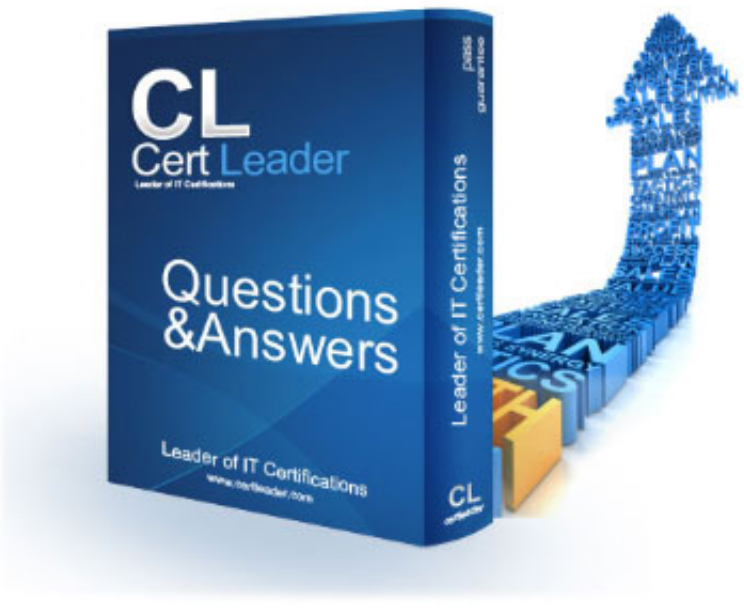
# 200-105 Dumps

# Interconnecting Cisco Networking Devices Part 2 (ICND2 v3.0)

**https://www.certleader.com/200-105-dumps.html**



**NEW QUESTION 1**
Which option describes a difference between EIGRP for IPv4 and IPv6?

A. Only EIGRP for IPv6 advertises all connected networks.
B. Only EIGRP for IPv6 requires a router ID to be configured under the routing process-
C. AS numbers are configured in EIGRP but not in EIGRPv3.
D. Only EIGRP for IPv6 is enabled in the global configuration mode.

**Answer:** B

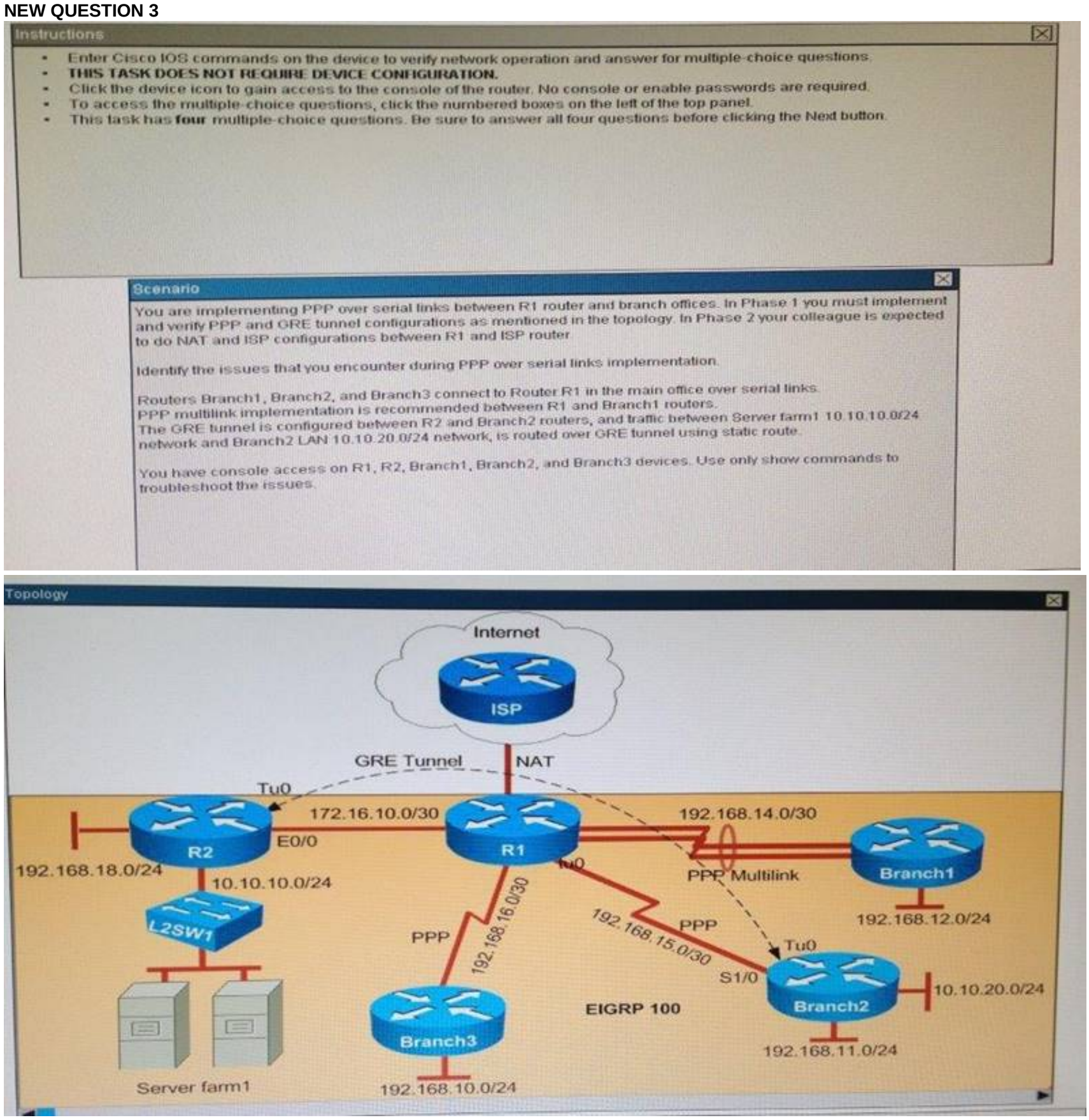
**Explanation:** Router ID - Both EIGRP for IPv4 and EIGRP for IPv6 use a 32-bit number for the EIGRP router ID. The 32-bit router ID is represented in dotted-decimal notation and is commonly referred to as an IPv4 address. If the EIGRP for IPv6 router has not been configured with an IPv4 address, the eigrp router-id command must be used to configure a 32-bit router ID. The process for determining the router ID is the same for both EIGRP for IPv4 and IPv6.

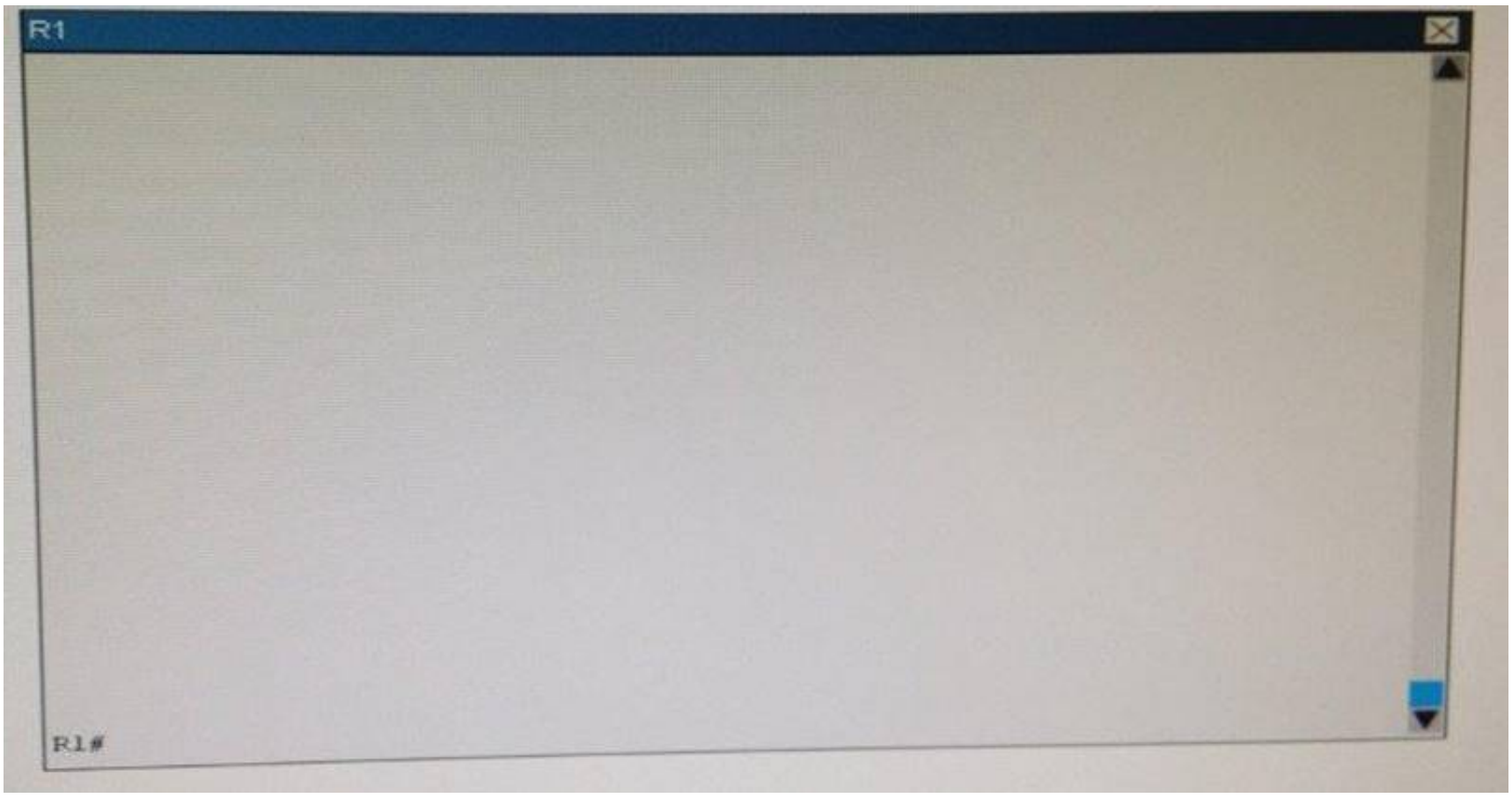
**NEW QUESTION 2**
Which identification number is valid for an extended ACL?

