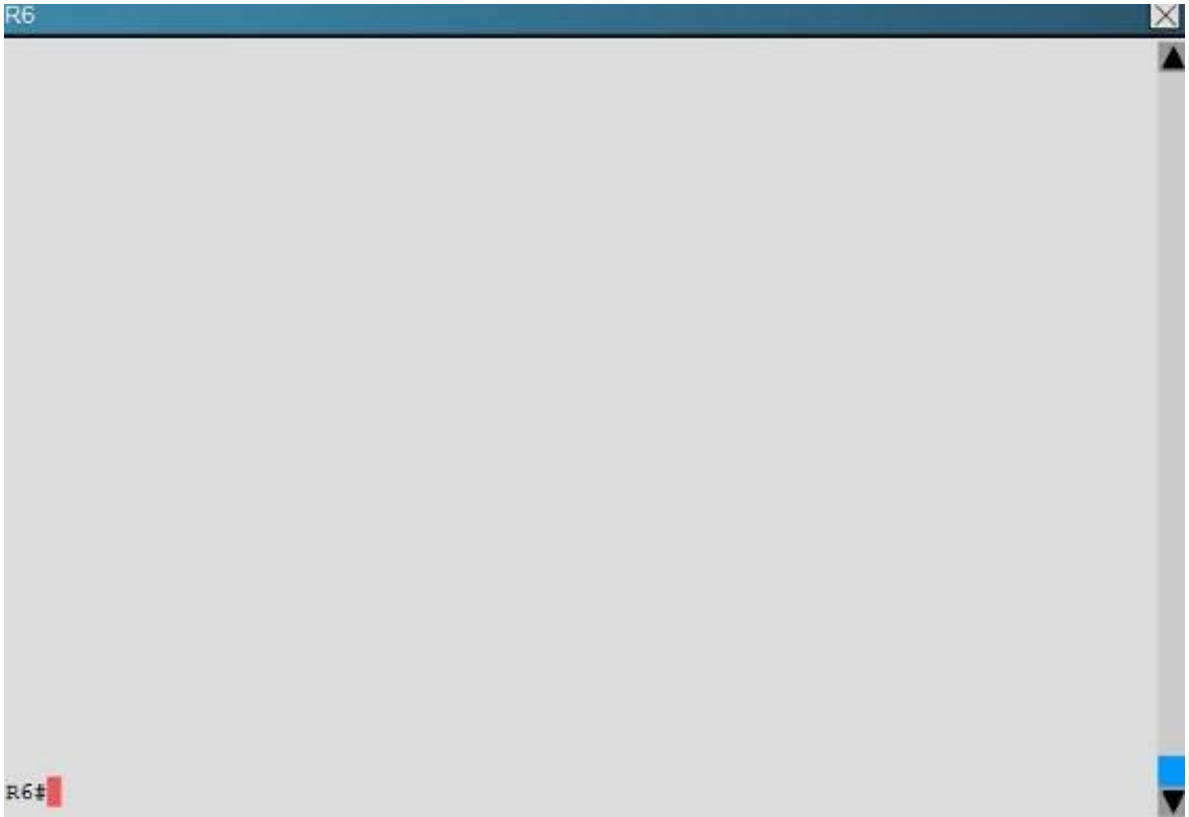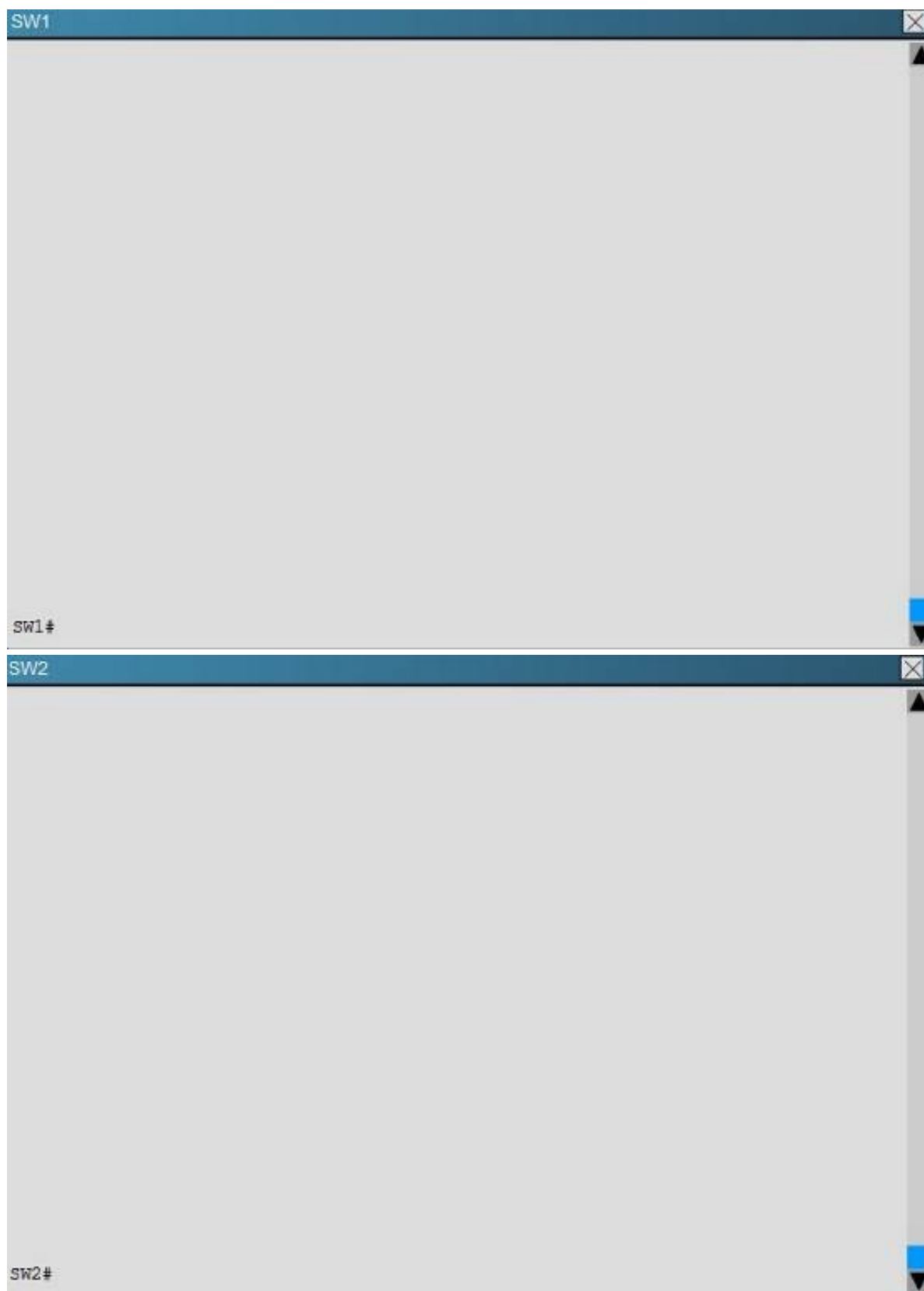
The loopback interfaces on R4 with the IP addresses of 10.4.4.4/32, 10.4.4.5/32, and 10.4.4.6/32 are not appearing in the routing table of R5. Why are the interfaces missing?

A. The interfaces are shutdown, so they are not being advertised.
B. R4 has been incorrectly configured to be in another AS, so it does not peer with R5.
C. Automatic summarization is enabled, so only the 10.0.0.0 network is displayed.
D. The loopback addresses haven't been advertised, and the network command is missing on R4.

Answer: B

Explanation: For an EIGRP neighbor to form, the following must match:
- Neighbors must be in the same subnet
- K values
- AS numbers
- Authentication method and key strings
Here, we see that R4 is configured for EIGRP AS 2, when it should be AS 1.

```
R4
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
!
router eigrp 2
 network 10.4.4.4 0.0.0.0
 network 10.4.4.5 0.0.0.0
 network 10.4.4.6 0.0.0.0
 network 192.168.123.0
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!

 --- More (18) --- █
```

```
R5
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
!
router eigrp 1
 network 10.5.5.5 0.0.0.0
 network 10.5.5.55 0.0.0.0
 network 10.10.10.0 0.0.0.255
 network 192.168.123.0
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!

control-plane
```

NEW QUESTION 684
Scenario:
You are a junior network engineer for a financial company, and the main office network is experiencing network issues. Troubleshoot the network issues.
Router R1 connects the main office to the internet, and routers R2 and R3 are internal routers. NAT is enabled on router R1.
The routing protocol that is enabled between routers R1, R2 and R3 is RIPv2.
R1 sends the default route into RIPv2 for the internal routers to forward internet traffic to R1.
You have console access on R1, R2 and R3 devices. Use only show commands to troubleshoot the issues.

```
R1                                                              ☒

Current configuration : 1651 bytes
!
! No configuration change since last restart
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
  --- More (105) ---
```

```
R1                                                              ☒

!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
  --- More (79) ---
```

```
R1                                                              ☒
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.200.225 255.255.255.224
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 ip address 172.16.200.1 255.255.255.0
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.10.1 255.255.255.252
 ip access-group R2LANBLOCK in
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
```

```
R1                                                                    ×
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 0.0.0.0 0.0.0.0 209.165.200.226
!
ip access-list standard R2LANBLOCK
 deny   10.100.20.0 0.0.0.255
 permit any
!
ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
 --- More (7) --- █
```

```
R1                                                                    ×
ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
ntp server 209.165.200.226
!
end
R1#█
```

```
R2                                                                    ×
Building configuration...

Current configuration : 1243 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
 --- More (92) --- █
```

```
R2                                                                    ✕
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
```

```
R2                                                                    ✕
!
!

!
ip dhcp excluded-address 192.168.20.1
!
ip dhcp pool DHCPASSIGNR3
 network 10.10.10.0 255.255.255.252
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
R2#
```

```
R3                                                                    ✕
Current configuration : 1115 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
```

```
R3                                                          ⌧
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
 --- More (60) ---
```

```
R3                                                          ⌧
!
!
interface Loopback0
 ip address 192.168.250.3 255.255.255.255
!
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.100.10.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address dhcp
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
```

```
R3                                                          ⌧
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
 network 192.168.250.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
```

```
R3                                                        ☒

 network 192.168.250.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4                                               1
 --- More (5) ---
```

```
R3                                                        ☒

!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#
```

Users complain that they are unable to reach internet sites. You are troubleshooting internet connectivity problem at main office. Which statement correctly identifies the problem on Router R1?

A. Interesting traffic for NAT ACL is incorrectly configured.
B. NAT configurations on the interfaces are incorrectly configured
C. NAT translation statement incorrectly configured.
D. Only static NAT translation configured for the server, missing Dynamic NAT or Dynamic NAT overloading for internal networks.

Answer: B

Explanation:

```
R1
!
!
!
!
interface Loopback0
 ip address 192.168.250.1 255.255.255.255
!
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.200.225 255.255.255.224
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 ip address 172.16.200.1 255.255.255.0
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.10.1 255.255.255.252
 ip nat outside
 ip virtual-reassembly in
!
```

NEW QUESTION 685

Which of the following is a security best practice?

A. Use multifactor VPN authentication.
B. Use only commercially licensed software
C. Use only WiFi instead of Ethernet cabling
D. use only solid state hard drives in servers.

Answer: A

NEW QUESTION 687

Instructions

- Enter Cisco IOS commands on the device to verify network operation and answer for multiple-choice questions.
- **THIS TASK DOES NOT REQUIRE DEVICE CONFIGURATION.**
- Click the device icon to gain access to the console of the router. No console or enable passwords are required.
- To access the multiple-choice questions, click the numbered boxes on the left of the top panel.
- This task has **four** multiple-choice questions. Be sure to answer all four questions before clicking the Next button.

Scenario

You are implementing PPP over serial links between R1 router and branch offices. In Phase 1 you must implement and verify PPP and GRE tunnel configurations as mentioned in the topology. In Phase 2 your colleague is expected to do NAT and ISP configurations between R1 and ISP router.

Identify the issues that you encounter during PPP over serial links implementation.

Routers Branch1, Branch2, and Branch3 connect to Router R1 in the main office over serial links.
PPP multilink implementation is recommended between R1 and Branch1 routers.
The GRE tunnel is configured between R2 and Branch2 routers, and traffic between Server farm1 10.10.10.0/24 network and Branch2 LAN 10.10.20.0/24 network, is routed over GRE tunnel using static route.

You have console access on R1, R2, Branch1, Branch2, and Branch3 devices. Use only show commands to troubleshoot the issues.

Topology

R1

R1#

R2

R2#

```
Branch1



Branch1#
```

```
Branch2



Branch2#
```

```
Branch3



Branch3#
```
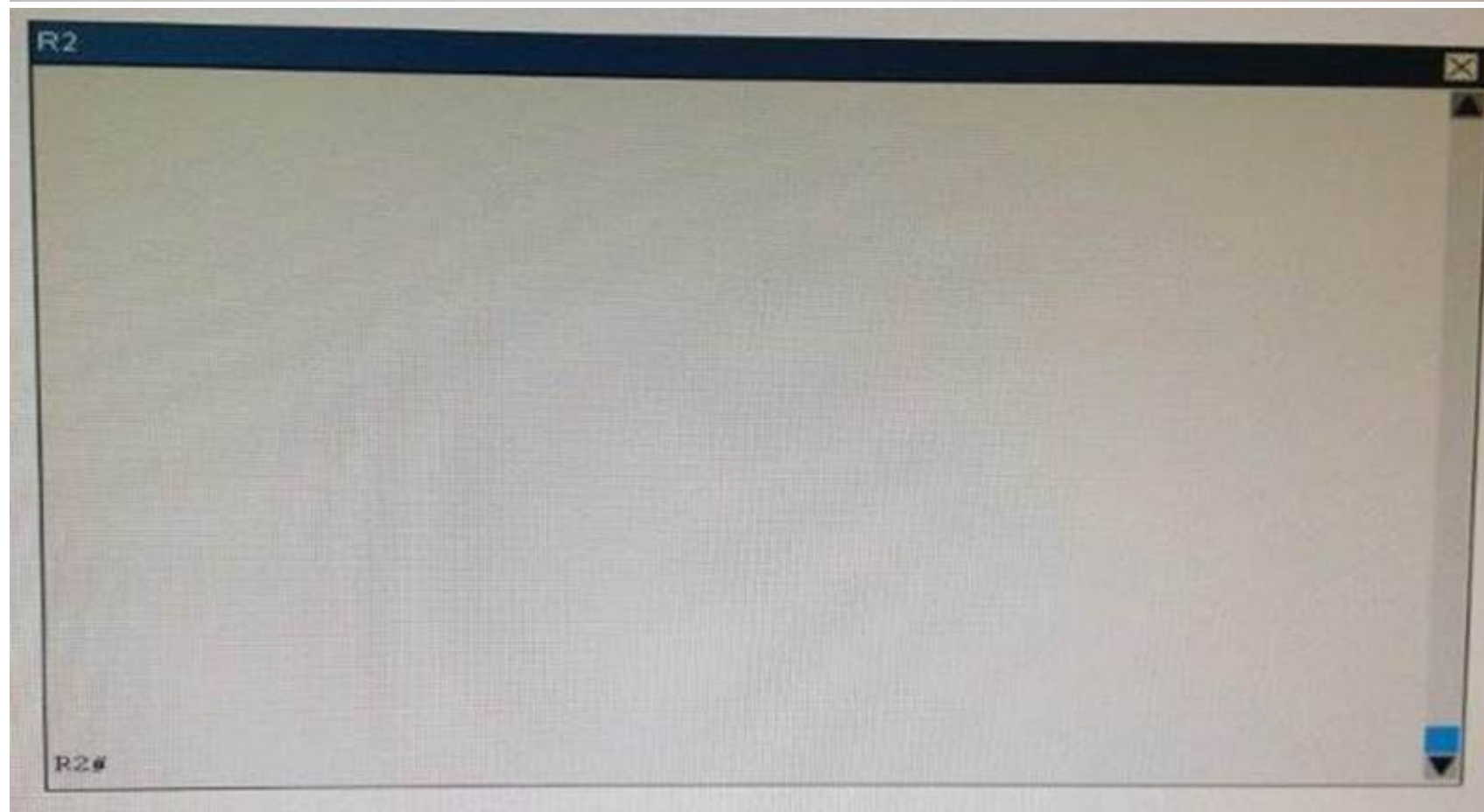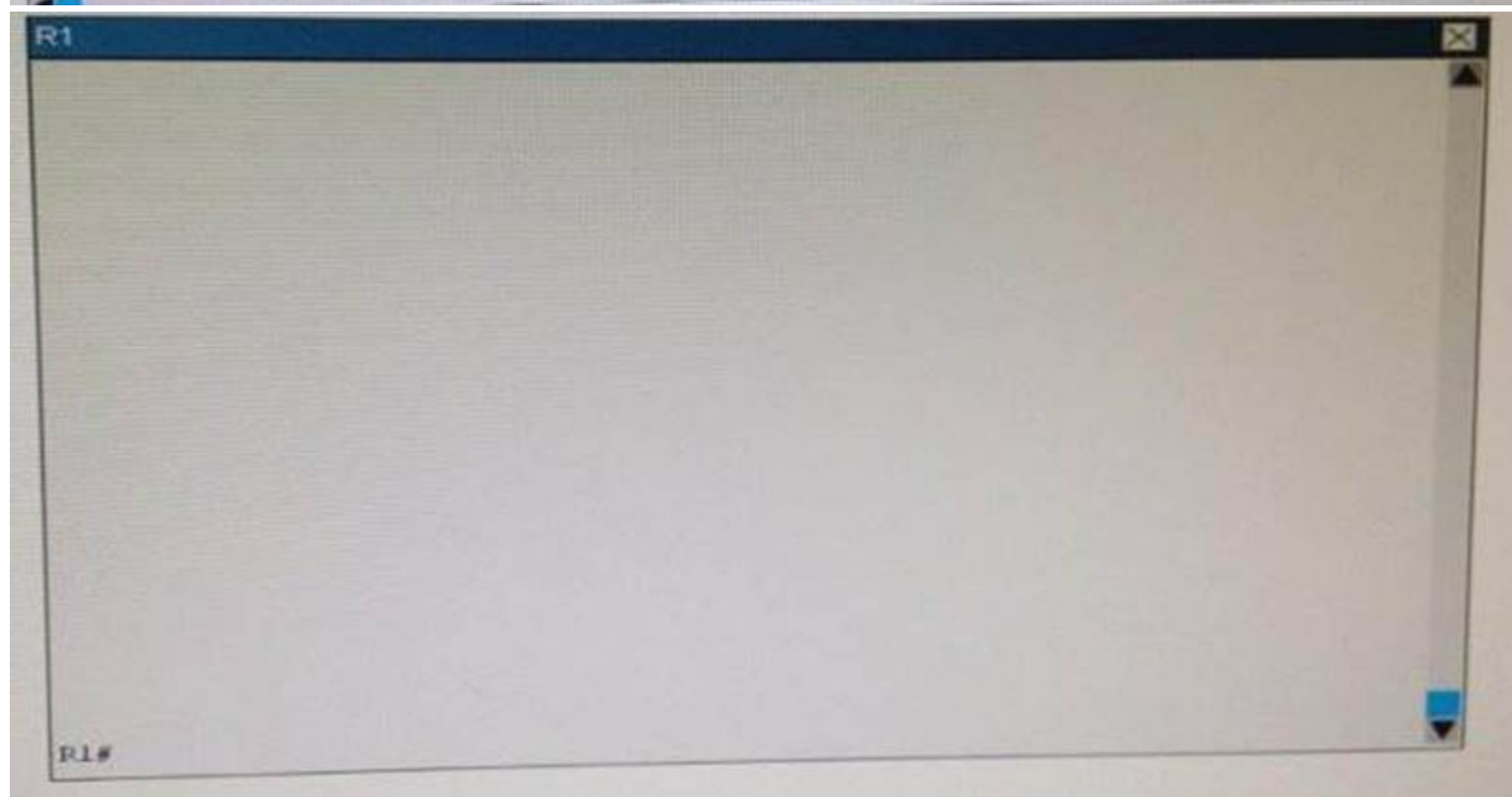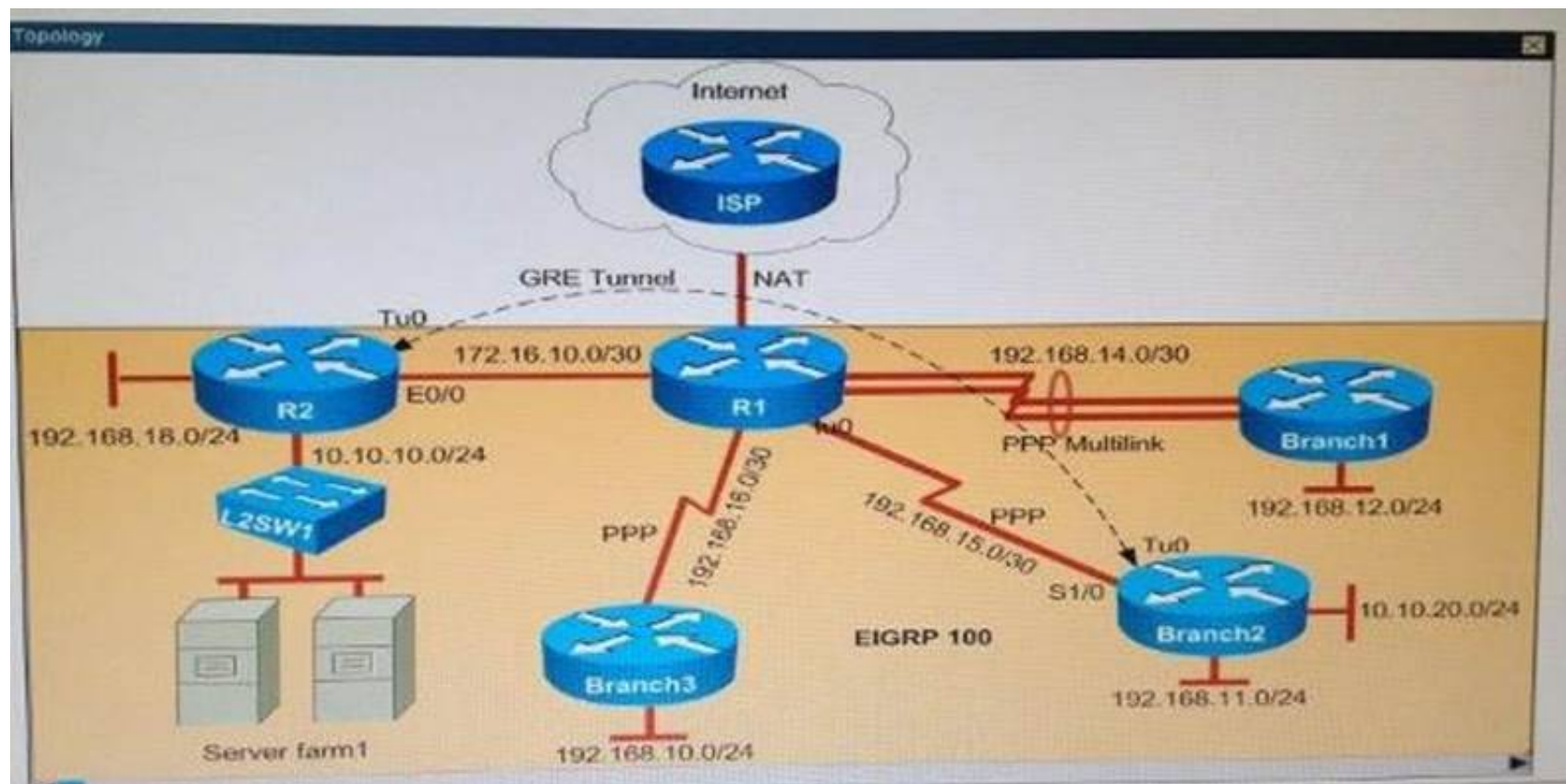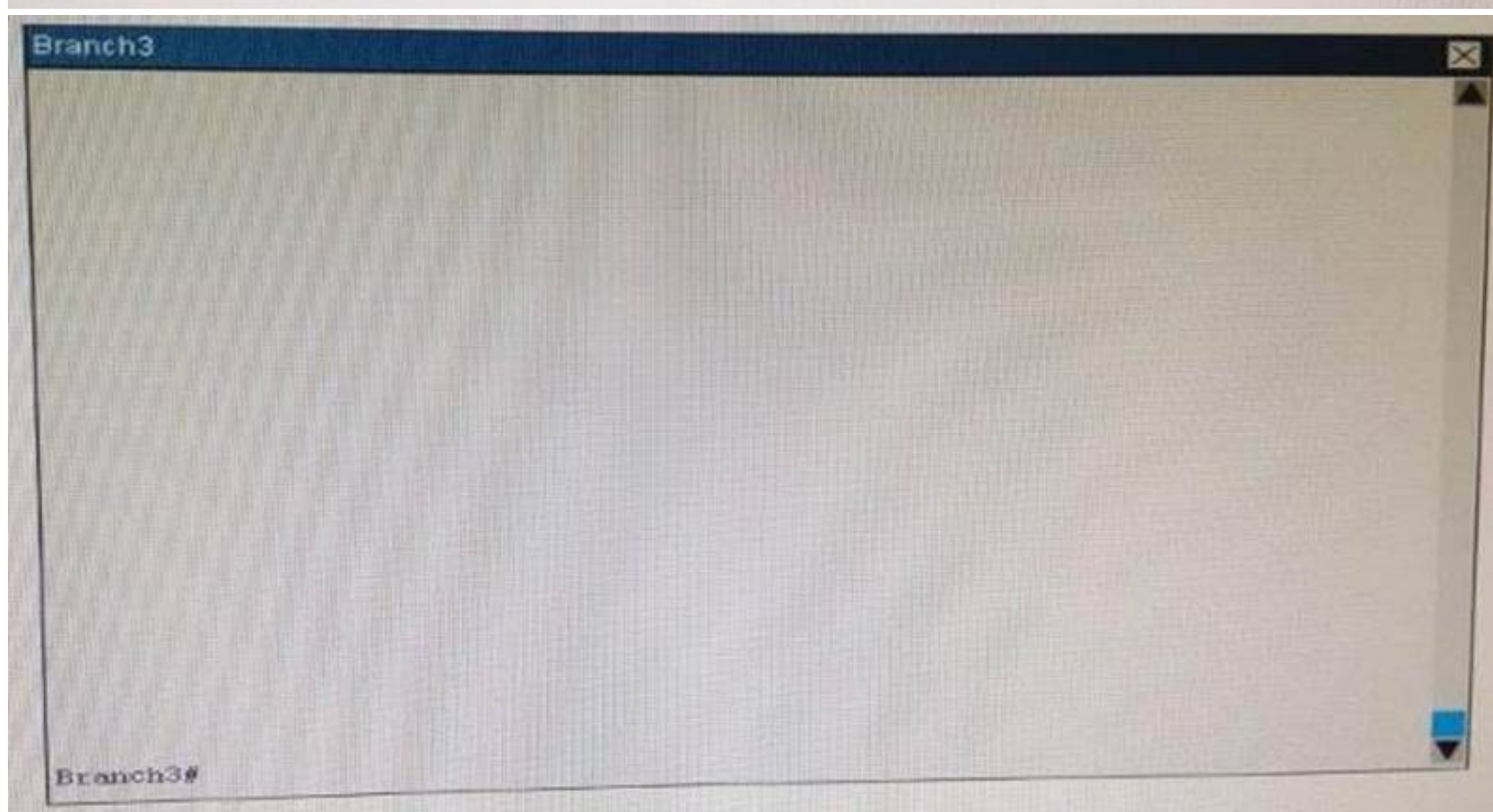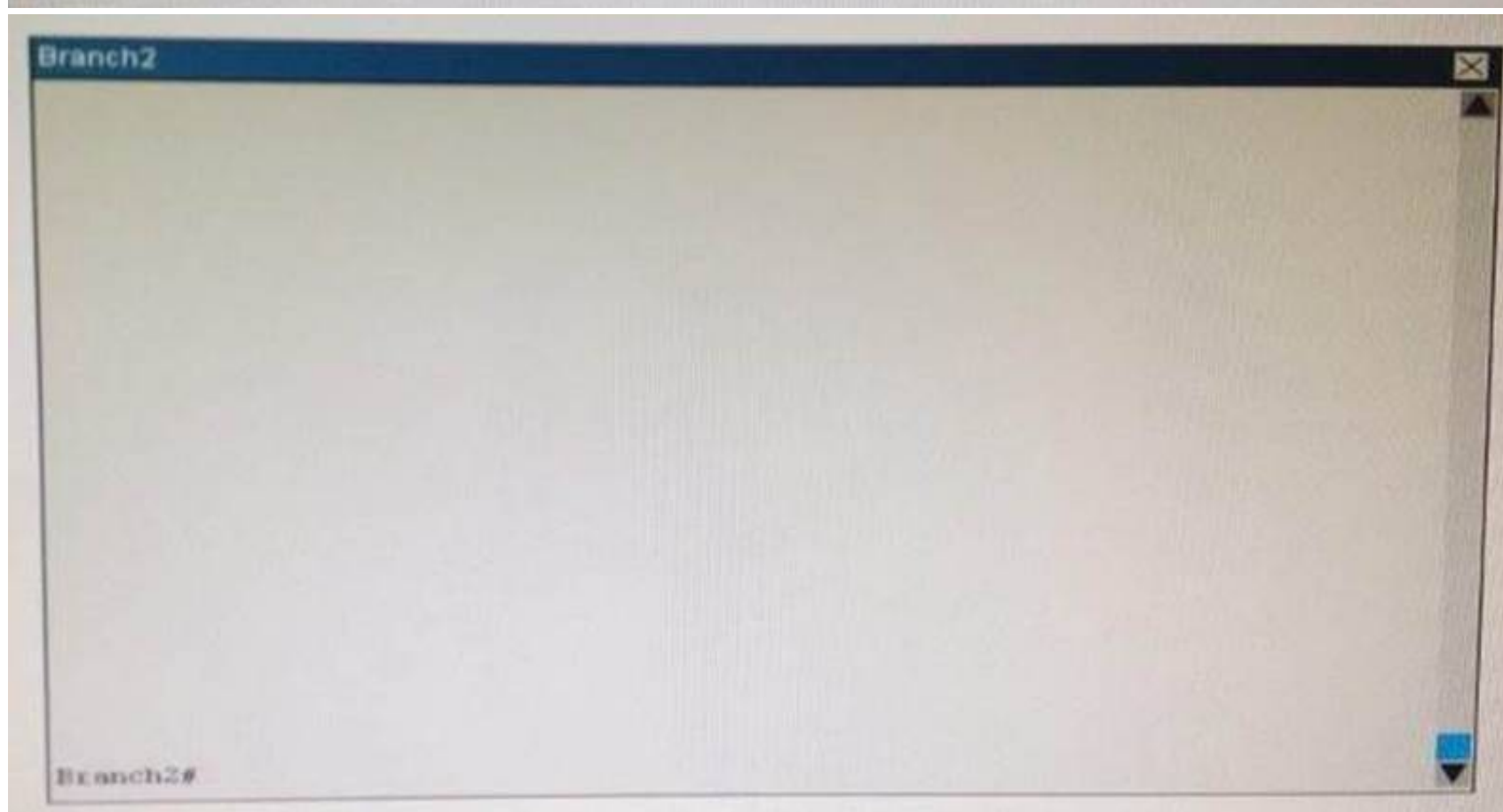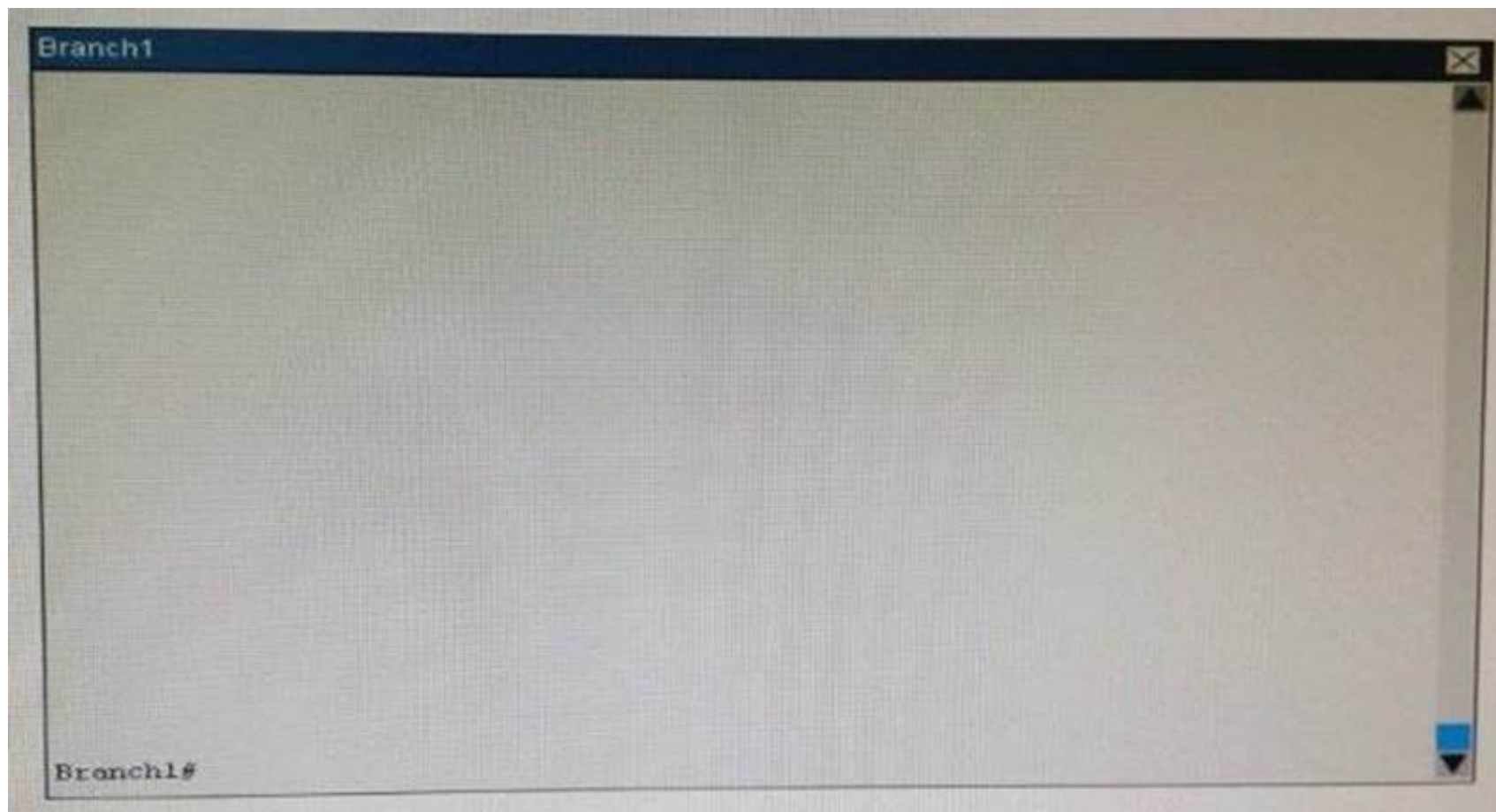
Which statement about the router configurations is correct?

A. PPP PAP is authentication configured between Branch2 and R1.
B. Tunnel keepalives are not configured for the tunnel0 interface on Branch2 and R2.

C. The Branch2 LAN network 192.168.11 0/24 is not advertised into the EIGRP network.
D. The Branch3 LAW network 192.168.10.0/24 is not advertised into the EIGRP network.
E. PPP CHAP is authentication configured between Branch1 and R1.