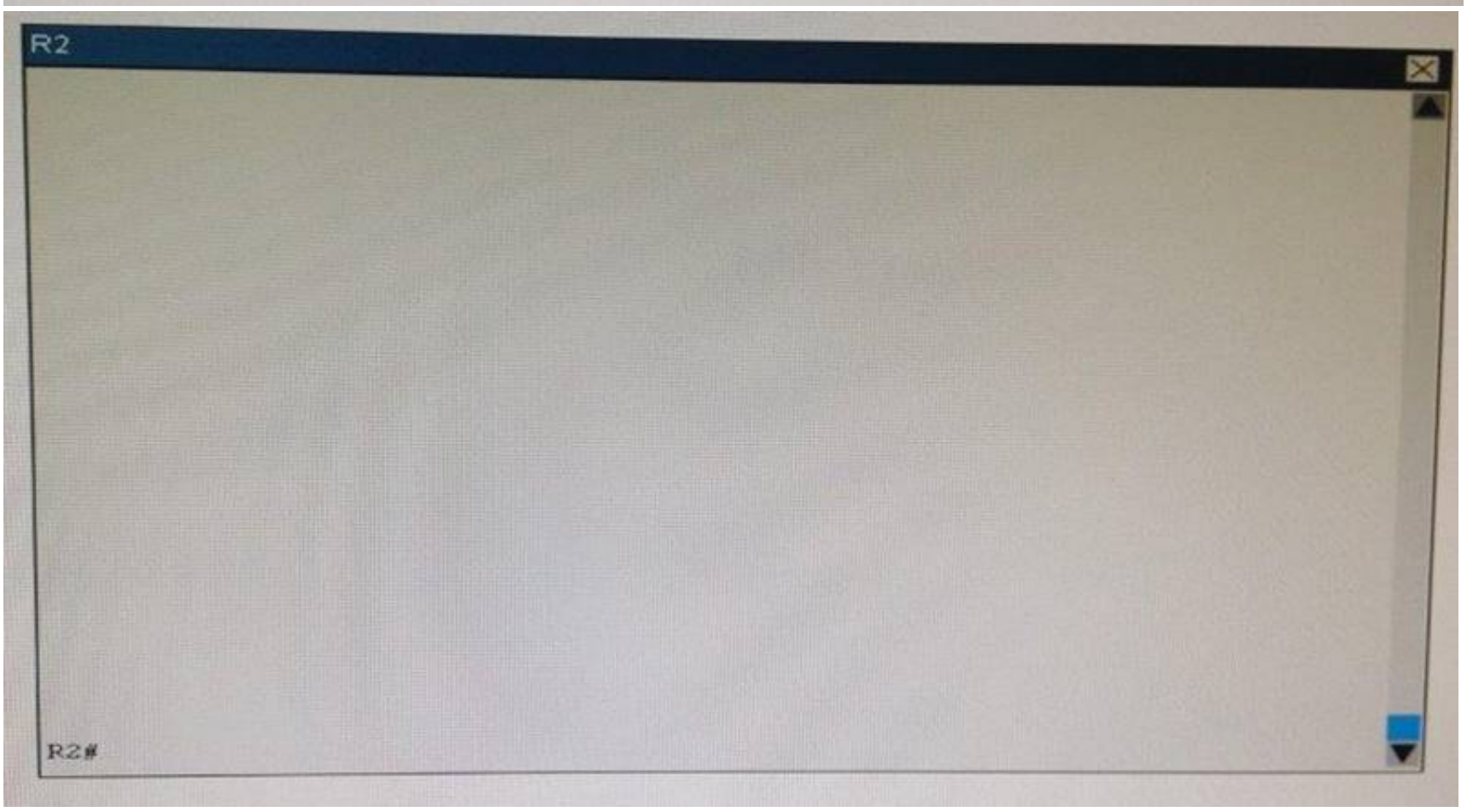
A. 1
B. 64
C. 99
D. 100
E. 299
F. 1099

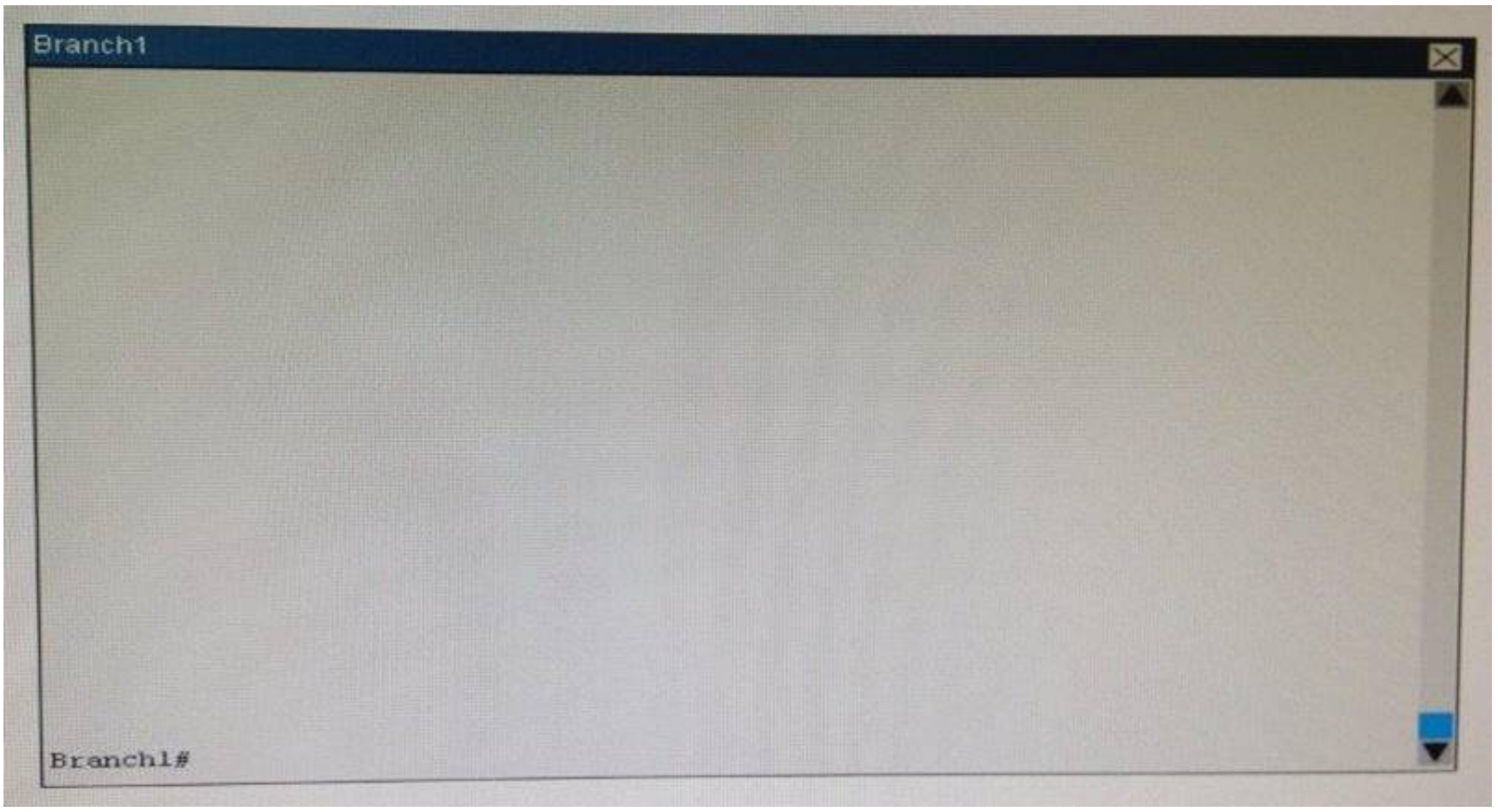
**Answer:** D

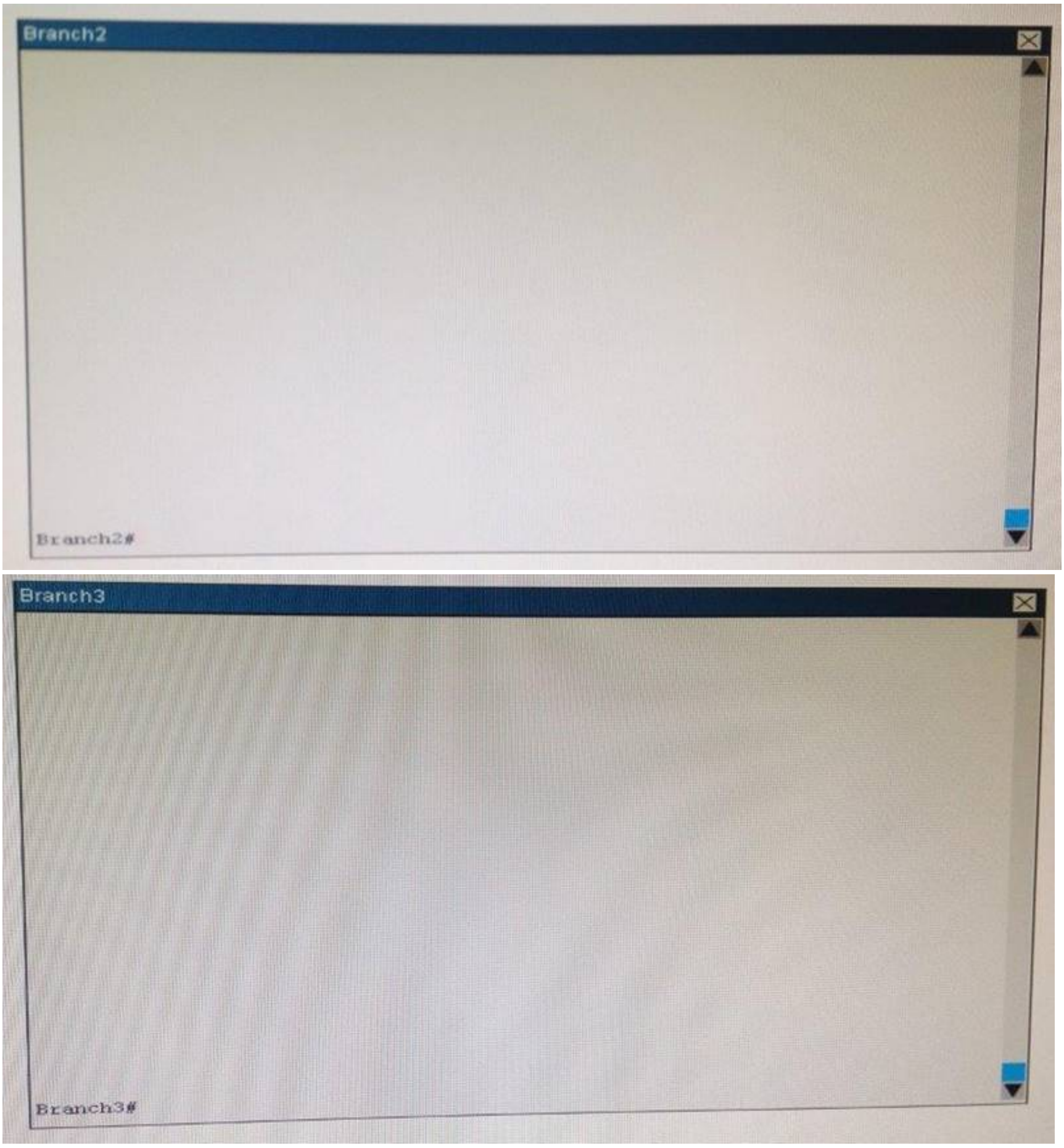
**NEW QUESTION 3**




R1
R1#


R2
R2#


Branch1
Branch1#




Why is the Branch2 network 10.1 0.20.0/24 unable to communicate with the Server farm1 network 10.1 0.10.0/24 over the GRE tunnel?

A. The GRE tunnel destination is not configured on the R2 router.
B. The GRE tunnel destination is not configured on the Branch2 router.
C. The static route points to the tunnel0 interface that is misconfigured on the Branch2 router.
D. The static route points to the tunnel0 interface that is misconfigured on the R2 router.

**Answer:** C

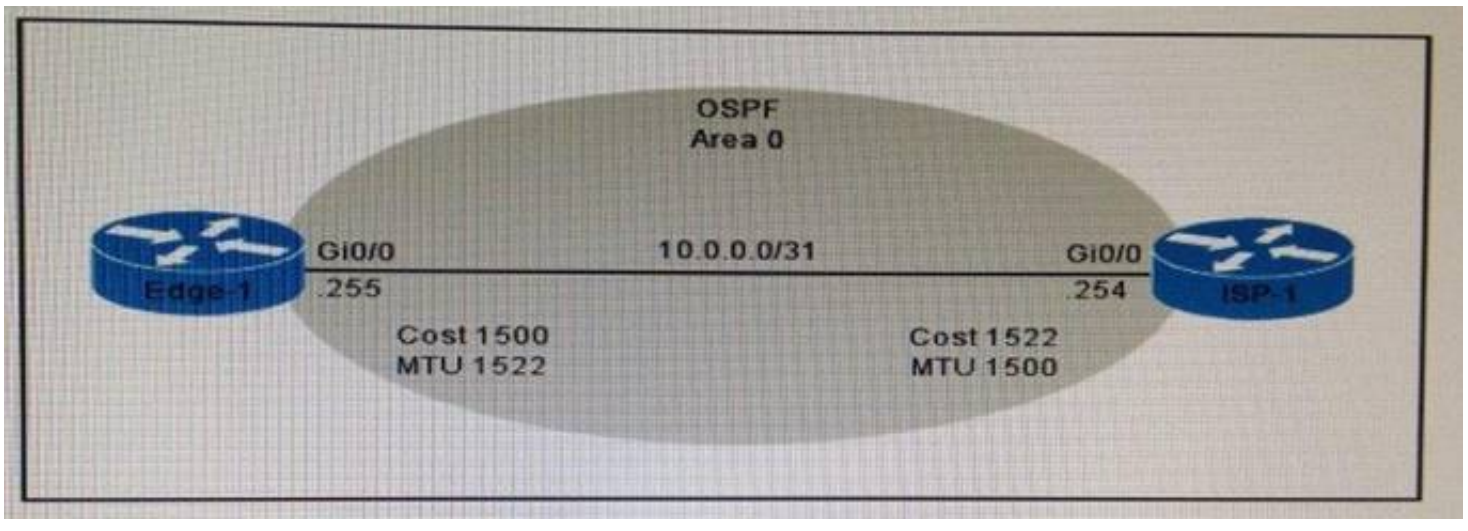
**NEW QUESTION 4**
Which process is associated with spanning-tree convergence?

A. determining the path cost
B. electing designated ports
C. learning the sender bridge ID
D. assigning the port ID

**Answer:** B

**Explanation:** Spanning Tree Protocol (STP) convergence (Layer 2 convergence) happens when bridges and switches have transitioned to either the forwarding or blocking state. When layer 2 is converged, Root Switch is elected and Root Ports, Designated Ports and Non-Designated ports in all switches are selected. At Converged condition, the Root Ports and the Designated ports are in forwarding state, and all other ports are in blocking state.

**NEW QUESTION 5**
Refer to the exhibit.




Router edge-1 is unable to establish OSPF neighbor adjacency with router ISP-1. Which two configuration changes can you make on edge-1 to allow the two routers to establish adjacency? (Choose two.)

A. Set the subnet mask on edge-1 to 255 255.255.252.
B. Reduce the MTU on edge-1 to 1514.
C. Set the OSPF cost on edge-1 to 1522.
D. Reduce the MTU on edge-1 to 1500.
E. Configure the ip ospf mtu-ignore command on the edge-1 Gi0/0 interface.

**Answer:** DE

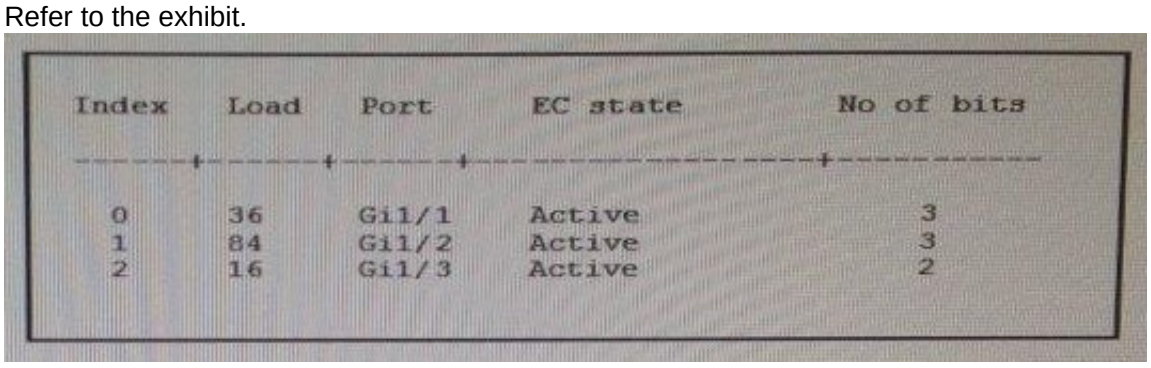
**Explanation:** A situation can occur where the interface MTU is at a high value, for example 9000, while the real value of the size of packets that can be forwarded over this interface is 1500.
If there is a mismatch on MTU on both sides of the link where OSPF runs, then the OSPF adjacency will not form because the MTU value is carried in the Database Description (DBD) packets and checked on the other side.

**NEW QUESTION 6**
Which part of the PPPoE server configuration contains the information used to assign an IP address to a PPPoE client?

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

**Answer:** A

**NEW QUESTION 7**
Refer to the exhibit.



| Index | Load | Port | EC state | No of bits |
|---|---|---|---|---|
| 0 | 36 | Gi1/1 | Active | 3 |
| 1 | 84 | Gi1/2 | Active | 3 |
| 2 | 16 | Gi1/3 | Active | 2 |

While troubleshooting a switch, you executed the show interface port-channel 1 etherchannel command and it returned this output. Which information is provided by the Load value?

A. the percentage of use of the link
B. the preference of the link
C. the session count of the link
D. the number source-destination pairs on the link

**Answer:** D

**NEW QUESTION 8**
Which statement about named ACLs is true?

A. They support standard and extended ACLs.
B. They are used to filter usernames and passwords for Telnet and SSH.
C. They are used to filter Layer 7 traffic.
D. They support standard ACLs only.
E. They are used to rate limit traffic destined to targeted networks.

**Answer:** A

**Explanation:** Named Access Control Lists (ACLs) allows standard and extended ACLs to be given names instead of numbers. Unlike in numbered Access Control Lists (ACLs), we can edit Named Access Control Lists. Another benefit of using named access configuration mode is that you can add new statements to the access list, and insert them wherever you like. With the legacy syntax, you must delete the entire access list before reapplying it using the updated rules.

**NEW QUESTION 9**
What are two drawbacks of implementing a link-state routing protocol? (Choose two.)

A. the sequencing and acknowledgment of link-state packets
B. the high volume of link-state advertisements in a converged network
C. the requirement for a hierarchical IP addressing scheme for optimal functionality
D. the high demand on router resources to run the link-state routing algorithm
E. the large size of the topology table listing all advertised routes in the converged network

**Answer:** CD

**NEW QUESTION 10**
Which protocol supports sharing the VLAN configuration between two or more switches?

A. multicast
B. STP
C. VTP
D. split-horizon

**Answer:** C

**Explanation:** "VTP allows a network manager to configure a switch so that it will propagate VLAN configurations to other switches in the network"
VTP minimizes misconfigurations and configuration inconsistencies that can cause problems, such as duplicate VLAN names or incorrect VLAN-type specifications. VTP helps you simplify management of the VLAN database across multiple switches.
VTP is a Cisco-proprietary protocol and is available on most of the Cisco switches.

**NEW QUESTION 10**
Which option is the benefit of implementing an intelligent DNS for a cloud computing solution?

A. It reduces the need for a backup data center.
B. It can redirect user requests to locations that are using fewer network resources.
C. It enables the ISP to maintain DNS records automatically.
D. It eliminates the need for a GSS.

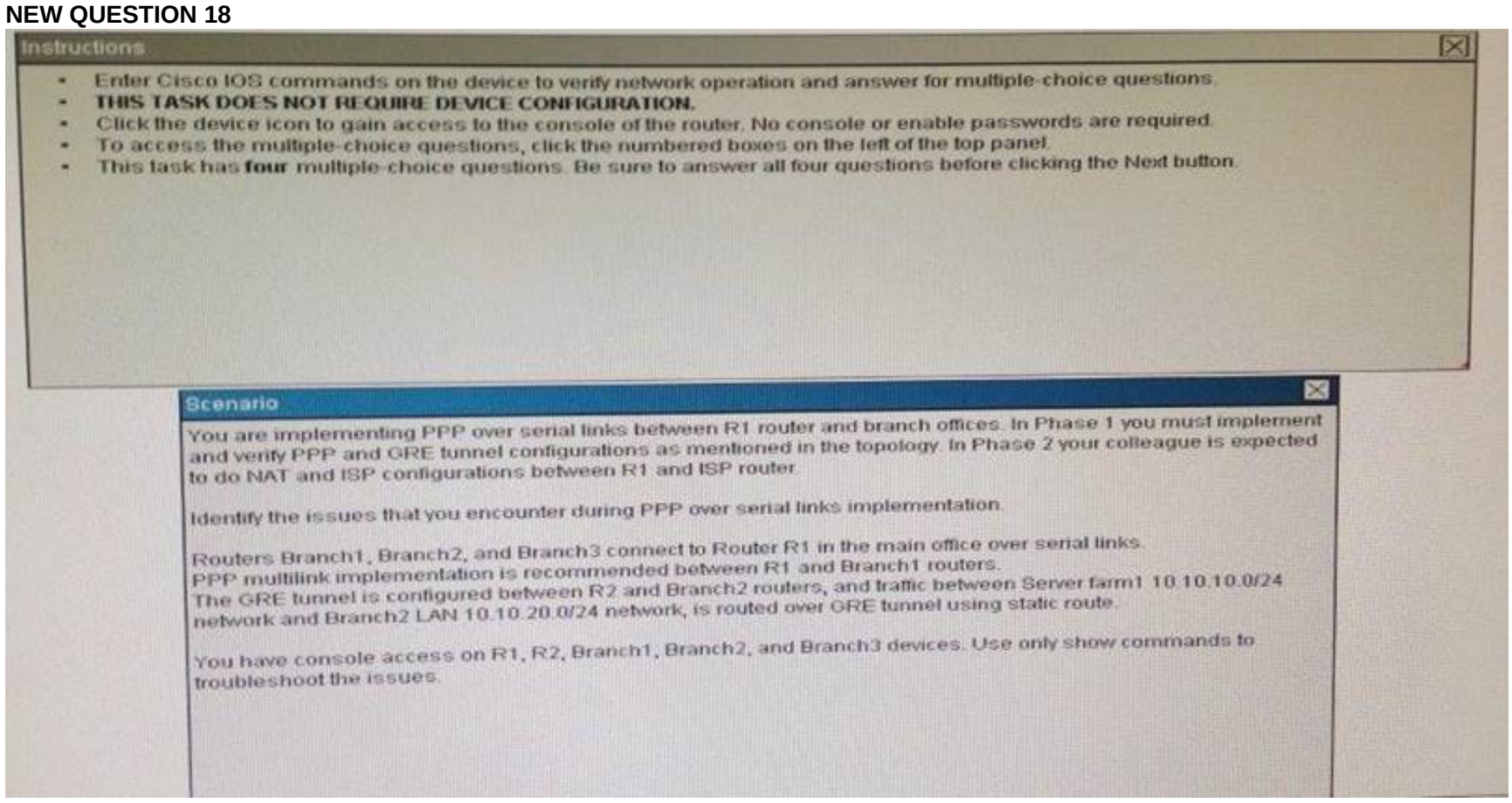
**Answer:** B

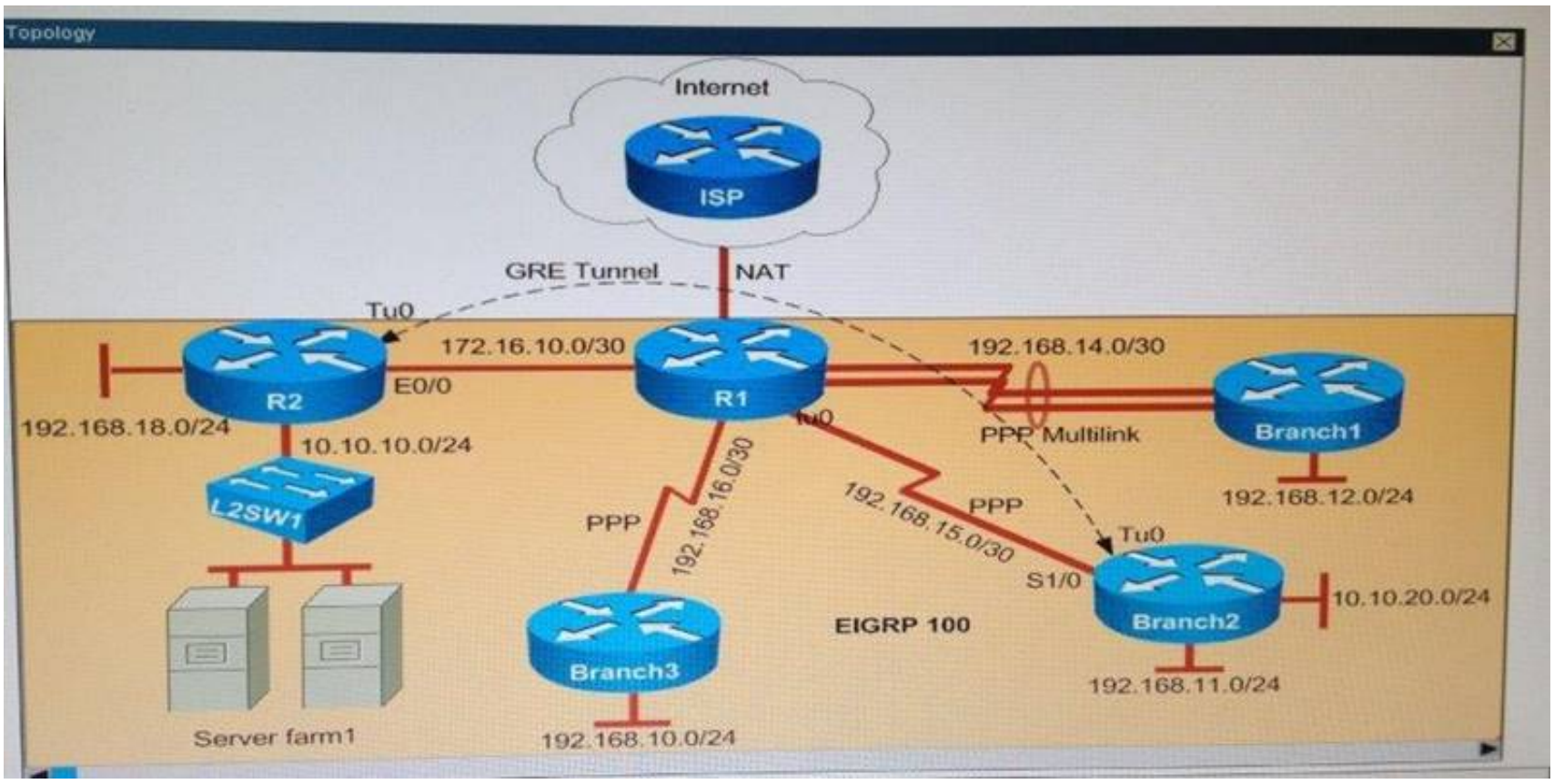
**NEW QUESTION 13**
Which type of interface can negotiate an IP address for a PPPoE client?

A. Ethernet
B. dialer
C. serial
D. Frame Relay

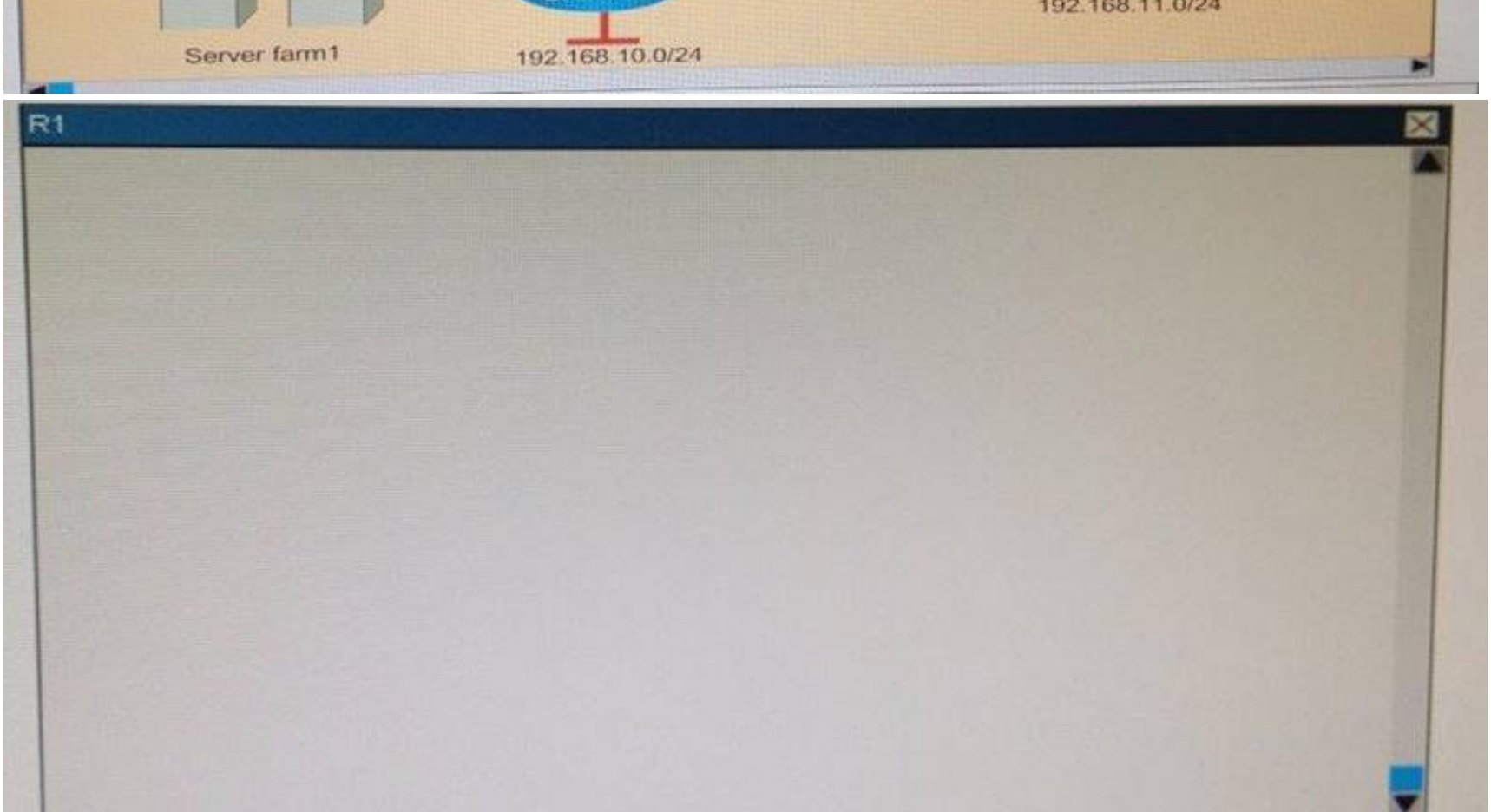
**Answer:** B

**NEW QUESTION 18**




Topology
Internet
ISP
GRE Tunnel
NAT
Tu0
172.16.10.0/30
E0/0
R2
R1
192.168.14.0/30
192.168.18.0/24
10.10.10.0/24
L2SW1
PPP Multilink
Branch1
192.168.12.0/24
Tu0
PPP
192.168.16.0/30
192.168.15.0/30
PPP
Tu0
S1/0
10.10.20.0/24
Branch2
EIGRP 100
Branch3
192.168.11.0/24
Server farm1
192.168.10.0/24


R1
R1#

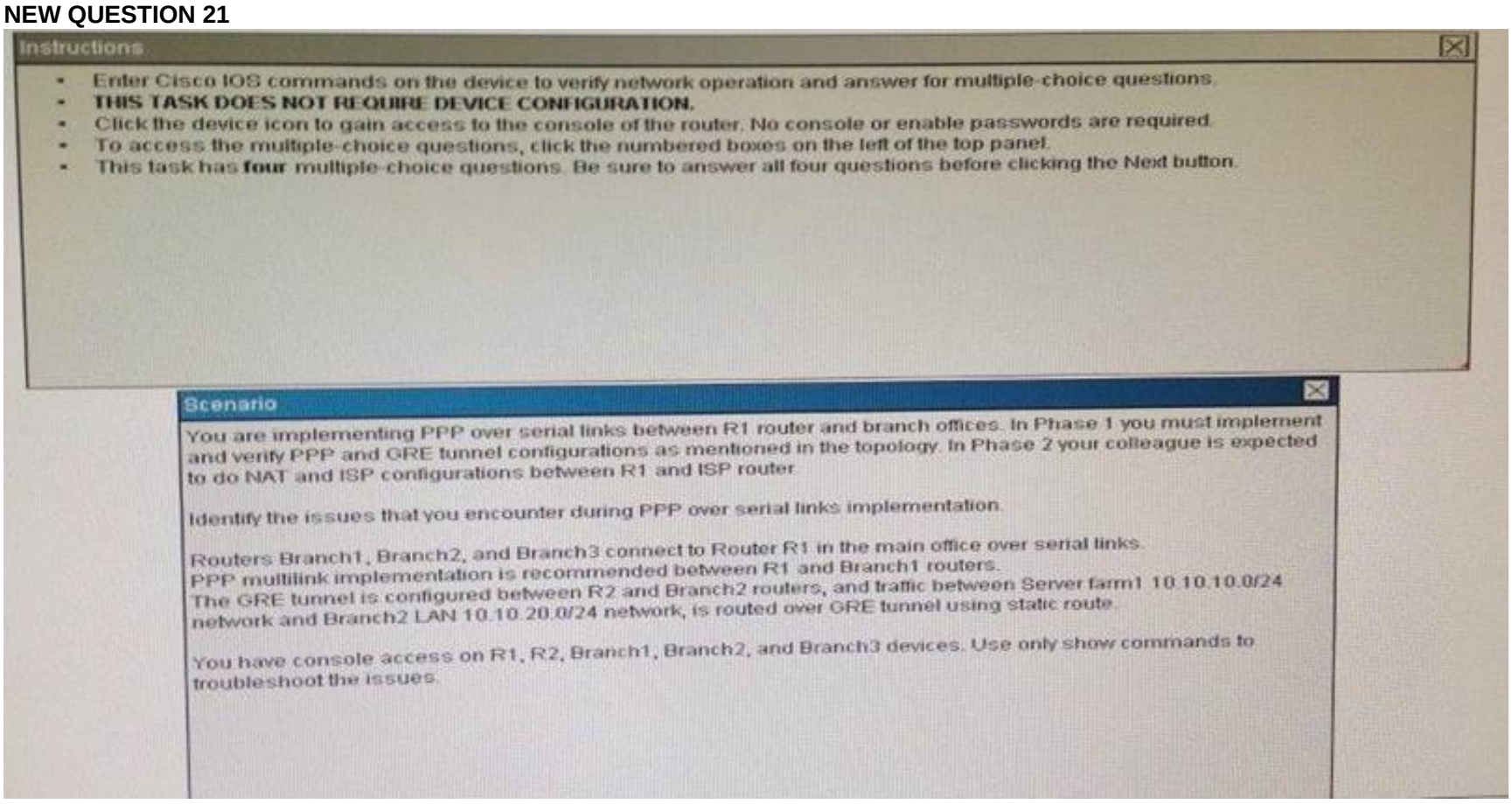

R2
R2#

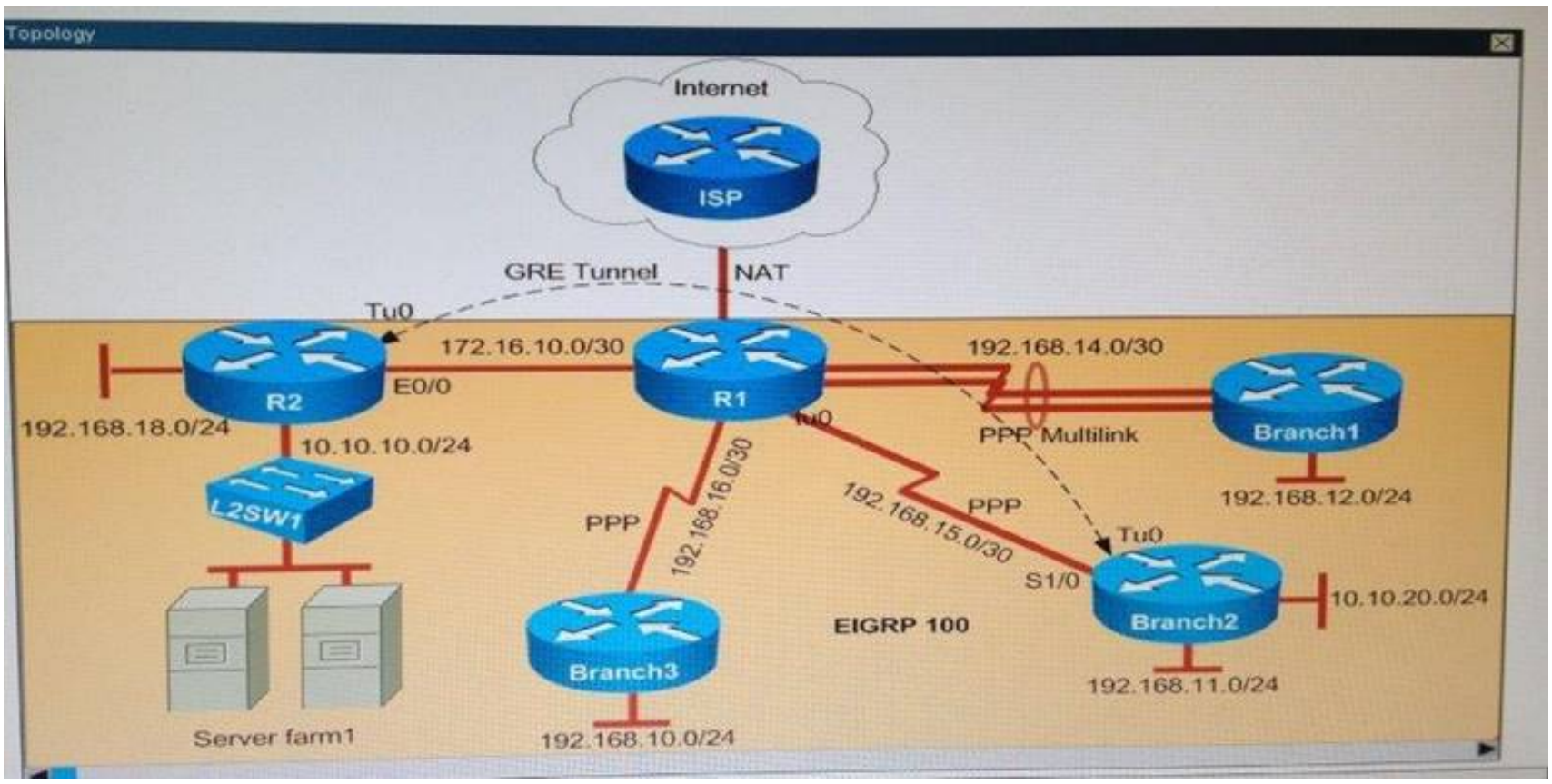
Why has the Branch3 router lost connectivity with R1?
Use only show commands to troubleshoot because usage of the debug command is restricted on the Branch3 and R1 routers.