Answer: D

Explanation: When we check Branch3 router we notice that "network 192.168.10.0" command is missing under "router eigrp 100"

```
Branch3#show running-config
<output omitted>
!
router eigrp 100
 network 192.168.16.0
!
```

NEW QUESTION 688
A user is unable to connect to the Internet. Based on the layered approach to troubleshooting and beginning with the lowest layer, drag each procedure on the left to its proper category on the right.

A user is unable to connect to the Internet. Based on the layered approach to troubleshooting and beginning with the lowest layer, drag each procedure on the left to its proper category on the right.	
verify URL	Step 1
verify NIC operation	Step 2
verify IP configuration	Step 3
verify Ethernet cable connection	Step 4

Answer:

Explanation: The question asks us to "begin with the lowest layer" so we have to begin with Layer 1: verify physical connection; in this case an Ethernet cable connection. For your information, "verify Ethernet cable connection" means that we check if the type of connection (crossover, straight-through, rollover…) is correct, the RJ45 headers are plugged in, the signal on the cable is acceptable…
Next we "verify NIC operation". We do this by simply making a ping to the loopback interface 127.0.0.1. If it works then the NIC card (layer 1, 2) and TCP/IP stack (layer 3) are working properly.
Verify IP configuration belongs to layer 3. For example, checking if the IP can be assignable for host, the PC's IP is in the same network with the gateway…
Verifying the URL by typing in your browser some popular websites like google.com, microsoft.com to assure that the far end server is not down (it sometimes make we think we can't access to the Internet). We are using a URL so this step belongs to layer 7 of the OSI model.

NEW QUESTION 691
Which three statements accurately describe Layer 2 Ethernet switches? (Choose three.)

A. Spanning Tree Protocol allows switches to automatically share VLAN information.
B. Establishing VLANs increases the number of broadcast domains.
C. Switches that are configured with VLANs make forwarding decisions based on both Layer 2 and Layer 3 address information.
D. Microsegmentation decreases the number of collisions on the network.
E. In a properly functioning network with redundant switched paths, each switched segment will contain one root bridge with all its ports in the forwarding stat
F. All other switches in that broadcast domain will have only one root port.
G. If a switch receives a frame for an unknown destination, it uses ARP to resolve the address.

Answer: BDE

Explanation: Microsegmentation is a network design (functionality) where each workstation or device on a network gets its own dedicated segment (collision domain) to the switch. Each network device gets the full bandwidth of the segment and does not have to share the segment with other devices. Microsegmentation reduces and can even eliminate collisions because each segment is its own collision domain ->.
Note: Microsegmentation decreases the number of collisions but it increases the number of collision domains.

NEW QUESTION 692
Which three are benefits of VLANs? (Choose three.)

A. They increase the size of collision domains.
B. They allow logical grouping of users by function.
C. They can enhance network security.
D. They increase the size of broadcast domains while decreasing the number of collision domains.
E. They increase the number of broadcast domains while decreasing the size of the broadcast domains.
F. They simplify switch administration.

Answer: BCE

Explanation:
When using VLAN the number and size of collision domains remain the same -> VLANs allow to group users by function, not by location or geography -> .
VLANs help minimize the incorrect configuration of VLANs so it enhances the security of the network -> . VLAN increases the size of broadcast domains but does

not decrease the number of collision domains ->
VLANs increase the number of broadcast domains while decreasing the size of the broadcast domains which increase the utilization of the links. It is also a big advantage of VLAN -> .
VLANs are useful but they are more complex and need more administration ->

NEW QUESTION 697
Refer to the exhibit.
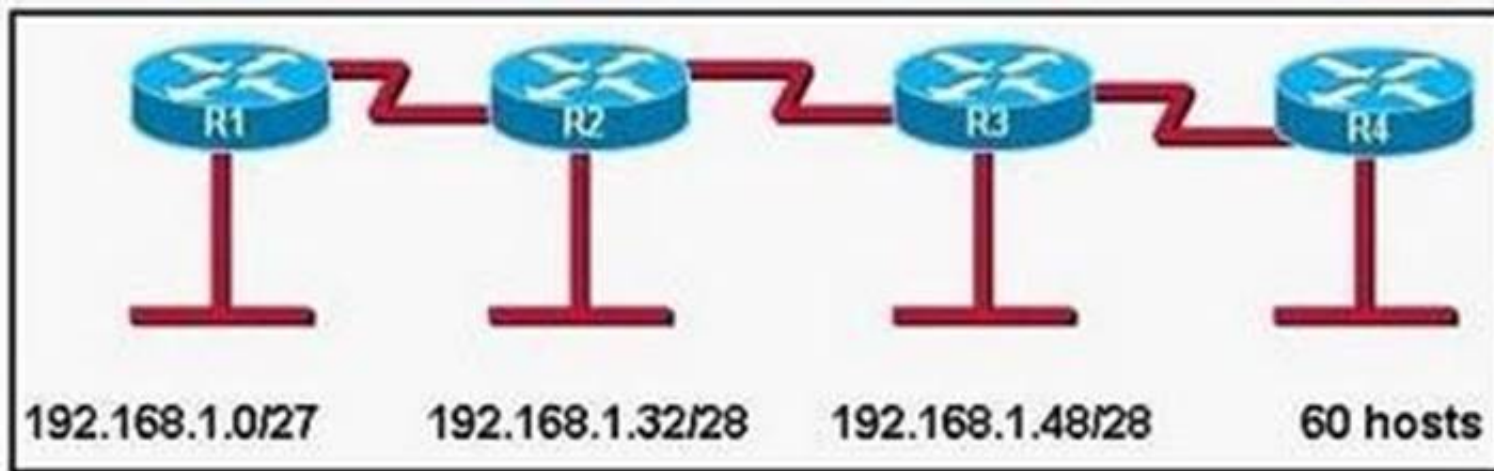
A new subnet with 60 hosts has been added to the network. Which subnet address should this network use to provide enough usable addresses while wasting the fewest addresses?

A. 192.168.1.56/26
B. 192.168.1.56/27
C. 192.168.1.64/26
D. 192.168.1.64/27

Answer: C

Explanation: A subnet with 60 host is 2*2*2*2*2*2 = 64 -2 == 62
6 bits needed for hosts part. Therefore subnet bits are 2 bits (8-6) in fourth octet. 8bits+ 8bits+ 8bits + 2bits = /26
/26 bits subnet is 24bits + 11000000 = 24bits + 192 256 – 192 = 64
0 -63
64 – 127

NEW QUESTION 700
Which two statements about ipv6 any cast addresses are true ?

A. They receive packets on the closest interface that is dissolved by the routing protocol
B. They are used in conjunction with source specific multicast for ipv6
C. They are allocated from the ipv6 broadcast address space
D. They are allocated from the ipv6 unicast address space
E. They use the prefix fC00: /8

Answer: AD

NEW QUESTION 704
Which option describes a benefit of a point-to-point leased line?

A. full-mesh capability
B. flexibility of design
C. low cost
D. simplicity of configuration

Answer: D

NEW QUESTION 705
Drag the security features on the left to the specific security risks they help protect against on the right. (Not all options are used.)

Answer:

Explanation:

Drag the security features on the left to the specific security risks they help protect against on the right. (Not all options are used.)

Left	Right
access-group	VTY password
console password	console password
enable secret	access-group
CHAP authentication	service password-encryption
VTY password	enable secret
service password-encryption	

NEW QUESTION 709
What are three features of the IPv6 protocol? (Choose three.)

A. optional IPsec
B. autoconfiguration
C. no broadcasts
D. complicated header
E. plug-and-play
F. checksums

Answer: BCE

Explanation: An important feature of IPv6 is that it allows plug and play option to the network devices by allowing them to configure themselves independently. It is possible to plug a node into an IPv6 network without requiring any human intervention. This feature was critical to allow network connectivity to an increasing number of mobile devices. This is accomplished by autoconfiguration.
IPv6 does not implement traditional IP broadcast, i.e. the transmission of a packet to all hosts on the attached link using a special broadcast address, and therefore does not define broadcast addresses. In IPv6, the same result can be achieved by sending a packet to the link-local all nodes multicast group at address ff02::1, which is analogous to IPv4 multicast to address 224.0.0.1.

NEW QUESTION 711
Drag and drop the IPv6 IP addresses from the left onto the correct IPv6 address types on the right

Left	Right
::	modified EUI-64
2020:10DB:0:0:85AB:800:52:7348	multicast
DB:FC:93:FF:FE:DB:05:0A	unicast
FF01::1	unspecified

Answer:

Explanation: FF01::1 = multicast
= unspecified
2020:10DB:0:0:85AB:800:52:7348 = Modified EUI-64 DB:FC:93:FF:FE:DB:05:0A = unicast

---

NEW QUESTION 713
In which STP state does MAC address learning take place on a PortFast-enabled port?

A. learning
B. listening
C. discarding
D. forwarding

Answer: D

Explanation: http://www.omnisecu.com/cisco-certified-network-associate-ccna/spanning-tree-port-states.php

---

NEW QUESTION 714
Drag and drop the networking features or functions from the left onto the planes on which they operate on the right .

data encapsulation	Control Plane
device access	
establishes Telnet sessions	
filtering	
QoS	Data Plane
routing state exchange	

Answer:

Explanation:
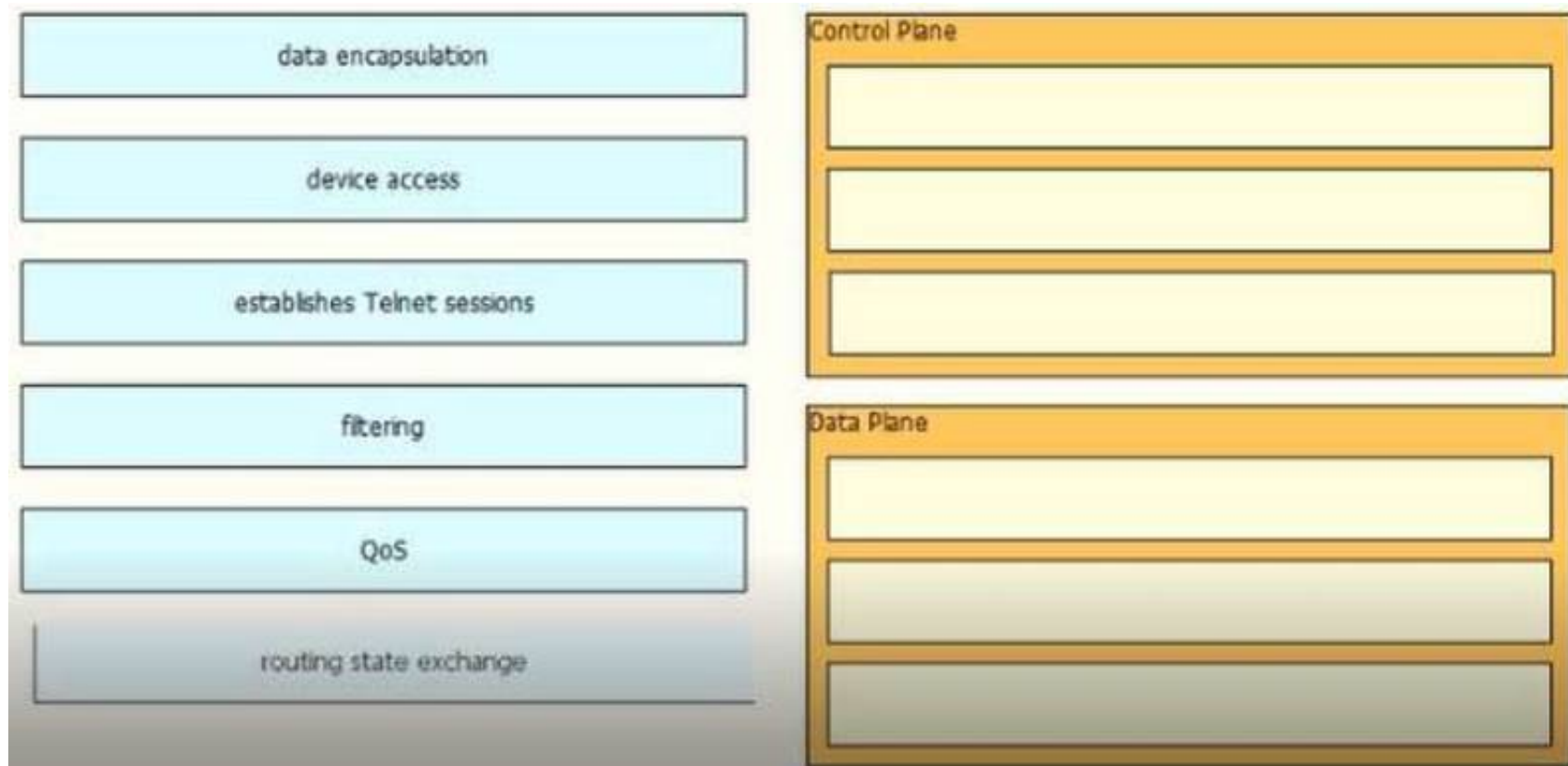
data encapsulation	Control Plane
	routing state exchange
device access	filtering
establishes Telnet sessions	device access
filtering	Data Plane
QoS	establishes Telnet sessions
routing state exchange	QoS
	data encapsulation
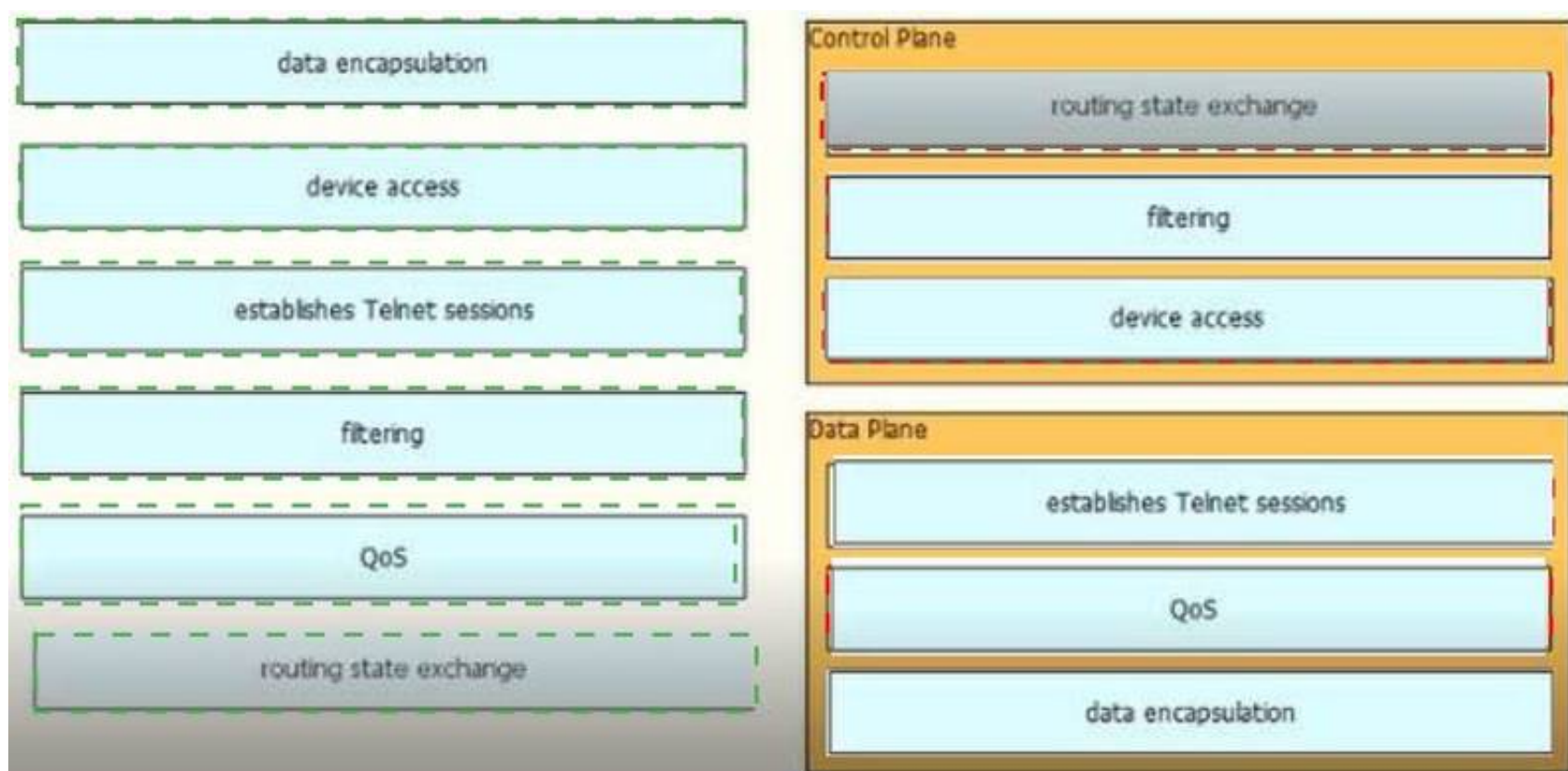
NEW QUESTION 715
Which two are features of IPv6? (Choose two.)

A. anycast
B. broadcast
C. multicast
D. podcast
E. allcast

Answer: AC

Explanation: IPv6 addresses are classified by the primary addressing and routing methodologies common in networking: unicast addressing, anycast addressing, and multicast addressing.
 A unicast address identifies a single network interface. The Internet Protocol delivers packets sent to a unicast address to that specific interface.
 An anycast address is assigned to a group of interfaces, usually belonging to different nodes. A packet sent to an anycast address is delivered to just one of the member interfaces, typically the nearest host, according to the routing protocol's definition of distance. Anycast addresses cannot be identified easily, they have the same format as unicast addresses, and differ only by their presence in the network at multiple points. Almost any unicast address can be employed as an anycast address.
 A multicast address is also used by multiple hosts, which acquire the multicast address destination by participating in the multicast distribution protocol among the network routers. A packet that is sent to a multicast address is delivered to all interfaces that have joined the corresponding multicast group.

NEW QUESTION 716
Scenario:
You are a junior network engineer for a financial company, and the main office network is experiencing network issues. Troubleshoot the network issues.
Router R1 connects the main office to the internet, and routers R2 and R3 are internal routers. NAT is enabled on router R1.

The routing protocol that is enabled between routers R1, R2 and R3 is RIPv2.
R1 sends the default route into RIPv2 for the internal routers to forward internet traffic to R1.
You have console access on R1, R2 and R3 devices. Use only show commands to troubleshoot the issues.

Topology

R1

```
Current configuration : 1651 bytes
!
! No configuration change since last restart
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
 --- More (105) ---
```

```
R1                                                      ⊠
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
--- More (79) ---
```

```
R1                                                      ⊠
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.200.225 255.255.255.224
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 ip address 172.16.200.1 255.255.255.0
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.10.1 255.255.255.252
 ip access-group R2LANBLOCK in
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
```

```
R1                                                      ⊠
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 0.0.0.0 0.0.0.0 209.165.200.226
!
ip access-list standard R2LANBLOCK
 deny   10.100.20.0 0.0.0.255
 permit any
!
ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
 --- More (7) ---
```

```
R1                                                    ✕
ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
ntp server 209.165.200.226
!
end
R1#
```

```
R2                                                    ✕
Building configuration...

Current configuration : 1243 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
 --- More (92) ---
```

```
R2                                                    ✕
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!

!
```

```
R2                                                        ☒
!
!


!
ip dhcp excluded-address 192.168.20.1
!
ip dhcp pool DHCPASSIGNR3
 network 10.10.10.0 255.255.255.252
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!

!
!
!
!
!
R2#
```

```
R3                                                        ☒

Current configuration : 1115 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
```

```
R3                                                        ☒
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
  --- More (60) ---
```

```
R3                                                    ☒
!
!
interface Loopback0
 ip address 192.168.250.3 255.255.255.255
!
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.100.10.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address dhcp
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
```

```
R3                                                    ☒
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
 network 192.168.250.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
```

```
R3                                                    ☒
 network 192.168.250.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 --- More (5) ---
```

```
R3                                                        ☒
!
no ip http server
no ip http secure-server
!
!
!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#
```

Why applications that are installed on PC's in R2 LAN network 10.100.20.0/24 are unable to communicate with server1?

A. A standard ACL statement that is configured on R1 is blocking the traffic sourced from Server1 network.
B. A standard ACL statement that is configured on R2 is blocking the traffic sourced from Setver1 network.
C. A standard ACL statement that is configured on R2 is blocking the traffic sourced from R2 LAN network.
D. A standard ACL statement that is configured on R1 is blocking the traffic sourced from R2 LAM network

Answer: B

Explanation: Check the below now:

```
R2
!
ip access-list standard SERVER1BLOCK
 deny 172.16.200.0 0.0.0.255
 permit any
!
!
```

```
R2
!
!
!
!
interface Loopback0
 ip address 192.168.250.2 255.255.255.255
!
interface Ethernet0/0
 description ***Link to R3***
 ip address 192.168.20.1 255.255.255.255
!
interface Ethernet0/1
 no ip address
!
interface Ethernet0/2
 description ***Link to R1***
 ip address 192.168.10.2 255.255.255.252
 ip access-group SERVER1BLOCK in
!
!
```

NEW QUESTION 718
After you configure the ip dns spoofing command globally on a device, under which two conditions is DNS spoofing enabled on the device? (Choose two)

A. The ip dns spoofing command is disabled on the local interface
B. The ip host command is disabled
C. All configured IP name server addresses are removed
D. The DNS server queue limit is disabled
E. The no ip domain lookup command is configured

Answer: BD

Explanation: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_dns/configuration/15-mt/dns-15-mt-book/dns-config-

NEW QUESTION 723

Scenario:

You work for a company that provides managed network services, and of your real estate clients running a small office is experiencing network issues,
Troubleshoot the network issues.

Router R1 connects the main office to internet, and routers R2 and R3 are internal routers NAT is enabled on Router R1.

The routing protocol that is enable between routers R1, R2, and R3 is RIPv2.

R1 sends default route into RIPv2 for internal routers to forward internet traffic to R1.

Server1 and Server2 are placed in VLAN 100 and 200 respectively, and dare still running router on stick configuration with router R2.

You have console access on R1, R2, R3, and L2SW1 devices. Use only show commands to troubleshoot the issues.

```
R1                                                                          ⊠

!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!

!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
```

```
R1                                                                          ▲

!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!                                                                           ▼
```

```
R1                                                                    ☒
 !
 interface Ethernet0/0
  description ***Link to ISP***
  ip address 209.165.201.1 255.255.255.224
  ip nat outside
  ip virtual-reassembly in
 !
 interface Ethernet0/1
  description ***Link to LAN***
  ip address 172.16.16.1 255.255.255.0
  ip nat inside
  ip virtual-reassembly in
 !
 interface Ethernet0/2
  description ***Link to R2***
  ip address 172.16.14.1 255.255.255.252
  ip nat inside
  ip virtual-reassembly in
 !
 interface Ethernet0/3
  no ip address
  shutdown
 !
 router rip
  version 2
```

```
R1                                                                    ☒
 !
 router rip
  version 2
  network 172.16.0.0
  default-information originate
  no auto-summary
 !
 ip forward-protocol nd
 !
 !
 no ip http server
 no ip http secure-server
 ip nat inside source list LOCAL interface Ethernet0/0 overload
 ip route 10.10.10.0 255.255.255.0 172.16.14.2 200
 !
 ip access-list standard LOCAL
  permit 10.0.0.0 0.255.255.255
  permit 172.16.0.0 0.0.255.255
  permit 192.168.0.0 0.0.255.255
 !
 !
 !
 !
 control-plane
 !
```

```
R1                                                              X

 !
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
 !
 !
end
R1#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4100 (bia aabb.cc00.4100)
  Description: ***Link to ISP***
  Internet address is 209.165.201.1/27
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:53, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
```

```
R1                                                              X

  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     40 packets input, 11786 bytes, 0 no buffer
     Received 39 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     191 packets output, 20271 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     4 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4110 (bia aabb.cc00.4110)
  Description: ***Link to LAN***
  Internet address is 172.16.16.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
```

```
R1                                                                              ☒

  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     245 packets output, 30725 bytes, 0 underruns
     0 output errors, 0 collisions, 4 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4120 (bia aabb.cc00.4120)
  Description: ***Link to R2***
  Internet address is 172.16.14.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
```

```
R1                                                                              ☒

  Internet address is 172.16.14.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:16, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     98 packets input, 20097 bytes, 0 no buffer
     Received 97 broadcasts (54 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     247 packets output, 25359 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     4 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
```

```
R1                                                                    ☒

      0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
  Hardware is AmdP2, address is aabb.cc00.4130 (bia aabb.cc00.4130)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier                                    ▼
```

```
R1                                                                    ☒

     0 babbles, 0 late collision, 0 deferred                        ▲
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
NVI0 is up, line protocol is up
  Hardware is NVI
  Interface is unnumbered. Using address of Ethernet0/0 (209.165.201.1)
  MTU 1514 bytes, BW 56 Kbit/sec, DLY 5000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation UNKNOWN, loopback not set
  Keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
R1#
R1#show ip interface brief                                           ▼
```

```
R1
R1#
R1#show ip interface brief
Interface                IP-Address      OK? Method Status                    Prot
ocol
Ethernet0/0              209.165.201.1   YES NVRAM  up                         up
Ethernet0/1              172.16.16.1     YES NVRAM  up                         up
Ethernet0/2              172.16.14.1     YES NVRAM  up                         up
Ethernet0/3              unassigned      YES NVRAM  administratively down down
NVI0                     209.165.201.1   YES unset  up                         up
R1#
R1#
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
```

```
R1
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
      172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
R        172.16.11.0/30 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
C        172.16.14.0/30 is directly connected, Ethernet0/2
L        172.16.14.1/32 is directly connected, Ethernet0/2
C        172.16.16.0/24 is directly connected, Ethernet0/1
L        172.16.16.1/32 is directly connected, Ethernet0/1
R     192.168.1.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R     192.168.100.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R     192.168.200.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
      209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C        209.165.201.0/27 is directly connected, Ethernet0/0
L        209.165.201.1/32 is directly connected, Ethernet0/0
R1#
R1#
```

```
R2                                                    X

R2#show run
R2#show running-config
Building configuration...

Current configuration : 1505 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
```

```
R2                                                    X

no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!


!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
```

```
R2                                                                    ☒

multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
R2                                                                    ☒
!
interface Ethernet0/0
 description ***Link to R3***
 ip address 172.16.11.1 255.255.255.252
!
interface Ethernet0/1
 no ip address
!
interface Ethernet0/1.1
 description ***Link to Mangement Segment***
 encapsulation dot1Q 1 native
 ip address 192.168.1.1 255.255.255.0
!
interface Ethernet0/1.100
 description ***Link to Server1 Segment***
 encapsulation dot1Q 200
 ip address 192.168.100.1 255.255.255.0
!
interface Ethernet0/1.200
 description ***Link to Server2 Segment***
 encapsulation dot1Q 100
 ip address 192.168.200.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R1***
```

```
R2                                                                    [X]

!
interface Ethernet0/2
  description ***Link to R1***
  ip address 172.16.14.2 255.255.255.252
!
interface Ethernet0/3
  description ***Link to LAN***
  ip address 10.10.10.1 255.255.255.0
!
router rip
  version 2
  network 10.0.0.0
  network 172.16.0.0
  network 192.168.1.0
  network 192.168.100.0
  network 192.168.200.0
  no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
```

```
R2                                                                    [X]

!
control-plane
!
!
!
!
!
!
line con 0
  logging synchronous
line aux 0
line vty 0 4
  login
  transport input all
!
!
end
R2#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
  Description: ***Link to R3***
  Internet address is 172.16.11.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R2

R2#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
  Description: ***Link to R3***
  Internet address is 172.16.11.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:32, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     50 packets input, 15683 bytes, 0 no buffer
     Received 50 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     343 packets output, 42566 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     2 unknown protocol drops
```

```
R2

     2 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 1000 bits/sec, 2 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     4632 packets input, 308536 bytes, 0 no buffer
     Received 4421 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     512 packets output, 73148 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
R2                                                                    ☒

        512 packets output, 73148 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        73 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/1.1 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
    Description: ***Link to Mangement Segment***
    Internet address is 192.168.1.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation 802.1Q Virtual LAN, Vlan ID  1.
    ARP type: ARPA, ARP Timeout 04:00:00
    Keepalive set (10 sec)
    Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
    Description: ***Link to Server1 Segment***
    Internet address is 192.168.100.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
    ARP type: ARPA, ARP Timeout 04:00:00
    Keepalive set (10 sec)
```

```
R2                                                                    ☒

    Keepalive set (10 sec)
    Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
    Description: ***Link to Server1 Segment***
    Internet address is 192.168.100.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
    ARP type: ARPA, ARP Timeout 04:00:00
    Keepalive set (10 sec)
    Last clearing of "show interface" counters never
Ethernet0/1.200 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
    Description: ***Link to Server2 Segment***
    Internet address is 192.168.200.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation 802.1Q Virtual LAN, Vlan ID  100.
    ARP type: ARPA, ARP Timeout 04:00:00
    Keepalive set (10 sec)
    Last clearing of "show interface" counters never
Ethernet0/2 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4220 (bia aabb.cc00.4220)
    Description: ***Link to R1***
```

```
R2                                                              ☒

Description: ***Link to R1***
Internet address is 172.16.14.2/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:08, output 00:00:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   128 packets input, 21994 bytes, 0 no buffer
   Received 127 broadcasts (77 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   345 packets output, 39952 bytes, 0 underruns
   0 output errors, 0 collisions, 1 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
   0 output buffer failures, 0 output buffers swapped out
```

```
R2                                                              ☒

        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4230 (bia aabb.cc00.4230)
  Description: ***Link to LAN***
  Internet address is 10.10.10.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     344 packets output, 42752 bytes, 0 underruns
     0 output errors, 0 collisions, 6 interface resets
     0 unknown protocol drops
```

```
R2                                                                    ☒
        0 output errors, 0 collisions, 6 interface resets
        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
R2#
R2#
R2#show ip interface brief
Interface              IP-Address      OK? Method Status          Prot
ocol
Ethernet0/0            172.16.11.1     YES NVRAM  up                up
Ethernet0/1            unassigned      YES NVRAM  up                up
Ethernet0/1.1          192.168.1.1     YES NVRAM  up                up
Ethernet0/1.100        192.168.100.1   YES NVRAM  up                up
Ethernet0/1.200        192.168.200.1   YES NVRAM  up                up
Ethernet0/2            172.16.14.2     YES NVRAM  up                up
Ethernet0/3            10.10.10.1      YES NVRAM  up                up
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R2                                                                    ☒
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*    0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.10.0/24 is directly connected, Ethernet0/3
L        10.10.10.1/32 is directly connected, Ethernet0/3
      172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C        172.16.11.0/30 is directly connected, Ethernet0/0
L        172.16.11.1/32 is directly connected, Ethernet0/0
C        172.16.14.0/30 is directly connected, Ethernet0/2
L        172.16.14.2/32 is directly connected, Ethernet0/2
R        172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.1.0/24 is directly connected, Ethernet0/1.1
```

```
R2                                                                          X

        o - ODR, P - periodic downloaded static route, H - NHRP, 1 - LISP
        + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*      0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C           10.10.10.0/24 is directly connected, Ethernet0/3
L           10.10.10.1/32 is directly connected, Ethernet0/3
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C           172.16.11.0/30 is directly connected, Ethernet0/0
L           172.16.11.1/32 is directly connected, Ethernet0/0
C           172.16.14.0/30 is directly connected, Ethernet0/2
L           172.16.14.2/32 is directly connected, Ethernet0/2
R           172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C           192.168.1.0/24 is directly connected, Ethernet0/1.1
L           192.168.1.1/32 is directly connected, Ethernet0/1.1
        192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C           192.168.100.0/24 is directly connected, Ethernet0/1.100
L           192.168.100.1/32 is directly connected, Ethernet0/1.100
        192.168.200.0/24 is variably subnetted, 2 subnets, 2 masks
C           192.168.200.0/24 is directly connected, Ethernet0/1.200
L           192.168.200.1/32 is directly connected, Ethernet0/1.200
R2#
```

```
R3                                                                          X



R3#show run
R3#show running-config
Building configuration...

Current configuration : 913 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
R3                                                                        ☒

 !
 no aaa new-model
 clock timezone PST -8 0
 mmi polling-interval 60
 no mmi auto-configure
 no mmi pvc
 mmi snmp-timeout 180
 !
 !
 !
 !


 !
 !
 !
 !
 !
 ip cef
 no ipv6 cef
 !
 multilink bundle-name authenticated
 !
 !
 !
 !
```

```
R3                                                                        ☒
 multilink bundle-name authenticated
 !
 !
 !
 !
 !
 !
 !
 !
 !
 !
 redundancy
 !
 !
 !
 !
 !
 !
 !
 !
 !
 !
 !
 !
 !
```

```
R3
                                                              X
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.10.12.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address 172.16.11.2 255.255.255.252
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
```

```
R3
                                                              X
!
control-plane
!
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4300 (bia aabb.cc00.4300)
  Description: ***Link to LAN***
  Internet address is 10.10.12.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R3                                                                      ☒

        reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      666 packets output, 71699 bytes, 0 underruns
      0 output errors, 0 collisions, 11 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
   Description: ***Link to R2***
```

```
R3                                                                      ☒

   Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
   Description: ***Link to R2***
   Internet address is 172.16.11.2/30
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:21, output 00:00:05, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      316 packets input, 74089 bytes, 0 no buffer
      Received 316 broadcasts (200 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      669 packets output, 71888 bytes, 0 underruns
      0 output errors, 0 collisions, 1 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
```

```
R3                                                                      ⊠
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is administratively down, line protocol is down
   Hardware is AmdP2, address is aabb.cc00.4320 (bia aabb.cc00.4320)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
```

```
R3                                                                      ⊠
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
   Hardware is AmdP2, address is aabb.cc00.4330 (bia aabb.cc00.4330)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
```

```
R3                                                                    X

      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
R3#
R3#
R3#show ip interface brief
Interface                IP-Address      OK? Method Status              Prot
ocol
Ethernet0/0              10.10.12.1      YES NVRAM  up                  up
Ethernet0/1              172.16.11.2     YES NVRAM  up                  up
Ethernet0/2              unassigned      YES NVRAM  administratively down down
Ethernet0/3              unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R3                                                                    X
Ethernet0/2              unassigned      YES NVRAM  administratively down down
Ethernet0/3              unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.12.0/24 is directly connected, Ethernet0/0
L        10.10.12.1/32 is directly connected, Ethernet0/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.16.11.0/30 is directly connected, Ethernet0/1
L        172.16.11.2/32 is directly connected, Ethernet0/1
R3#
R3#
R3#
```

```
L2SW1                                                    ⊠

!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
!
no ipv6 cef
ipv6 multicast rpf use-bgp
!
!
!
!
!
!
!

spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
!

vlan internal allocation policy ascending
!
!
```

```
L2SW1                                                    ⊠

L2SW1#show run
L2SW1#show running-config
Building configuration...

Current configuration : 1074 bytes
!
version 15.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2SW1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
```

```
L2SW1                                                              ☒

interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
ip default-gateway 192.168.1.1
!
no ip http server
!
!
!
!
!
control-plane
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
!
end
L2SW1#
L2SW1#
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
```

```
L2SW1                                                              ☒

!
interface Ethernet0/0
 description ***Link to R2***
 switchport trunk encapsulation dot1q
 switchport mode trunk
 duplex auto
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 switchport access vlan 100
 switchport mode access
 duplex auto
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 switchport access vlan 200
 switchport mode access
 duplex auto
!
interface Ethernet0/3
 duplex auto
!
interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
```

```
L2SW1                                                                    X

L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4500 (bia aabb.cc00.4500)
  Description: ***Link to R2***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 12/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 2 packets/sec
     1447 packets input, 208877 bytes, 0 no buffer
     Received 139 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     13457 packets output, 919293 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
L2SW1                                                                    X

     13457 packets output, 919293 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4510 (bia aabb.cc00.4510)
  Description: ***Link to Server1 segment***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:01, output hang never
  Last clearing of "show interface" counters never
  Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     755 packets input, 80219 bytes, 0 no buffer
     Received 123 broadcasts (0 multicasts)
```

```
L2SW1                                                              ✕
    755 packets input, 80219 bytes, 0 no buffer
    Received 123 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    3867 packets output, 268544 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4520 (bia aabb.cc00.4520)
  Description: ***Link to Server2 Segment***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:01, output hang never
  Last clearing of "show interface" counters never
  Input queue: 5/2000/0/0 (size/max/drops/flushes): Total output drops: 0
  Queueing strategy: fifo
```

```
L2SW1                                                              ✕
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    758 packets input, 81010 bytes, 0 no buffer
    Received 125 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    3867 packets output, 268544 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4530 (bia aabb.cc00.4530)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
```

```
L2SW1                                                                    ☒
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/0 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
       0 packets input, 0 bytes, 0 no buffer
       Received 0 broadcasts (0 multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       3566 packets output, 252186 bytes, 0 underruns
       0 output errors, 0 collisions, 55 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Vlan1 is up, line protocol is up
   Hardware is Ethernet SVI, address is aabb.cc80.4500 (bia aabb.cc80.4500)
   Internet address is 192.168.1.254/24
   MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive not supported
```

```
L2SW1                                                                    ☒
   Keepalive not supported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:12, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      235 packets input, 42480 bytes, 0 no buffer
      Received 235 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      11 packets output, 830 bytes, 0 underruns
      0 output errors, 0 interface resets
      0 unknown protocol drops
      0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface          IP-Address      OK? Method Status              Protocol
Ethernet0/0        unassigned      YES unset  up                  up
Ethernet0/1        unassigned      YES unset  up                  up
Ethernet0/2        unassigned      YES unset  up                  up
Ethernet0/3        unassigned      YES unset  up                  up
```

```
L2SW1                                                                    X

      0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface            IP-Address      OK? Method Status              Protocol
Ethernet0/0          unassigned      YES unset  up                  up
Ethernet0/1          unassigned      YES unset  up                  up
Ethernet0/2          unassigned      YES unset  up                  up
Ethernet0/3          unassigned      YES unset  up                  up
Vlan1                192.168.1.254   YES NVRAM  up                  up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
```

```
L2SW1                                                                    X

Ethernet0/0          unassigned      YES unset  up                  up
Ethernet0/1          unassigned      YES unset  up                  up
Ethernet0/2          unassigned      YES unset  up                  up
Ethernet0/3          unassigned      YES unset  up                  up
Vlan1                192.168.1.254   YES NVRAM  up                  up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.1.0/24 is directly connected, Vlan1
L        192.168.1.254/32 is directly connected, Vlan1
L2SW1#
L2SW1#
L2SW1#
```

Answer:

Explanation: Pending
Suggest your Answer for this question.