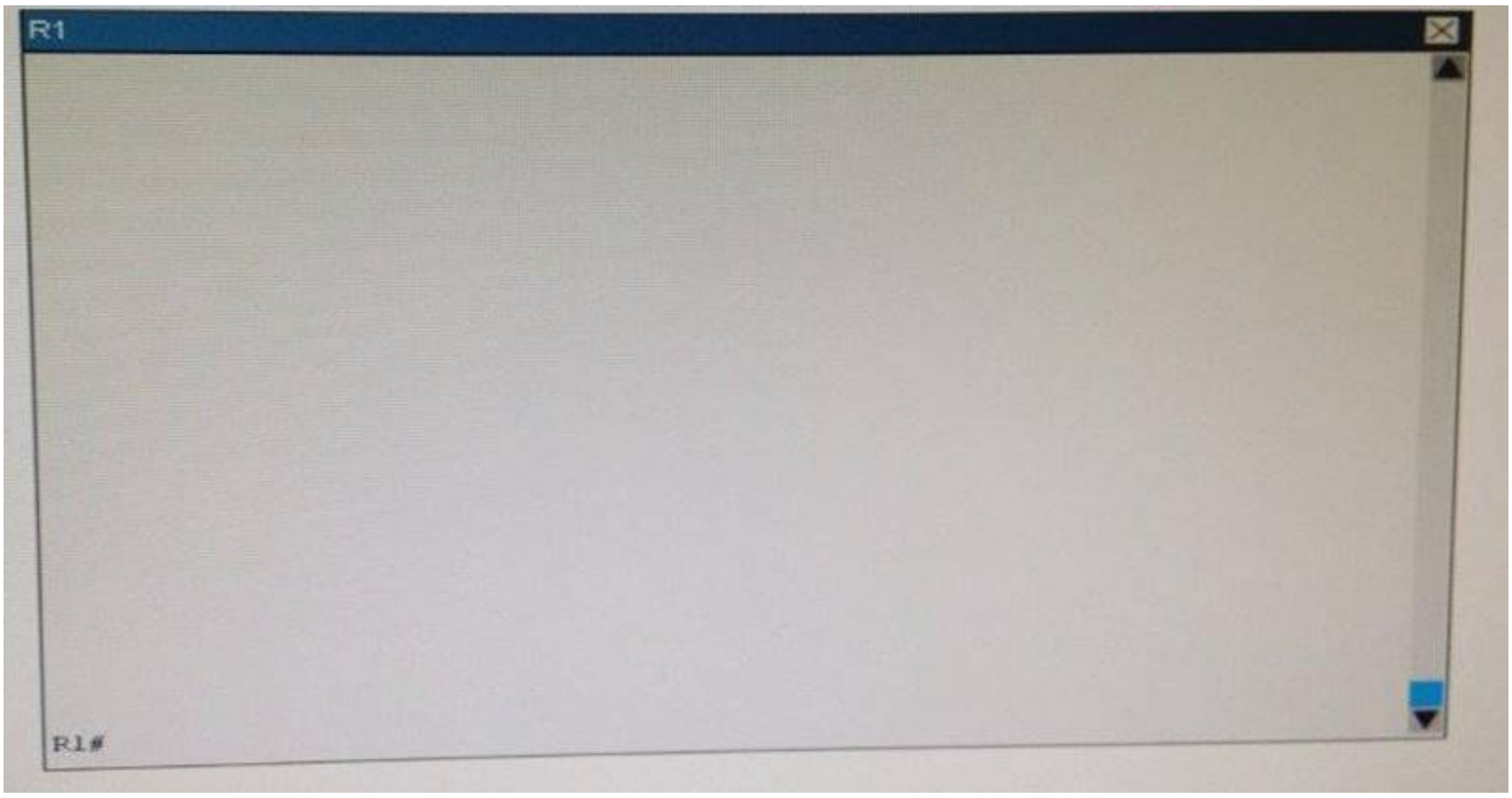
A. A PPP chap hostname mismatch is noticed between Branch3 and R1.
B. A PPP chap password mismatch is noticed between Branch3 and R1.
C. PPP encapsulation is not configured on Branch3.
D. The PPP chap hostname and PPP chap password commands are missing on the Branch3 router.

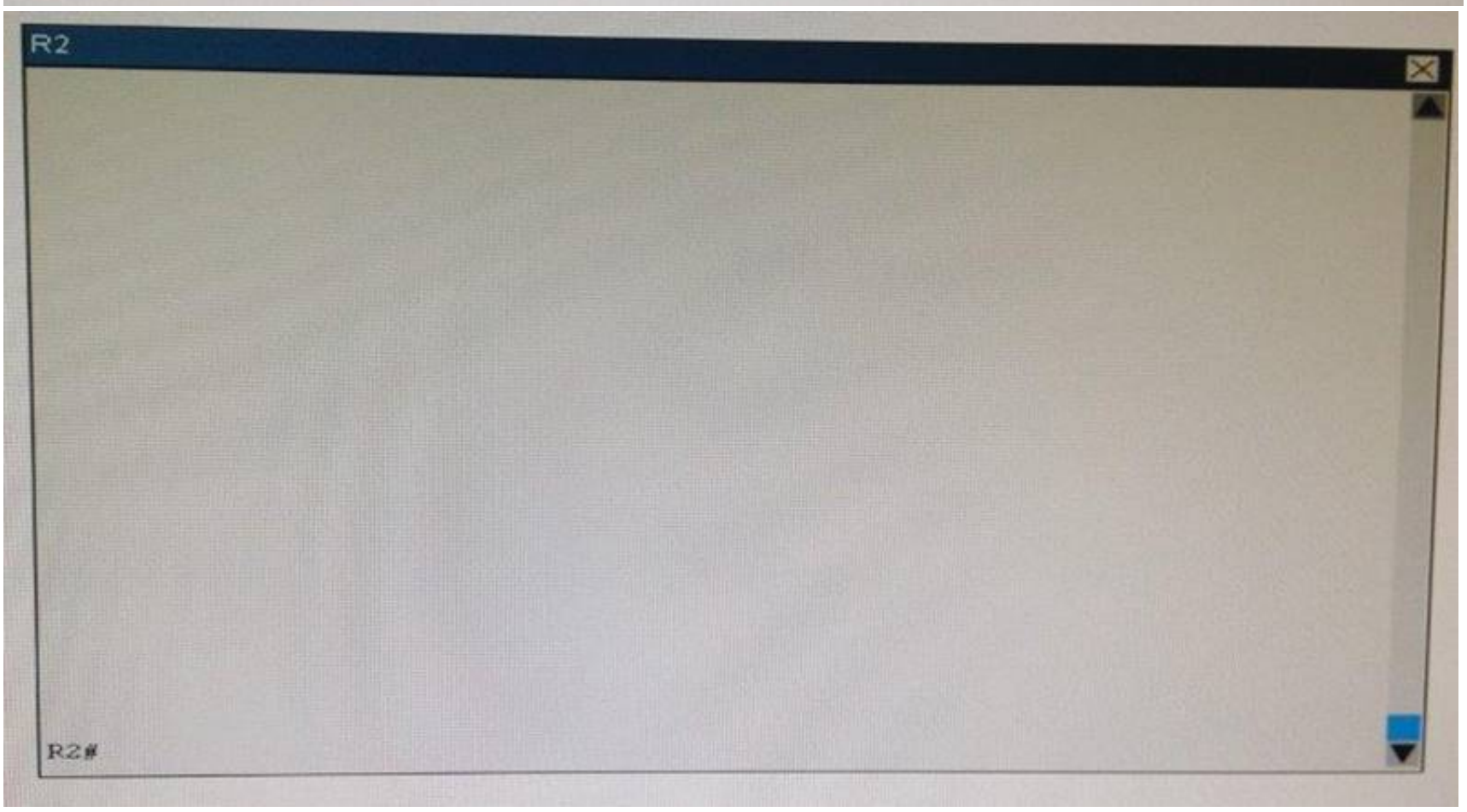
**Answer:** A

**NEW QUESTION 21**

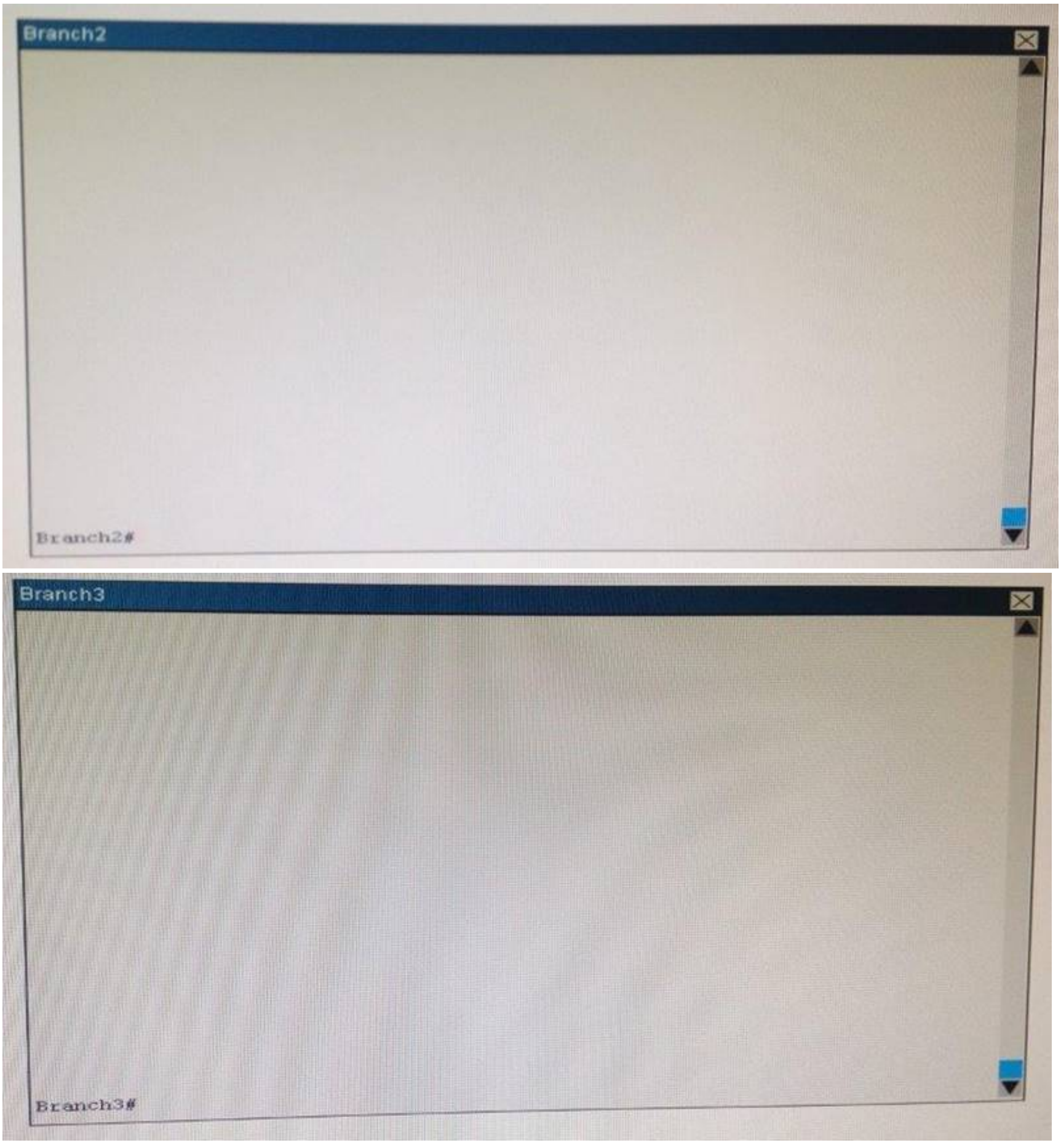



R1
R1#


R2
R2#


Branch1
Branch1#




Why did Branch1 router lose WAN connectivity with R1 router?

A. The IP address is misconfigured on PPP multilink interface on the Branch1 router.
B. The PPP multilink group is misconfigured on the £ranch1 serial interfaces.
C. The PPP multilink group is misconfigured on the R1 serial interfaces.
D. The Branch1 serial interfaces are placed in a shutdown condition.

**Answer:** A

**NEW QUESTION 23**
Which spanning-tree feature places a port immediately into a forwarding stated?

A. BPDU guard
B. PortFast
C. loop guard
D. UDLD
E. Uplink Fast

**Answer:** B

**Explanation:** PortFast causes a switch or trunk port to enter the spanning tree forwarding state immediately, bypassing the listening and learning states. You can use PortFast on switch or trunk ports that are connected to a single workstation, switch, or server to allow those devices to connect to the network immediately, instead of waiting for the port to transition from the listening and learning states to the forwarding state.

**NEW QUESTION 27**
Which two circumstances can cause collision domain issues on VLAN domain? (Choose two.)

A. duplex mismatches on Ethernet segments in the same VLAN
B. multiple errors on switchport interfaces
C. congestion on the switch inband path
D. a failing NIC in an end device
E. an overloaded shared segment

**Answer:** AE

**Explanation:** Collision Domains
A collision domain is an area of a single LAN where end stations contend for access to the network because all end stations are connected to a shared physical medium. If two connected devices transmit onto the media at the same time, a collision occurs. When a collision occurs, a JAM signal is sent on the network, indicating that a collision has occurred and that devices should ignore any fragmented data associated with the collision. Both sending devices back off sending their data for a random amount and then try again if the medium is free for transmission. Therefore, collisions effectively delay transmission of data, lowering the effective throughput available to a device. The more devices that are attached to a collision domain, the greater the chances of collisions; this results in lower bandwidth and performance for each device attached to the collision domain. Bridges and switches terminate the physical signal path of a collision domain, allowing you to segment separate collision domains, breaking them up into multiple smaller pieces to provide more bandwidth per user within the new collision domains formed.