NEW QUESTION 727
Refer to the diagram.
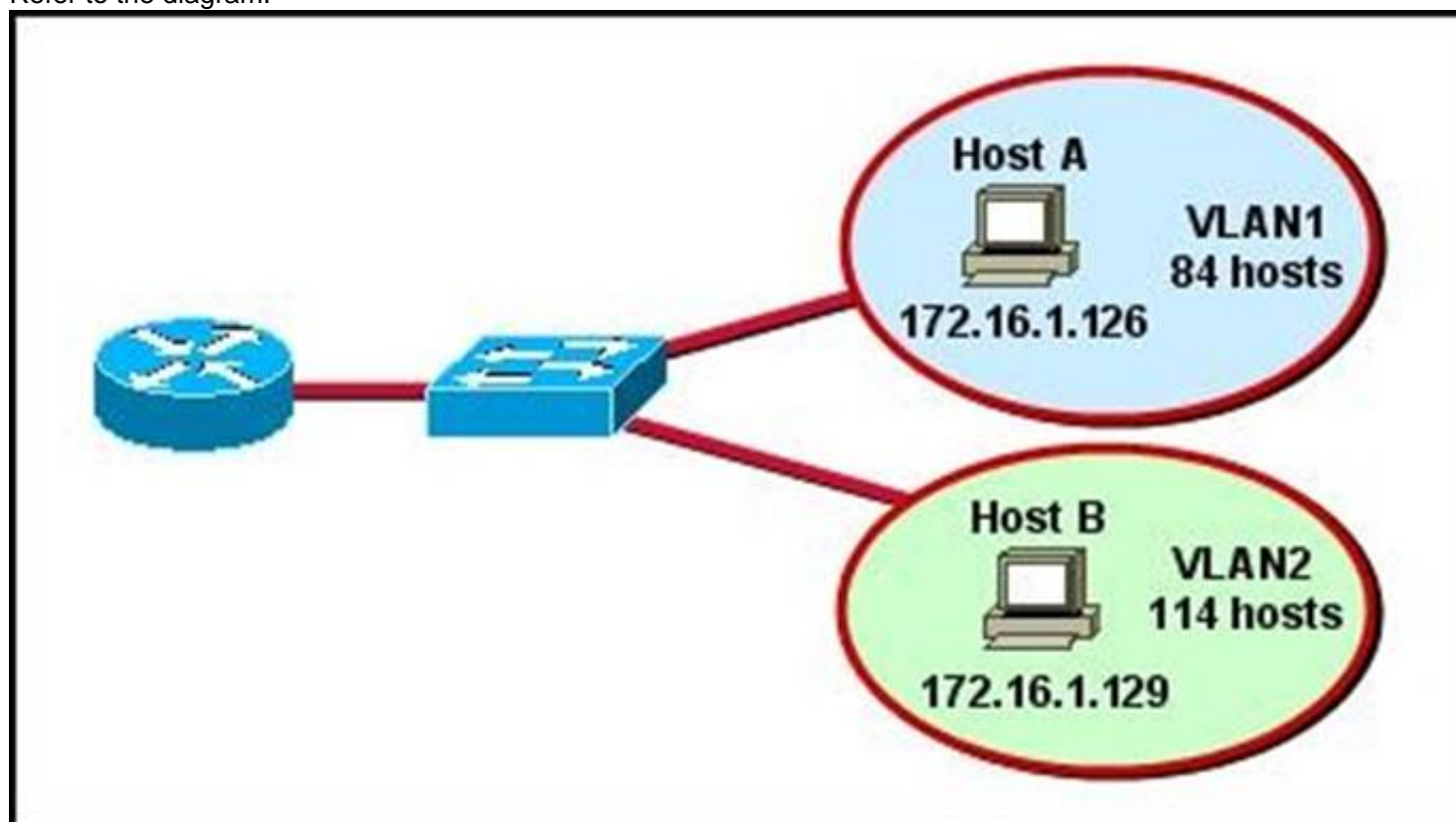
All hosts have connectivity with one another. Which statements describe the addressing scheme that is in use in the network? (Choose three.)

A. The subnet mask in use is 255.255.255.192.
B. The subnet mask in use is 255.255.255.128.
C. The IP address 172.16.1.25 can be assigned to hosts in VLAN1
D. The IP address 172.16.1.205 can be assigned to hosts in VLAN1
E. The LAN interface of the router is configured with one IP address.
F. The LAN interface of the router is configured with multiple IP addresses.

Answer: BCF

Explanation: The subnet mask in use is 255.255.255.128: This is subnet mask will support up to 126 hosts, which is needed. The IP address 172.16.1.25 can be assigned to hosts in VLAN1: The usable host range in this subnet is
172.16.1.1-172.16.1.126
The LAN interface of the router is configured with multiple IP addresses: The router will need 2 subinterfaces for the single physical interface, one with an IP address that belongs in each VLAN.

NEW QUESTION 729
Which two statements about stateful firewalls in an enterprise network are true? (Choose two)

A. They can fitter HTTP and HTTPS traffic in the inbound direction only
B. They can use information about previous packets to make decisions about future packets.
C. They are most effective when placed in front of the router connected to the Internet
D. They are more susceptible to DoS attacks than stateless firewalls
E. They can track the number of active TCP connections

Answer: CE

NEW QUESTION 734
Which definition of a host route is true?

A. a route to the exact /32 destination address
B. a route used when a route to the destination network is missing
C. a dynamic route learned from a server
D. a route that is manually configured

Answer: A

NEW QUESTION 735
Which two statements about Cisco Discovery Protocol are true? (Choose two)

A. It is used to initiate a VTP server and client relationship.
B. It uses SNMP to share device information to an external server
C. It uses TLVs to share device information.
D. It runs on the data link layer only
E. It runs on the network layer and the data link layer.

Answer: CD

NEW QUESTION 736
What parameter can be different on ports within an EtherChannel?

A. speed
B. DTP negotiation settings
C. trunk encapsulation
D. duplex

Answer: B

Explanation: For an etherchannel to come up, the speed, duplex and the trunk encapsulation must be the same on each end.

NEW QUESTION 737
Which two benefits of implementing a full mesh wan topology are true? choose two

A. redundancy
B. reduced jitter
C. increased latency
D. improved scalability
E. reliability

Answer: AE

NEW QUESTION 740
Scenario:
You work for a company that provides managed network services, and of your real estate clients running a small office is experiencing network issues,
Troubleshoot the network issues.
Router R1 connects the main office to internet, and routers R2 and R3 are internal routers NAT is enabled on Router R1.
The routing protocol that is enable between routers R1, R2, and R3 is RIPv2.
R1 sends default route into RIPv2 for internal routers to forward internet traffic to R1.
Server1 and Server2 are placed in VLAN 100 and 200 respectively, and dare still running router on stick configuration with router R2.
You have console access on R1, R2, R3, and L2SW1 devices. Use only show commands to troubleshoot the issues.

```
R1

R1#show r
R1#show run
R1#show running-config
Building configuration...

Current configuration : 1438 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
R1

!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!




!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
```

```
R1                                                                          ☒

!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!                                                                           ▼
```

```
R1                                                                          ☒

!
interface Ethernet0/0
  description ***Link to ISP***
  ip address 209.165.201.1 255.255.255.224
  ip nat outside
  ip virtual-reassembly in
!
interface Ethernet0/1
  description ***Link to LAN***
  ip address 172.16.16.1 255.255.255.0
  ip nat inside
  ip virtual-reassembly in
!
interface Ethernet0/2
  description ***Link to R2***
  ip address 172.16.14.1 255.255.255.252
  ip nat inside
  ip virtual-reassembly in
!
interface Ethernet0/3
  no ip address
  shutdown
!
router rip
  version 2                                                                 ▼
```

```
R1                                                                    ☒
!
router rip
 version 2
 network 172.16.0.0
 default-information originate
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 10.10.10.0 255.255.255.0 172.16.14.2 200
!
ip access-list standard LOCAL
 permit 10.0.0.0 0.255.255.255
 permit 172.16.0.0 0.0.255.255
 permit 192.168.0.0 0.0.255.255
!
!
!
!
control-plane
!
```

```
R1                                                                    ☒
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R1#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4100 (bia aabb.cc00.4100)
  Description: ***Link to ISP***
  Internet address is 209.165.201.1/27
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:53, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
```

```
R1                                                                          ×

    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
       40 packets input, 11786 bytes, 0 no buffer
       Received 39 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       191 packets output, 20271 bytes, 0 underruns
       0 output errors, 0 collisions, 1 interface resets
       4 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4110 (bia aabb.cc00.4110)
    Description: ***Link to LAN***
    Internet address is 172.16.16.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
```

```
R1                                                                          ×

    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
       0 packets input, 0 bytes, 0 no buffer
       Received 0 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       245 packets output, 30725 bytes, 0 underruns
       0 output errors, 0 collisions, 4 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4120 (bia aabb.cc00.4120)
    Description: ***Link to R2***
    Internet address is 172.16.14.1/30
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
```

```
R1                                                              ☒
    Internet address is 172.16.14.1/30
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input 00:00:16, output 00:00:07, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        98 packets input, 20097 bytes, 0 no buffer
        Received 97 broadcasts (54 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        247 packets output, 25359 bytes, 0 underruns
        0 output errors, 0 collisions, 1 interface resets
        4 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
```

```
R1                                                              ☒
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
    Hardware is AmdP2, address is aabb.cc00.4130 (bia aabb.cc00.4130)
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        0 packets input, 0 bytes, 0 no buffer
        Received 0 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        0 packets output, 0 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
```

```
R1                                                                        ✖
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
 NVIO is up, line protocol is up
   Hardware is NVI
   Interface is unnumbered. Using address of Ethernet0/0 (209.165.201.1)
   MTU 1514 bytes, BW 56 Kbit/sec, DLY 5000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation UNKNOWN, loopback not set
   Keepalive set (10 sec)
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
       0 packets input, 0 bytes, 0 no buffer
       Received 0 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
       0 packets output, 0 bytes, 0 underruns
       0 output errors, 0 collisions, 0 interface resets
       0 unknown protocol drops
       0 output buffer failures, 0 output buffers swapped out
 R1#
 R1#show ip interface brief
```

```
R1                                                                        ✖
R1#
R1#show ip interface brief
Interface                IP-Address       OK? Method Status                Prot
ocol
Ethernet0/0              209.165.201.1    YES NVRAM  up                        up
Ethernet0/1              172.16.16.1      YES NVRAM  up                        up
Ethernet0/2              172.16.14.1      YES NVRAM  up                        up
Ethernet0/3              unassigned       YES NVRAM  administratively down   down
NVIO                     209.165.201.1    YES unset  up                        up
R1#
R1#
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
```

R1

```
           N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
           E1 - OSPF external type 1, E2 - OSPF external type 2
           i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
           ia - IS-IS inter area, * - candidate default, U - per-user static route
           o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
           + - replicated route, % - next hop override

Gateway of last resort is not set

           10.0.0.0/24 is subnetted, 1 subnets
R             10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
           172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
R             172.16.11.0/30 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
C             172.16.14.0/30 is directly connected, Ethernet0/2
L             172.16.14.1/32 is directly connected, Ethernet0/2
C             172.16.16.0/24 is directly connected, Ethernet0/1
L             172.16.16.1/32 is directly connected, Ethernet0/1
R          192.168.1.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R          192.168.100.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R          192.168.200.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
           209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C             209.165.201.0/27 is directly connected, Ethernet0/0
L             209.165.201.1/32 is directly connected, Ethernet0/0
R1#
R1#
```

R2

```
R2#show run
R2#show running-config
Building configuration...

Current configuration : 1505 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
```

```
R2                                                          ⊠
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
```

```
R2                                                          ⊠
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
R2                                                            X

!
interface Ethernet0/0
 description ***Link to R3***
 ip address 172.16.11.1 255.255.255.252
!
interface Ethernet0/1
 no ip address
!
interface Ethernet0/1.1
 description ***Link to Mangement Segment***
 encapsulation dot1Q 1 native
 ip address 192.168.1.1 255.255.255.0
!
interface Ethernet0/1.100
 description ***Link to Server1 Segment***
 encapsulation dot1Q 200
 ip address 192.168.100.1 255.255.255.0
!
interface Ethernet0/1.200
 description ***Link to Server2 Segment***
 encapsulation dot1Q 100
 ip address 192.168.200.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R1***
```

```
R2                                                            X

!
interface Ethernet0/2
 description ***Link to R1***
 ip address 172.16.14.2 255.255.255.252
!
interface Ethernet0/3
 description ***Link to LAN***
 ip address 10.10.10.1 255.255.255.0
!
router rip
 version 2
 network 10.0.0.0
 network 172.16.0.0
 network 192.168.1.0
 network 192.168.100.0
 network 192.168.200.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
```

```
R2                                                              ☒
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R2#show interfaces
Ethernet0/0 is up, line protocol is up
 Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
 Description: ***Link to R3***
 Internet address is 172.16.11.1/30
 MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
```

```
R2                                                              ☒
R2#show interfaces
Ethernet0/0 is up, line protocol is up
 Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
 Description: ***Link to R3***
 Internet address is 172.16.11.1/30
 MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, loopback not set
 Keepalive set (10 sec)
 ARP type: ARPA, ARP Timeout 04:00:00
 Last input 00:00:32, output 00:00:08, output hang never
 Last clearing of "show interface" counters never
 Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
 Queueing strategy: fifo
 Output queue: 0/40 (size/max)
 5 minute input rate 0 bits/sec, 0 packets/sec
 5 minute output rate 0 bits/sec, 0 packets/sec
    50 packets input, 15683 bytes, 0 no buffer
    Received 50 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    343 packets output, 42566 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    2 unknown protocol drops
```

R2   ☒

```
      2 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:00, output 00:00:08, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 1000 bits/sec, 2 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      4632 packets input, 308536 bytes, 0 no buffer
      Received 4421 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      512 packets output, 73148 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
```

R2   ☒

```
      512 packets output, 73148 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      73 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1.1 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Mangement Segment***
   Internet address is 192.168.1.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  1.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server1 Segment***
   Internet address is 192.168.100.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
```

```
R2                                                                      ⊠

   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server1 Segment***
   Internet address is 192.168.100.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID   200.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/1.200 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server2 Segment***
   Internet address is 192.168.200.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID   100.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/2 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4220 (bia aabb.cc00.4220)
   Description: ***Link to R1***
```

```
R2                                                                      ⊠

 Description: ***Link to R1***
 Internet address is 172.16.14.2/30
 MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, loopback not set
 Keepalive set (10 sec)
 ARP type: ARPA, ARP Timeout 04:00:00
 Last input 00:00:08, output 00:00:02, output hang never
 Last clearing of "show interface" counters never
 Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
 Queueing strategy: fifo
 Output queue: 0/40 (size/max)
 5 minute input rate 0 bits/sec, 0 packets/sec
 5 minute output rate 0 bits/sec, 0 packets/sec
    128 packets input, 21994 bytes, 0 no buffer
    Received 127 broadcasts (77 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    345 packets output, 39952 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
```

```
R2                                                                      ☒
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4230 (bia aabb.cc00.4230)
   Description: ***Link to LAN***
   Internet address is 10.10.10.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
       0 packets input, 0 bytes, 0 no buffer
       Received 0 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       344 packets output, 42752 bytes, 0 underruns
       0 output errors, 0 collisions, 6 interface resets
       0 unknown protocol drops
```

```
R2                                                                      ☒
       0 output errors, 0 collisions, 6 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
R2#
R2#
R2#show ip interface brief
Interface             IP-Address      OK? Method Status          Prot
ocol
Ethernet0/0           172.16.11.1     YES NVRAM  up                up
Ethernet0/1           unassigned      YES NVRAM  up                up
Ethernet0/1.1         192.168.1.1     YES NVRAM  up                up
Ethernet0/1.100       192.168.100.1   YES NVRAM  up                up
Ethernet0/1.200       192.168.200.1   YES NVRAM  up                up
Ethernet0/2           172.16.14.2     YES NVRAM  up                up
Ethernet0/3           10.10.10.1      YES NVRAM  up                up
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R2
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*      0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C          10.10.10.0/24 is directly connected, Ethernet0/3
L          10.10.10.1/32 is directly connected, Ethernet0/3
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C          172.16.11.0/30 is directly connected, Ethernet0/0
L          172.16.11.1/32 is directly connected, Ethernet0/0
C          172.16.14.0/30 is directly connected, Ethernet0/2
L          172.16.14.2/32 is directly connected, Ethernet0/2
R          172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.1.0/24 is directly connected, Ethernet0/1.1
```

```
R2
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*      0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C          10.10.10.0/24 is directly connected, Ethernet0/3
L          10.10.10.1/32 is directly connected, Ethernet0/3
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C          172.16.11.0/30 is directly connected, Ethernet0/0
L          172.16.11.1/32 is directly connected, Ethernet0/0
C          172.16.14.0/30 is directly connected, Ethernet0/2
L          172.16.14.2/32 is directly connected, Ethernet0/2
R          172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.1.0/24 is directly connected, Ethernet0/1.1
L          192.168.1.1/32 is directly connected, Ethernet0/1.1
        192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.100.0/24 is directly connected, Ethernet0/1.100
L          192.168.100.1/32 is directly connected, Ethernet0/1.100
        192.168.200.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.200.0/24 is directly connected, Ethernet0/1.200
L          192.168.200.1/32 is directly connected, Ethernet0/1.200
R2#
```

```
R3                                                                    X

    R3#show run
    R3#show running-config
    Building configuration...

    Current configuration : 913 bytes
    !
    version 15.2
    service timestamps debug datetime msec
    service timestamps log datetime msec
    no service password-encryption
    !
    hostname R3
    !
    boot-start-marker
    boot-end-marker
    !
    !
    !
    no aaa new-model
    clock timezone PST -8 0
    mmi polling-interval 60
    no mmi auto-configure
```

```
R3                                                                    X
    !
    no aaa new-model
    clock timezone PST -8 0
    mmi polling-interval 60
    no mmi auto-configure
    no mmi pvc
    mmi snmp-timeout 180
    !
    !
    !
    !
    !



    !
    !
    !
    !
    !
    ip cef
    no ipv6 cef
    !
    multilink bundle-name authenticated
    !
    !
    !
    !
    !
```

```
R3                                                                    X

multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!
```

```
R3                                                                    X

interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.10.12.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address 172.16.11.2 255.255.255.252
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
```

```
R3

!
control-plane
!
!
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4300 (bia aabb.cc00.4300)
  Description: ***Link to LAN***
  Internet address is 10.10.12.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R3

     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     666 packets output, 71699 bytes, 0 underruns
     0 output errors, 0 collisions, 11 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
  Description: ***Link to R2***
```

R3

```
Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
Description: ***Link to R2***
Internet address is 172.16.11.2/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:21, output 00:00:05, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   316 packets input, 74089 bytes, 0 no buffer
   Received 316 broadcasts (200 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   669 packets output, 71888 bytes, 0 underruns
   0 output errors, 0 collisions, 1 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
```

R3

```
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
   0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is administratively down, line protocol is down
   Hardware is AmdP2, address is aabb.cc00.4320 (bia aabb.cc00.4320)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   0 packets input, 0 bytes, 0 no buffer
   Received 0 broadcasts (0 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   0 packets output, 0 bytes, 0 underruns
   0 output errors, 0 collisions, 0 interface resets
   0 unknown protocol drops
```

```
R3                                                                          ☒
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
  Hardware is AmdP2, address is aabb.cc00.4330 (bia aabb.cc00.4330)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
R3                                                                          ☒
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
R3#
R3#
R3#show ip interface brief
Interface               IP-Address      OK? Method Status                 Prot
ocol
Ethernet0/0             10.10.12.1      YES NVRAM  up                      up
Ethernet0/1             172.16.11.2     YES NVRAM  up                      up
Ethernet0/2             unassigned      YES NVRAM  administratively down down
Ethernet0/3             unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R3
Ethernet0/2                    unassigned      YES NVRAM  administratively down down
Ethernet0/3                    unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.12.0/24 is directly connected, Ethernet0/0
L        10.10.12.1/32 is directly connected, Ethernet0/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.16.11.0/30 is directly connected, Ethernet0/1
L        172.16.11.2/32 is directly connected, Ethernet0/1
R3#
R3#
R3#
```

```
L2SW1
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
!
no ipv6 cef
ipv6 multicast rpf use-bgp
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
!
vlan internal allocation policy ascending
!
!
```

L2SW1

```
L2SW1#show run
L2SW1#show running-config
Building configuration...

Current configuration : 1074 bytes
!
version 15.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2SW1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
```

L2SW1

```
interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
ip default-gateway 192.168.1.1
!
no ip http server
!
!
!
!
!
control-plane
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
!
end
L2SW1#
L2SW1#
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
```

L2SW1

```
!
interface Ethernet0/0
 description ***Link to R2***
 switchport trunk encapsulation dot1q
 switchport mode trunk
 duplex auto
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 switchport access vlan 100
 switchport mode access
 duplex auto
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 switchport access vlan 200
 switchport mode access
 duplex auto
!
interface Ethernet0/3
 duplex auto
!
interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
```

L2SW1

```
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4500 (bia aabb.cc00.4500)
  Description: ***Link to R2***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 12/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 2 packets/sec
     1447 packets input, 208877 bytes, 0 no buffer
     Received 139 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     13457 packets output, 919293 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
L2SW1                                                                    ☒
       13457 packets output, 919293 bytes, 0 underruns
       0 output errors, 0 collisions, 0 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4510 (bia aabb.cc00.4510)
   Description: ***Link to Server1 segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/0 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
       755 packets input, 80219 bytes, 0 no buffer
       Received 123 broadcasts (0 multicasts)
```

```
L2SW1                                                                    ☒
       755 packets input, 80219 bytes, 0 no buffer
       Received 123 broadcasts (0 multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       3867 packets output, 268544 bytes, 0 underruns
       0 output errors, 0 collisions, 0 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4520 (bia aabb.cc00.4520)
   Description: ***Link to Server2 Segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
```

L2SW1

```
 Queueing strategy: fifo
 Output queue: 0/0 (size/max)
 5 minute input rate 0 bits/sec, 0 packets/sec
 5 minute output rate 0 bits/sec, 0 packets/sec
    758 packets input, 81010 bytes, 0 no buffer
    Received 125 broadcasts (0 multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    3867 packets output, 268544 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4530 (bia aabb.cc00.4530)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
```

L2SW1

```
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     3566 packets output, 252186 bytes, 0 underruns
     0 output errors, 0 collisions, 55 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Vlan1 is up, line protocol is up
  Hardware is Ethernet SVI, address is aabb.cc80.4500 (bia aabb.cc80.4500)
  Internet address is 192.168.1.254/24
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
```

```
L2SW1                                                                    ☒
    Keepalive not supported
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input 00:00:12, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        235 packets input, 42480 bytes, 0 no buffer
        Received 235 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        11 packets output, 830 bytes, 0 underruns
        0 output errors, 0 interface resets
        0 unknown protocol drops
        0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface              IP-Address      OK? Method Status        Protocol
Ethernet0/0            unassigned      YES unset  up            up
Ethernet0/1            unassigned      YES unset  up            up
Ethernet0/2            unassigned      YES unset  up            up
Ethernet0/3            unassigned      YES unset  up            up
```

```
L2SW1                                                                    ☒
    0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface              IP-Address      OK? Method Status        Protocol
Ethernet0/0            unassigned      YES unset  up            up
Ethernet0/1            unassigned      YES unset  up            up
Ethernet0/2            unassigned      YES unset  up            up
Ethernet0/3            unassigned      YES unset  up            up
Vlan1                  192.168.1.254   YES NVRAM  up            up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
```

```
L2SW1                                                                    X
Ethernet0/0              unassigned       YES unset  up              up
Ethernet0/1              unassigned       YES unset  up              up
Ethernet0/2              unassigned       YES unset  up              up
Ethernet0/3              unassigned       YES unset  up              up
Vlan1                    192.168.1.254    YES NVRAM  up              up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

       192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C         192.168.1.0/24 is directly connected, Vlan1
L         192.168.1.254/32 is directly connected, Vlan1
L2SW1#
L2SW1#
L2SW1#
```

Examine R2 configuration, the traffic that is destined to R3 LAN network sourced from Router R2 is forwarded to R1 instead R3. What could be an issue?

```
R2#traceroute 10.10.12.1 source 10.10.10.1
Type escape sequence to abort.
Tracing the route to 10.10.12.1
VRF info: (vrf in name/id, vrf out name/id)
  1 172.16.14.1 0 msec 1 msec 0 msec
  2 172.16.14.1 !H !H *
R2#
```

A. RIPv2 routing updates are suppressed between R2 and R3 using passive interface feature.
B. RIPv2 enabled on R3, but R3 LAN network that is not advertised into RIPv2 domain.
C. No issue that is identified; this behavior is normal since default route propagated into RIPv2 domain by Router R1.
D. RIPv2 not enabled on R3.

Answer: D

Explanation: As per R3

```
R3
interface Ethernet0/3
 no ip address
 shutdown
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
!
!
!
control-lane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
```

NO RIPv2 CONFIG!

NEW QUESTION 743
Which two benefits can you get by stacking cisco switches ?(choose Two)

A. The stack enables any active member to take over as the master switch if the existing master fails.
B. Each switch in the stack can use a different ios image
C. You can add or remove switches without taking the stack down
D. you can license the entire stack with a single master license
E. each switch in the stack handles the mac table independently from the others

Answer: AC

NEW QUESTION 748
Drag and Drop the protocols from the left onto the correct IP traffic types on the right.

DHCP		TCP
HTTP		
SMTP		

SNMP		UDP
Telnet		
VoIP		

Answer:

Explanation: TCP HTTP SMTP
Telnet UDP DHCP SNMP VOIP

NEW QUESTION 752
What feature you should use to analyse and monitor your traffic for troubleshooting?

A. RSPAN
B. SPAN
C. Netflow
D. SNMP

Answer: C

NEW QUESTION 754
Drag and drop the IEEE standard Cable names from the left onto the correct cable types on the right?

10BASE-T		Copper
10GBASE-LR		
10GBASE-T		
100BASE-TX		Fiber
1000BASE-LX		
1000BASE-SC		

Answer:

Explanation:

10BASE-T		Copper
10GBASE-LR		10BASE-T
10GBASE-T		10GBASE-T
100BASE-TX		100BASE-TX
1000BASE-LX		Fiber
1000BASE-SC		10GBASE-LR
		1000BASE-LX
		1000BASE-SC

NEW QUESTION 755
Which two statements about LLDP are True? (Choose Two)

A. it enables systems to learn about one another over the data-link layer
B. it uses mandatory TLVs to discover the neighboring devices
C. it is implemented in accordance with the 802.11a specification
D. if functions at layer 2 and layer 3
E. it is a cisco-proprietary technology

Answer: AC

NEW QUESTION 758

Drag and Drop the CSMAComponents from the left onto the correct description on the right

1-persistent	access mode used for Ethernet networks
CSMA/CA	access mode used for Wi-Fi networks
CSMA/CD	access mode used in the controller area network
O-persistent	rules that define the system response when a collision occurs on an Ethernet network
P-persistent	rules that define the system response when a collision occurs on a Wi-Fi network

Answer:

Explanation:

1-persistent	1-persistent
CSMA/CA	P-persistent
CSMA/CD	O-persistent
O-persistent	CSMA/CD
P-persistent	CSMA/CA

NEW QUESTION 763
You are implementing EIGRP between the main office and branch offices. In Phase 1 you must implement and verify EIGRP configurations as mentioned in the topology in Phase 2. your colleague is expected to do NAT and ISP configurations
Identity the issues that you are encountering during Phase 1 EIGRP implementation.
• Router R1 connects the main office to the Internet and routers R2 and R3 are internal routers
• Routers Branch 1 and Branch2 connect to router R2 in the main office.
• Users from the Branch1 LAN network 10 20 40 0724 are expected to perform testing of the application that is hosted on the servers in Server farm1, before servers are available for production
- The GRE tunnel is configured between R3 and Branch1, and traffic between server farm1 and Branch1 LAN network 10 20 40 0/24 is routed through the GRE tunnel using static routes
• The link between Branch1 and Branch2 is used as a secondary path in the event of failure of the primary path to mam office
You have console access on R1. R2. R3. Branch1, and Branch2 devices Use only show commands to troubleshoot the issues
Topology:

```
Branch1

 ip address 10.20.40.1 255.255.255.0
!
!

router eigrp 200
 network 10.16.200.2 0.0.0.0
 network 172.16.12.0 0.0.0.255
 network 192.168.10.0
 network 192.168.12.0
!

ip forward-protocol nd
!
!

no ip http server
no ip http secure-server
ip route 10.20.20.0 255.255.255.0 Tunn
!
!
```

```
R3

interface Ethernet0/0
 description ***Link to Server farm2***
 ip address 10.20.30.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to Server farm1***
 ip address 10.20.20.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.15.2 255.255.255.252
!
interface Ethernet0/3
 no ip address
 shutdown
!
```

The traffic from Branch2 to the main office is using the secondary path instead of the primary path connected to R2. Which cause of the issue is true?

A. The network 192.163.11,0/30 was not advertised into EIGRP on Brancfi2.
B. The IP address was misconfigured between the Branch2 and R2 interfaces.
C. EIGRP packets were blocked by the inbound ACL on Branch2.
D. The primary path has more link delay configured then secondary path which causes EIGRP to choose the secondary path.

Answer: B

NEW QUESTION 768
Which two criteria must be met to support the ICMP echo IP SLA? (Choose two)

A. The source and destination devices must be Cisco devices
B. The source device must be a Cisco device, but the destination device can be from any vendor
C. The source device must be runing Layer 2 services
D. A default gateway must be configured for the source and destination devices
E. The destination device must support the echo protocol.

Answer: AE

NEW QUESTION 772
If you change the weight and distance parameters on a device with an established bgp neighbor, which additional task must you perform to allow two devices to continue exchanging routes ?

A. Change the weight and distance settings on the other device to match
B. reset the gateway interface
C. reset the BGP connections on the device
D. Clear the IP routers on the device

Answer: C

NEW QUESTION 773
Scenario:
You work for a company that provides managed network services, and of your real estate clients running a small office is experiencing network issues,
Troubleshoot the network issues.
Router R1 connects the main office to internet, and routers R2 and R3 are internal routers NAT is enabled on Router R1.
The routing protocol that is enable between routers R1, R2, and R3 is RIPv2.
R1 sends default route into RIPv2 for internal routers to forward internet traffic to R1.
Server1 and Server2 are placed in VLAN 100 and 200 respectively, and dare still running router on stick configuration with router R2.
You have console access on R1, R2, R3, and L2SW1 devices. Use only show commands to troubleshoot the issues.

Instructions

- Enter IOS commands on the device to verify network operation and answer the multiple-choice questions.
- **THIS TASK DOES NOT REQUIRE DEVICE CONFIGURATION.**
- Click the device icon to gain access to the console of the device. No console or enable passwords are required.
- To access the multiple-choice questions, click the numbered boxes on the left of the top panel.
- There are **four** multiple-choice questions with this task. Be sure to answer all four questions before clicking Next.