**NEW QUESTION 30**
Which Cisco platform can verify ACLs?

A. Cisco Prime Infrastructure
B. Cisco Wireless LAN Controller
C. Cisco APIC-EM
D. Cisco IOS-XE

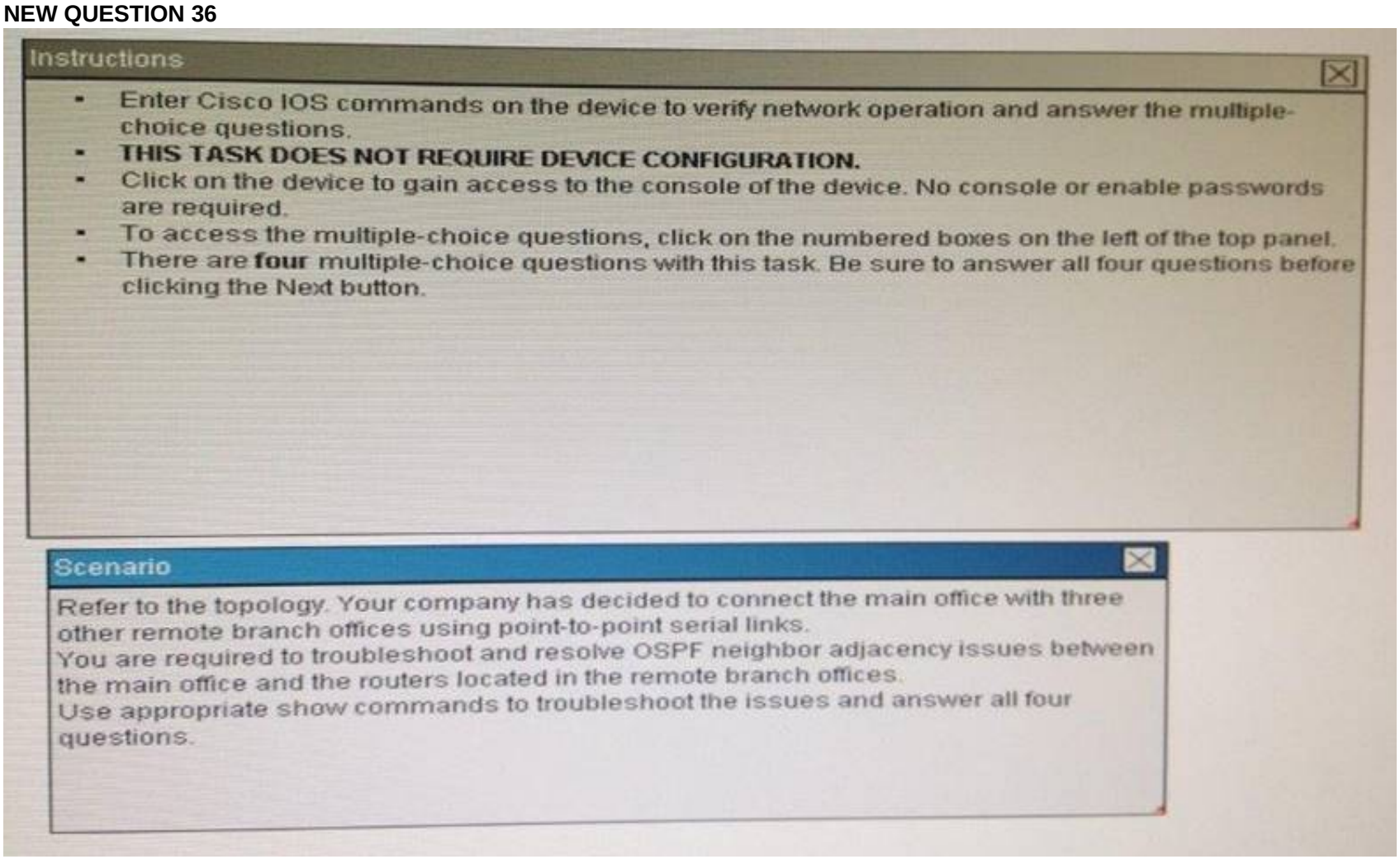
**Answer:** C

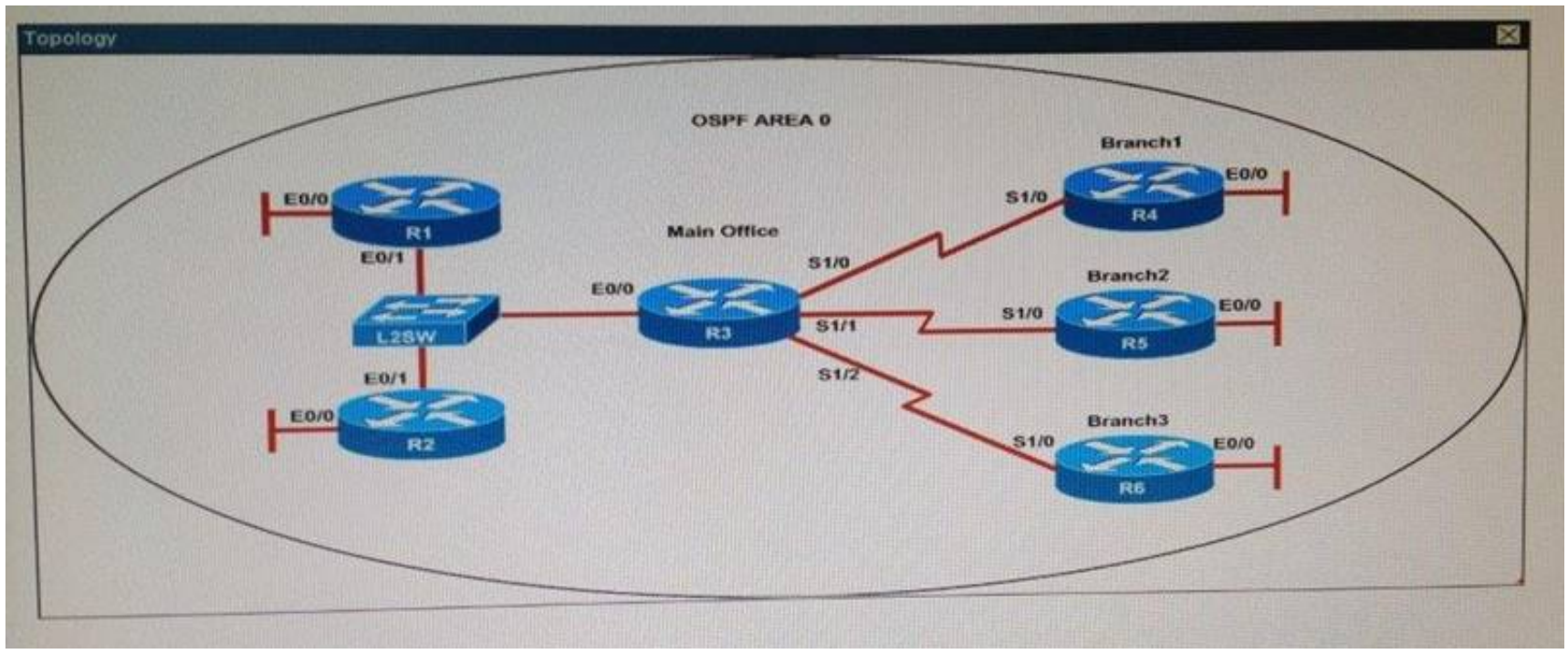
**NEW QUESTION 33**
Which configuration can you apply to enable encapsulation on a subinterface?

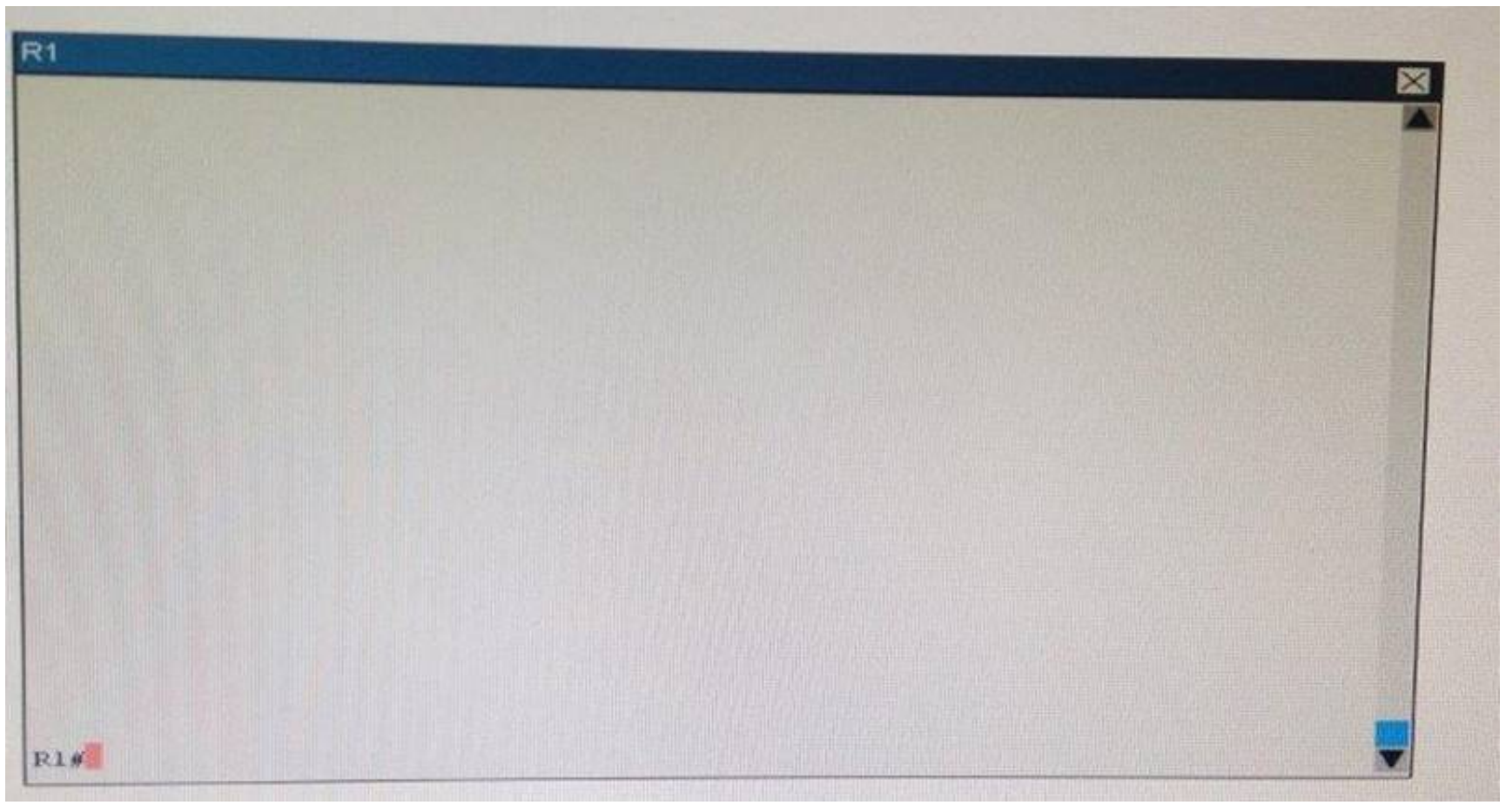
A. interface FastEthernet 0/0 encapsulation dot1Q 30ip address 10.1.1.30 255.255.255.0
B. interface FastEthernet 0/0.30ip address 10.1.1.30 255.255.255.0
C. interface FastEthernet 0/0.30 description subinterface vlan 30
D. interface FastEthernet 0/0.30 encapsulation dot1Q 30ip address 10.1.1.30 255.255.255.0

**Answer:** D

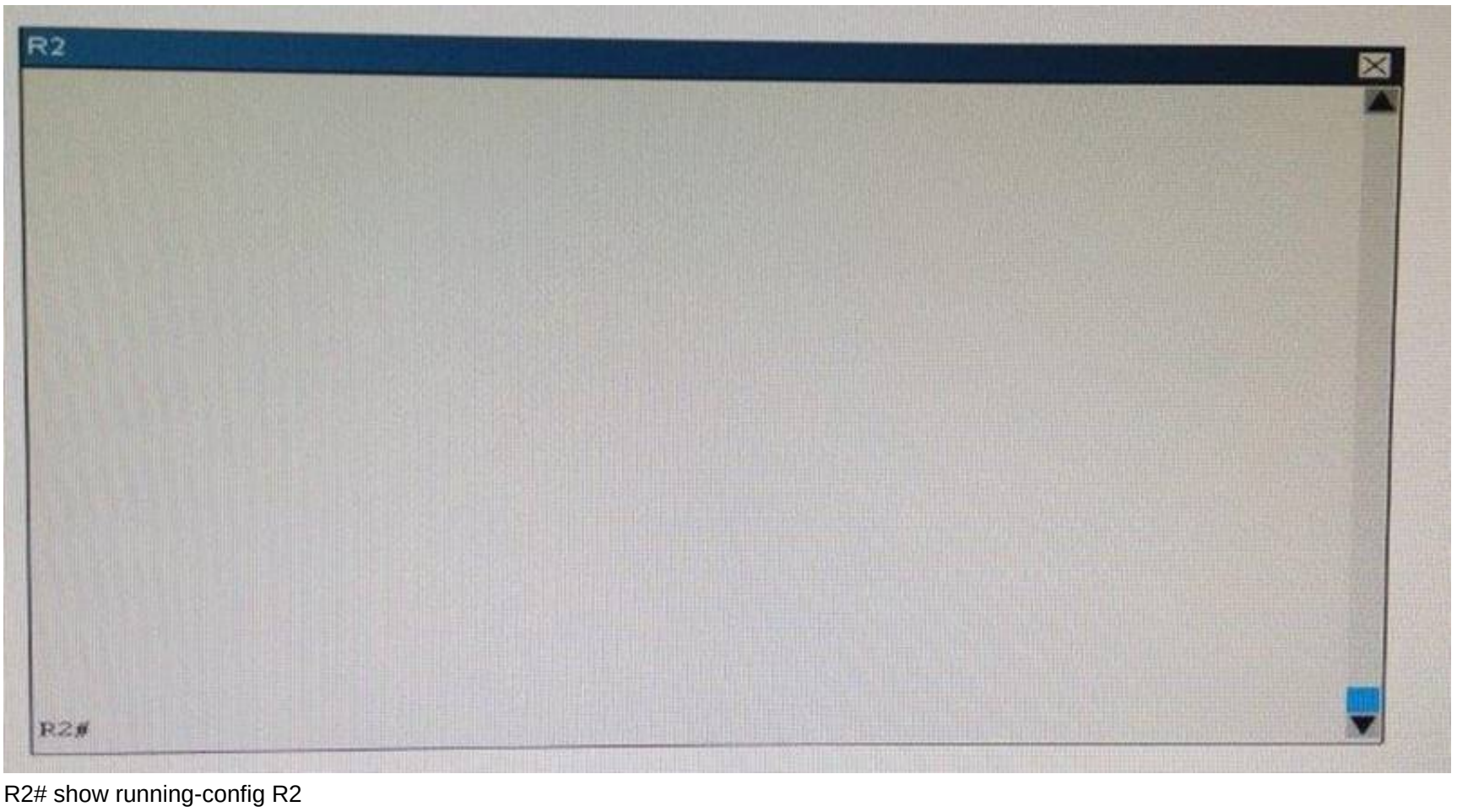
**NEW QUESTION 36**



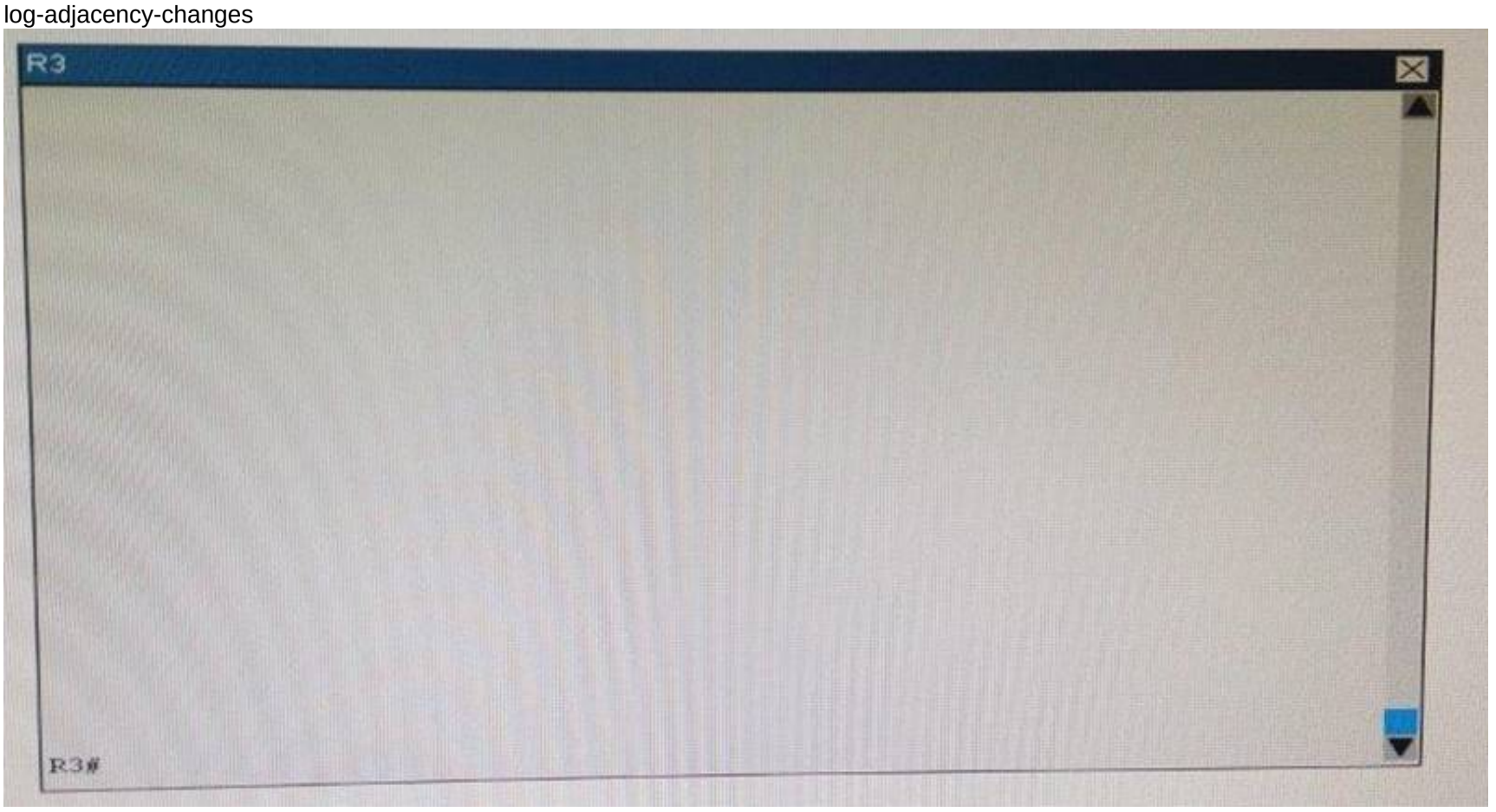



R1# show running-config interface Loopback0
description ***Loopback***
ip address 192.168.1.1 255.255.255.255
ip ospf 1 area 0
!
interface Ethernet0/0
description **Connected to R1-LAN** ip address 10.10.110.1 255.255.255.0
ip ospf 1 area 0
!
interface Ethernet0/1
description **Connected to L2SW**
ip address 10.10.230.1 255.255.255.0
ip ospf hello-interval 25 ip ospf 1 area 0
!
router ospf 1
log-adjacency-changes