Topology
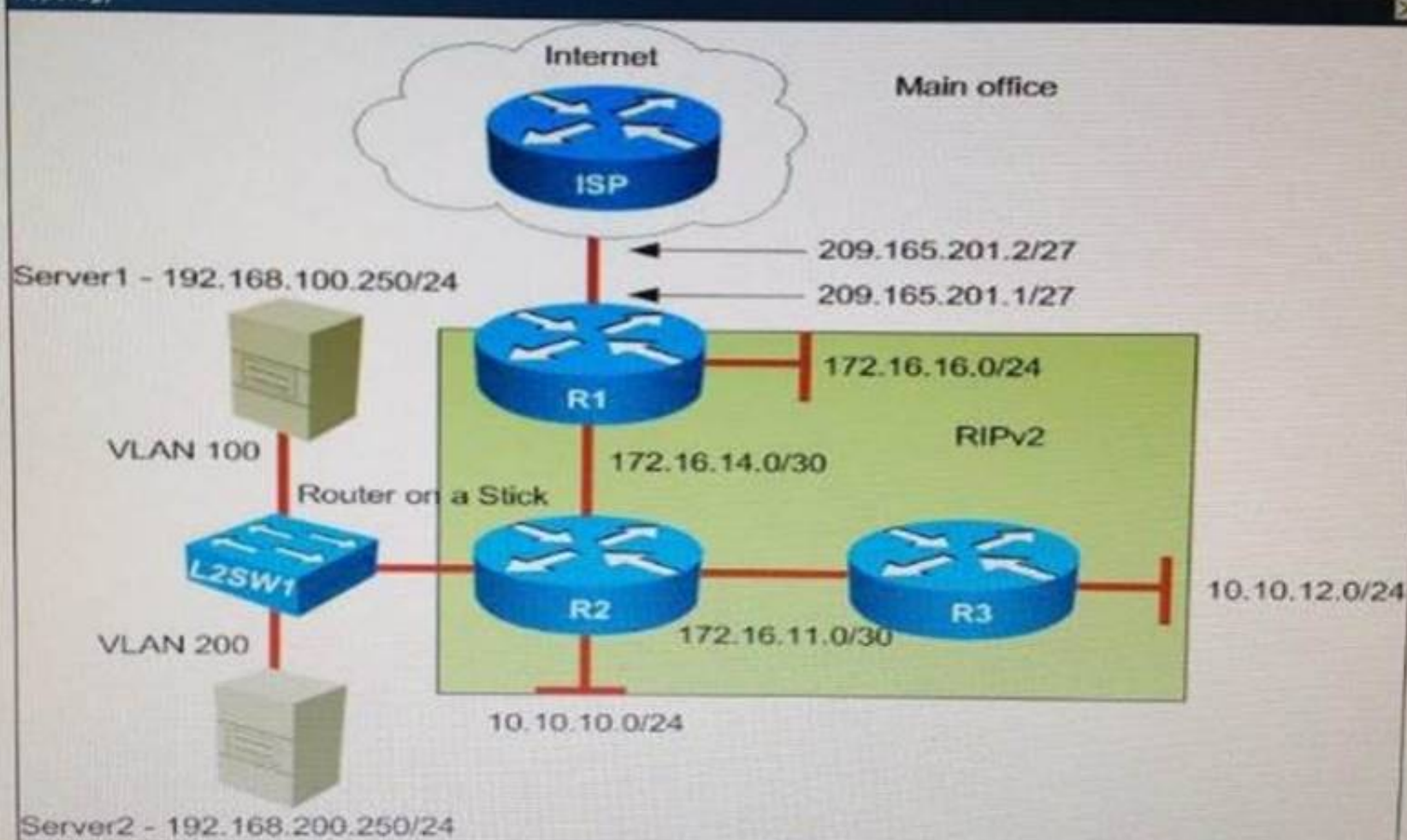
Internet

Main office

ISP

209.165.201.2/27
209.165.201.1/27

Server1 - 192.168.100.250/24

172.16.16.0/24

R1

RIPv2

VLAN 100

172.16.14.0/30

Router on a Stick

L2SW1

R2

R3

10.10.12.0/24

172.16.11.0/30

VLAN 200

10.10.10.0/24

Server2 - 192.168.200.250/24

R1

```
R1#show r
R1#show run
R1#show running-config
Building configuration...

Current configuration : 1438 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
           VST -8 0
   polling-interval 60
   auto-configure
no snl pvc
snl snmp-timeout 180
!
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
```

```
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
```

```
!
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.201.1 255.255.255.224
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to LAN***
 ip address 172.16.16.1 255.255.255.0
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 172.16.14.1 255.255.255.252
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
```

```
router rip
 version 2
 network 172.16.0.0
 default-information originate
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 10.10.10.0 255.255.255.0 172.16.14.2 200
!
ip access-list standard LOCAL
 permit 10.0.0.0 0.255.255.255
 permit 172.16.0.0 0.0.255.255
 permit 192.168.0.0 0.0.255.255
!
!
!
!
control-plane
!
```

```
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R1#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4100 (bia aabb.cc00.4100)
  Description: ***Link to ISP***
  Internet address is 209.165.201.1/27
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:53, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
```

```
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     40 packets input, 11786 bytes, 0 no buffer
     Received 39 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     191 packets output, 20271 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     4 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4110 (bia aabb.cc00.4110)
  Description: ***Link to LAN***
  Internet address is 172.16.16.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
```

```
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    245 packets output, 30725 bytes, 0 underruns
    0 output errors, 0 collisions, 4 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4120 (bia aabb.cc00.4120)
  Description: ***Link to R2***
  Internet address is 172.16.14.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
```

```
Internet address is 172.16.14.1/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:16, output 00:00:07, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    98 packets input, 20097 bytes, 0 no buffer
    Received 97 broadcasts (54 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    247 packets output, 25359 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    4 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
```

```
          output buffer failures, 0 output buffers swapped out
          0/0 is administratively down, line protocol is down
          Hardware is AmdP2, address is eabb.cc00.4130 (bia eabb.cc00.4130)
          MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
             reliability 255/255, txload 1/255, rxload 1/255
          Encapsulation ARPA, loopback not set
          Keepalive set (10 sec)
          ARP type: ARPA, ARP Timeout 04:00:00
          Last input never, output never, output hang never
          Last clearing of "show interface" counters never
          Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
          Queueing strategy: fifo
          Output queue: 0/40 (size/max)
          5 minute input rate 0 bits/sec, 0 packets/sec
          5 minute output rate 0 bits/sec, 0 packets/sec
             0 packets input, 0 bytes, 0 no buffer
             Received 0 broadcasts (0 IP multicasts)
             0 runts, 0 giants, 0 throttles
             0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
             0 input packets with dribble condition detected
             0 packets output, 0 bytes, 0 underruns
             0 output errors, 0 collisions, 0 interface resets
             0 unknown protocol drops
             0 babbles, 0 late collision, 0 deferred
             0 lost carrier, 0 no carrier
```

```
             0 late collision, 0 deferred
             0 lost carrier, 0 no carrier
          0 output buffer failures, 0 output buffers swapped out
          0 is up, line protocol is up
          Hardware is NVI
          Interface is unnumbered. Using address of Ethernet0/0 (209.165.201.1)
          MTU 1514 bytes, BW 56 Kbit/sec, DLY 5000 usec,
             reliability 255/255, txload 1/255, rxload 1/255
          Encapsulation UNKNOWN, loopback not set
          Keepalive set (10 sec)
          Last input never, output never, output hang never
          Last clearing of "show interface" counters never
          Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
          5 minute input rate 0 bits/sec, 0 packets/sec
          5 minute output rate 0 bits/sec, 0 packets/sec
             0 packets input, 0 bytes, 0 no buffer
             Received 0 broadcasts (0 IP multicasts)
             0 runts, 0 giants, 0 throttles
             0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
             0 packets output, 0 bytes, 0 underruns
             0 output errors, 0 collisions, 0 interface resets
             0 unknown protocol drops
             0 output buffer failures, 0 output buffers swapped out
R1#
R1#show ip interface brief
```

```
                      brief
                              IP-Address      OK? Method Status             Prot
Ethernet0/0                   209.165.201.1   YES NVRAM  up                  up
Ethernet0/1                   172.16.16.1     YES NVRAM  up                  up
Ethernet0/2                   172.16.14.1     YES NVRAM  up                  up
Ethernet0/3                   unassigned      YES NVRAM  administratively down down
NVI0                          209.165.201.1   YES unset  up                  up
R1#
R1#
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
```

```
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
      172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
R        172.16.11.0/30 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
C        172.16.14.0/30 is directly connected, Ethernet0/2
L        172.16.14.1/32 is directly connected, Ethernet0/2
C        172.16.16.0/24 is directly connected, Ethernet0/1
L        172.16.16.1/32 is directly connected, Ethernet0/1
R     192.168.1.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R     192.168.100.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R     192.168.200.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
      209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C        209.165.201.0/27 is directly connected, Ethernet0/0
L        209.165.201.1/32 is directly connected, Ethernet0/0
R1#
R1#
```

```
               ...
        configuration : 1503 bytes
   version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
```

```
          ...
       ...t 150
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
```

```
          bundle-name authenticated
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
```

```
interface Ethernet0/0
 description ***Link to R3***
 ip address 172.16.11.1 255.255.255.252

interface Ethernet0/1
 no ip address
!
interface Ethernet0/1.1
 description ***Link to Mangement Segment***
 encapsulation dot1Q 1 native
 ip address 192.168.1.1 255.255.255.0
!
interface Ethernet0/1.100
 description ***Link to Server1 Segment***
 encapsulation dot1Q 200
 ip address 192.168.100.1 255.255.255.0
!
interface Ethernet0/1.200
 description ***Link to Server2 Segment***
 encapsulation dot1Q 100
 ip address 192.168.200.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R1***
```

```
interface Ethernet0/2
 description ***Link to R1***
 ip address 172.16.14.2 255.255.255.252
!
interface Ethernet0/3
 description ***Link to LAN***
 ip address 10.10.10.1 255.255.255.0
!
router rip
 version 2
 network 10.0.0.0
 network 172.16.0.0
 network 192.168.1.0
 network 192.168.100.0
 network 192.168.200.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
```

```
control-plane
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R2#show interfaces
Ethernet0/0 is up, line protocol is up
 Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
 Description: ***Link to R3***
 Internet address is 172.16.11.1/30
 MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
```

```
Show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
  Description: ***Link to R3***
  Internet address is 172.16.11.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:32, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     50 packets input, 15683 bytes, 0 no buffer
     Received 50 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     343 packets output, 42566 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     2 unknown protocol drops
```

```
     2 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 1000 bits/sec, 2 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     4632 packets input, 308536 bytes, 0 no buffer
     Received 4421 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     512 packets output, 73148 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
         ......... output, 73188 bytes, 0 ...........
         .......... errors, 0 collisions, 0 interface resets
         .. unknown protocol drops
         0 babbles, 0 late collision, 0 deferred
         0 lost carrier, 0 no carrier
         0 output buffer failures, 0 output buffers swapped out
Ethernet0/1.1 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Mangement Segment***
   Internet address is 192.168.1.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  1.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server1 Segment***
   Internet address is 192.168.100.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
```

```
   ......... set (10 sec)
   ... clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server1 Segment***
   Internet address is 192.168.100.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/1.200 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
   Description: ***Link to Server2 Segment***
   Internet address is 192.168.200.1/24
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation 802.1Q Virtual LAN, Vlan ID  100.
   ARP type: ARPA, ARP Timeout 04:00:00
   Keepalive set (10 sec)
   Last clearing of "show interface" counters never
Ethernet0/2 is up, line protocol is up
   Hardware is AmdP2, address is aabb.cc00.4220 (bia aabb.cc00.4220)
   Description: ***Link to R1***
```

```
         MTU, loopback not set
      set [10 sec]
    type: ARPA, ARP Timeout 04:00:00
    input 00:00:08, output 00:00:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   128 packets input, 21994 bytes, 0 no buffer
   Received 127 broadcasts (77 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   345 packets output, 39952 bytes, 0 underruns
   0 output errors, 0 collisions, 1 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
   0 output buffer failures, 0 output buffers swapped out
```

```
         output failures, 0 output buffers swapped out
      is up, line protocol is up
      is AmdP2, address is aabb.cc00.4230 (bia aabb.cc00.4230)
Description: ***Link to LAN***
Internet address is 10.10.10.1/24
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   0 packets input, 0 bytes, 0 no buffer
   Received 0 broadcasts (0 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   344 packets output, 42752 bytes, 0 underruns
   0 output errors, 0 collisions, 6 interface resets
   0 unknown protocol drops
```

```
                ... errors, 0 collisions, 0 interface resets
        ... unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
R2#
R2#
R2#show ip interface brief
Interface                  IP-Address      OK? Method Status                Prot
ocol
Ethernet0/0                172.16.11.1     YES NVRAM  up                       up
Ethernet0/1                unassigned      YES NVRAM  up                       up
Ethernet0/1.1              192.168.1.1     YES NVRAM  up                       up
Ethernet0/1.100            192.168.100.1   YES NVRAM  up                       up
Ethernet0/1.200            192.168.200.1   YES NVRAM  up                       up
Ethernet0/2                172.16.14.2     YES NVRAM  up                       up
Ethernet0/3                10.10.10.1      YES NVRAM  up                       up
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
       L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*    0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.10.0/24 is directly connected, Ethernet0/3
L        10.10.10.1/32 is directly connected, Ethernet0/3
      172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C        172.16.11.0/30 is directly connected, Ethernet0/0
L        172.16.11.1/32 is directly connected, Ethernet0/0
C        172.16.14.0/30 is directly connected, Ethernet0/2
L        172.16.14.2/32 is directly connected, Ethernet0/2
R        172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.1.0/24 is directly connected, Ethernet0/1.1
```

```
                    ....... is 172.16.14.1 to network 0.0.0.0

      ....0/8 [120/1] via 172.16.14.1, 00:60:23, Ethernet0/2
      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.10.0/24 is directly connected, Ethernet0/3
L        10.10.10.1/32 is directly connected, Ethernet0/3
      172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C        172.16.11.0/30 is directly connected, Ethernet0/0
L        172.16.11.1/32 is directly connected, Ethernet0/0
C        172.16.14.0/30 is directly connected, Ethernet0/2
L        172.16.14.2/32 is directly connected, Ethernet0/2
R        172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.1.0/24 is directly connected, Ethernet0/1.1
L        192.168.1.1/32 is directly connected, Ethernet0/1.1
      192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.100.0/24 is directly connected, Ethernet0/1.100
L        192.168.100.1/32 is directly connected, Ethernet0/1.100
      192.168.200.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.200.0/24 is directly connected, Ethernet0/1.200
L        192.168.200.1/32 is directly connected, Ethernet0/1.200
R2#
```

```
      ......-config
      ..... configuration...

......t configuration : 913 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
                    PST -8 0
        ...ng-interval 60
        ...auto-configure
        ...pvc
    ...snmp-timeout 180
!
!
!
!

!
!
!
!

ip cef
no ipv6 cef
!

multilink bundle-name authenticated
!
!
!
!
```

```
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.10.12.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address 172.16.11.2 255.255.255.252
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
```

```
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4300 (bia aabb.cc00.4300)
  Description: ***Link to LAN***
  Internet address is 10.10.12.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R3                                                              ✕
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     666 packets output, 71699 bytes, 0 underruns
     0 output errors, 0 collisions, 11 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
  Description: ***Link to R2***
```

R3

```
Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
Description: ***Link to R2***
Internet address is 172.16.11.2/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:21, output 00:00:05, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   316 packets input, 74089 bytes, 0 no buffer
   Received 316 broadcasts (200 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   669 packets output, 71888 bytes, 0 underruns
   0 output errors, 0 collisions, 1 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
```

R3

```
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
   0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is administratively down, line protocol is down
   Hardware is AmdP2, address is aabb.cc00.4320 (bia aabb.cc00.4320)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
```

```
R3                                                                    X

        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
   Hardware is AmdP2, address is aabb.cc00.4330 (bia aabb.cc00.4330)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
```

```
R3                                                                    X

      0 input packets with dribble condition detected
      0 packets output, 0 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
R3#
R3#
R3#show ip interface brief
Interface              IP-Address      OK? Method Status              Prot
ocol
Ethernet0/0            10.10.12.1      YES NVRAM  up                   up
Ethernet0/1            172.16.11.2     YES NVRAM  up                   up
Ethernet0/2            unassigned      YES NVRAM  administratively down down
Ethernet0/3            unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R3                                                                          ⊠
Ethernet0/2                unassigned      YES NVRAM  administratively down down  ▲
Ethernet0/3                unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.12.0/24 is directly connected, Ethernet0/0
L        10.10.12.1/32 is directly connected, Ethernet0/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.16.11.0/30 is directly connected, Ethernet0/1
L        172.16.11.2/32 is directly connected, Ethernet0/1
R3#
R3#
R3#                                                                          ▼
```

```
L2SW1                                                                       ⊠
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
!
no ipv6 cef
ipv6 multicast rpf use-bgp
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
!
vlan internal allocation policy ascending
!
!                                                                           ▼
```

```
L2SW1                                                                    ⊠

L2SW1#show run
L2SW1#show running-config
Building configuration...

Current configuration : 1074 bytes
!
version 15.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2SW1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
```

```
L2SW1                                                                    ⊠

interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
ip default-gateway 192.168.1.1
!
no ip http server
!
!
!
!
!
control-plane
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
!
end
L2SW1#
L2SW1#
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
```

L2SW1   ☒

```
!
interface Ethernet0/0
 description ***Link to R2***
 switchport trunk encapsulation dot1q
 switchport mode trunk
 duplex auto
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 switchport access vlan 100
 switchport mode access
 duplex auto
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 switchport access vlan 200
 switchport mode access
 duplex auto
!
interface Ethernet0/3
 duplex auto
!
interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
```

L2SW1   ☒

```
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4500 (bia aabb.cc00.4500)
  Description: ***Link to R2***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 12/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 2 packets/sec
     1447 packets input, 208877 bytes, 0 no buffer
     Received 139 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     13457 packets output, 919293 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

L2SW1

```
       13457 packets output, 919293 bytes, 0 underruns
       0 output errors, 0 collisions, 0 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4510 (bia aabb.cc00.4510)
   Description: ***Link to Server1 segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/0 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
       755 packets input, 80219 bytes, 0 no buffer
       Received 123 broadcasts (0 multicasts)
```

L2SW1

```
       755 packets input, 80219 bytes, 0 no buffer
       Received 123 broadcasts (0 multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       3867 packets output, 268544 bytes, 0 underruns
       0 output errors, 0 collisions, 0 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4520 (bia aabb.cc00.4520)
   Description: ***Link to Server2 Segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
```

L2SW1 ✕

```
    Queueing strategy: fifo
    Output queue: 0/0 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        758 packets input, 81010 bytes, 0 no buffer
        Received 125 broadcasts (0 multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        3867 packets output, 268544 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up (connected)
    Hardware is AmdP2, address is aabb.cc00.4530 (bia aabb.cc00.4530)
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    Auto-duplex, Auto-speed, media type is unknown
    input flow-control is off, output flow-control is unsupported
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
```

L2SW1 ✕

```
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/0 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        0 packets input, 0 bytes, 0 no buffer
        Received 0 broadcasts (0 multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        3566 packets output, 252186 bytes, 0 underruns
        0 output errors, 0 collisions, 55 interface resets
        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Vlan1 is up, line protocol is up
    Hardware is Ethernet SVI, address is aabb.cc80.4500 (bia aabb.cc80.4500)
    Internet address is 192.168.1.254/24
    MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive not supported
```

```
L2SW1                                                          ⊠
    Keepalive not supported
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input 00:00:12, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        235 packets input, 42480 bytes, 0 no buffer
        Received 235 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        11 packets output, 830 bytes, 0 underruns
        0 output errors, 0 interface resets
        0 unknown protocol drops
        0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface            IP-Address      OK? Method Status         Protocol
Ethernet0/0          unassigned      YES unset  up             up
Ethernet0/1          unassigned      YES unset  up             up
Ethernet0/2          unassigned      YES unset  up             up
Ethernet0/3          unassigned      YES unset  up             up
```

```
L2SW1                                                          ⊠
        0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface            IP-Address      OK? Method Status         Protocol
Ethernet0/0          unassigned      YES unset  up             up
Ethernet0/1          unassigned      YES unset  up             up
Ethernet0/2          unassigned      YES unset  up             up
Ethernet0/3          unassigned      YES unset  up             up
Vlan1                192.168.1.254   YES NVRAM  up             up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
```

```
L2SW1                                                                    X
Ethernet0/0           unassigned      YES unset  up              up
Ethernet0/1           unassigned      YES unset  up              up
Ethernet0/2           unassigned      YES unset  up              up
Ethernet0/3           unassigned      YES unset  up              up
Vlan1                 192.168.1.254   YES NVRAM  up              up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

       192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C         192.168.1.0/24 is directly connected, Vlan1
L         192.168.1.254/32 is directly connected, Vlan1
L2SW1#
L2SW1#
L2SW1#
```

Server1 and Server2 are unable to communicate with the rest of the network. Your initial check with system administrators shows that IP address settings are correctly configured on the server side. What could be an issue?

A. The VLAN encapsulation is misconfigured on the router subinterfaces.
B. The IP address is misconfigured on the primary router interface.
C. The Router is missing subinterface configuration.
D. The Trunk is not configured on the L2SW1 switch.

Answer: A

Explanation:

```
R2
!
interface Ethernet0/1.100
 description ***Link to Server1 Segment***
 encapsulation dot1Q 200
 ip address 192.168.100.1 255.255.255.0
!
interface Ethernet0/1.200
 description ***Link to Server2 Segment***
 encapsulation dot1Q 100
 ip address 192.168.200.1 255.255.255.0
!
```

NEW QUESTION 776
Which interface counter can you use to diagnose a duplex mismatch problem?

A. no earner
B. late collisions
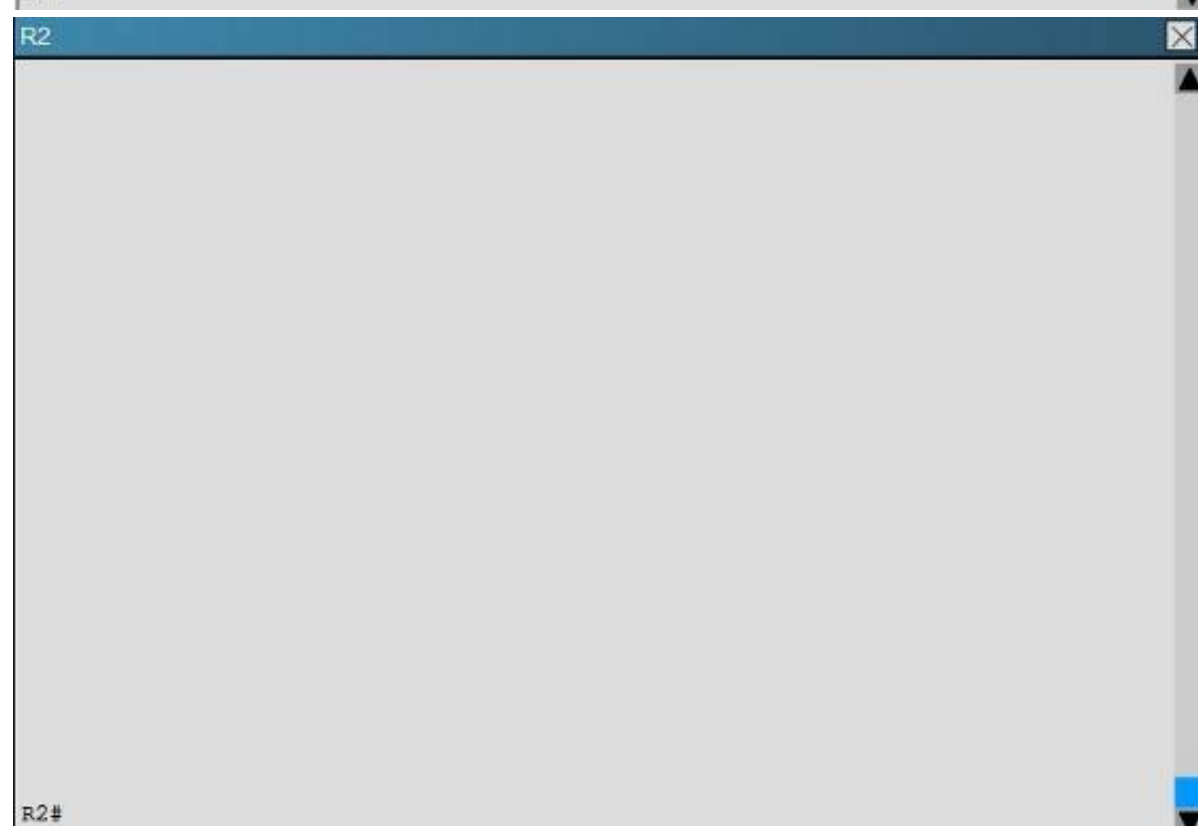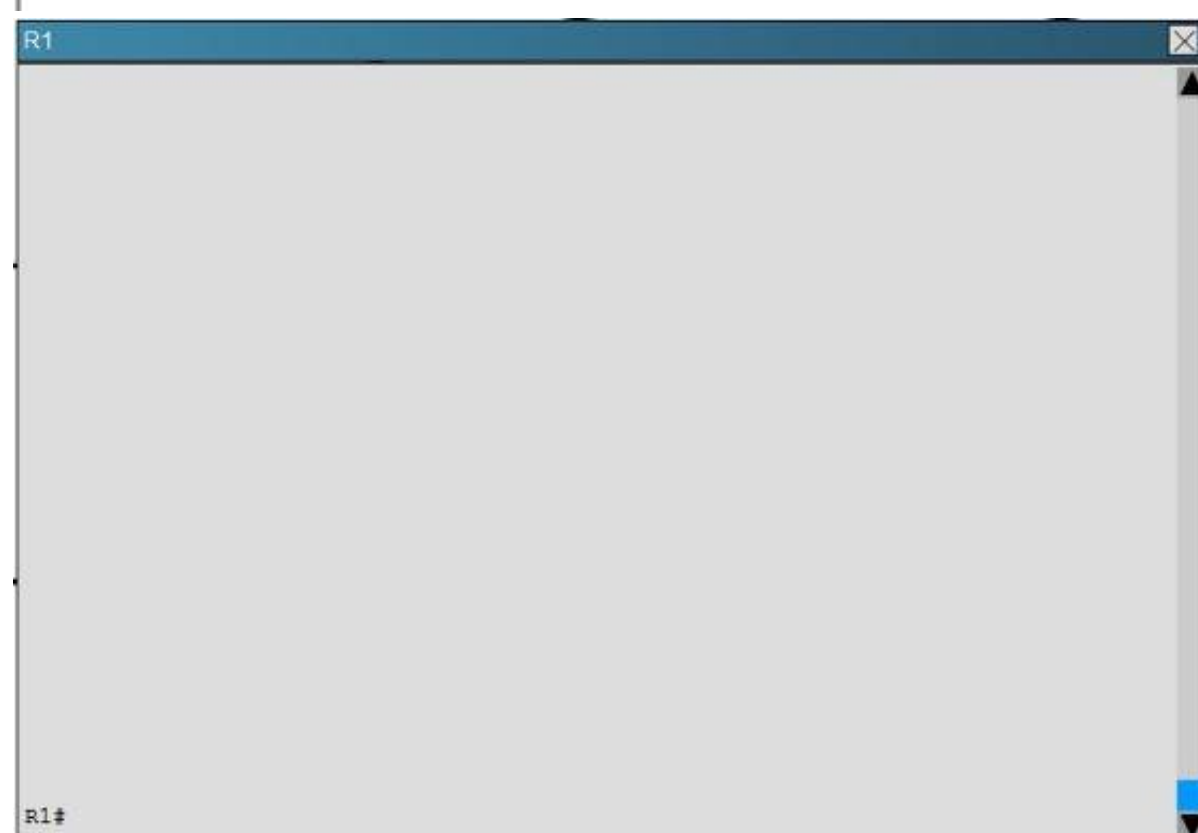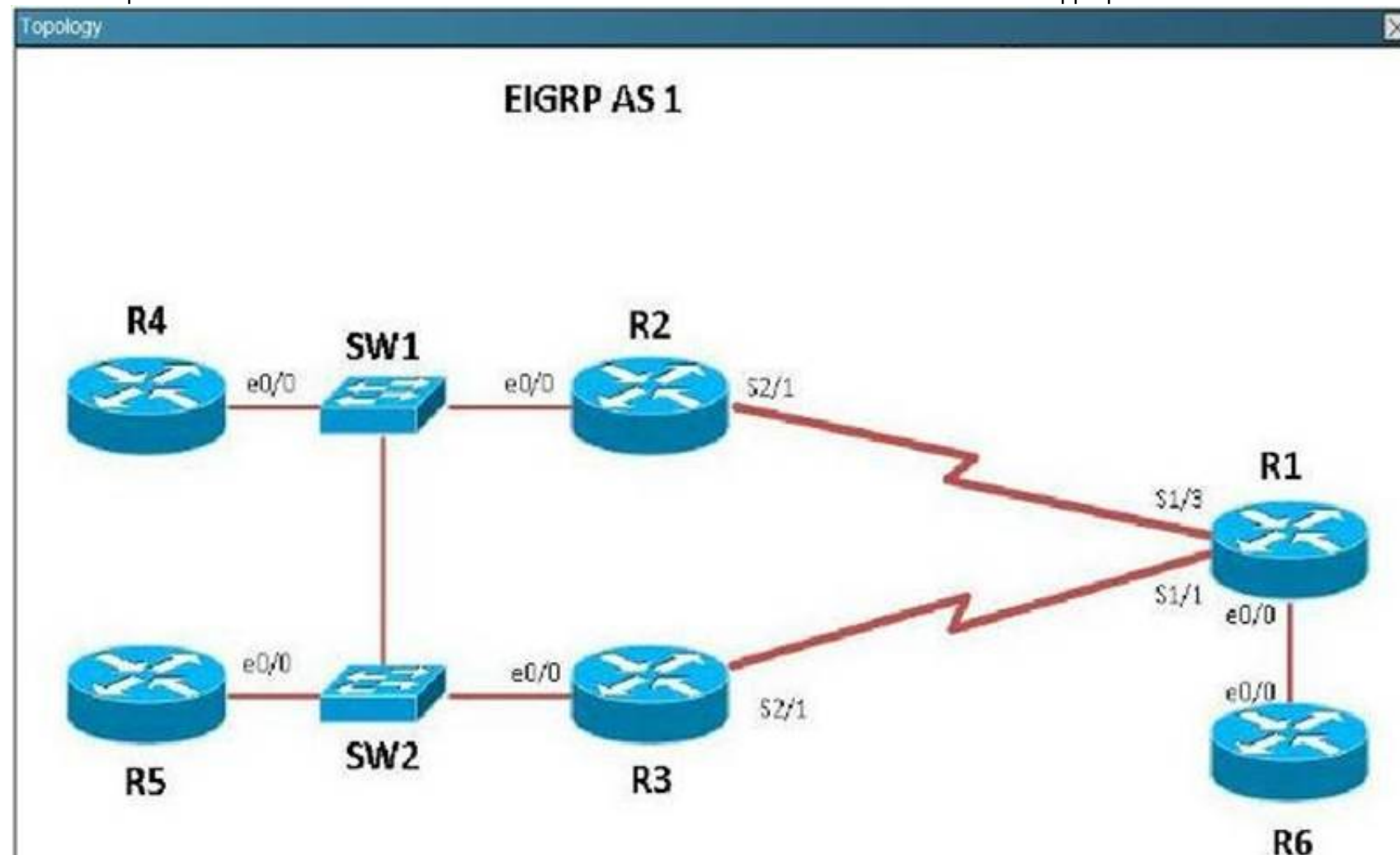C. giants
D. CRC errors
E. deferred
F. runts

Answer: B

NEW QUESTION 781
Scenario

Refer to the topology. Your company has connected the routers R1, R2, and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.
The EIGRP routing protocol is configured.
You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.

Topology ☒

EIGRP AS 1

R4   SW1   R2   S2/1

e0/0   e0/0

R1   S1/3

S1/1   e0/0

R5   e0/0   e0/0   R3   e0/0

SW2   S2/1

R6

R1 ☒

R1#

R2 ☒

R2#

R3

```
R3#
```

R4

```
R4#
```

R5

```
R5#
```

```
R6                                                    ⊠
▲










R6#
```

```
SW1                                                   ⊠
▲










SW1#
```

```
SW2                                                   ⊠
▲










SW2#
```

Study the following output taken on R1: R1# Ping 10.5.5.55 source 10.1.1.1 Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.5.5.55, timeout is 2 seconds: Packet sent with a source address of 10.1.1.1
…….
Success rate is 0 percent (0/5) Why are the pings failing?

A. The network statement is missing on R5.
B. The loopback interface is shut down on R5.
C. The network statement is missing on R1.
D. The IP address that is configured on the Lo1 interface on R5 is incorrect.

Answer: C

Explanation: R5 does not have a route to the 10.1.1.1 network, which is the loopback0 IP address of R1. When looking at the EIGRP configuration on R1, we see that the 10.1.1.1 network statement is missing on R1.