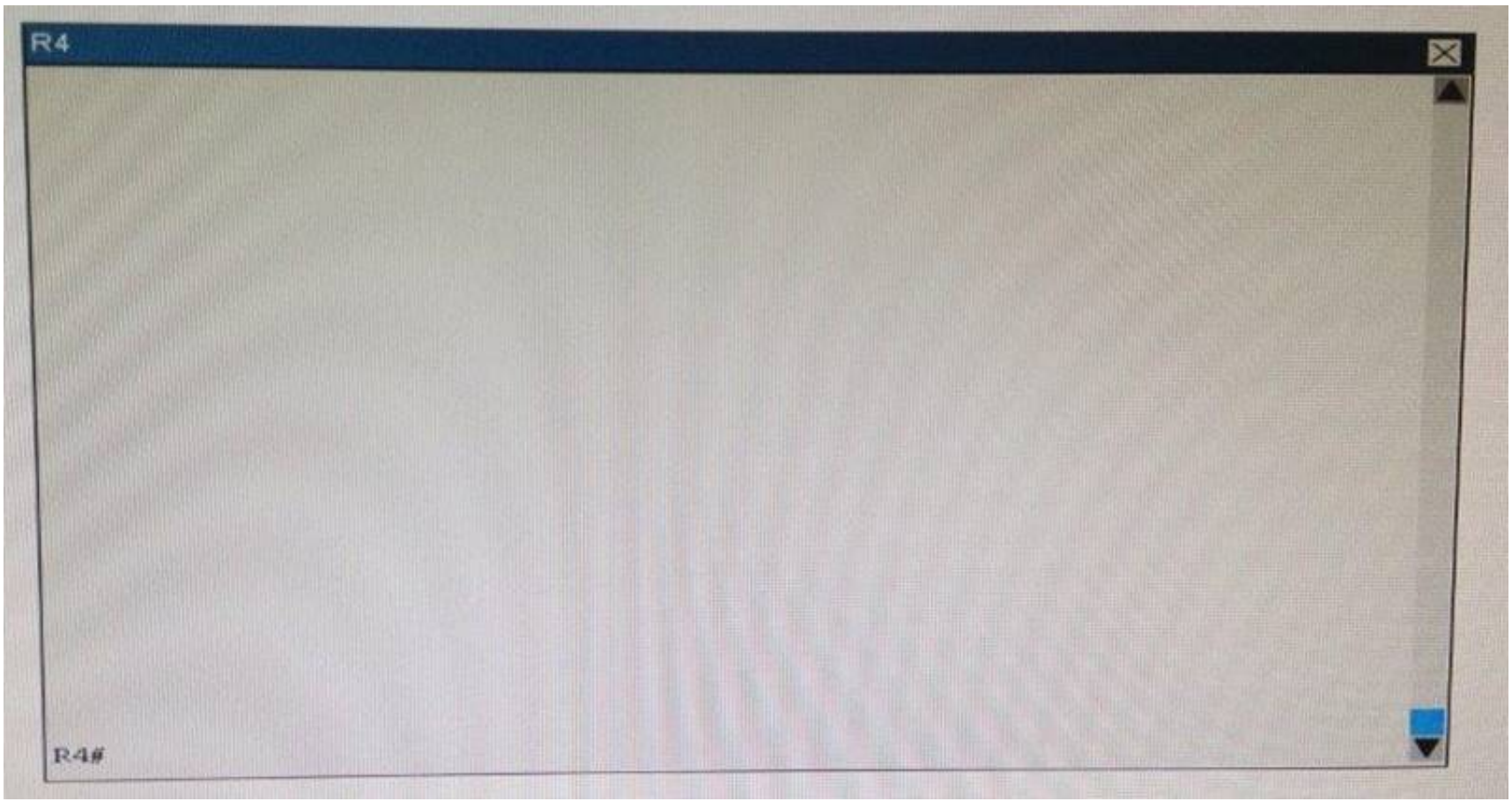



R2# show running-config R2
!
interface Loopback0 description **Loopback**
ip address 192.168.2.2 255.255.255.255
ip ospf 2 area 0
!
interface Ethernet0/0
description **Connected to R2-LAN**
ip address 10.10.120.1 255.255.255.0
ip ospf 2 area 0
!
interface Ethernet0/1
description **Connected to L2SW**
ip address 10.10.230.2 255.255.255.0
ip ospf 2 area 0
!
router ospf 2
log-adjacency-changes

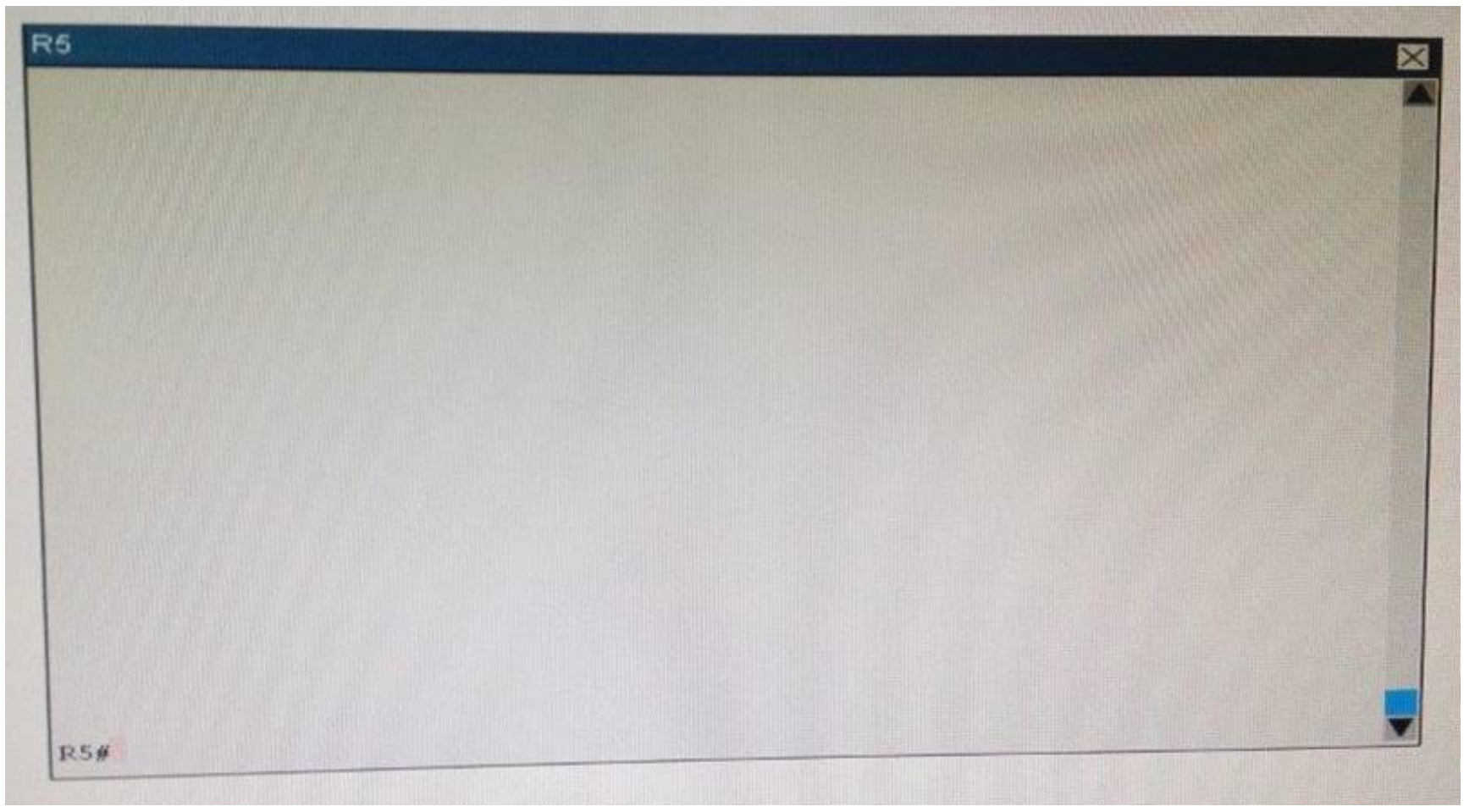



R3# show running-config R3
username R6 password CISCO36
!
interface Loopback0 description **Loopback**
ip address 192.168.3.3 255.255.255.255
ip ospf 3 area 0
!
interface Ethernet0/0
description **Connected to L2SW**
ip address 10.10.230.3 255.255.255.0
ip ospf 3 area 0
!
interface Serial1/0

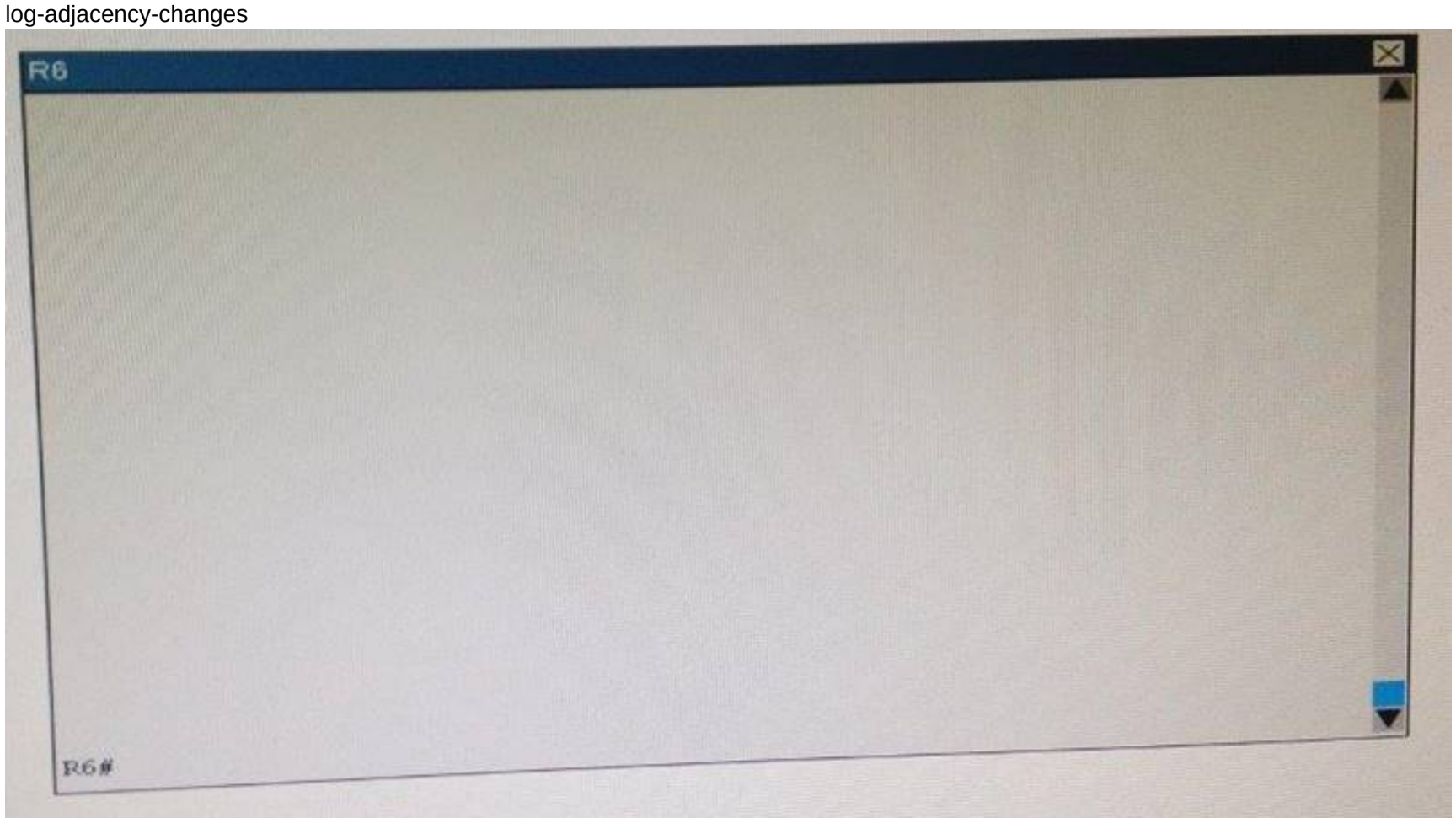
description **Connected to R4-Branch1 office** ip address 10.10.240.1 255.255.255.252
encapsulation ppp ip ospf 3 area 0
!
interface Serial1/1
description **Connected to R5-Branch2 office** ip address 10.10.240.5 255.255.255.252
encapsulation ppp
ip ospf hello-interval 50 ip ospf 3 area 0
!
interface 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
!
router ospf 3
router-id 192.168.3.3
!