```
R1

 no ip address
 serial restart-delay 0
!
interface Serial2/2
 no ip address
 shutdown
 serial restart-delay 0
!
interface Serial2/3
 no ip address
 shutdown
 serial restart-delay 0
!
!
router eigrp 1
 network 192.168.12.0
 network 192.168.13.0
 network 192.168.16.0
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server


R1#
```

NEW QUESTION 782
Which two statements about configuring an EtherChannel on a Cisco switch are true? (Choose two.)

A. The interfaces configured in the EtherChannel must be on the same physical switch.
B. The interfaces configured in the EtherChannel must operate at the same speed and duplex mode
C. An EtherChannel can operate in Layer 2 mode only.
D. The interfaces configured in the EtherChannel must be part of the same VLAN or trunk.
E. The interfaces configured in the EtherChannel must have the same STP port path cost

Answer: BD

NEW QUESTION 784
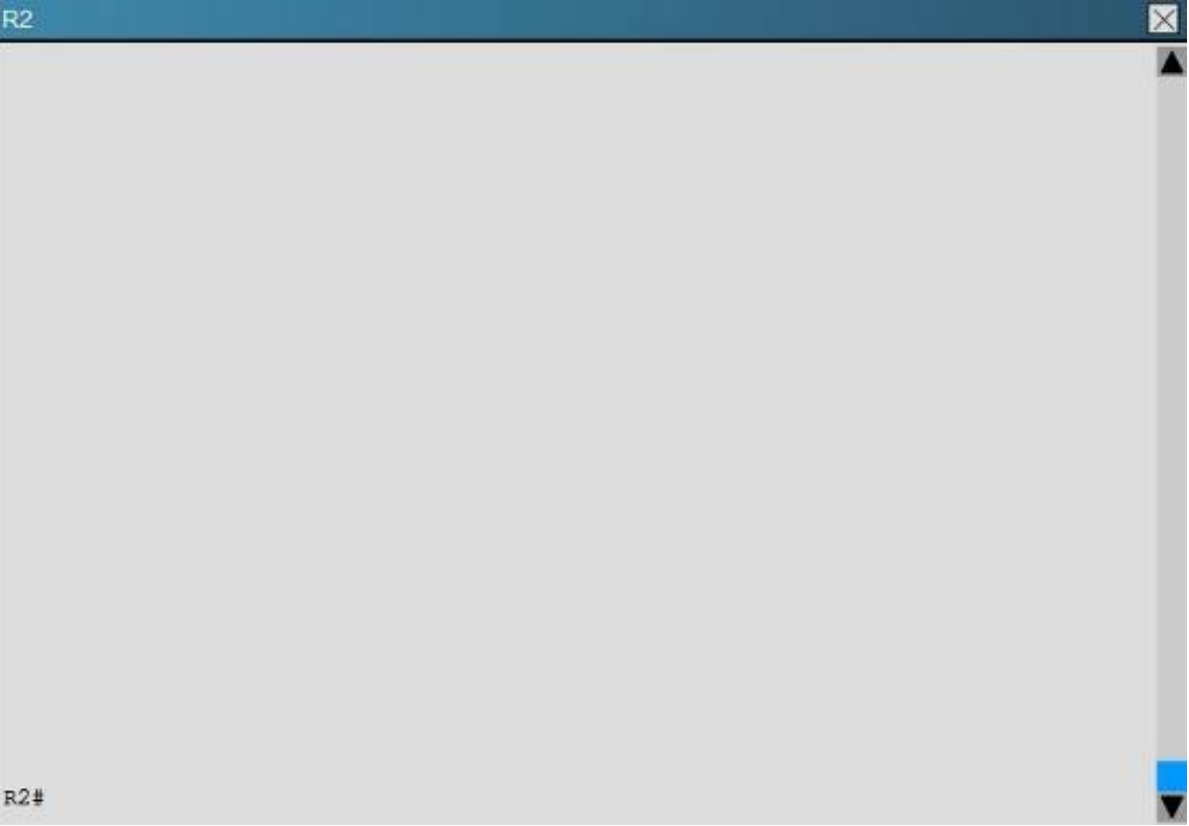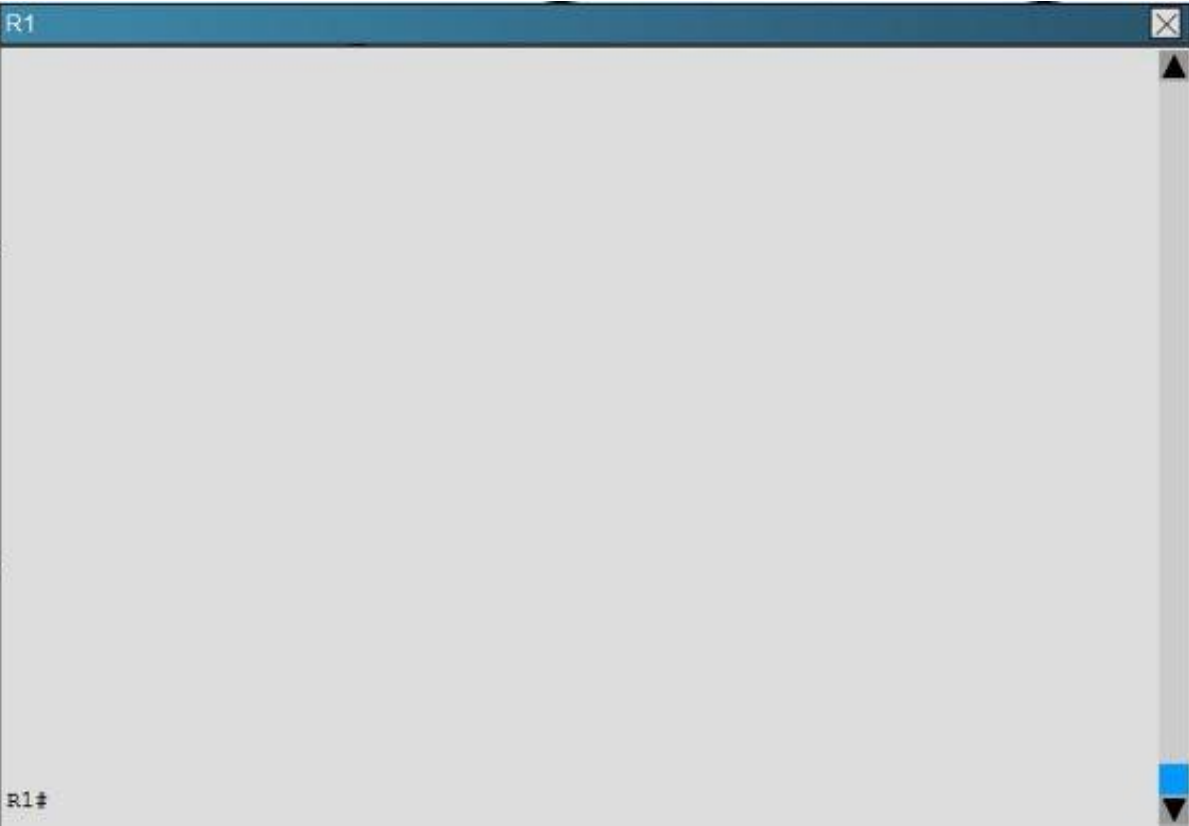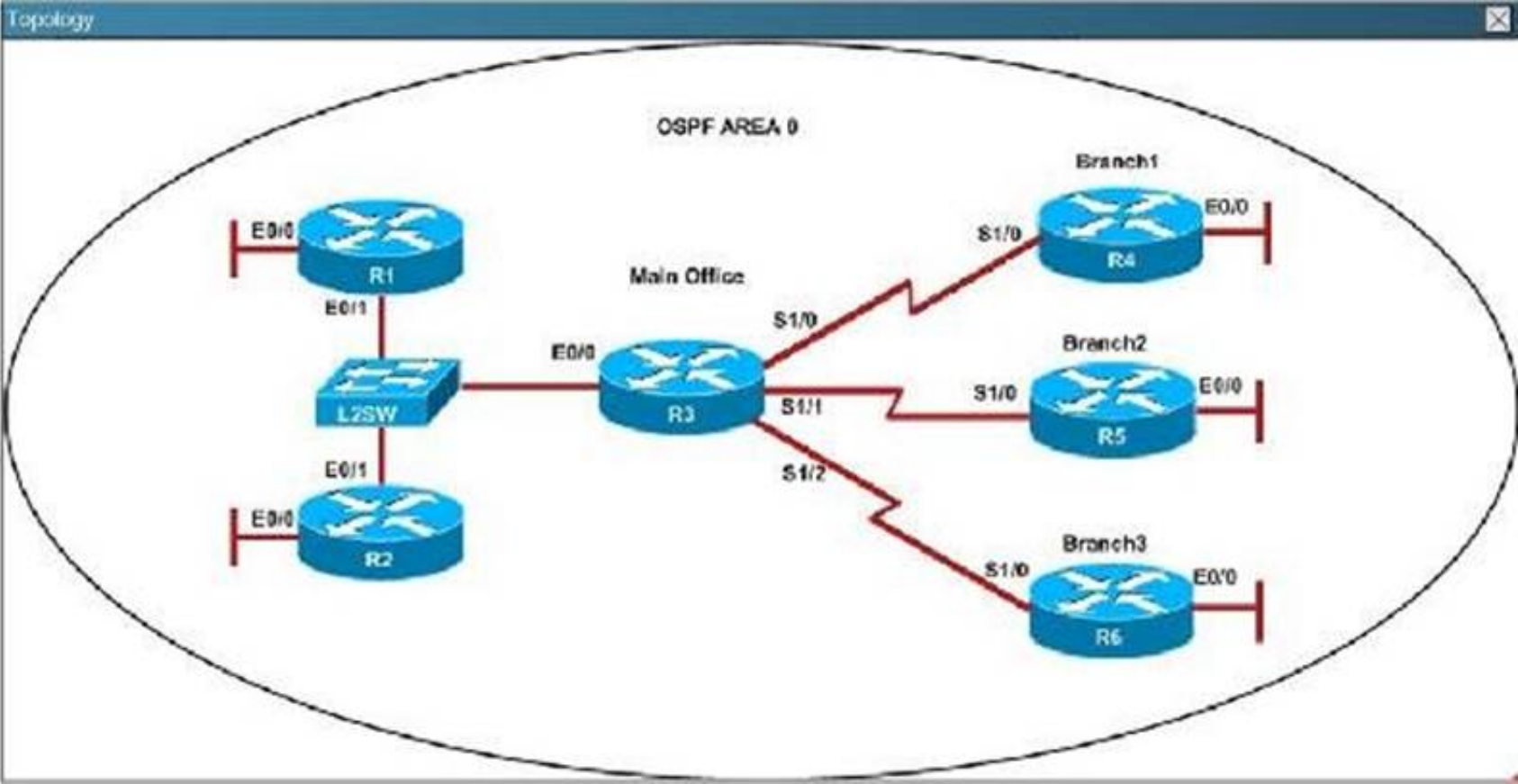Scenario
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.
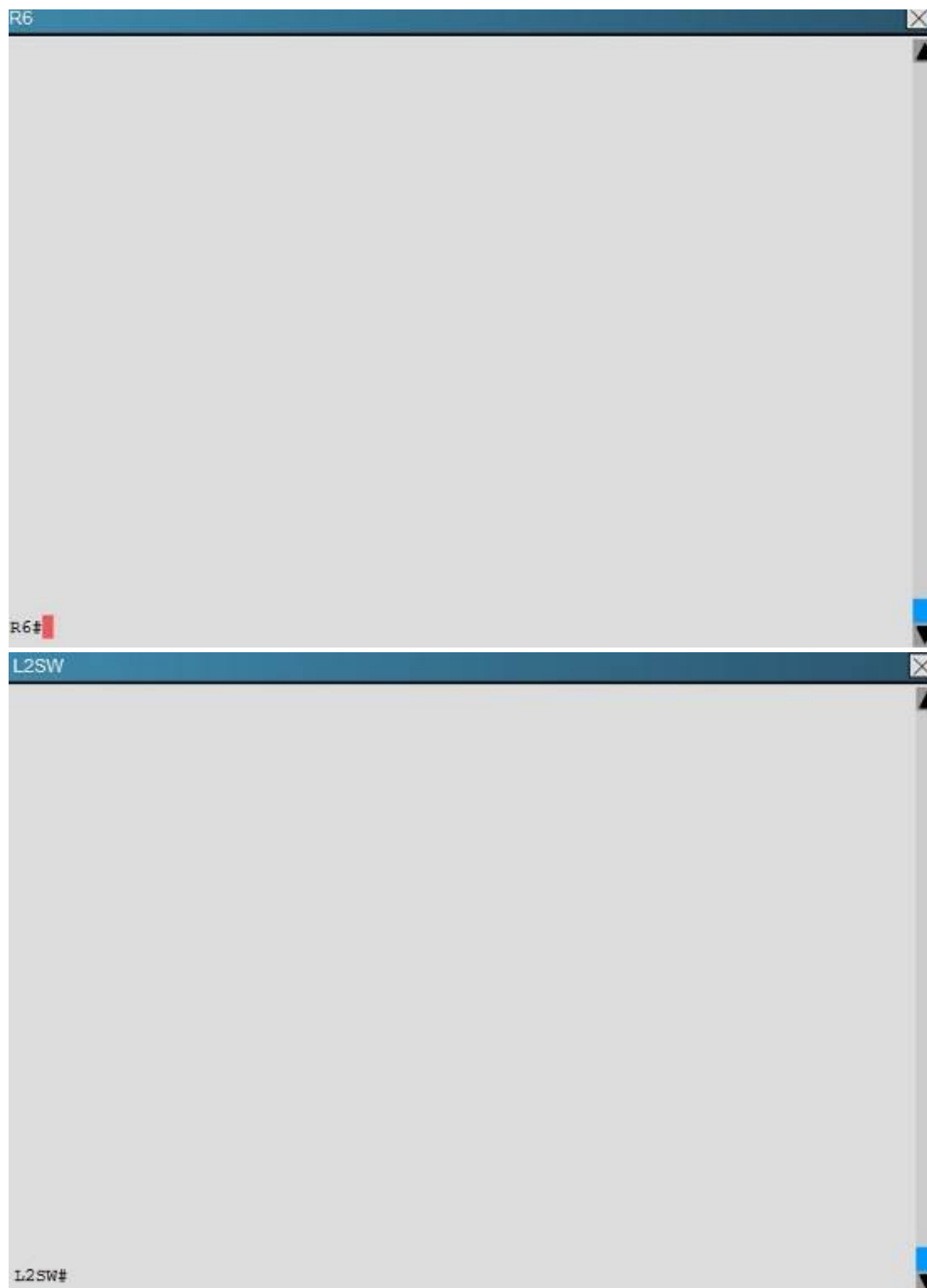
Topology

R1

R1#

R2

R2#

R3

R3#

R4

R4#

R5

R5#

```
R6                                                                    ☒


R6#
```

```
L2SW                                                                  ☒


L2SW#
```
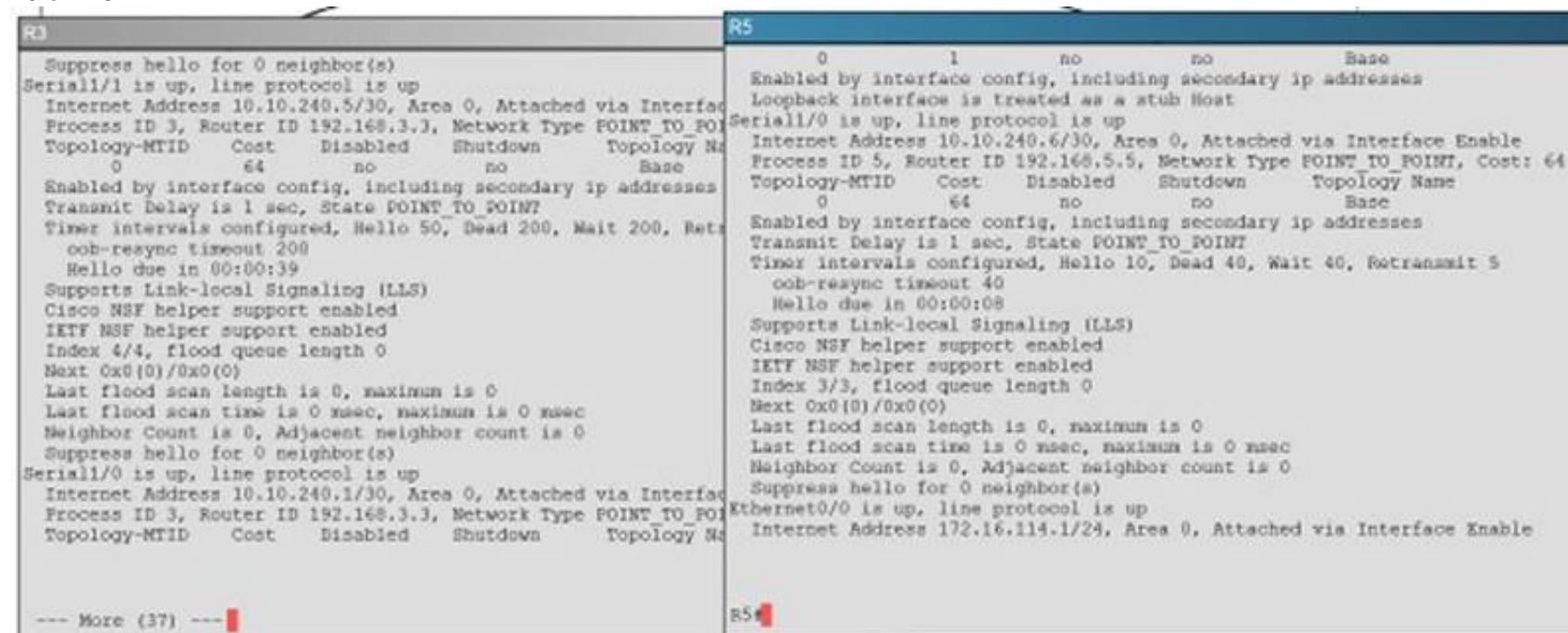
An OSPF neighbor adjacency is not formed between R3 in the main office and R5 in the Branch2 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; a password mismatch.
C. There is an OSPF hello and dead interval mismatch.
D. There is a missing network command in the OSPF process on R5.

Answer: C

Explanation: The "show ip ospf interface command on R3 and R5 shows that the hello and dead intervals do not match. They are 50 and 200 on R3 and 10 and 40 on R5.

```
R3
   Suppress hello for 0 neighbor(s)
Serial1/1 is up, line protocol is up
   Internet Address 10.10.240.5/30, Area 0, Attached via Interfac
   Process ID 3, Router ID 192.168.3.3, Network Type POINT_TO_POI
   Topology-MTID    Cost    Disabled    Shutdown     Topology N
         0           64        no          no             Base
   Enabled by interface config, including secondary ip addresses
   Transmit Delay is 1 sec, State POINT_TO_POINT
   Timer intervals configured, Hello 50, Dead 200, Wait 200, Retr
     oob-resync timeout 200
     Hello due in 00:00:39
   Supports Link-local Signaling (LLS)
   Cisco NSF helper support enabled
   IETF NSF helper support enabled
   Index 4/4, flood queue length 0
   Next 0x0(0)/0x0(0)
   Last flood scan length is 0, maximum is 0
   Last flood scan time is 0 msec, maximum is 0 msec
   Neighbor Count is 0, Adjacent neighbor count is 0
   Suppress hello for 0 neighbor(s)
Serial1/0 is up, line protocol is up
   Internet Address 10.10.240.1/30, Area 0, Attached via Interfac
   Process ID 3, Router ID 192.168.3.3, Network Type POINT_TO_POI
   Topology-MTID    Cost    Disabled    Shutdown     Topology N

--- More (37) ---
```

```
R5
         0           1        no          no            Base
   Enabled by interface config, including secondary ip addresses
   Loopback interface is treated as a stub Host
Serial1/0 is up, line protocol is up
   Internet Address 10.10.240.6/30, Area 0, Attached via Interface Enable
   Process ID 5, Router ID 192.168.5.5, Network Type POINT_TO_POINT, Cost: 64
   Topology-MTID    Cost    Disabled    Shutdown      Topology Name
         0           64        no          no             Base
   Enabled by interface config, including secondary ip addresses
   Transmit Delay is 1 sec, State POINT_TO_POINT
   Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
     oob-resync timeout 40
     Hello due in 00:00:08
   Supports Link-local Signaling (LLS)
   Cisco NSF helper support enabled
   IETF NSF helper support enabled
   Index 3/3, flood queue length 0
   Next 0x0(0)/0x0(0)
   Last flood scan length is 0, maximum is 0
   Last flood scan time is 0 msec, maximum is 0 msec
   Neighbor Count is 0, Adjacent neighbor count is 0
   Suppress hello for 0 neighbor(s)
Ethernet0/0 is up, line protocol is up
   Internet Address 172.16.114.1/24, Area 0, Attached via Interface Enable

R5
```

NEW QUESTION 789

Which two statements about late collisions are true? (Choose two.)

A. They may indicate a duplex mismatch.
B. By definition, they occur after the 512th bit of the frame has been transmitted.
C. They indicate received frames that did not pass the FCS match.
D. They are frames that exceed 1518 bytes.
E. They occur when CRC errors and interference occur on the cable.

Answer: AB

NEW QUESTION 790
Which two statements about EUI-64 addressing are true? (Choose two)

A. A 64-bit interface identifier is derived from the interface MAC address
B. A 96-bit interface identifier is derived from the interface MAC address.
C. A locally administered address has the universal/local bit set to 0.
D. The address includes the hex digits FFFE after the first 24 bits of the interface MAC address
E. The address includes the hex digits FFFE after the last 24 bits of the interface MAC address

Answer: CD

NEW QUESTION 794
What is a valid HSRP virtual MAC address?

A. 0000.5E00.01A3
B. 0007.B400.AE01
C. 0000.0C07.AC15
D. 0007.5E00.B301

Answer: C

Explanation: With HSRP, two or more devices support a virtual router with a fictitious MAC address and unique IP address. There are two version of HSRP.
+ With HSRP version 1, the virtual router's MAC address is 0000.0c07.ACxx , in which xx is the HSRP group.
+ With HSRP version 2, the virtual MAC address if 0000.0C9F.Fxxx, in which xxx is the HSRP group. Note: Another case is HSRP for IPv6, in which the MAC address range from 0005.73A0.0000 through
0005.73A0.0FFF.

NEW QUESTION 798
What SNMP message alerts the manager to a condition on the network?

A. response
B. get
C. trap
D. capture

Answer: C

Explanation: An agent can send unsolicited traps to the manager. Traps are messages alerting the SNMP manager to a condition on the network. Traps can mean improper user authentication, restarts, link status (up or down), MAC address tracking, closing of a TCP connection, loss of connection to a neighbor, or other significant events.
Reference:
http://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst2950/software/release/12-1_9_ea1/configuration/guid

NEW QUESTION 800
Which three statements about the features of SNMPv2 and SNMPv3 are true? (Choose three.)

A. SNMPv3 enhanced SNMPv2 security features.
B. SNMPv3 added the Inform protocol message to SNMP.
C. SNMPv2 added the Inform protocol message to SNMP.
D. SNMPv3 added the GetBulk protocol messages to SNMP.
E. SNMPv2 added the GetBulk protocol message to SNMP.
F. SNMPv2 added the GetNext protocol message to SNMP.

Answer: ACE

Explanation: SNMPv1/v2 can neither authenticate the source of a management message nor provide encryption. Without authentication, it is possible for nonauthorized users to exercise SNMP network management functions. It is also possible for nonauthorized users to eavesdrop on management information as it passes from managed systems to the management system. Because of these deficiencies, many SNMPv1/v2 implementations are limited to simply a read-only capability, reducing their utility to that of a network monitor; no network control applications can be supported. To correct the security deficiencies of SNMPv1/v2, SNMPv3 was issued as a set of Proposed Standards in January 1998. -> A is correct.
The two additional messages are added in SNMP2 (compared to SNMPv1)
GetBulkRequest The GetBulkRequest message enables an SNMP manager to access large chunks of data. GetBulkRequest allows an agent to respond with as much information as will fit in the response PDU. Agents that cannot provide values for all variables in a list will send partial information. -> E is correct.
InformRequest The InformRequest message allows NMS stations to share trap information. (Traps are issued by SNMP agents when a device change occurs.) InformRequest messages are generally used between NMS stations, not between NMS stations and agents. -> C is correct.
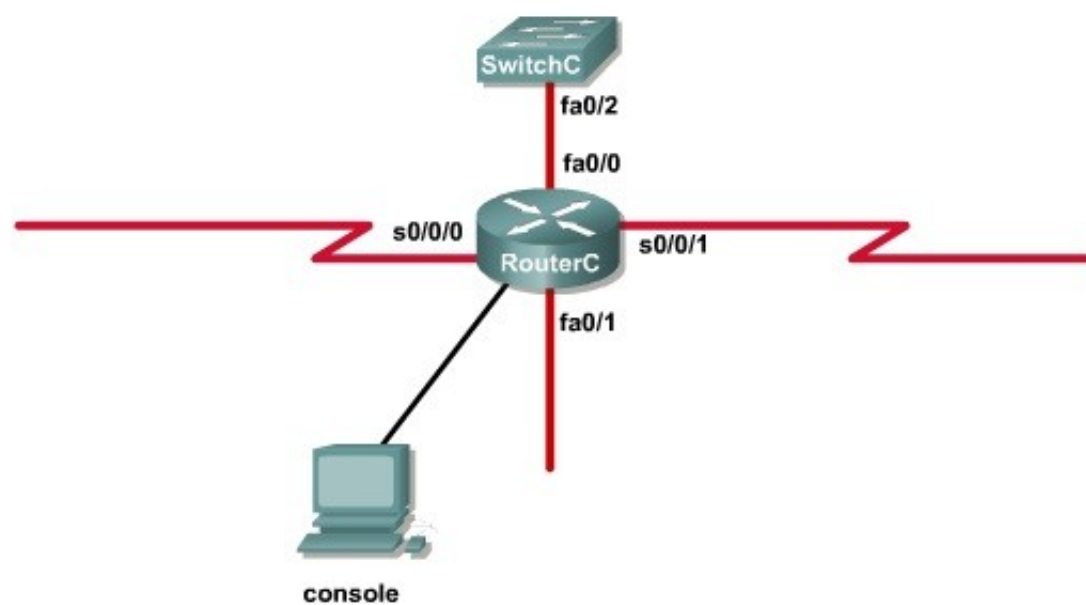Note: These two messages are carried over SNMPv3.

NEW QUESTION 803
An administrator is trying to ping and telnet from SwitchC to RouterC with the results shown below.

```
SwitchC>
SwitchC> ping 10.4.4.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.4.4.3, timeout is 2 seconds:
U.U.U
Success rate is 0 percent (0/5)
SwitchC>
SwitchC> telnet 10.4.4.3
Trying 10.4.4.3 ...
% Destination unreachable; gateway or host down
SwitchC>
```

Click the console connected to RouterC and issue the appropriate commands to answer the questions.

Topology

RouterC

```
Press RETURN to get started!
RouterC>
```

```
<output omitted>

interface Loopback1
  ip address 172.16.4.1.255.255.255.0
!
interface Loopback2
  ip address 10.145.145.1  255.255.255.0
  ipv6 address 2001:410:2:3::/64 eui-64
!
interface FastEthernet0/0
  ip address 10.4.4.3.255.255.255.0
  ip access-group 106 in
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
speed auto
!
interface Serial0/0/0
  bandwidth 64
  no ip address
  ip access-group 102 out
  encapsulation frame-relay
  ip ospf authentication
  ip ospf authentication
  ip ospf authentication-key san-fran
!
interface Serial0/0/0.1 point-to-point
  ip address 10.140.3.2 255.255.255.0
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  frame-relay interface-dlci 120
!
interface Serail0/0/1
  bandwidth 64
  ip address 10.45.45.1 255.255.255.0
  ip access-group 102 in
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
```

```
router eigrp 100
  network 10.0.0.0
  network 172.16.0.0
  network 192.168.2.0
  not auto-summary
!
router ospf 100
  log-adjacency-changes
  network 10.4.4.3 0.0.0.0 area 0
  network 10.45.45.1 0.0.0.0 area 0
  network 10.140.3.2 0.0.0.0 area 0
  network 192.168.2.62 0.0.0.0 area 0
!
router rip
  version 2
  network 10.0.0.0
  network 172.16.0.0
!
ip default-gateway 10.1.1.2
!
!
ip http server
no ip http secure-server
!
```

```
access-list 102 permit tcp any any eq ftp
access-list 102 permit tcp any any eq ftp-data
access-list 102 deny tcp any any eq telnet
access-list 102 deny icmp any any echo-reply
access-list 102 permit ip any any


access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 deny icmp any any echo-reply
access-list 104 permit ip any any


access-list 106 permit tcp any any eq ftp
access-list 106 permit tcp any any ftp-data
access-list 106 deny tcp any any eq telnet
access-list 106 permit icmp any any echo-reply
access-list 110 permit udp any any eq domain
access-list 110 permit udp any eq domain any
access-list 110 permit tcp any any eq domain
access-list 110 permit tcp any eq domain any
access-list 110 permit tcp any any


access-list 114 permit ip 10.4.4.0.0.0.0.255 any

access-list 115 permit ip 0.0.0.0 255.255.255.0 any

access-list 122 deny tcp any any
access-list 122 deny imp any any echo-reply
access-list 122 permit ip any any
!
<output omitted>
```

Which will fix the issue and allow ONLY ping to work while keeping telnet disabled?

A. Correctly assign an IP address to interface fa0/1.
B. Change the ip access-group command on fa0/0 from "in" to "out".
C. Remove access-group 106 in from interface fa0/0 and add access-group 115 in.
D. Remove access-group 102 out from interface s0/0/0 and add access-group 114 in
E. Remove access-group 106 in from interface fa0/0 and add access-group 104 in.

Answer: E

Explanation: Let's have a look at the access list 104:

```
access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telent
access-list 104 permit icmp any any echo
access-list 104 permit icmp any any echo-reply
access-list 104 permit ip any any
```

The question does not ask about ftp traffic so we don't care about the two first lines. The 3rd line denies all telnet traffic and the 4th line allows icmp traffic to be sent (ping). Remember that the access list 104 is applied on the inbound direction so the 5th line "access-list 104 deny icmp any any echo-reply" will not affect our icmp traffic because the "echo-reply" message will be sent over the outbound direction.

NEW QUESTION 805

Which two statements about Ethernet standards are true? (Choose two)

A. Ethernet is defined by IEEE standard 802.2.
B. Ethernet is defined by IEEE standard 802.3.
C. Ethernet 10BASE-T does not support full-duplex.
D. When an Ethernet network uses CSMA/CD, it terminates transmission as soon as a collision occurs.
E. When an Ethernet network uses CSMA/C
F. it terminates transmission as soon as a collision occurs.

Answer: BD

NEW QUESTION 807
Which three statements about Syslog utilization are true? (Choose three.)

A. Utilizing Syslog improves network performance.
B. The Syslog server automatically notifies the network administrator of network problems.
C. A Syslog server provides the storage space necessary to store log files without using router disk space.
D. There are more Syslog messages available within Cisco IOS than there are comparable SNMP trap messages.
E. Enabling Syslog on a router automatically enables NTP for accurate time stamping.
F. A Syslog server helps in aggregation of logs and alerts.

Answer: CDF

Explanation: The Syslog sender sends a small (less than 1KB) text message to the Syslog receiver. The Syslog receiver is commonly called "syslogd," "Syslog daemon," or "Syslog server." Syslog messages can be sent via UDP (port 514) and/or TCP (typically, port 5000). While there are some exceptions, such as SSL wrappers, this data is typically sent in clear text over the network. A Syslog server provides the storage space necessary to store log files without using router disk space.
In general, there are significantly more Syslog messages available within IOS as compared to SNMP Trap messages. For example, a Cisco Catalyst 6500 switch running Cisco IOS Software Release 12.2(18)SXF contains about 90 SNMP trap notification messages, but has more than 6000 Syslog event messages.
System logging is a method of collecting messages from devices to a server running a syslog daemon. Logging to a central syslog server helps in aggregation of logs and alerts. Cisco devices can send their log messages to a UNIX-style syslog service. A syslog service accepts messages and stores them in files, or prints them according to a simple configuration file.
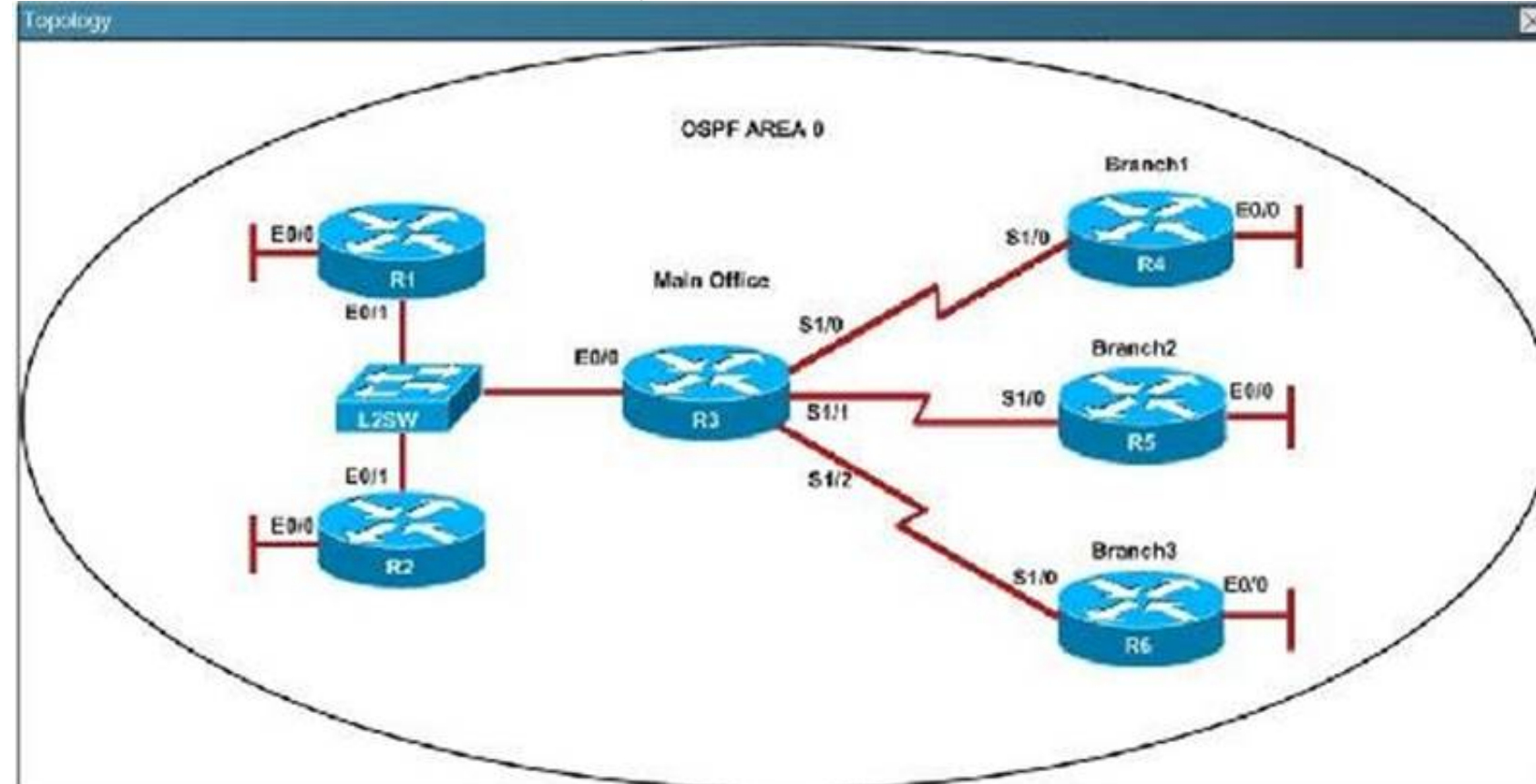Reference: http://www.cisco.com/c/en/us/products/collateral/services/high-availability/white_paper_c11-557812.html

NEW QUESTION 810
Scenario:
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.

R1

R1#

R2

R2#

R3

R3#

R4
R4#

R5
R5#

R6
R6#

```
L2SW                                                              [X]

                                                                  [▲]








L2SW#                                                             [■]
                                                                  [▼]
```

An OSPF neighbor adjacency is not formed between R3 in the main office and R4 in the Branch1 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a Layer 2 issue; an encapsulation mismatch on serial links.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R4.

Answer: A

Explanation: A show running-config command on R3 and R4 shows that R4 is incorrectly configured for area 2:

```
R3                                        R4
 no ip address                            !
 shutdown                                 interface Ethernet0/2
!                                          no ip address
interface Ethernet0/2                      shutdown
 no ip address                            !
 shutdown                                 interface Ethernet0/3
!                                          no ip address
interface Ethernet0/3                      shutdown
 no ip address                            !
 shutdown                                 interface Serial1/0
!                                          description ***Connected to R3-Main Branch office***
interface Serial1/0                        ip address 10.10.240.2 255.255.255.252
 description ***Connected to R4-Branch1 office***   encapsulation ppp
 ip address 10.10.240.1 255.255.255.252    ip ospf 4 area 2
 encapsulation ppp                         serial restart-delay 0
 ip ospf 3 area 0                         !
 serial restart-delay 0                   interface Serial1/1
!                                          no ip address
interface Serial1/1                        shutdown
 description ***Connected to R5-Branch2 office***   serial restart-delay 0
 ip address 10.10.240.5 255.255.255.252   !
 encapsulation ppp                        interface Serial1/2
 ip ospf hello-interval 50                 no ip address
 ip ospf 3 area 0                          shutdown

 ppp authentication chap                  --- More (37) ---
```

NEW QUESTION 812
Refer to the exhibit.

```
Switch# show spanning-tree interface fastethernet 0/10
Vlan             Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------
VLAN0001         Root FWD 19        128.1    P2p
VLAN0002         Altn BLK 19        128.2    P2p
VLAN0003         Root FWD 19        128.2    P2p
```

Given the output shown from this Cisco Catalyst 2950, what is the reason that interface FastEthernet 0/10 is not the root port for VLAN 2?

A. This switch has more than one interface connected to the root network segment in VLAN 2.
B. This switch is running RSTP while the elected designated switch is running 802.1d Spanning Tree.
C. This switch interface has a higher path cost to the root bridge than another in the topology.
D. This switch has a lower bridge ID for VLAN 2 than the elected designated switch.

Answer: C

Explanation: Since the port is in the blocked status, we must assume that there is a shorter path to the root bridge elsewhere.

NEW QUESTION 813
Which two features can you enable on a switch to capture and analyze frames that transit an interface? (Choose two)

A. SNMP
B. SPAN
C. NetFlow
D. RSPAN
E. IP SLA

Answer: BC

NEW QUESTION 815
What is the danger of the permit any entry in a NAT access list?

A. It can lead to overloaded resources on the router.
B. It can cause too many addresses to be assigned to the same interface.
C. It can disable the overload command.
D. It prevents the correct translation of IP addresses on the inside network.

Answer: A

NEW QUESTION 818
Scenario:
You are a junior network engineer for a financial company, and the main office network is experiencing network issues. Troubleshoot the network issues.
Router R1 connects the main office to the internet, and routers R2 and R3 are internal routers. NAT is enabled on router R1.
The routing protocol that is enabled between routers R1, R2 and R3 is RIPv2.
R1 sends the default route into RIPv2 for the internal routers to forward internet traffic to R1.
You have console access on R1, R2 and R3 devices. Use only show commands to troubleshoot the issues.