R4# show running-config R4
!
interface Loopback0 description **Loopback**
ip address 192.168.4.4 255.255.255.255
ip ospf 4 area 2
!
interface Ethernet0/0
ip address 172.16.113.1 255.255.255.0
ip ospf 4 area 2
!
interface Serial1/0
description **Connected to R3-Main Branch office** ip address 10.10.240.2 255.255.255.252
encapsulation ppp ip ospf 4 area 2
!
router ospf 4
log-adjacency-changes

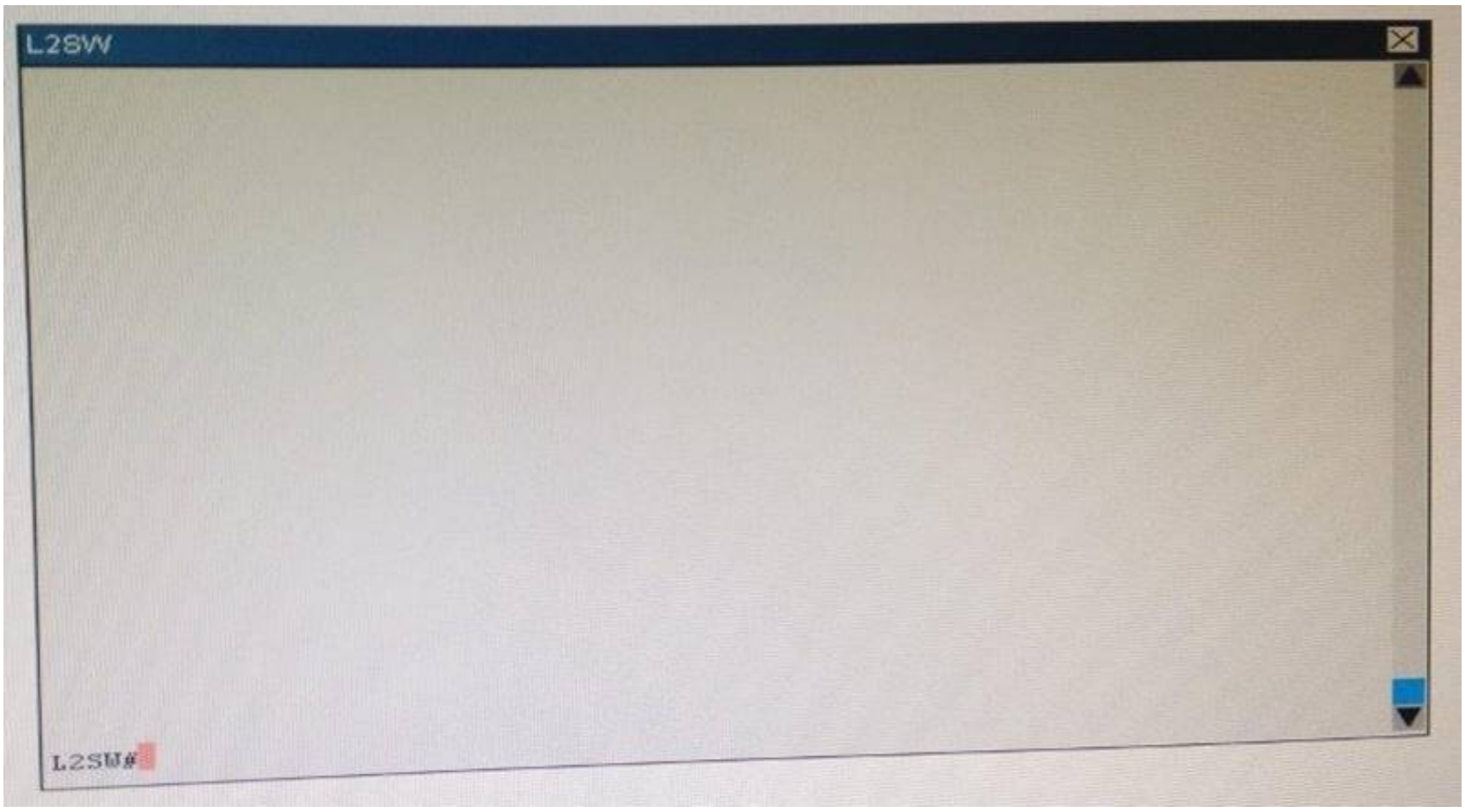



R5# show running-config R5
!
interface Loopback0 description **Loopback**
ip address 192.168.5.5 255.255.255.255
ip ospf 5 area 0
!
interface Ethernet0/0
ip address 172.16.114.1 255.255.255.0
ip ospf 5 area 0
!
interface Serial1/0
description **Connected to R3-Main Branch office** ip address 10.10.240.6 255.255.255.252
encapsulation ppp ip ospf 5 area 0
!
router ospf 5
log-adjacency-changes




R6# show running-config R6
username R3 password CISCO36
!
interface Loopback0 description **Loopback**
ip address 192.168.6.6 255.255.255.255
ip ospf 6 area 0
!
interface Ethernet0/0
ip address 172.16.115.1 255.255.255.0
ip ospf 6 area 0
!
interface Serial1/0
description **Connected to R3-Main Branch office** ip address 10.10.240.10 255.255.255.252

encapsulation ppp ip ospf 6 area 0
ppp authentication chap
!
router ospf 6
router-id 192.168.3.3
!




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

**NEW QUESTION 39**
Which statement about QoS default behavior is true?

A. Ports are untrusted by default.
B. VoIP traffic is passed without being tagged.
C. Video traffic is passed with a well-known DSCP value of 46.
D. Packets are classified internally with an environment.
E. Packets that arrive with a tag are untagged at the edge of an administrative domain.

**Answer:** E

**Explanation:** Frames received from users in the administratively-defined VLANs are classified or tagged for transmission to other devices. Based on rules that you define, a unique identifier (the tag) is inserted in each frame header before it is forwarded. The tag is examined and understood by each device before any broadcasts or transmissions to other switches, routers, or end stations. When the frame reaches the last switch or router, the tag is removed before the frame is sent to the target end station. VLANs that are assigned on trunk or access ports without identification or a tag are called native or untagged frames. For IEEE 802.1Q frames with tag information, the priority value from the header frame is used. For native frames, the default priority of the input port is used.
Each port on the switch has a single receive queue buffer (the ingress port) for incoming traffic. When an untagged frame arrives, it is assigned the value of the port as its port default priority. You assign this value by using the CLI or CMS. A tagged frame continues to use its assigned CoS value when it passes through the ingress port.

**NEW QUESTION 40**
Which statement about switch access ports is true?

A. They drop packets with 802.1Q tags.
B. A VLAN must be assigned to an access port before it is created.
C. They can receive traffic from more than one VLAN with no voice support
D. By default, they carry traffic for VLAN 10.

**Answer:** A

**Explanation:** "If an access port receives a packet with an 802.1Q tag in the header other than the access VLAN value, that port drops the packet without learning its MAC source address."

**NEW QUESTION 45**
Which two pieces of information are provided by the show controllers serial 0 command? (Choose two.)

A. the type of cable that is connected to the interface.
B. The uptime of the interface
C. the status of the physical layer of the interface
D. the full configuration of the interface
E. the interface's duplex settings

**Answer:** AC

**Explanation:** The show controller command provides hardware-related information useful to troubleshoot and diagnose issues with Cisco router interfaces. The Cisco 12000 Series uses a distributed architecture with a central command-line interface (CLI) at the Gigabit Route Processor (GRP) and a local CLI at each line card.

**NEW QUESTION 49**
Which protocol provides a method of sharing VLAN configuration information between two Cisco switches?

A. STP
B. VTP
C. 802.1Q
D. RSTP

**Answer:** B

**Explanation:** Understanding VLAN Trunk Protocol (VTP) http://www.cisco.com/en/US/tech/tk389/tk689/technologies_tech_note09186a0080094c52. shtml
Introduction
VLAN Trunk Protocol (VTP) reduces administration in a switched network. When you configure a new VLAN on one VTP server, the VLAN is distributed through all switches in the domain. This reduces the need to configure the same VLAN everywhere. VTP is a Cisco-proprietary protocol that is available on most of the Cisco Catalyst series products.

**NEW QUESTION 52**
Which two of these statements regarding RSTP are correct? (Choose two.)

A. RSTP cannot operate with PVST+.
B. RSTP defines new port roles.
C. RSTP defines no new port states.
D. RSTP is a proprietary implementation of IEEE 802.1D STP.
E. RSTP is compatible with the original IEEE 802.1D STP.

**Answer:** BE

**Explanation:** http://www.cisco.com/en/US/tech/tk389/tk621/technologies_white_paper09186a0080094cf a.shtml
Port Roles
The role is now a variable assigned to a given port. The root port and designated port roles remain, while the blocking port role is split into the backup and alternate port roles. The Spanning Tree Algorithm (STA) determines the role of a port based on Bridge Protocol Data Units (BPDUs). In order to simplify matters, the thing to remember about a BPDU is there is always a method to compare any two of them and decide whether one is more useful than the other. This is based on the value stored in the BPDU and occasionally on the port on which they are received. This considered, the information in this section explains practical approaches to port roles.
Compatibility with 802.1D
RSTP is able to interoperate with legacy STP protocols. However, it is important to note that the inherent fast convergence benefits of 802.1w are lost when it interacts with legacy bridges.

**NEW QUESTION 57**
What is one benefit of PVST+?

A. PVST+ supports Layer 3 load balancing without loops.
B. PVST+ reduces the CPU cycles for all the switches in the network.
C. PVST+ allows the root switch location to be optimized per VLAN.
D. PVST+ automatically selects the root bridge location, to provide optimized bandwidth usage.

**Answer:** C

**Explanation:** Per VLAN Spanning Tree (PVST)
Introduction http://www.cisco.com/en/US/tech/tk389/tk621/tk846/tsd_technology_support_sub- protocol_home.html
Per VLAN Spanning Tree (PVST) maintains a spanning tree instance for each VLAN configured in the network. This means a switch can be the root bridge of a VLAN while another switch can be the root bridge of other VLANs in a common topology. For example, Switch 1 can be the root bridge for Voice data while Switch 2 can be the root bridge for Video data. If designed correctly, it can optimize the network traffic.
http://www.ciscopress.com/articles/article.asp?p=102157&seqNum=4

**NEW QUESTION 58**
What are two characteristics of a switch that is configured as a VTP client? (Choose two.)

A. If a switch that is configured to operate in client mode cannot access a VTP server, then the switch reverts to transparent mode.
B. On switches that are configured to operate in client mode, VLANs can be created, deleted, or renamed locally.
C. The local VLAN configuration is updated only when an update that has a higher configuration revision number is received.
D. VTP advertisements are not forwarded to neighboring switches that are configured in VTP transparent mode.
E. VTP client is the default VTP mode.

F. When switches in VTP client mode are rebooted, they send a VTP advertisement request to the VTP servers.

**Answer:** CF

**Explanation:** VLAN Trunking Protocol (VTP) http://archive.networknewz.com/2004/0317.html
VTP Modes
Server Mode Once VTP is configured on a Cisco switch, the default mode used is Server Mode. In any given VTP management domain, at least one switch must be in Server Mode. When in Server Mode, a switch can be used to add, delete, and modify VLANs, and this information will be passed to all other switches in the VTP management domain.
Client Mode When a switch is configured to use VTP Client Mode, it is simply the recipient of any VLANs added, deleted, or modified by a switch in Server Mode within the same management domain. A switch in VTP client mode cannot make any changes to VLAN information.
Transparent Mode A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to other switches in the VTP management domain, but will not actually process the contents of these messages. When individual VLANs are added, deleted, or modified on a switch running in transparent mode, the changes are local to that particular switch only, and are not passed to other switches in the VTP management domain.

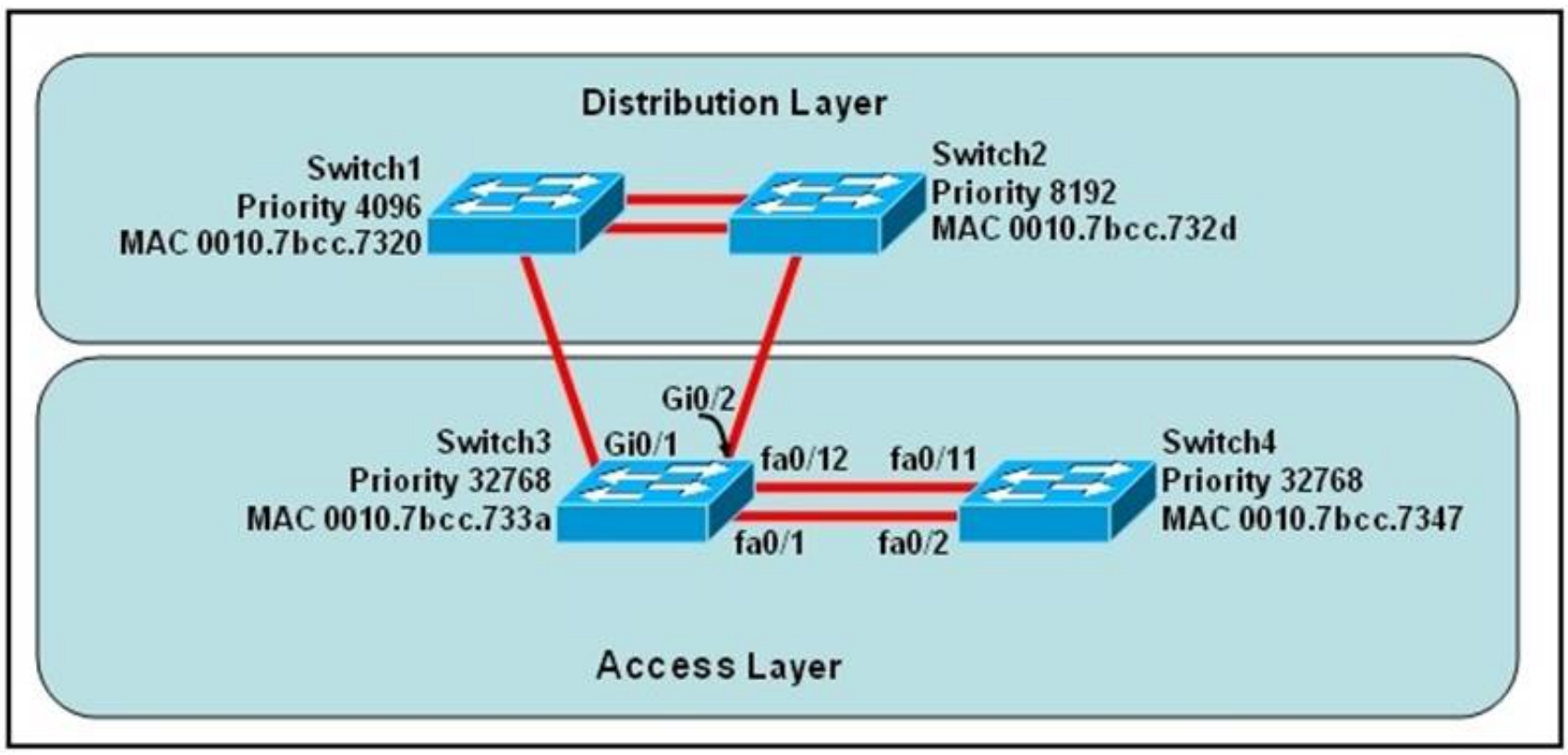
**NEW QUESTION 62**
Which three statements about RSTP are true? (Choose three.)

A. RSTP significantly reduces topology reconverging time after a link failure.
B. RSTP expands the STP port roles by adding the alternate and backup roles.
C. RSTP port states are blocking, discarding, learning, or forwarding.
D. RSTP provides a faster transition to the forwarding state on point-to-point links than STP does.
E. RSTP also uses the STP proposal-agreement sequence.
F. RSTP uses the same timer-based process as STP on point-to-point links.

**Answer:** ABD

**Explanation:** http://www.cisco.com/en/US/tech/tk389/tk621/technologies_white_paper09186a0080094cf a.shtml
Convergence
Cisco enhanced the original 802.1D specification with features such as Uplink Fast,
Backbone Fast, and Port Fast to speed up the convergence time of a bridged network. The drawback is that these mechanisms are proprietary and need additional configuration.
Alternate and Backup Port Roles
These two port roles correspond to the blocking state of 802.1D. A blocked port is defined as not being the designated or root port. A blocked port receives a more useful BPDU than the one it sends out on its segment.
Remember that a port absolutely needs to receive BPDUs in order to stay blocked. RSTP introduces these two roles for this purpose.
Rapid Transition to Forwarding State
Rapid transition is the most important feature introduced by 802.1w. The legacy STA passively waited for the network to converge before it turned a port into the forwarding state. The achievement of faster convergence was a matter of tuning the conservative default parameters (forward delay and max_age timers) and often put the stability of the network at stake. The new rapid STP is able to actively confirm that a port can safely transition to the forwarding state without having to rely on any timer configuration. There is now a real feedback mechanism that takes place between RSTP-compliant bridges. In order to achieve fast convergence on a port, the protocol relies upon two new variables: edge ports and link type.

**NEW QUESTION 67**
Refer to the exhibit.




At the end of an RSTP election process, which access layer switch port will assume the discarding role?