```
R1                                                              [X]
Current configuration : 1651 bytes
!
! No configuration change since last restart
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
  --- More (105) --- ▮
```

```
R1                                                              [X]
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
  --- More (79) --- ▮
```

```
R1                                                              [X]
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.200.225 255.255.255.224
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 ip address 172.16.200.1 255.255.255.0
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.10.1 255.255.255.252
 ip access-group R2LANBLOCK in
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
```

```
R1                                                    ⊠

ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 0.0.0.0 0.0.0.0 209.165.200.226
!
ip access-list standard R2LANBLOCK
 deny   10.100.20.0 0.0.0.255
 permit any
!
ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
 --- More (7) ---
```

```
R1                                                    ⊠

ip access-list extended LOCAL
 permit ip host 127.0.0.1 any
!
!
!
!
control-plane
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
ntp server 209.165.200.226
!
end
R1#
```

```
R2                                                    ⊠

Building configuration...

Current configuration : 1243 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
 --- More (92) ---
```

```
R2                                                        ⊠  ▲
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
                                                          ▼
```

```
R2                                                        ⊠  ▲
!
!

!
ip dhcp excluded-address 192.168.20.1
!
ip dhcp pool DHCPASSIGNR3
 network 10.10.10.0 255.255.255.252
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
R2#                                                       ▼
```

```
R3                                                        ⊠  ▲
Current configuration : 1115 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!                                                         ▼
```

```
R3                                                                    ☒
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
 --- More (60) ---
```

```
R3                                                                    ☒
!
!
interface Loopback0
 ip address 192.168.250.3 255.255.255.255
!
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.100.10.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address dhcp
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
```

```
R3                                                                    ☒
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.168.20.0
 network 192.168.250.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
control-plane
!
```

```
R3                                                    ⊠
 network 192.168.250.0
 no auto-summary
 !
ip forward-protocol nd
 !
 !
no ip http server
no ip http secure-server
 !
 !
 !
 !
control-plane
 !
 !
 !
 !
 !
 !
 !
line con 0
 logging synchronous
line aux 0
line vty 0 4
 --- More (5) ---
```

```
R3                                                    ⊠
 !
no ip http server
no ip http secure-server
 !
 !
 !
 !
control-plane
 !
 !
 !
 !
 !
 !
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
  transport input all
 !
 !
end
R3#
```

Examine the DHCP configuration between R2 and R3; R2 is configured as the DHCP server and R3 as the client. What is the reason R3 is not receiving the IP address via DHCP?

A. On R2. The network statement In the DHCP pool configuration is incorrectly configured.
B. On R3. DHCP is not enabled on the interface that is connected to R2.
C. On R2, the interface that is connected to R3 is in shutdown condition.
D. On R3, the interface that is connected to R2 is in shutdown condition.

Answer: B

Explanation: Please check the below:

Explanation/show commands:

R2	R3
no mmi pvc mmi snmp-timeout 180 ! ! ip dhcp excluded-address 192.168.20.1 ! ip dhcp pool DHCPASSIGNR3 network 192.168.20.0 255.255.255.252 ! ip cef no ipv6 cef ! multilink bundle-name authenticated !	! ! interface Loopback0 ip address 192.168.250.3 255.255.255.255 ! interface Ethernet0/0 description ***Link to LAN*** ip address 10.100.10.1 255.255.255.0 ! **interface Ethernet0/1** **description ***Link to R2***** **no ip address** ! interface Ethernet0/2 description ***Link to Server2 Segment*** ip address 10.100.11.1 255.255.255.0 ! interface Ethernet0/3 no ip address

NEW QUESTION 822
Which two states are the port states when RSTP has converged? (Choose two.)

A. discarding
B. listening
C. learning
D. forwarding
E. disabled

Answer: AD

Explanation: There are only three port states left in RSTP that correspond to the three possible operational states. The 802.1D disabled, blocking, and listening states are merged into a unique 802.1w discarding state.
STP (802.1D) Port State RSTP (802.1w) Port State
Is Port Included in Active Topology? Is Port Learning MAC Addresses? Disabled
Discarding No
No Blocking Discarding No
No Listening Discarding Yes
No Learning Learning
Yes Yes
Forwarding Forwarding Yes
Yes Reference:
http://www.cisco.com/en/US/tech/tk389/tk621/technologies_white_paper09186a0080094cfa.shtml#states

NEW QUESTION 827
Scenario
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.

```
R2
                                                                    ▲




















R2#                                                                 ▼
```

```
R3
                                                                    ▲



















R3#                                                                 ▼
```

```
R4
                                                                    ▲

















R4#                                                                 ▼
```

```
R5

R5#
```

```
R6

R6#
```

```
L2SW

L2SW#
```
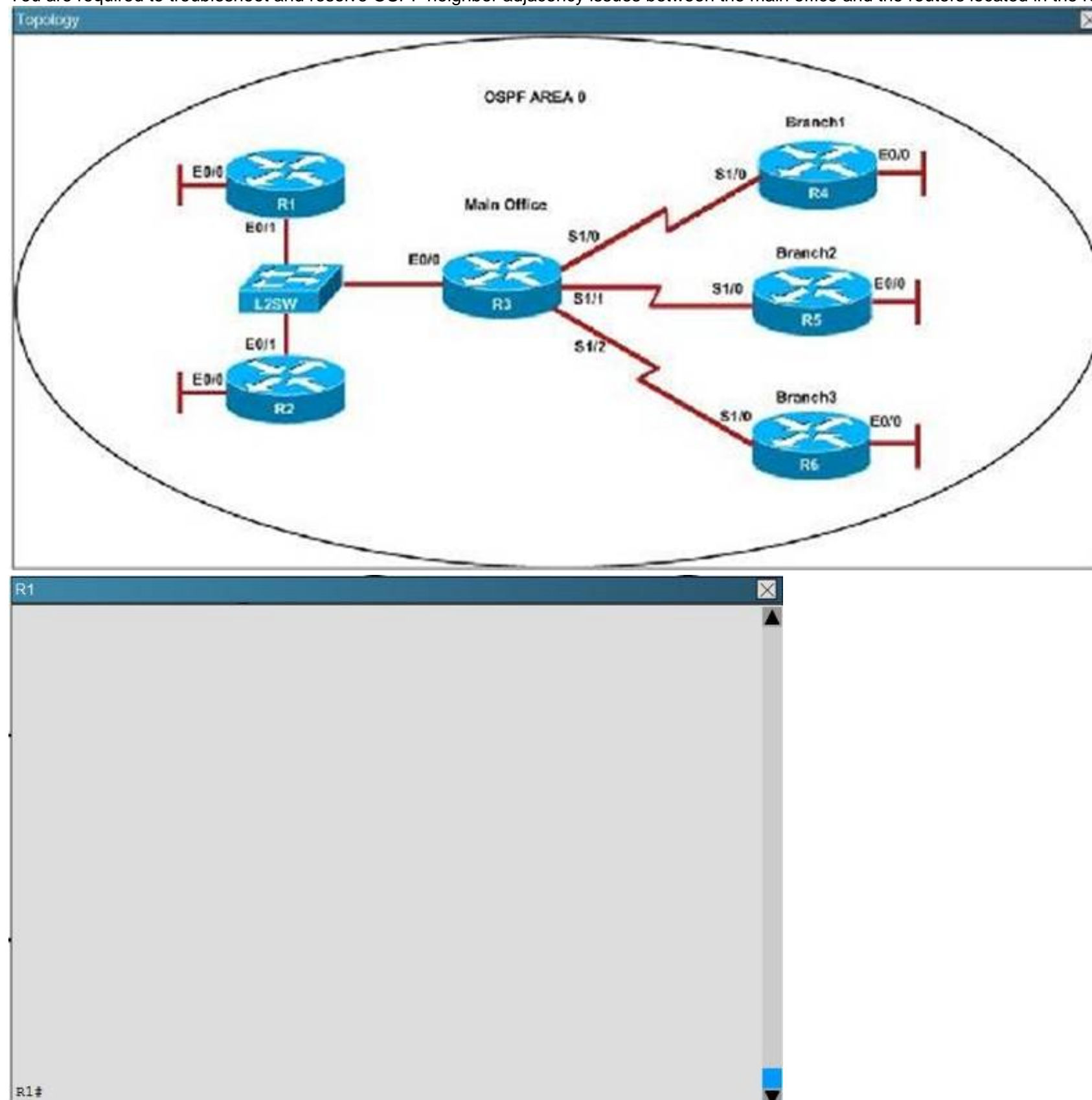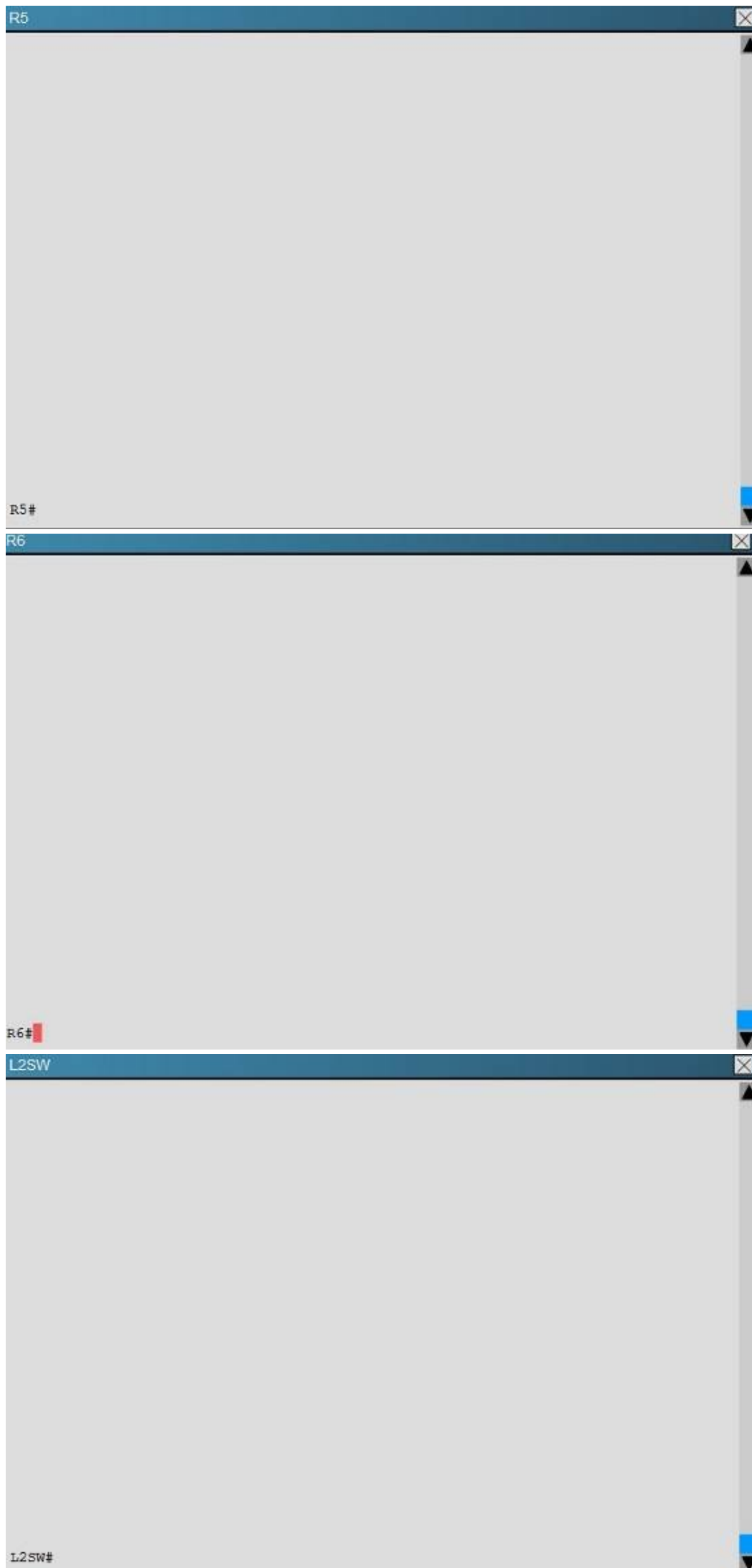
An OSPF neighbor adjacency is not formed between R3 in the main office and R6 in the Branch3 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; the username is not configured on R3 and R6.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R6.

Answer: D

Explanation: Using the show running-config command we see that R6 has been incorrectly configured with the same router ID as R3 under the router OSPF process.

R3	R6

`ip address 10.10.240.5 255.255.255.252`
`encapsulation ppp`
`ip ospf hello-interval 50`
`ip ospf 3 area 0`
`ppp authentication chap`
`serial restart-delay 0`
`!`
`interface Serial1/2`
`description ***Connected to R6-Branch3 office***`
`ip address 10.10.240.9 255.255.255.252`
`encapsulation ppp`
`ip ospf 3 area 0`
`ppp authentication chap`
`serial restart-delay 0`
`!`
`interface Serial1/3`
`no ip address`
`shutdown`
`serial restart-delay 0`
`!`
`router ospf 3`
`router-id 192.168.3.3`
`!`
`ip forward-protocol nd`
`!`
`!`
	`no ip address`
	`shutdown`
	`serial restart-delay 0`
	`!`
	`interface Serial1/2`
	`no ip address`
	`shutdown`
	`serial restart-delay 0`
	`!`
	`interface Serial1/3`
	`no ip address`
	`shutdown`
	`serial restart-delay 0`
	`!`
	`router ospf 6`
	`router-id 192.168.3.3`
	`!`
	`ip forward-protocol nd`
	`!`
	`!`
	`no ip http server`
	`no ip http secure-server`
	`!`
	`!`
	`!`

NEW QUESTION 831
Which step in the router boot process searches for an IOS image to load into the router?

A. bootstrap
B. POST
C. mini-IOS
D. ROMMON mode

Answer: A

NEW QUESTION 832
In an Ethernet network, under what two scenarios can devices transmit? (Choose two.)

A. when they receive a special token
B. when there is a carrier
C. when they detect no other devices are sending
D. when the medium is idle
E. when the server grants access

Answer: CD

Explanation: Ethernet network is a shared environment so all devices have the right to access to the medium. If more than one device transmits simultaneously, the signals collide and cannot reach the destination.
If a device detects another device is sending, it will wait for a specified amount of time before attempting to transmit.
When there is no traffic detected, a device will transmit its message. While this transmission is occurring, the device continues to listen for traffic or collisions on the LAN. After the message is sent, the device returns to its default listening mode.

NEW QUESTION 833
Scenario
Refer to the topology. Your company has connected the routers R1, R2, and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.
The EIGRP routing protocol is configured.
You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.

Topology ⊠

EIGRP AS 1

R4   SW1   R2
    e0/0   e0/0   S2/1   S1/3   R1
                                                            S1/1   e0/0

    e0/0   e0/0   e0/0

R5   SW2   R3   R6
                        S2/1

R1 ⊠

R1#

R2 ⊠

R2#

R3

```
R3#
```

R4

```
R4#
```

R5

```
R5#
```

R6

R6#

SW1

SW1#

SW2

SW2#
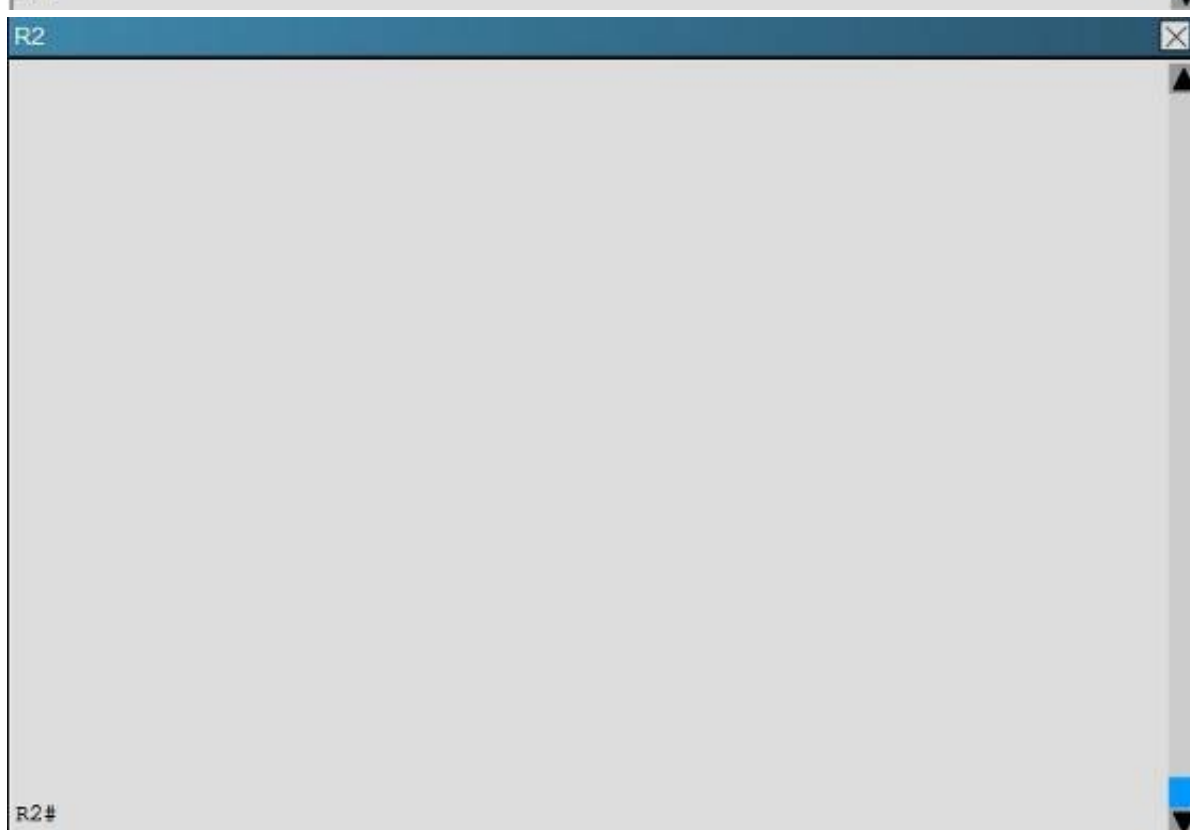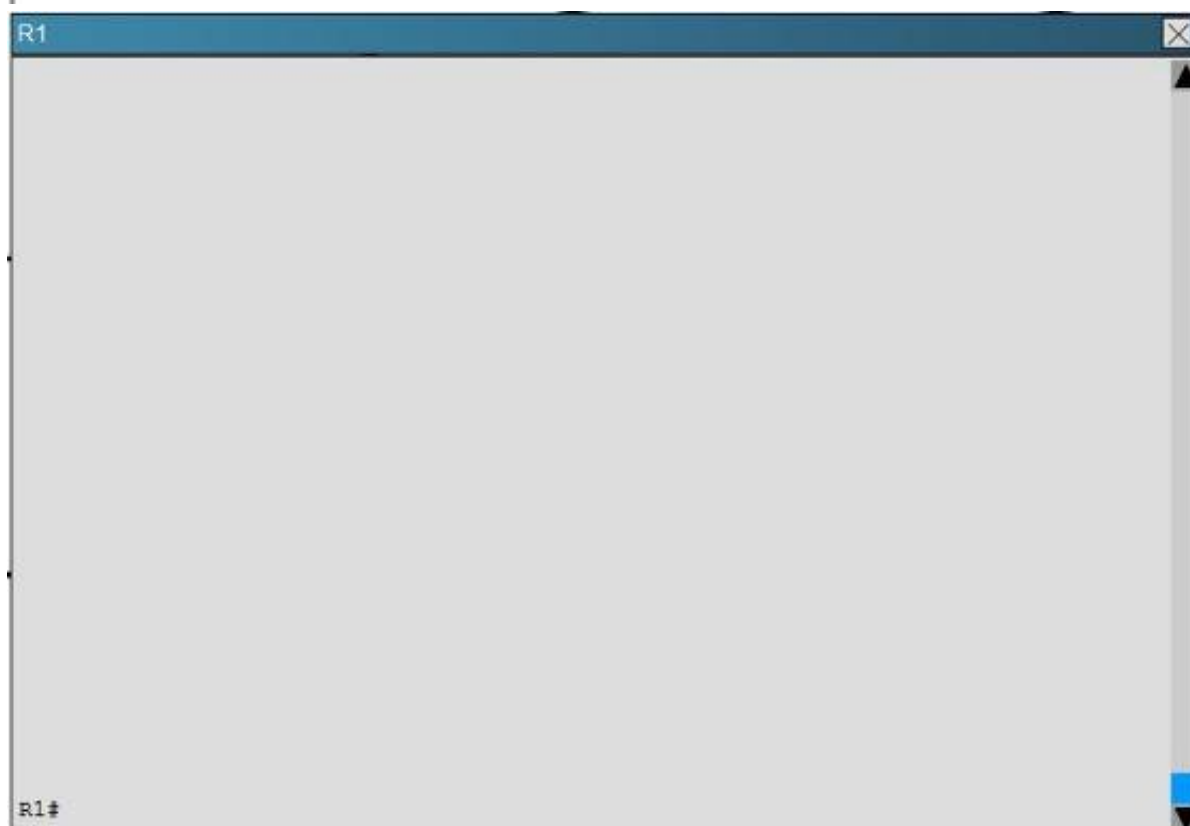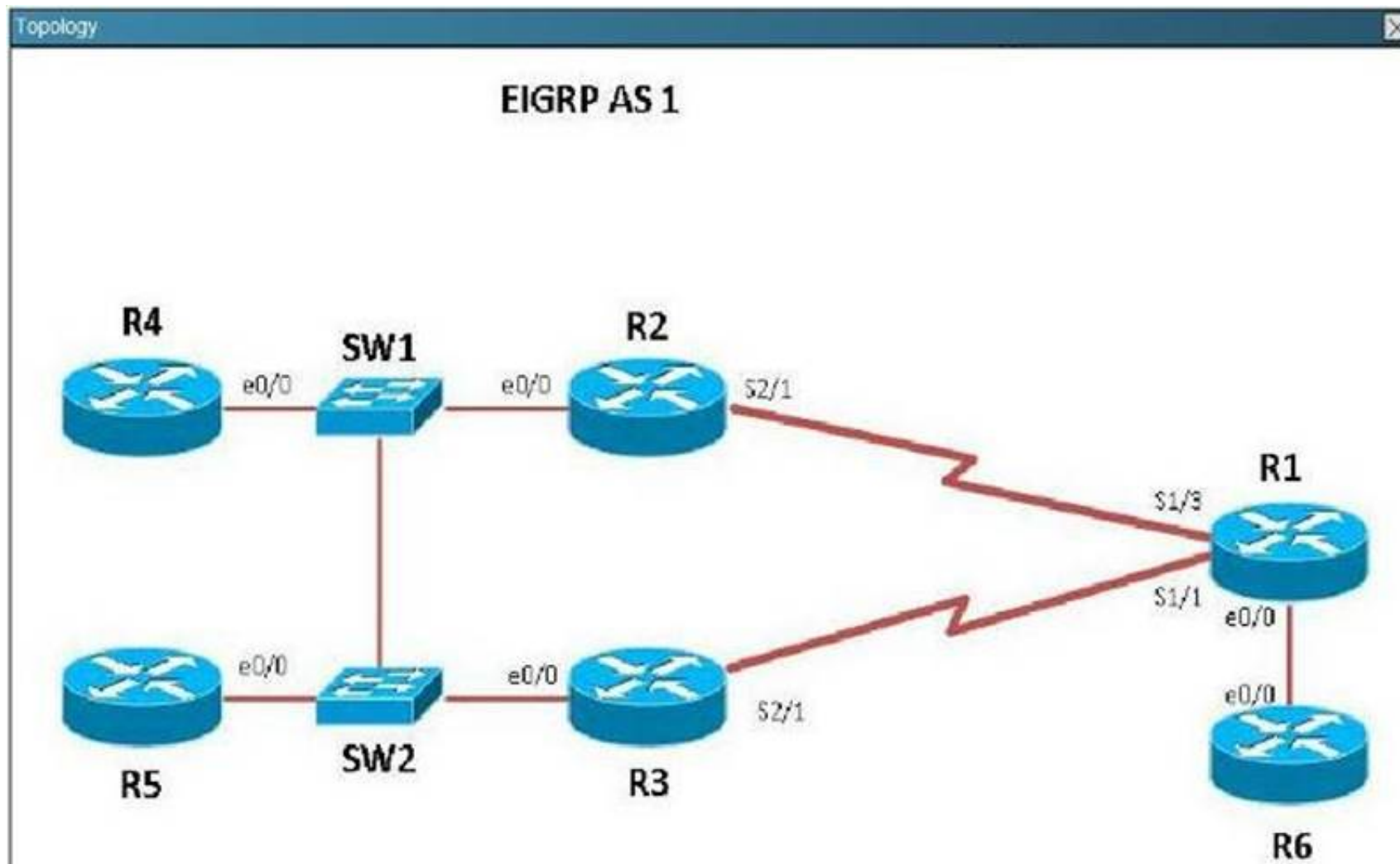
Which path does traffic take from R1 to R5?

A. The traffic goes through R2.
B. The traffic goes through R3.
C. The traffic is equally load-balanced over R2 and R3.
D. The traffic is unequally load-balanced over R2 and R3.

Answer: A

Explanation: Using the "show ip int brief command" on R5 we can see the IP addresses assigned to this router. Then, using the "show ip route" command on R1 we can see that to reach 10.5.5.5 and 10.5.5.55 the preferred path is via Serial 1/3, which we see from the diagram is the link to R2.

NEW QUESTION 835
What SNMP message alerts the manager to a condition on the network?

A. response
B. get
C. trap
D. capture

Answer: C

Explanation: An agent can send unsolicited traps to the manager. Traps are messages alerting the SNMP manager to a condition on the network. Traps can mean improper user authentication, restarts, link status (up or down), MAC address tracking, closing of a TCP connection, loss of connection to a neighbor, or other significant events.
Reference:
http://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst2950/software/release/12-1_9_ea1/configuration/guid

NEW QUESTION 837
Which two statements are true for multicast MAC address directions?

A. 01:00:5E:xx:xx:xx
B. one to one
C. 01 00 xx xxxxxxx
D. 02 xx xxxxxxx
E. one to many

Answer: AE

Explanation:
The Internet authorities have reserved the multicast address range of 01:00:5E:00:00:00 to 01:00:5E:7F:FF:FF for Ethernet and Fiber Distributed Data Interface (FDDI) media access control (MAC) addresses.
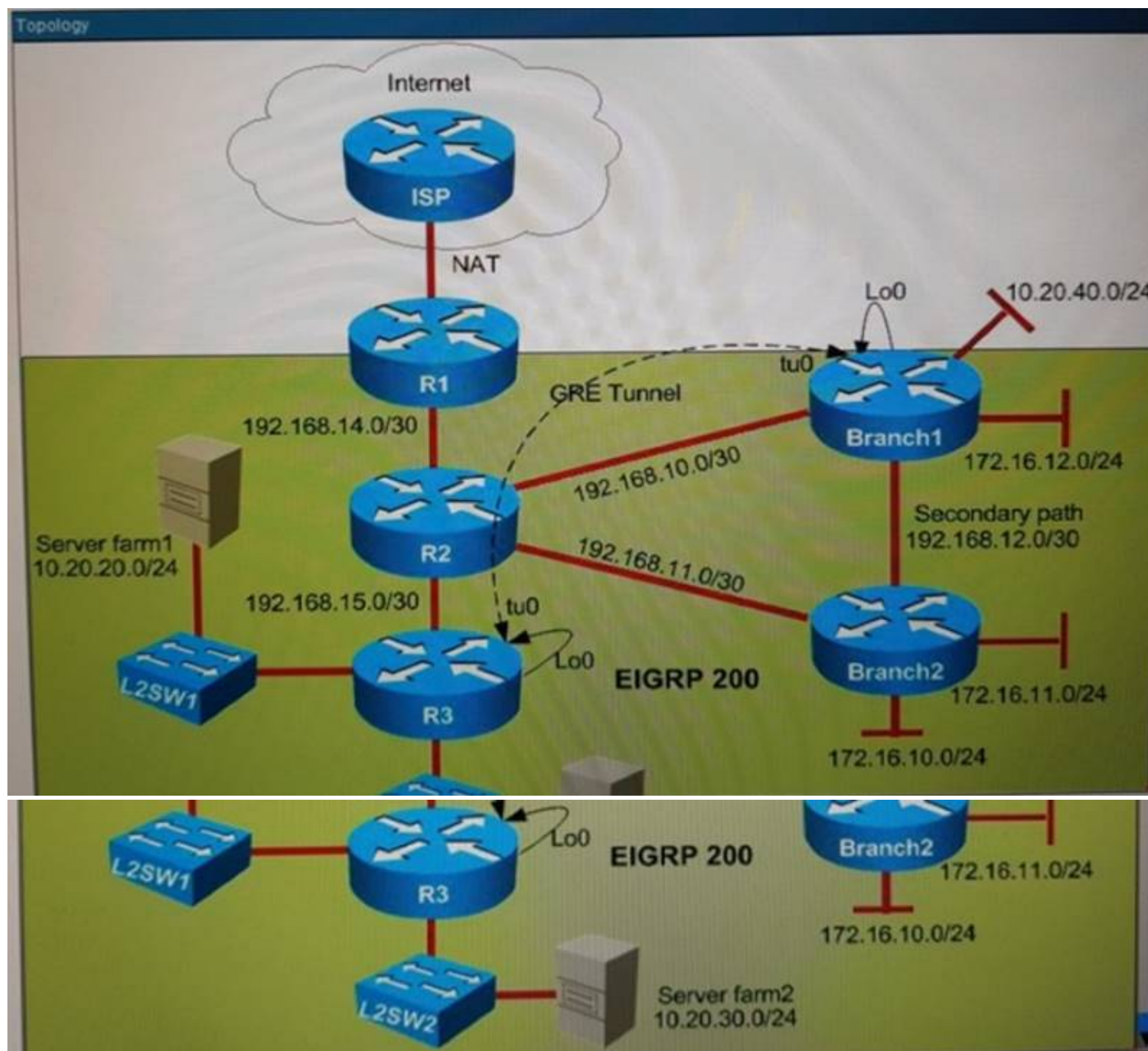
NEW QUESTION 842
You are implementing EIGRP between the main office and branch offices. In Phase 1 you must implement and verify EIGRP configurations as mentioned in the topology in Phase 2. your colleague is expected to do NAT and ISP configurations
Identity the issues that you are encountering during Phase 1 EIGRP implementation.
• Router R1 connects the main office to the Internet and routers R2 and R3 are internal routers
• Routers Branch 1 and Branch2 connect to router R2 in the main office.
• Users from the Branch1 LAN network 10 20 40 0724 are expected to perform testing of the application that is hosted on the servers in Server farm1, before servers are available for production
- The GRE tunnel is configured between R3 and Branch1, and traffic between server farm1 and Branch1 LAN network 10 20 40 0/24 is routed through the GRE tunnel using static routes
• The link between Branch1 and Branch2 is used as a secondary path in the event of failure of the primary path to mam office
You have console access on R1. R2. R3. Branch1, and Branch2 devices Use only show commands to troubleshoot the issues
Topology:

Topology

Internet

ISP

NAT

R1

192.168.14.0/30

Server farm1
10.20.20.0/24

R2

192.168.15.0/30

L2SW1

R3

GRE Tunnel

192.168.10.0/30

192.168.11.0/30

tu0

Lo0

EIGRP 200

Lo0   10.20.40.0/24

tu0

Branch1

172.16.12.0/24

Secondary path
192.168.12.0/30

Branch2

172.16.11.0/24

172.16.10.0/24

L2SW1

R3

Lo0   EIGRP 200

Branch2

172.16.11.0/24

172.16.10.0/24

L2SW2

Server farm2
10.20.30.0/24

Branch1

```
ip address 10.20.40.1 255.255.255.0
!
!
router eigrp 200
 network 10.16.200.2 0.0.0.0
 network 172.16.12.0 0.0.0.255
 network 192.168.10.0
 network 192.168.12.0
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
ip route 10.20.20.0 255.255.255.0 Tunn
!
!
```

```
R3
interface Ethernet0/0
 description ***Link to Server farm2***
 ip address 10.20.30.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to Server farm1***
 ip address 10.20.20.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.15.2 255.255.255.252
!
interface Ethernet0/3
 no ip address
 shutdown
!
```

The GRE tunnel between R3 and Branch1 is down. Which cause of the issue is true?

A. The tunnel source loopback0 interface is not advertised into EIGRP in Branch1.
B. The tunnel source loopback0 interface is not advertised into EIGRP in R3.
C. The EIGRP neighbor relationship was not formed due to EIGRP packets blocked by the inbound ACL on R3.
D. The EIGRP neighbor relationship was not formed due the IP address being misconfigured between the R2 and R3 interfaces.

Answer: B

NEW QUESTION 846
Which logging command can enable administrators to correlate syslog messages with millisecond precision?

A. no logging console
B. logging buffered 4
C. no logging monitor
D. service timestamps log datetime msec
E. logging host 10.2.0.21

Answer: D

NEW QUESTION 850
Which three are valid modes for a switch port used as a VLAN trunk? (Choose three.)

A. transparent
B. auto
C. on
D. desirable
E. blocking
F. forwarding

Answer: BCD

Explanation: These are the different types of trunk modes:
 ON: This mode puts the port into permanent trunk mode and negotiates to convert the link into a trunk link. The port becomes a trunk port even if the adjacent port does not agree to the change.
 OFF: This mode puts the port into permanent non-trunk mode and negotiates to convert the link into a non-trunk link. The port becomes a non-trunk port even if the adjacent port does not agree to the change.
 Desirable: This mode causes the port to actively attempt to convert the link into a trunk link. The port becomes a trunk port if the adjacent port is set to on, desirable, or auto mode.
 Auto: This mode enables the port to convert the link into a trunk link. The port becomes a trunk port if the adjacent port is set to on or desirable mode. This is the default mode for Fast and Gigabit Ethernet ports.
 Nonegotiate: This mode puts the port into permanent trunk mode, but does not allow the port to generate Dynamic Trunking Protocol (DTP) frames. The adjacent port must be configured manually as a trunk port to establish a trunk link.

NEW QUESTION 855
Refer to the exhibit.

```
Switch1# show mac-address-table
Dynamic Addresses Count: 19
Secure Addresses (User-defined) Count: 0
Static Addresses (User-defined) Count: 0
System Self Addresses Count: 41
Total MAC addresses: 50
Non-static Address Table:
Destination Address    AddressType    VLAN    Destination Port
-------------------    -----------    ----    ----------------
0010.0de0.e289         Dynamic        1       FastEthernet0/1
0010.7b00.1540         Dynamic        2       FastEthernet0/5
0010.7b00.1545         Dynamic        2       FastEthernet0/5
0060.5cf4.0076         Dynamic        1       FastEthernet0/1
0060.5cf4.0077         Dynamic        3       FastEthernet0/1
0060.5cf4.1315         Dynamic        1       FastEthernet0/1
0060.70cb.f301         Dynamic        2       FastEthernet0/1
0060.70cb.3f01         Dynamic        5       FastEthernet0/2
00e0.1e42.9978         Dynamic        4       FastEthernet0/1
00e0.1e9f.3900         Dynamic        3       FastEthernet0/1
0060.70cb.33f1         Dynamic        6       FastEthernet0/3
0060.70cb.103f         Dynamic        6       FastEthernet0/4

<output omitted>

Switch1# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID    Local Intrfce    Holdtime    Capability    Platform    Port ID
Switch2      Fas 0/1          157         S             2950-12     Fas 0/1
Switch3      Fas 0/2          143         S             2950-12     Fas 0/5

Switch1#
```

Which two statements are true of the interfaces on Switch1? (Choose two.)

A. Multiple devices are connected directly to FastEthernet0/1.
B. A hub is connected directly to FastEthernet0/5.
C. FastEthernet0/1 is connected to a host with multiple network interface cards.
D. FastEthernet0/5 has statically assigned MAC addresses.
E. FastEthernet0/1 is configured as a trunk link.
F. Interface FastEthernet0/2 has been disabled.

Answer: BE

Explanation: Carefully observe the information given after command show. Fa0/1 is connected to Switch2, seven MAC
addresses correspond to Fa0/1, and these MAC are in different VLAN. From this we know that Fa0/1 is the trunk interface.
From the information given by show cdp neighbors we find that there is no Fa0/5 in CDP neighbor. However, F0/5 corresponds to two MAC addresses in the same
VLAN. Thus we know that Fa0/5 is connected to a Hub.
Based on the output shown, there are multiple MAC addresses from different VLANs attached to the FastEthernet 0/1 interface. Only trunks are able to pass
information from devices in multiple VLANs.

NEW QUESTION 858
Refer to the exhibit.
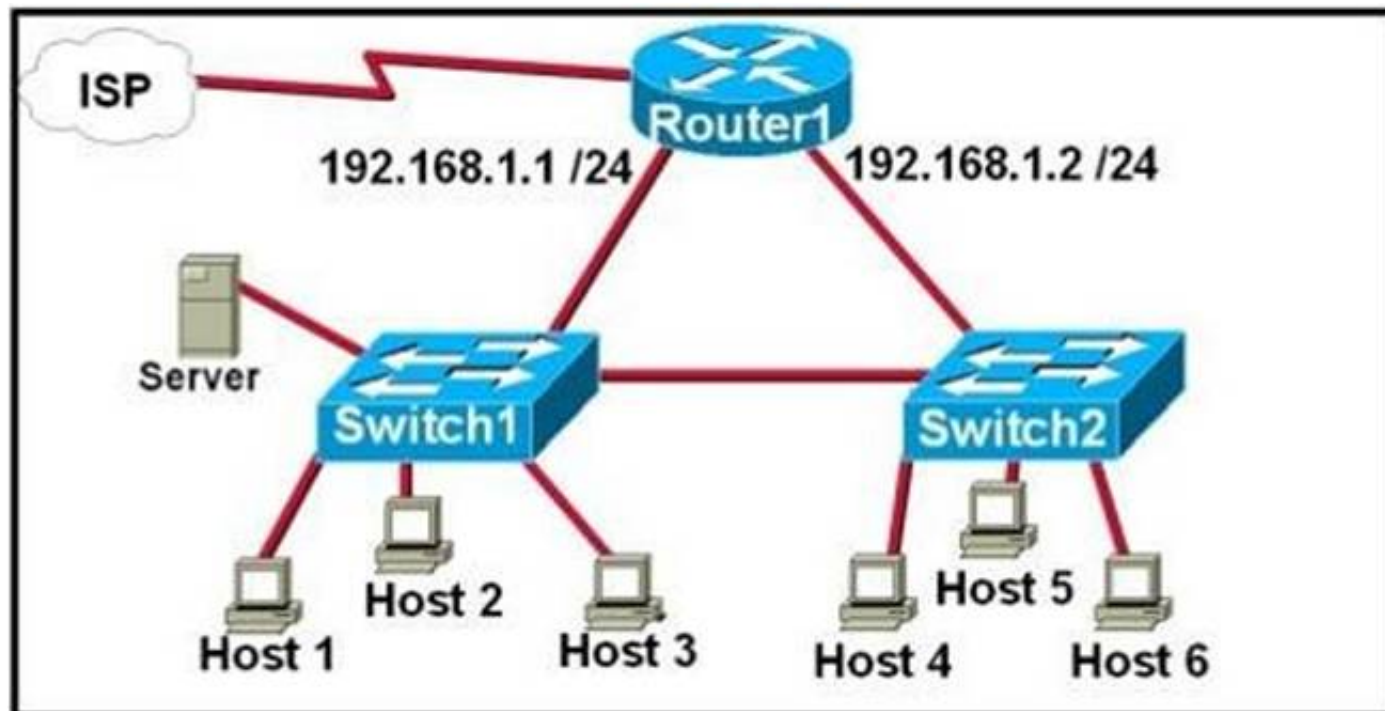
A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What
conclusions can be made about this design?

A. This design will function as intended.
B. Spanning-tree will need to be used.
C. The router will not accept the addressing scheme.
D. The connection between switches should be a trunk.
E. The router interfaces must be encapsulated with the 802.1Q protocol.

Answer: C

Explanation: Each interface on a router must be in a different network. If two interfaces are in the same network, the router will not accept it and show error when the administrator assigns it.

NEW QUESTION 861

A national retail chain needs to design an IP addressing scheme to support a nationwide network. The company needs a minimum of 300 sub-networks and a maximum of 50 host addresses per subnet. Working with only one Class B address, which of the following subnet masks will support an appropriate addressing scheme? (Choose two.)

A. 255.255.255.0
B. 255.255.255.128
C. 255.255.252.0
D. 255.255.255.224
E. 255.255.255.192
F. 255.255.248.0

Answer: BE

Explanation: Subnetting is used to break the network into smaller more efficient subnets to prevent excessive rates of Ethernet packet collision in a large network. Such subnets can be arranged hierarchically, with the organization's network address space (see also Autonomous System) partitioned into a tree-like structure. Routers are used to manage traffic and constitute borders between subnets.
A routing prefix is the sequence of leading bits of an IP address that precede the portion of the address used as host identifier. In IPv4 networks, the routing prefix is often expressed as a "subnet mask", which is a bit mask covering the number of bits used in the prefix. An IPv4 subnet mask is frequently expressed in quad-dotted decimal representation, e.g., 255.255.255.0 is the subnet mask for the 192.168.1.0 network with a 24-bit routing prefix (192.168.1.0/24).

NEW QUESTION 866

Scenario:
You work for a company that provides managed network services, and of your real estate clients running a small office is experiencing network issues,
Troubleshoot the network issues.
Router R1 connects the main office to internet, and routers R2 and R3 are internal routers NAT is enabled on Router R1.
The routing protocol that is enable between routers R1, R2, and R3 is RIPv2.
R1 sends default route into RIPv2 for internal routers to forward internet traffic to R1.
Server1 and Server2 are placed in VLAN 100 and 200 respectively, and dare still running router on stick configuration with router R2.
You have console access on R1, R2, R3, and L2SW1 devices. Use only show commands to troubleshoot the issues.

```
                  config
            configuration...

        configuration : 1498 bytes

version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```



```
R1                                                              X
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!


!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
```

R1   ☒

```
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
```

R1   ☒

```
!
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.201.1 255.255.255.224
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to LAN***
 ip address 172.16.16.1 255.255.255.0
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 172.16.14.1 255.255.255.252
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
```

```
R1                                                                    ☒

!
router rip
 version 2
 network 172.16.0.0
 default-information originate
 no auto-summary
!
ip forward-protocol nd
!
!
!
no ip http server
no ip http secure-server
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 10.10.10.0 255.255.255.0 172.16.14.2 200
!
ip access-list standard LOCAL
 permit 10.0.0.0 0.255.255.255
 permit 172.16.0.0 0.0.255.255
 permit 192.168.0.0 0.0.255.255
!
!
!
!
control-plane
!
```

```
R1                                                                    ☒

line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R1#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4100 (bia aabb.cc00.4100)
  Description: ***Link to ISP***
  Internet address is 209.165.201.1/27
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:53, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
```

R1

```
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
       40 packets input, 11786 bytes, 0 no buffer
       Received 39 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       191 packets output, 20271 bytes, 0 underruns
       0 output errors, 0 collisions, 1 interface resets
       4 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4110 (bia aabb.cc00.4110)
    Description: ***Link to LAN***
    Internet address is 172.16.16.1/24
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
       reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
```

R1

```
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
       0 packets input, 0 bytes, 0 no buffer
       Received 0 broadcasts (0 IP multicasts)
       0 runts, 0 giants, 0 throttles
       0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
       0 input packets with dribble condition detected
       245 packets output, 30725 bytes, 0 underruns
       0 output errors, 0 collisions, 4 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up
    Hardware is AmdP2, address is aabb.cc00.4120 (bia aabb.cc00.4120)
    Description: ***Link to R2***
    Internet address is 172.16.14.1/30
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
```

```
R1                                                                    ✕

    Internet address is 172.16.14.1/30
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input 00:00:16, output 00:00:07, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        98 packets input, 20097 bytes, 0 no buffer
        Received 97 broadcasts (54 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        247 packets output, 25359 bytes, 0 underruns
        0 output errors, 0 collisions, 1 interface resets
        4 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
```

```
R1                                                                    ✕

        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
    Hardware is AmdP2, address is aabb.cc00.4130 (bia aabb.cc00.4130)
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        0 packets input, 0 bytes, 0 no buffer
        Received 0 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        0 packets output, 0 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        0 unknown protocol drops
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
```

```
R1                                                                    ⊠
        0 babbles, 0 late collision, 0 deferred
        0 lost carrier, 0 no carrier
        0 output buffer failures, 0 output buffers swapped out
  NVI0 is up, line protocol is up
    Hardware is NVI
    Interface is unnumbered. Using address of Ethernet0/0 (209.165.201.1)
    MTU 1514 bytes, BW 56 Kbit/sec, DLY 5000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation UNKNOWN, loopback not set
    Keepalive set (10 sec)
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        0 packets input, 0 bytes, 0 no buffer
        Received 0 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
        0 packets output, 0 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        0 unknown protocol drops
        0 output buffer failures, 0 output buffers swapped out
  R1#
  R1#show ip interface brief
```

```
R1                                                                    ⊠
R1#
R1#show ip interface brief
Interface              IP-Address      OK? Method Status              Prot
ocol
Ethernet0/0            209.165.201.1   YES NVRAM  up                    up
Ethernet0/1            172.16.16.1     YES NVRAM  up                    up
Ethernet0/2            172.16.14.1     YES NVRAM  up                    up
Ethernet0/3            unassigned      YES NVRAM  administratively down down
NVI0                   209.165.201.1   YES unset  up                    up
R1#
R1#
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 1 subnets
R        10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
```

```
R1                                                                    ☒

         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
         E1 - OSPF external type 1, E2 - OSPF external type 2
         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
         ia - IS-IS inter area, * - candidate default, U - per-user static route
         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
         + - replicated route, % - next hop override

Gateway of last resort is not set

         10.0.0.0/24 is subnetted, 1 subnets
R           10.10.10.0 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
         172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
R           172.16.11.0/30 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
C           172.16.14.0/30 is directly connected, Ethernet0/2
L           172.16.14.1/32 is directly connected, Ethernet0/2
C           172.16.16.0/24 is directly connected, Ethernet0/1
L           172.16.16.1/32 is directly connected, Ethernet0/1
R         192.168.1.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R         192.168.100.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
R         192.168.200.0/24 [120/1] via 172.16.14.2, 00:00:20, Ethernet0/2
         209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C           209.165.201.0/27 is directly connected, Ethernet0/0
L           209.165.201.1/32 is directly connected, Ethernet0/0
R1#
R1#
```

```
R2                                                                    ☒

R2#show run
R2#show running-config
Building configuration...

Current configuration : 1505 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
```

```
R2                                                          ☒
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
!

!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
```

```
R2                                                          ☒
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
R2                                                                    ☒
!
interface Ethernet0/0
 description ***Link to R3***
 ip address 172.16.11.1 255.255.255.252
!
interface Ethernet0/1
 no ip address
!
interface Ethernet0/1.1
 description ***Link to Mangement Segment***
 encapsulation dot1Q 1 native
 ip address 192.168.1.1 255.255.255.0
!
interface Ethernet0/1.100
 description ***Link to Server1 Segment***
 encapsulation dot1Q 200
 ip address 192.168.100.1 255.255.255.0
!
interface Ethernet0/1.200
 description ***Link to Server2 Segment***
 encapsulation dot1Q 100
 ip address 192.168.200.1 255.255.255.0
!
interface Ethernet0/2
 description ***Link to R1***
```

```
R2                                                                    ☒
!
interface Ethernet0/2
 description ***Link to R1***
 ip address 172.16.14.2 255.255.255.252
!
interface Ethernet0/3
 description ***Link to LAN***
 ip address 10.10.10.1 255.255.255.0
!
router rip
 version 2
 network 10.0.0.0
 network 172.16.0.0
 network 192.168.1.0
 network 192.168.100.0
 network 192.168.200.0
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
```

```
R2                                                          X

!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R2#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
  Description: ***Link to R3***
  Internet address is 172.16.11.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R2                                                          X

R2#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4200 (bia aabb.cc00.4200)
  Description: ***Link to R3***
  Internet address is 172.16.11.1/30
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:32, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     50 packets input, 15683 bytes, 0 no buffer
     Received 50 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     343 packets output, 42566 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     2 unknown protocol drops
```

```
R2                                                                    ☒
      2 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 1000 bits/sec, 2 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
      4632 packets input, 308536 bytes, 0 no buffer
      Received 4421 broadcasts (0 IP multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      512 packets output, 73148 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
```

```
R2                                                                    ☒
      512 packets output, 73148 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      73 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1.1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  Description: ***Link to Mangement Segment***
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  1.
  ARP type: ARPA, ARP Timeout 04:00:00
  Keepalive set (10 sec)
  Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  Description: ***Link to Server1 Segment***
  Internet address is 192.168.100.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
  ARP type: ARPA, ARP Timeout 04:00:00
  Keepalive set (10 sec)
```

```
R2                                                                        ☒

  Keepalive set (10 sec)
  Last clearing of "show interface" counters never
Ethernet0/1.100 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  Description: ***Link to Server1 Segment***
  Internet address is 192.168.100.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  200.
  ARP type: ARPA, ARP Timeout 04:00:00
  Keepalive set (10 sec)
  Last clearing of "show interface" counters never
Ethernet0/1.200 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4210 (bia aabb.cc00.4210)
  Description: ***Link to Server2 Segment***
  Internet address is 192.168.200.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  100.
  ARP type: ARPA, ARP Timeout 04:00:00
  Keepalive set (10 sec)
  Last clearing of "show interface" counters never
Ethernet0/2 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4220 (bia aabb.cc00.4220)
  Description: ***Link to R1***
```

```
R2                                                                        ☒

Description: ***Link to R1***
Internet address is 172.16.14.2/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:08, output 00:00:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   128 packets input, 21994 bytes, 0 no buffer
   Received 127 broadcasts (77 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 input packets with dribble condition detected
   345 packets output, 39952 bytes, 0 underruns
   0 output errors, 0 collisions, 1 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier
   0 output buffer failures, 0 output buffers swapped out
```

```
R2                                                                    ☒
        0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4230 (bia aabb.cc00.4230)
  Description: ***Link to LAN***
  Internet address is 10.10.10.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     344 packets output, 42752 bytes, 0 underruns
     0 output errors, 0 collisions, 6 interface resets
     0 unknown protocol drops
```

```
R2                                                                    ☒
       0 output errors, 0 collisions, 6 interface resets
       0 unknown protocol drops
       0 babbles, 0 late collision, 0 deferred
       0 lost carrier, 0 no carrier
       0 output buffer failures, 0 output buffers swapped out
R2#
R2#
R2#show ip interface brief
Interface          IP-Address      OK? Method Status        Prot
ocol
Ethernet0/0        172.16.11.1     YES NVRAM  up              up
Ethernet0/1        unassigned      YES NVRAM  up              up
Ethernet0/1.1      192.168.1.1     YES NVRAM  up              up
Ethernet0/1.100    192.168.100.1   YES NVRAM  up              up
Ethernet0/1.200    192.168.200.1   YES NVRAM  up              up
Ethernet0/2        172.16.14.2     YES NVRAM  up              up
Ethernet0/3        10.10.10.1      YES NVRAM  up              up
R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R2

R2#
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*      0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C          10.10.10.0/24 is directly connected, Ethernet0/3
L          10.10.10.1/32 is directly connected, Ethernet0/3
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C          172.16.11.0/30 is directly connected, Ethernet0/0
L          172.16.11.1/32 is directly connected, Ethernet0/0
C          172.16.14.0/30 is directly connected, Ethernet0/2
L          172.16.14.2/32 is directly connected, Ethernet0/2
R          172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.1.0/24 is directly connected, Ethernet0/1.1
```

```
R2

       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 172.16.14.1 to network 0.0.0.0

R*      0.0.0.0/0 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C          10.10.10.0/24 is directly connected, Ethernet0/3
L          10.10.10.1/32 is directly connected, Ethernet0/3
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
C          172.16.11.0/30 is directly connected, Ethernet0/0
L          172.16.11.1/32 is directly connected, Ethernet0/0
C          172.16.14.0/30 is directly connected, Ethernet0/2
L          172.16.14.2/32 is directly connected, Ethernet0/2
R          172.16.16.0/24 [120/1] via 172.16.14.1, 00:00:23, Ethernet0/2
        192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.1.0/24 is directly connected, Ethernet0/1.1
L          192.168.1.1/32 is directly connected, Ethernet0/1.1
        192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.100.0/24 is directly connected, Ethernet0/1.100
L          192.168.100.1/32 is directly connected, Ethernet0/1.100
        192.168.200.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.200.0/24 is directly connected, Ethernet0/1.200
L          192.168.200.1/32 is directly connected, Ethernet0/1.200
R2#
```

```
R3

R3#show run
R3#show running-config
Building configuration...

Current configuration : 913 bytes
!
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R3
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
R3

!
no aaa new-model
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
```

```
R3

multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
redundancy
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
R3

interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.10.12.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 ip address 172.16.11.2 255.255.255.252
!
interface Ethernet0/2
 no ip address
 shutdown
!
interface Ethernet0/3
 no ip address
 shutdown
!
ip forward-protocol nd
!
!
no ip http server
no ip http secure-server
!
!
!
!
```

```
R3
!
control-plane
!
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
!
end
R3#show interfaces
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4300 (bia aabb.cc00.4300)
  Description: ***Link to LAN***
  Internet address is 10.10.12.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

```
R3
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     666 packets output, 71699 bytes, 0 underruns
     0 output errors, 0 collisions, 11 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up
  Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
  Description: ***Link to R2***
```

R3

```
Hardware is AmdP2, address is aabb.cc00.4310 (bia aabb.cc00.4310)
Description: ***Link to R2***
Internet address is 172.16.11.2/30
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:21, output 00:00:05, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    316 packets input, 74089 bytes, 0 no buffer
    Received 316 broadcasts (200 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    669 packets output, 71888 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
```

R3

```
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is administratively down, line protocol is down
    Hardware is AmdP2, address is aabb.cc00.4320 (bia aabb.cc00.4320)
    MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
        reliability 255/255, txload 1/255, rxload 1/255
    Encapsulation ARPA, loopback not set
    Keepalive set (10 sec)
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input never, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        0 packets input, 0 bytes, 0 no buffer
        Received 0 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        0 input packets with dribble condition detected
        0 packets output, 0 bytes, 0 underruns
        0 output errors, 0 collisions, 0 interface resets
        0 unknown protocol drops
```

```
R3                                                                        ☒
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is administratively down, line protocol is down
  Hardware is AmdP2, address is aabb.cc00.4330 (bia aabb.cc00.4330)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
R3                                                                        ☒
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
R3#
R3#
R3#show ip interface brief
Interface               IP-Address      OK? Method Status               Prot
ocol
Ethernet0/0             10.10.12.1      YES NVRAM  up                    up
Ethernet0/1             172.16.11.2     YES NVRAM  up                    up
Ethernet0/2             unassigned      YES NVRAM  administratively down down
Ethernet0/3             unassigned      YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
```

```
R3

Ethernet0/2                    unassigned        YES NVRAM  administratively down down
Ethernet0/3                    unassigned        YES NVRAM  administratively down down
R3#
R3#
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

       10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C         10.10.12.0/24 is directly connected, Ethernet0/0
L         10.10.12.1/32 is directly connected, Ethernet0/0
       172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C         172.16.11.0/30 is directly connected, Ethernet0/1
L         172.16.11.2/32 is directly connected, Ethernet0/1
R3#
R3#
R3#
```

```
L2SW1

!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
!
no ipv6 cef
ipv6 multicast rpf use-bgp
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
!
vlan internal allocation policy ascending
!
!
```

```
L2SW1                                                          ☒

L2SW1#show run
L2SW1#show running-config
Building configuration...

Current configuration : 1074 bytes
!
version 15.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2SW1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
clock timezone PST -8 0
!
ip cef
!
```

```
L2SW1                                                          ☒

interface Vlan1
 ip address 192.168.1.254 255.255.255.0
!
ip default-gateway 192.168.1.1
!
no ip http server
!
!
!
!
!
!
control-plane
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
!
end
L2SW1#
L2SW1#
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
```

L2SW1 ☒

```
!
interface Ethernet0/0
  description ***Link to R2***
  switchport trunk encapsulation dotlq
  switchport mode trunk
  duplex auto
!
interface Ethernet0/1
  description ***Link to Server1 segment***
  switchport access vlan 100
  switchport mode access
  duplex auto
!
interface Ethernet0/2
  description ***Link to Server2 Segment***
  switchport access vlan 200
  switchport mode access
  duplex auto
!
interface Ethernet0/3
  duplex auto
!
interface Vlan1
  ip address 192.168.1.254 255.255.255.0
!
```

L2SW1 ☒

```
L2SW1#show interfaces
Ethernet0/0 is up, line protocol is up (connected)
  Hardware is AmdP2, address is aabb.cc00.4500 (bia aabb.cc00.4500)
  Description: ***Link to R2***
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Auto-duplex, Auto-speed, media type is unknown
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:07, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 12/2000/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 2 packets/sec
     1447 packets input, 208877 bytes, 0 no buffer
     Received 139 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 input packets with dribble condition detected
     13457 packets output, 919293 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

L2SW1   ☒

```
      13457 packets output, 919293 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/1 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4510 (bia aabb.cc00.4510)
   Description: ***Link to Server1 segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/0 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      755 packets input, 80219 bytes, 0 no buffer
      Received 123 broadcasts (0 multicasts)
```

L2SW1   ☒

```
      755 packets input, 80219 bytes, 0 no buffer
      Received 123 broadcasts (0 multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      3867 packets output, 268544 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/2 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4520 (bia aabb.cc00.4520)
   Description: ***Link to Server2 Segment***
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:07, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 5/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
```

```
L2SW1                                                            X

   Queueing strategy: fifo
   Output queue: 0/0 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      758 packets input, 81010 bytes, 0 no buffer
      Received 125 broadcasts (0 multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      3867 packets output, 268544 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Ethernet0/3 is up, line protocol is up (connected)
   Hardware is AmdP2, address is aabb.cc00.4530 (bia aabb.cc00.4530)
   MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Auto-duplex, Auto-speed, media type is unknown
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output never, output hang never
```

```
L2SW1                                                            X

   Last input never, output never, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/0 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      0 packets input, 0 bytes, 0 no buffer
      Received 0 broadcasts (0 multicasts)
      0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 input packets with dribble condition detected
      3566 packets output, 252186 bytes, 0 underruns
      0 output errors, 0 collisions, 55 interface resets
      0 unknown protocol drops
      0 babbles, 0 late collision, 0 deferred
      0 lost carrier, 0 no carrier
      0 output buffer failures, 0 output buffers swapped out
Vlan1 is up, line protocol is up
   Hardware is Ethernet SVI, address is aabb.cc80.4500 (bia aabb.cc80.4500)
   Internet address is 192.168.1.254/24
   MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive not supported
```

```
L2SW1                                                                    ☒
    Keepalive not supported
    ARP type: ARPA, ARP Timeout 04:00:00
    Last input 00:00:12, output never, output hang never
    Last clearing of "show interface" counters never
    Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
    Queueing strategy: fifo
    Output queue: 0/40 (size/max)
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
        235 packets input, 42480 bytes, 0 no buffer
        Received 235 broadcasts (0 IP multicasts)
        0 runts, 0 giants, 0 throttles
        0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
        11 packets output, 830 bytes, 0 underruns
        0 output errors, 0 interface resets
        0 unknown protocol drops
        0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface            IP-Address      OK? Method Status         Protocol
Ethernet0/0          unassigned      YES unset  up             up
Ethernet0/1          unassigned      YES unset  up             up
Ethernet0/2          unassigned      YES unset  up             up
Ethernet0/3          unassigned      YES unset  up             up
```

```
L2SW1                                                                    ☒
    0 output buffer failures, 0 output buffers swapped out
L2SW1#
L2SW1#
L2SW1#show ip interface brief
Interface            IP-Address      OK? Method Status         Protocol
Ethernet0/0          unassigned      YES unset  up             up
Ethernet0/1          unassigned      YES unset  up             up
Ethernet0/2          unassigned      YES unset  up             up
Ethernet0/3          unassigned      YES unset  up             up
Vlan1                192.168.1.254   YES NVRAM  up             up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
```

```
L2SW1                                                                    X
Ethernet0/0              unassigned      YES unset  up                up
Ethernet0/1              unassigned      YES unset  up                up
Ethernet0/2              unassigned      YES unset  up                up
Ethernet0/3              unassigned      YES unset  up                up
Vlan1                    192.168.1.254   YES NVRAM  up                up
L2SW1#
L2SW1#
L2SW1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

       192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C         192.168.1.0/24 is directly connected, Vlan1
L         192.168.1.254/32 is directly connected, Vlan1
L2SW1#
L2SW1#
L2SW1#
```

Users in the main office complain that they are unable to reach internet sites.
You observe that internet traffic that is destined towards ISP router is not forwarded correctly on Router R1. What could be an issue?
Ping to Internet server shows the following results from R1: R1#ping 209.165.200.225
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 209.165.200.225. timeout is 2 seconds: Success rate is 0 percent (0/5)

A. The next hop router address for the default route is incorrectly configured.
B. Default route pointing to ISP router is configured with AD of 255.
C. Default route pointing to ISP router is not configured on Router R1
D. Router R1 configured as DHCP client is not receiving default route via DHCP from ISP router.

Answer: C

Explanation: (Default Static Route will fix the problem to connect to ISP router)

Explanation/show command:

```
        172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
R           172.16.11.0/30 [ 120/1} via 172.16.14.2, 00:00:20, Ethernet0/2
C           172.16.14.0/30 is directly connected, Ethernet0/2
L           172.16.14.1/32 is directly connected, Ethernet0/2
C           172.16.16.0/24 is directly connected, Ethernet0/1
L           172.16.16.1/32 is directly connected, Ethernet0/1
R       192.168.1.0/24 [ 120/1} via 172.16.14.2, 00:00:20, Ethernet0/2
R       192.168.100.0/24 [ 120/1} via 172.16.14.2, 00:00:20, Ethernet0/2
R       192.168.200.0/24 [ 120/1} via 172.16.14.2, 00:00:20, Ethernet0/2
        209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C           209.165.201.0/27 is directly connected, Ethernet0/0
L           209.165.201.1/32 is directly connected, Ethernet0/0
R1#
```
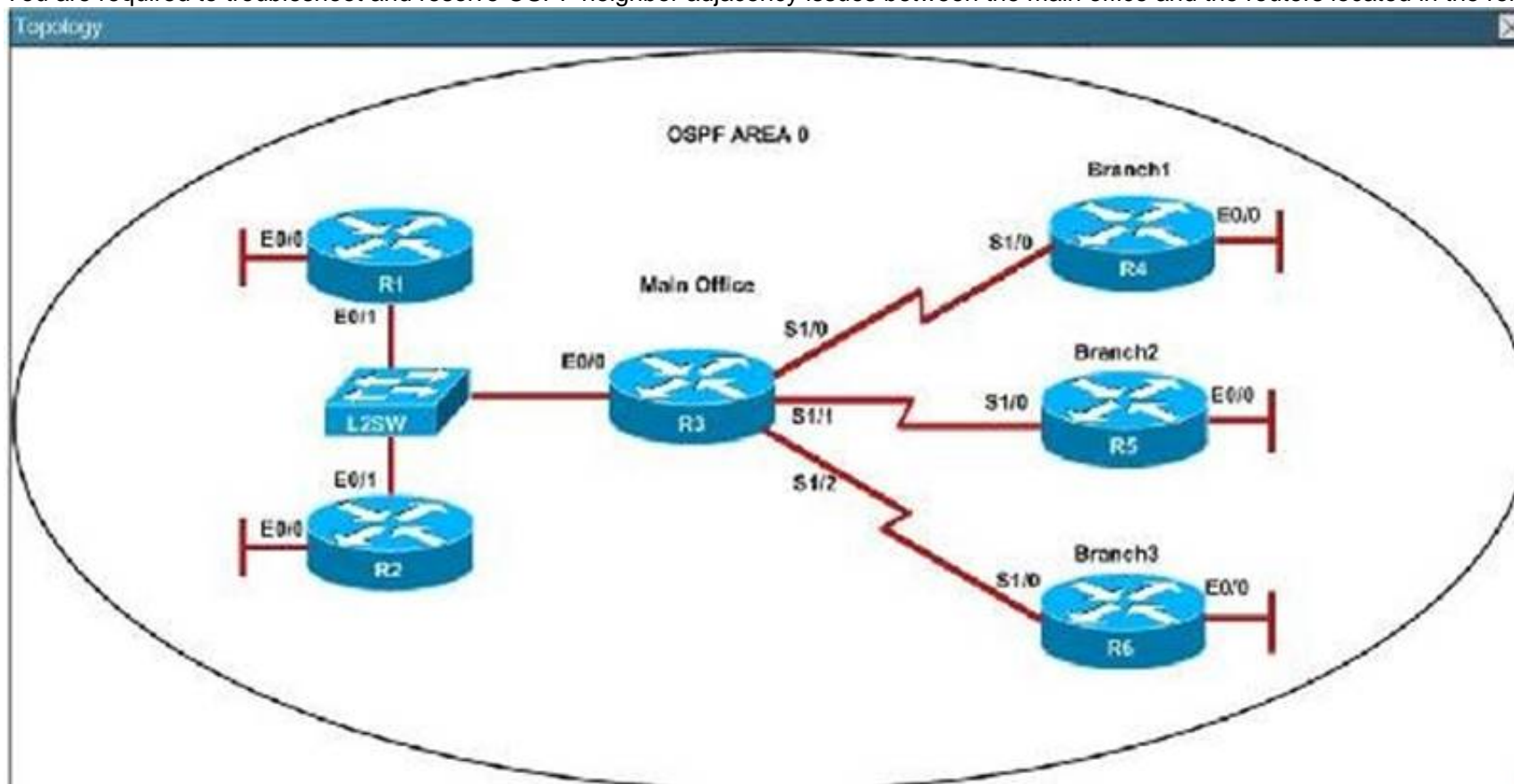
```
R1
interface Ethernet0/2
 description ***Link to R2***
 ip address 172.16.14.1 255.255.255.252
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/3
 no ip address
 shutdown
!
router rip
 version 2
 network 172.16.0.0
 default-information originate
 no auto-summary
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
ip nat inside source list LOCAL interface Ethernet0/0 overload
ip route 10.10.10.0 255.255.255.0 172.16.14.2 200
```

NEW QUESTION 867
Scenario:
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.
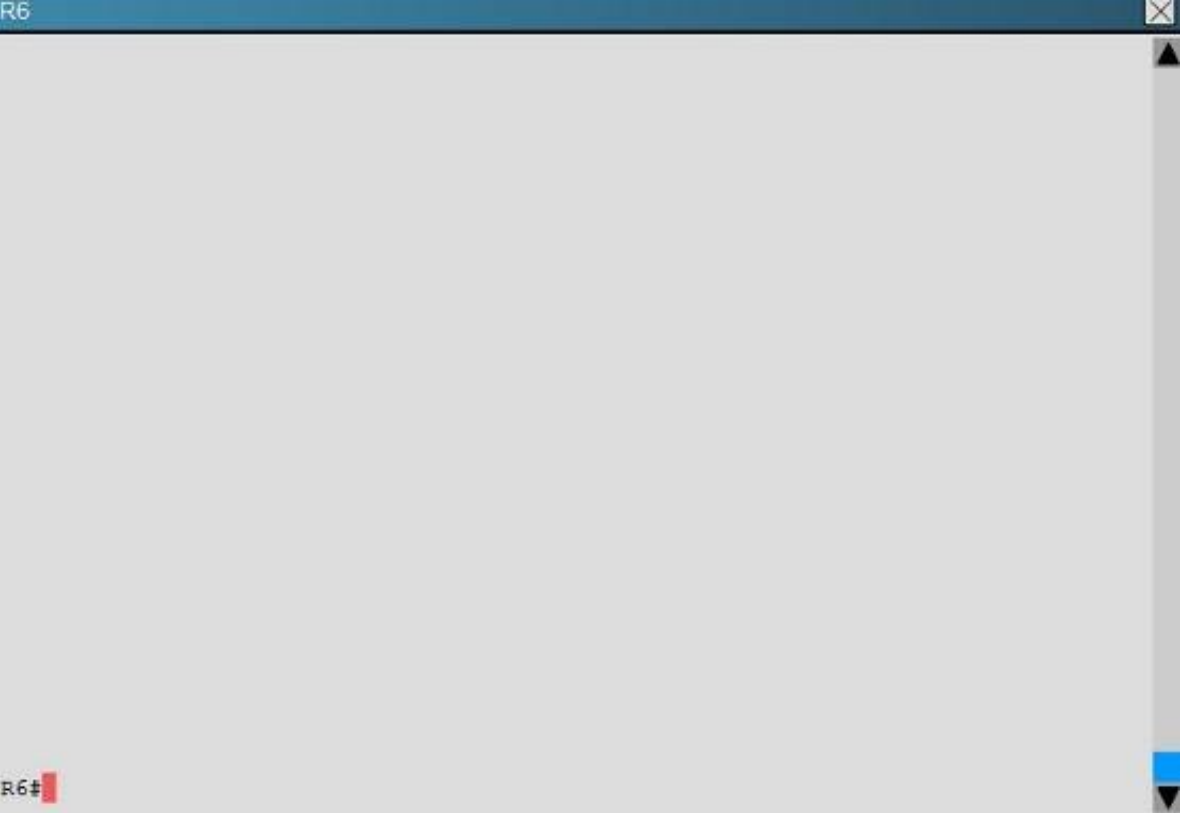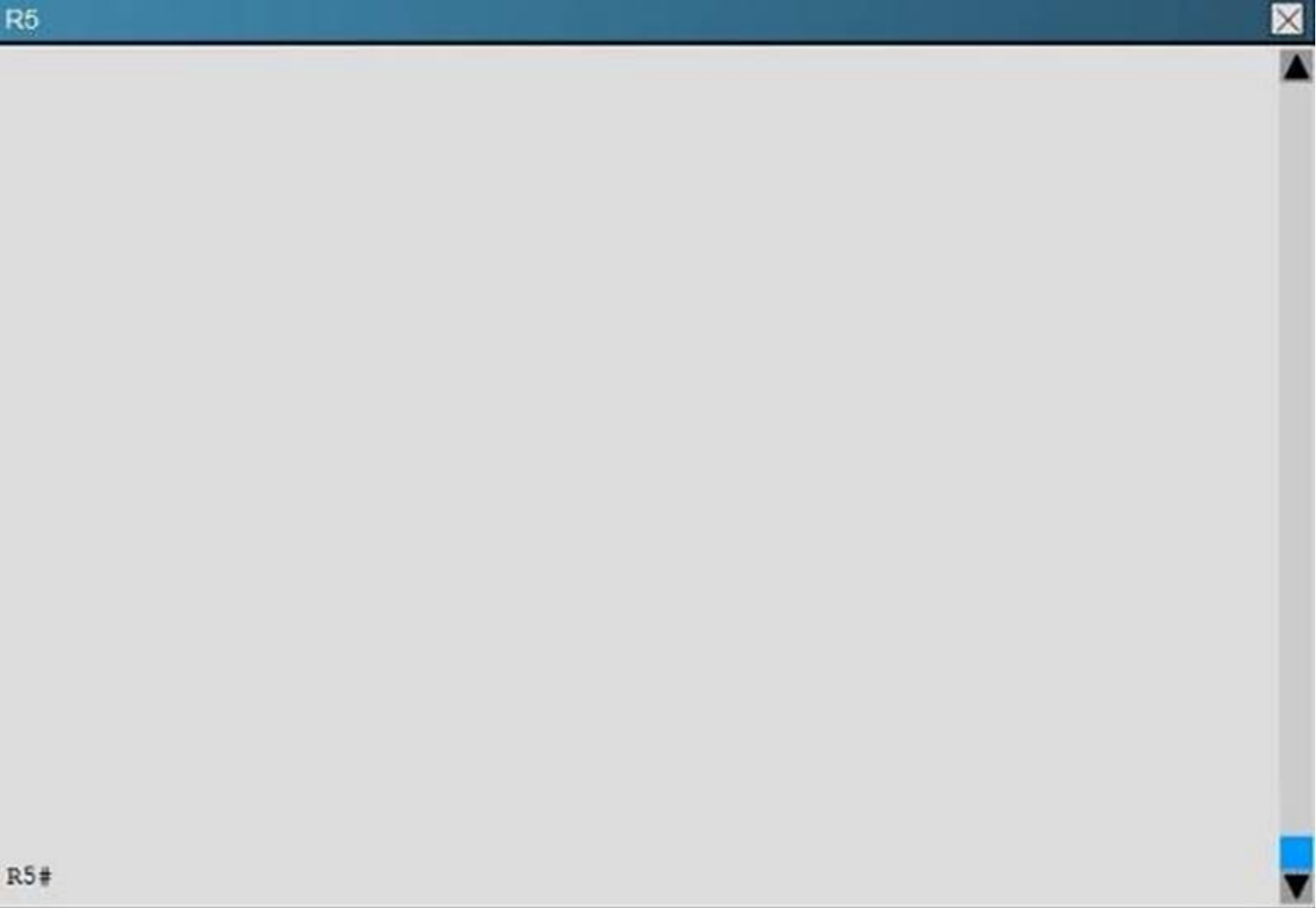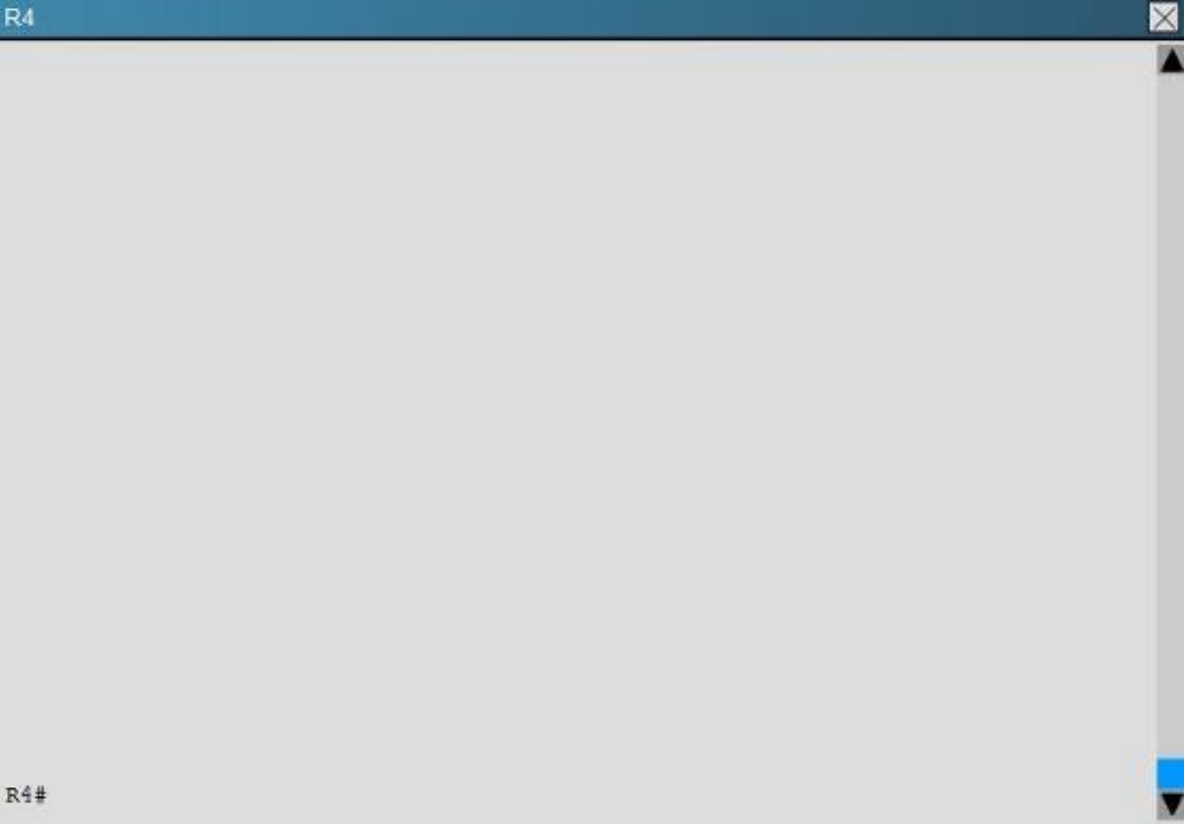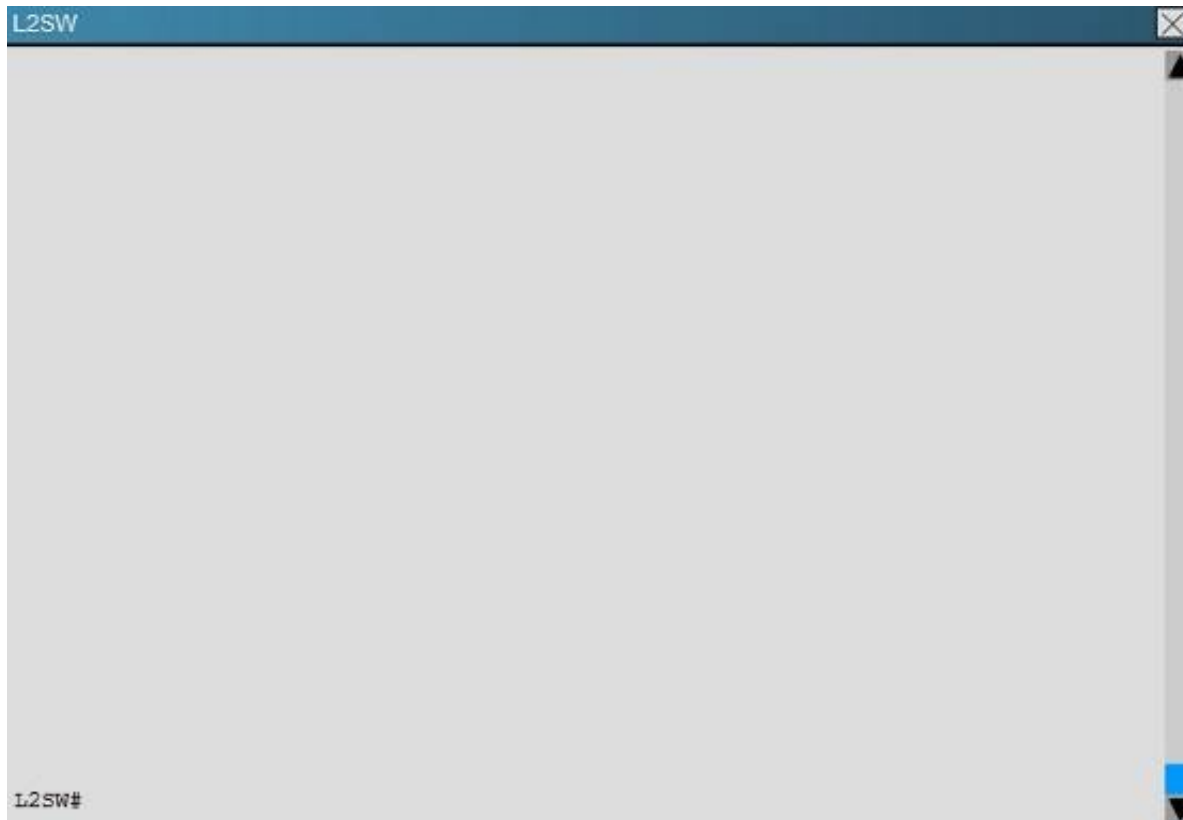
R1

R1#

R2

R2#

R3

R3#

R4

```
R4#
```

R5

```
R5#
```

R6

```
R6#
```

```
L2SW                                                             [X]


















L2SW#
```

R1 does not form an OSPF neighbor adjacency with R2. Which option would fix the issue?

A. R1 ethernet0/1 is shutdow
B. Configure no shutdown command.
C. R1 ethernet0/1 configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25.
D. R2 ethernet0/1 and R3 ethernet0/0 are configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25.
E. Enable OSPF for R1 ethernet0/1; configure ip ospf 1 area 0 command under ethernet0/1.

Answer: B

Explanation: Looking at the configuration of R1, we see that R1 is configured with a hello interval of 25 on interface Ethernet 0/1 while R2 is left with the default of 10 (not configured).

```
R1                                              R2

!                                               !
!                                               !
!                                               !
!                                               !
!                                               !
interface Loopback0                             interface Loopback0
 description ***Loopback***                      description ***Loopback***
 ip address 192.168.1.1 255.255.255.255          ip address 192.168.2.2 255.255.255.255
 ip ospf 1 area 0                                ip ospf 2 area 0
!                                               !
interface Ethernet0/0                           interface Ethernet0/0
 description ***Connected to R1-LAN***           description ***Connected to R2-LAN***
 ip address 10.10.110.1 255.255.255.0            ip address 10.10.120.1 255.255.255.0
 ip ospf 1 area 0                                ip ospf 2 area 0
!                                               !
interface Ethernet0/1                           interface Ethernet0/1
 description ***Connected to L2SW***             description ***Connected to L2SW***
 ip address 10.10.230.1 255.255.255.0            ip address 10.10.230.2 255.255.255.0
 ip ospf hello-interval 25                       ip ospf 2 area 0
 ip ospf 1 area 0                               !
!                                               interface Ethernet0/2
interface Ethernet0/2                            no ip address
 no ip address                                   shutdown
 shutdown                                       !


--- More (35) ---                               --- More (35) ---
```

Topic 4, New Pool Exam D

NEW QUESTION 869
What is the simplest IP SLA operation that can measure end-to-end response time between devices?

A. ICMP path jitter
B. ICMP path echo
C. ICMP echo
D. ICMP Jitter

Answer: D

NEW QUESTION 870

You apply a new inbound access list to routers, blocking UDP packets to the HSRP group. Which two effects does this action have on HSRP group process? (Choose two)

A. HSRP redundancy works as expected.
B. HSRP redundancy fails
C. The active router immediately becomes the standby router
D. Both the active and standby routers become active
E. The routers in the group generate duplicate IP address warnings

Answer: BD

NEW QUESTION 872
What is one benefit of PVST+?

A. PVST + reduces the CPU cycles for all the switches in the network.
B. PVST + automatically selects the root bridge location, to provide optimized bandwidth usage.
C. PVST + supports Layer 3 load balancing without loops.
D. PVST + allows the root switch location to be optimized per VLAN.

Answer: D

NEW QUESTION 875
Which command can you enter to display duplicate IP addresses that the DHCP server assigns?

A. show ip dhcp database 10.0.2.12
B. show ip dhcp server statistics
C. show ip dhcp conflict 10.0.2.12
D. show ip dhcp binding 10.0.2.12

Answer: D

NEW QUESTION 876
When an interface is configured with PortFast BPDU guard, how does interface respond when it receives a BPDU?

A. It goes into an errdisable state.
B. It goes into a down/down state.
C. It becomes the root bridge for the configured VLAN.
D. It continues operating normally.

Answer: A

NEW QUESTION 879
What happens when you add a switch running an earlier IOS version to a StackWise configuration running a later version?

A. The switch software upgrades the IOS version on the switch to match the version on the stack
B. The switch keeps its version of IOS and runs normally as part of the stack
C. The switch software downgrades the IOS version on the stack to match the version on the switch
D. The stack ignores the switch until you update the IOS version on the switch

Answer: A

NEW QUESTION 882
Match the terms on the left with the appropriate OSI layer on the right. (Not all options are used)

Match the terms on the left with the appropriate OSI layer on the right. (Not all options are used.)

frames	Network Layer
packets	
UDP	
IP addresses	
segments	Transport Layer
MAC addresses	
windowing	
routing	

Answer:

Explanation:

Match the terms on the left with the appropriate OSI layer on the right. (Not all options are used.)

frames
packets
UDP
IP addresses
segments
MAC addresses
windowing
routing

Network Layer

packets
IP addresses
routing

Transport Layer

UDP
segments
windowing

NEW QUESTION 887

Which command should you enter to configure an LLDP delay time of 5 seconds?

A. lldp reinit 5000
B. lldp reinit 5
C. lldp holdtime 5
D. lldp timer 5000

Answer: B

NEW QUESTION 891

Refer to the exhibit. PC_1 is sending packets to the FTP server. Consider the packets as they leave RouterA interface Fa0/0 towards RouterB. Drag the correct frame and packet address to their place in the table.

Refer to the exhibit. PC_1 is sending packets to the FTP server. Consider the packets as they leave RouterA interface Fa0/0 towards RouterB. Drag the correct frame and packet address to their place in the table.

IP 172.16.25.33
MAC 0000.0c93.9999

IP 172.16.25.34
MAC 0000.0c89.3333

IP 172.16.21.254
MAC 0000.0c12.2222
RouterA Fa0/0
Fa0/1

Fa0/1
RouterB Fa0/0
IP 172.16.34.1
MAC 0000.3465.7777

SwitchA

SwitchB

IP 172.16.21.7
MAC 0000.ad12.6666
PC_1

FTP
IP 172.16.34.250
MAC 0000.aa54.5555

Source MAC	Destination MAC	Source IP Address	Destination IP Address
Target	Target	Target	Target

Answer:

Explanation:

Refer to the exhibit. PC_1 is sending packets to the FTP server. Consider the packets as they leave RouterA interface Fa0/0 towards RouterB. Drag the correct frame and packet address to their place in the table.
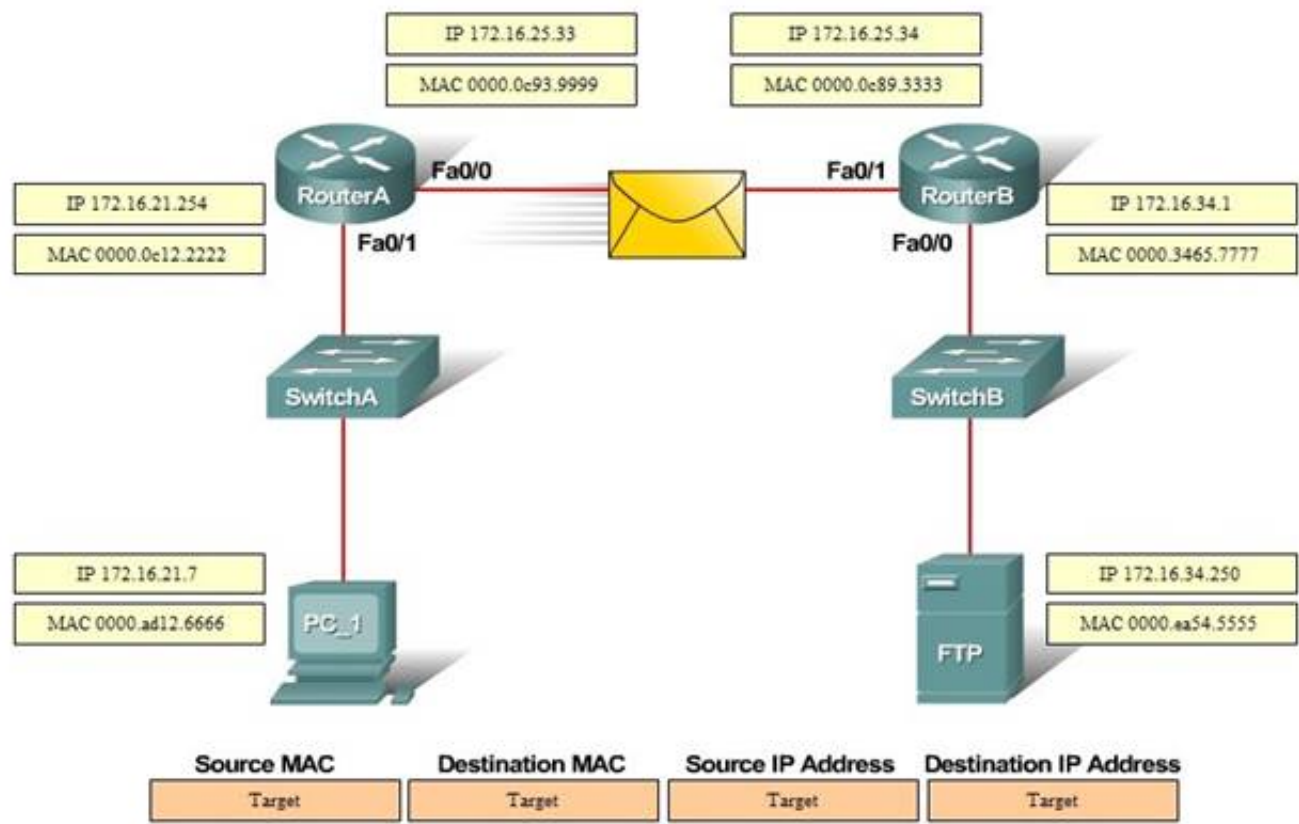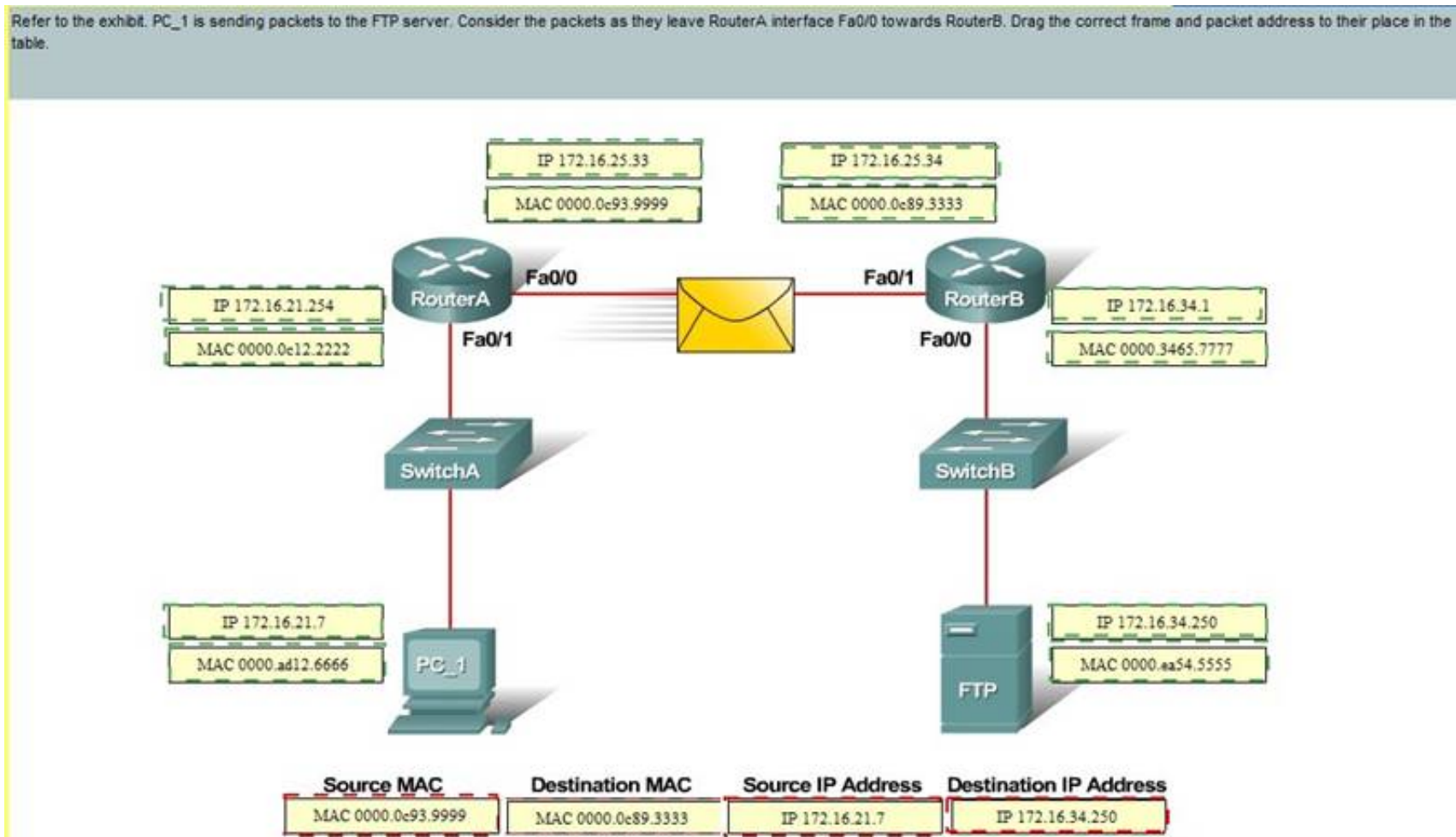
NEW QUESTION 892
Which two conditions can StackWise use to determine the master of the stack? (Choose two)

A. the lowest member priority
B. the lowest system MAC address
C. the greatest number of configured VLANs
D. the highest system MAC address
E. the highest member priority

Answer: BE

NEW QUESTION 896
Which command should you enter to configure a single port to bypass the spanning-tree Forward and Delay timers?

A. spanning-tree portfast
B. spanning-tree portfast default
C. spanning-tree portfast bpdufilter default
D. spanning-tree portfast bpduguard default

Answer: A

NEW QUESTION 901
Refer to the exhibit.

```
Switch# show spanning-tree interface fastethernet 0/10
Vlan              Role Sts Cost        Prio.Nbr  Type
---------------- ---- --- --------- -------- ----------------------------
VLAN0001          Root FWD 19          128.1     P2p
VLAN0002          Altn BLK 19          128.2     P2p
VLAN0003          Root FWD 19          128.2     P2p
```

Given the output shown from this Cisco switch, what is the reason that interface FastEthernet 0/10 is not the root port for VLAN 2?

A. This switch has more than one interface connected to the root network segment in VLAN 2.
B. This switch is running RSTP while the elected designated switch is running 802.1d Spanning Tree.
C. This switch interface has a higher path cost to the root bridge than another in the topology.
D. This switch has a lower bridge ID for VLAN 2 than the elected designated switch.

Answer: C

Explanation: Since the port is in the blocked status, we must assume that there is a shorter path to the root bridge elsewhere.

NEW QUESTION 906
Which chassis-aggregation technology combines two physical switches into one virtual switch?

A. LACP

B. VRRP
C. VSS
D. StackWise

Answer: C

NEW QUESTION 909
During which phase of PPPoE is PPP authentication performed?

A. the PPP Session phase
B. Phase 2
C. the Active Discovery phase
D. the Authentication phase
E. Phase 1

Answer: A

NEW QUESTION 910
Refer to the exhibit. PC_1 is exchanging packets with the FTP server. Consider the packets as they leave RouterB interface Fa0/1 towards RouterA. Drag the correct frame and packet addresses to their place in the table.
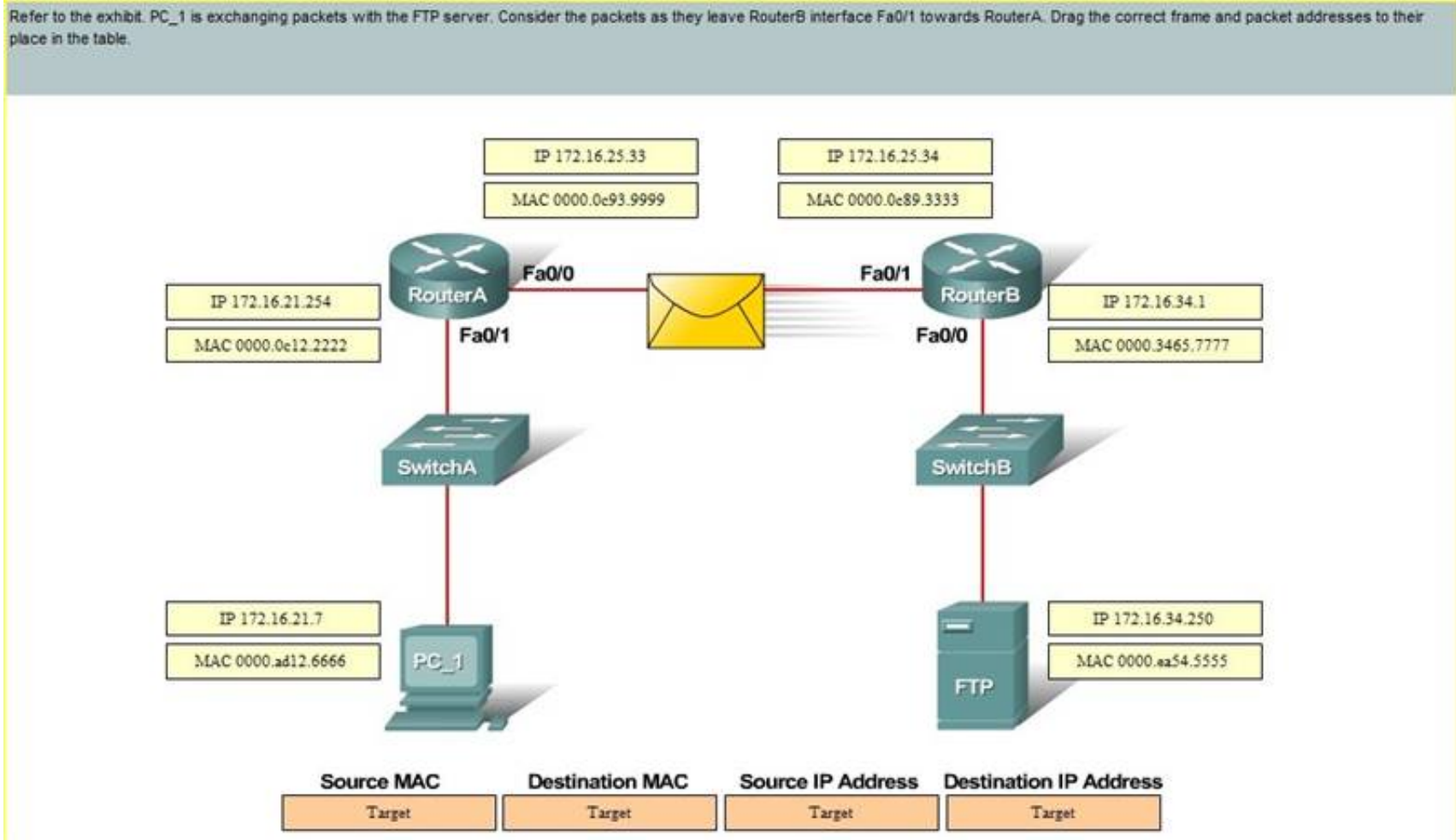
Answer:

Explanation: Source Mac AddressDestination Mac AddressSource IP addressDestination MAC address MAC 0000.0c89.3333MAC 0000.0c89.9999 IP 172.16.34.250IP 172.16.21.7

NEW QUESTION 915
Which two features can mitigate spanning tree issues that are caused by broken fiber cables on interswitch links? (Choose Two)

A. root guard
B. DTP
C. UDLD
D. BPDU guard
E. loop guard

Answer: DE

NEW QUESTION 917
Which two statements about static routing are true? (Choose two)

A. It provides only limited security unless the administrator performs additional configuration
B. Its default administrative distance is lower than EIGRP.
C. It allows packets to transit a different path if the topology changes
D. It allows the administrator to determine the entire path of a packet
E. Its initial implementation is more complex than OSPF.

Answer: BD

NEW QUESTION 921
Which IEEE mechanism is responsible for the authentication of devices when they attempt to connect to a local network?

A. 802.1x
B. 802.3x
C. 802.11
D. 802.2x

Answer: A

NEW QUESTION 922
Which two of these statements regarding mode allows traffic? (Choose two)

A. 802.1Q trunks require full-duplex, point-to-point connectivity.
B. 802.1Q trunking ports can also be secure ports.
C. 802.1Q native VLAN frames are always untagged and cannot be tagged.
D. 802.1Q trunks should have native VLANs that are the same at both ends.
E. 802.1Q native VLAN frames are untagged by default.

Answer: DE

NEW QUESTION 924
Which NAT function can map multiple inside addresses to a single outside address?

A. PAT
B. SFTP
C. RARP
D. TFTP
E. ARP

Answer: A

NEW QUESTION 929
Which technology provides chassis redundancy in a VSS environment?

A. OBFD
B. Stack Wise
C. VRRP
D. multichassis EtherChannels

Answer: D

NEW QUESTION 931
Which feature or method can you use to isolate physical layer problems on a serial link?

A. autonegotiation
B. UDLD
C. protocol analyzer
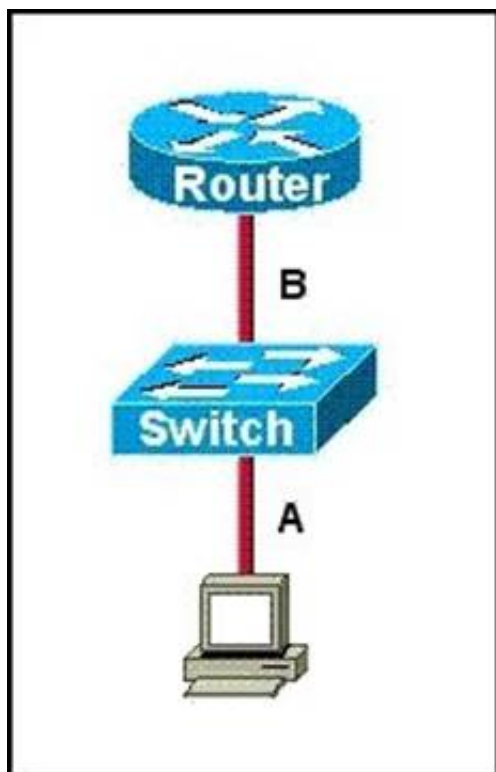D. loopback tests

Answer: A

NEW QUESTION 935
Which command should you enter on an interface in a vendor-neutral EtherChannel so that it will be selected first to transmit packets?

A. lacp system-priority 1024
B. pagp port-priority 1024
C. lacp port-priority 1024
D. pagp system-priority 1024

Answer: A

NEW QUESTION 939
Refer to the exhibit.

The two connected ports on the switch are not turning orange or green. Which steps would be the most effective to troubleshoot this physical layer problem?

A. Ensure the switch has power.
B. Reseat all cables.
C. Ensure cable A is plugged into a trunk port.
D. Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.
E. Reboot all of the devices.
F. Ensure that cables A and are straight-through cables.

Answer: ABF

NEW QUESTION 942
Which IP address can send traffic to all hosts on network 10.101.0.0/16?

A. 10.101.0.1
B. 10.101.254.254
C. 10.101.254.255
D. 224.0.0.1

Answer: A

NEW QUESTION 944
Which command is needed to send RIPv2 updates as broadcast when configured for RIPv2?

A. ip rip v2-broadcast
B. ip rip receive version 1
C. ip rip receive version 2
D. version 2

Answer: A

NEW QUESTION 945
Which command should you enter to configure a DHCP client?

A. ip dhcp client
B. ip helper-address
C. ip address dhcp
D. ip dhcp pool

Answer: A

NEW QUESTION 950
In which three ways is an IPv6 header simpler than an IPv4 header? (Choose three.)

A. Unlike IPv4 headers, IPv6 headers have a fixed length.
B. IPv6 uses an extension header instead of the IPv4 Fragmentation field.
C. IPv6 headers eliminate the IPv4 Checksum field.
D. IPv6 headers use the Fragment Offset field in place of the IPv4 Fragmentation field.
E. IPv6 headers use a smaller Option field size than IPv4 headers.
F. IPv6 headers use a 4-bit TTL field, and IPv4 headers use an 8-bit TTL field.

Answer: ABC

NEW QUESTION 954
Which two pieces of information about a Cisco device can Cisco Discovery Protocol communicate? (Choose

two.)

A. the native VLAN
B. the VTP domain
C. the spanning tree protocol
D. the spanning-tree priority
E. the trunking protocol

Answer: BE

NEW QUESTION 956
Which IPv6 address is the all-router multicast group?

A. FF02::1
B. FF02::2
C. FF02::3
D. FF02::4

Answer: B

Explanation: Well-known IPv6 multicast addresses:
Address Description ff02::1
All nodes on the local network segment
ff02::2
All routers on the local network segment

NEW QUESTION 960
Which type of access list compares source and destination IP addresses?

A. extended
B. standard
C. IP named
D. reflexive

Answer: A

Explanation: Extended ACLs compare the source and destination addresses of the IP packets to the addresses configured in the ACL in order to control traffic. You can also make extended ACLs more granular and configured to filter traffic by criteria such as: Protocol Port numbers Differentiated services code point (DSCP) value Precedence value State of the synchronize sequence number (SYN) bit

NEW QUESTION 963
Which two commands can you use to configure a PAgP EtherChanne? (Choose two)

A. channel-group 10 mode desirable
B. channel-group 10 mode on
C. channel-group 10 mode active
D. channel-group 10 mode auto
E. channel-group 10 mode passive

Answer: AD

NEW QUESTION 968
Refer to the exhibit.

```
ACL 102
access-list 102 deny tcp  172.21.1.1 0.0.0.255  any eq 80
access-list 102 deny ip any any

RouterA#sho ip int
FastEthernet0/0 is up, line protocol is up
  Internet address is 192.168.1.144/20
  Broadcast address is 255.255.255.255
  Address determined by DHCP
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is enabled
  Outgoing access list is 102
  Inbound  access list is not set
  Proxy ARP is enabled
```

An attempt to deny web access to a subnet blocks all traffic from the subnet. Which interface command immediately removes the effect of ACL 102?

A. no ip access-class 102 in
B. no ip access-class 102 out
C. no ip access-group 102 in
D. no ip access-group 102 out
E. no ip access-list 102 in

Answer: D

Explanation: Explanation
The "ip access-group" is used to apply and ACL to an interface. From the output shown, we know that the ACL is applied to outbound traffic, so "no ip access-group 102 out" will remove the effect of this ACL.

NEW QUESTION 971
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