A. Switch3, port fa0/1
B. Switch3, port fa0/12
C. Switch4, port fa0/11
D. Switch4, port fa0/2
E. Switch3, port Gi0/1
F. Switch3, port Gi0/2

**Answer:** C

**Explanation:** In this question, we only care about the Access Layer switches (Switch3 & 4). Switch 3 has a lower bridge ID than Switch 4 (because the MAC of Switch3 is smaller than that of Switch4) so both ports of Switch3 will be in forwarding state. The alternative port will surely belong to Switch4.
Switch4 will need to block one of its ports to avoid a bridging loop between the two switches. But how does Switch4 select its blocked port? Well, the answer is based on the BPDUs it receives from Switch3. A BPDU is superior than another if it has:
1. A lower Root Bridge ID2. A lower path cost to the Root3. A lower Sending Bridge ID4. A lower Sending Port ID
These four parameters are examined in order. In this specific case, all the BPDUs sent by Switch3 have the same Root Bridge ID, the same path cost to the Root and the same Sending Bridge ID. The only parameter left to select the best one is the Sending Port ID (Port ID = port priority + port index). In this case the port priorities are equal because they use the default value, so Switch4 will compare port index values, which are unique to each port on the switch, and because Fa0/12 is inferior to Fa0/1, Switch4 will select the port connected with Fa0/1 (of Switch3) as its root port and block the other port -> Port fa0/11 of Switch4 will be blocked (discarding role)

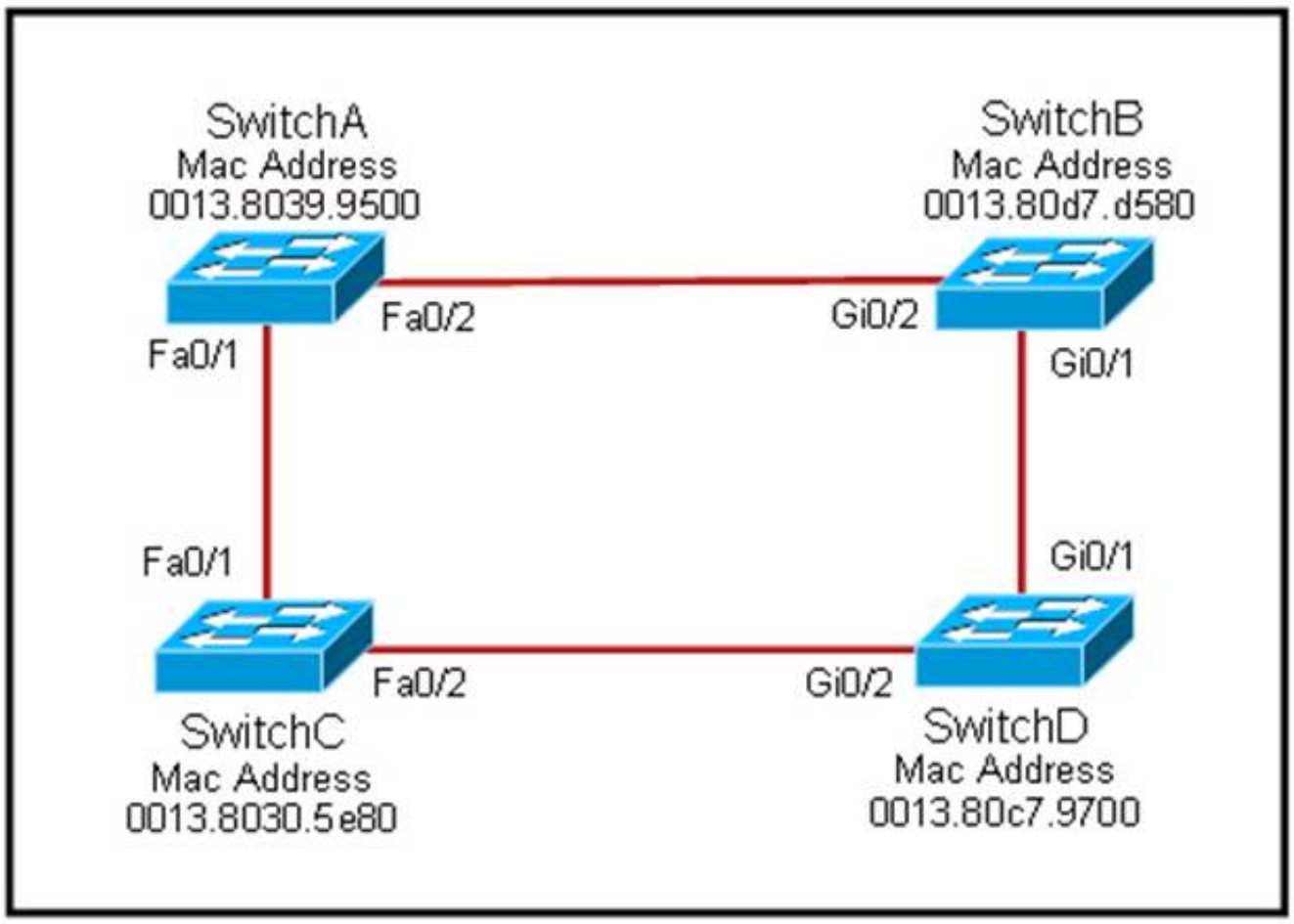
**NEW QUESTION 70**
At which layer of the OSI model is RSTP used to prevent loops?

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

**Answer:** B

**Explanation:** RSTP and STP operate on switches and are based on the exchange of Bridge Protocol Data Units (BPDUs) between switches. One of the most important fields in BPDUs is the Bridge Priority in which the MAC address is used to elect the Root Bridge ,
RSTP operates at Layer 2. http://www.cisco.com/en/US/tech/tk389/tk621/technologies_white_paper09186a0080094cf a.shtml

**NEW QUESTION 75**
Refer to the exhibit.




Each of these four switches has been configured with a hostname, as well as being configured to run RSTP. No other configuration changes have been made. Which three of these show the correct RSTP port roles for the indicated switches and interfaces? (Choose three.)

A. SwitchA, Fa0/2, designated
B. SwitchA, Fa0/1, root
C. SwitchB, Gi0/2, root
D. SwitchB, Gi0/1, designated
E. SwitchC, Fa0/2, root
F. SwitchD, Gi0/2, root

**Answer:** ABF

**Explanation:** The question says "no other configuration changes have been made" so we can understand these switches have the same bridge priority. SwitchC has lowest MAC address so, it will become root bridge and 2 of its ports (Fa0/1 & Fa0/2) will be designated
ports (DP). Because SwitchC is the root bridge the 2 ports nearest SwitchC on SwitchA (Fa0/1) and SwitchD (Gi0/2) will be root ports (RP) -> B and F are correct.
SwitchB must have a root port so which port will it choose? To answer this question we need to know about STP cost and port cost.
In general, "cost" is calculated based on bandwidth of the link. The higher the bandwidth on a link, the lower the value of its cost. Below are the cost values you should memorize:
Link speed Cost SwitchB will choose the interface with lower cost to the root bridge as the root port so we must calculate the cost on interface Gi0/1 & Gi0/2 of SwitchB to the root bridge. This can be calculated from the "cost to the root bridge" of each switch because a switch always advertises its cost to the root bridge in its BPDU. The receiving switch will add its local port cost value to the cost in the BPDU.
SwitchC advertises its cost to the root bridge with a value of 0. Switch D adds 4 (the cost value of 1Gbps link) and advertises this value (4) to SwitchB. SwitchB adds another 4 and learns that it can reach SwitchC via Gi0/1 port with a total cost of 8. The same process happens for SwitchA and SwitchB learns that it can reach SwitchC via Gi0/2 with a total cost of 23 -> Switch B chooses Gi0/1 as its root port.

Now our last task is to identify the port roles of the ports between SwitchA & SwitchB. It is rather easy as the MAC address of SwitchA is lower than that of SwitchB so Fa0/2 of SwitchA will be designated port while Gi0/2 of SwitchB will be alternative port.

**NEW QUESTION 77**
Refer to the exhibit.

```
Switch# show spanning-tree interface fastethernet0/10
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 802.1dSpanning 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:** These four parameters are examined in order to make root bridge , root port , designated port. Other switch has lowest Sending Bridge ID or Sending Port ID so vlan 2 is not the root port.
1. A lower Root Bridge ID2. A lower path cost to the Root3. A lower Sending Bridge ID4. A lower Sending Port ID

Topic 3, Routing Technologies

**NEW QUESTION 82**
Which statement describes an EIGRP feasible successor route?

A. A primary route, added to the routing table
B. A backup route, added to the routing table
C. A primary route, added to the topology table
D. A backup route, added to the topology table

**Answer:** D

**Explanation:** Two terms that appear often in the EIGRP world are "successor" and "feasible successor". A successor is the route with the best metric to reach a destination. That route is stored in the routing table. A feasible successor is a backup path to reach that same destination that can be used immediately if the successor route fails. These backup routes are stored in the topology table.
Reference: http://study-ccna.com/eigrp-overview

**NEW QUESTION 86**
Refer to the exhibit.

```
R1# show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        192.168.1.2     YES manual up                    up

FastEthernet1/0        172.16.4.1      YES manual up                    up

Serial2/0              192.168.10.2    YES manual up                    up

Serial3/0              unassigned      YES unset  administratively down down

Loopback0              1.1.1.1         YES manual up                    up
```

If the router R1 returns the given output and has not had its router ID set manually, what address will EIGRP use as its router ID?

A. 192.168.1.2
B. 172.16.4.1
C. 192.168.10.2
D. 1.1.1.1

**Answer:** D

**Explanation:** The router ID is selected according to the following rules:
? manual configuration
? highest up/up loopback
? highest up/up physical interface

**NEW QUESTION 88**
Which two statements about the OSPF Router ID are true? (Choose two.)

A. It identifies the source of a Type 1 LSA.
B. It should be the same on all routers in an OSPF routing instance.
C. By default, the lowest IP address on the router becomes the OSPF Router ID.
D. The router automatically chooses the IP address of a loopback as the OSPF Router ID.
E. It is created using the MAC Address of the loopback interface.

**Answer:** AD

**Explanation:** From the output of the “show ip ospf database”:

OSPF Router with ID (10.0.0.120) (Process ID 1)

Next, who are the other routers in our area?

Router Link States (Area 1)

| Link ID | ADV Router | Age | Seq# | Checksum | Link count |
|---|---|---|---|---|---|
| 10.0.0.111 | 10.0.0.111 | 600 | 0x8000023A | 0x0092B3 | 1 |
| 10.0.0.112 | 10.0.0.112 | 1246 | 0x80000234 | 0x009CAC | 1 |
| 10.0.0.113 | 10.0.0.113 | 148 | 0x8000022C | 0x004399 | 3 |
| 10.0.0.120 | 10.0.0.120 | 152 | 0x80000240 | 0x0046CB | 1 |

This tells us there are four routers in Area 1. The router with RID 10.0.0.113 has 3 links in Area 1, every one else has only 1 link. Also the router will chose the highest loopback interface as its OSPF router ID (if available).

**NEW QUESTION 89**
Refer to the exhibit.

```
AcmeB# show ip route
          !    !
Gateway of last resort is not set
     192 168.3.0/28 is variably subnetted, 6 subnets
D        192.168.3.64 [90/20625671] via 192.168.0.6, 03:17:05, Serial0/01
D        192.168.3.80 [90/20625671] via 192.168.0.6, 03:17:05, Serial0/1
D        192.168.3.32 [90/20625671] via 192.168.9.2, 03:17:05, Serial0/0
D        192.168.3.48 [90/20625671] via 192.168.9.2, 03:17:05, Serial0/0
D        192.168.3.0 [90/30830] via 192.168.2.10, 03:17:05, FastEthernet0/0
D        192.168.3.16 [90/175250] via 192.168.2.10, 03:17:06, FastEthernet0/0
    192.168.9.0/30 is subnetted, 1 subnets
C      192.168.9.0 is directly connected, Serial0/0
     192.168.0.0/30 is subnetted, 1 subnets
C    192.168.0.4 is directly connected, Serial0/1
    192.168.2.0/30 is subnetted, 1 subnets
C     192.168.2.8 is directly connected, FastEthernet0/0
AcmeB#
```

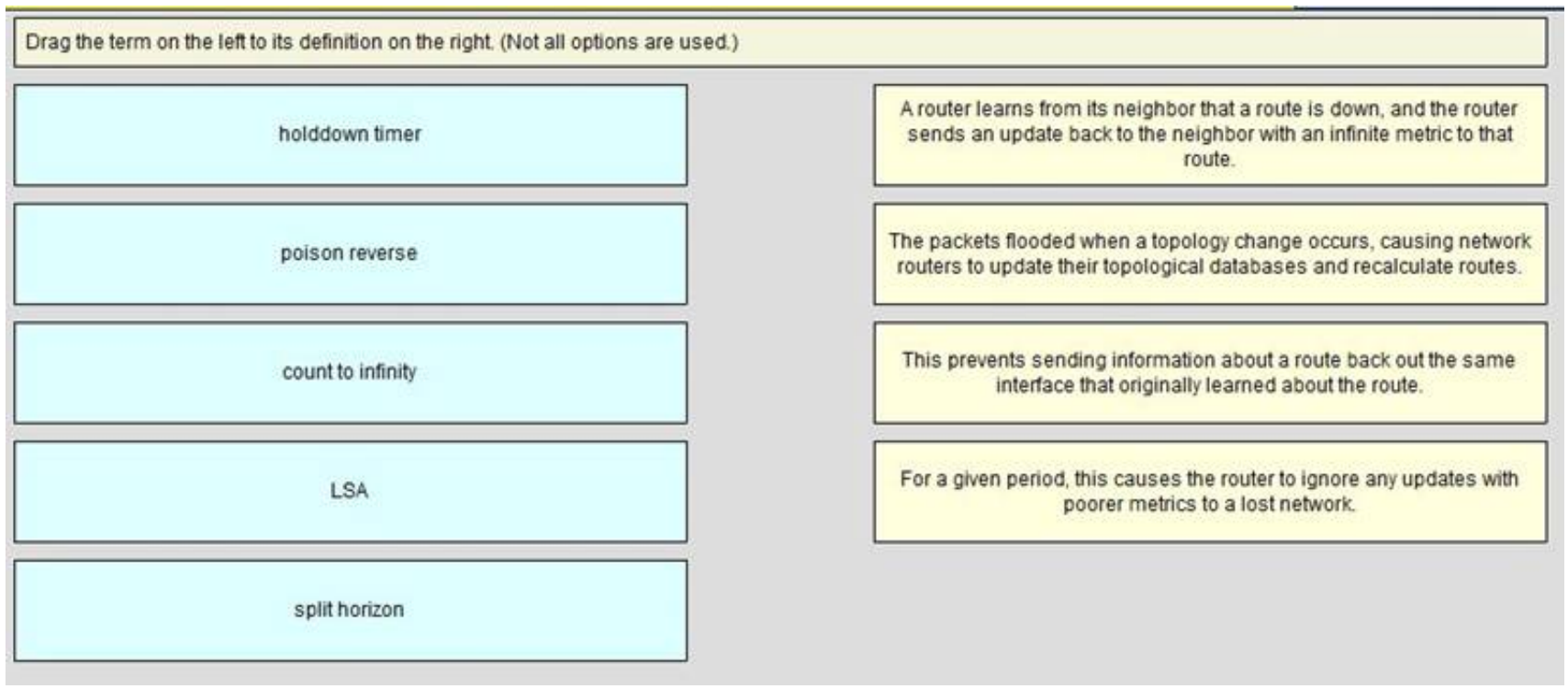
A packet with a source IP address of 192.168.2.4 and a destination IP address of 10.1.1.4 arrives at the AcmeB router. What action does the router take?

A. forwards the received packet out the Serial0/0 interface
B. forwards a packet containing an EIGRP advertisement out the Serial0/1 interface
C. forwards a packet containing an ICMP message out the FastEthemet0/0 interface
D. forwards a packet containing an ARP request out the FastEthemet0/1 interface

**Answer:** C

**Explanation:** CCNA - EIGRP Common Question
http://www.orbitco-ccna-pastquestions.com/CCNA---EIGRP-Common-Question.php
Looking at the output above, there is no IP route for 10.1.1.4 address on AcmeB routing table. If the router can no find a specific path in its routing table to a particular route,( In this case no path is found so AcmeB) the router will inform the source host with an ICMP message that the destination is unreachable and this will be through the same interface it has received the packet (interface Fa0/0 network 192.168.3.0/28 from the exhibit).

**NEW QUESTION 94**
DRAG DROP




**Answer:**

**Explanation:** poison reverse: A router learns from its neighbor that a route is down and the router sends an update back to the neighbor with an infinite metric to that routeLSA: The packets flooded when a topology change occurs, causing network routers to update their topological databases and recalculate routes split horizon: This prevents sending information about a routeback out the same interface that originally learned about the route holddown timer: For a given period, this causes the router to ignore any updates with poorer metrics to a lost network

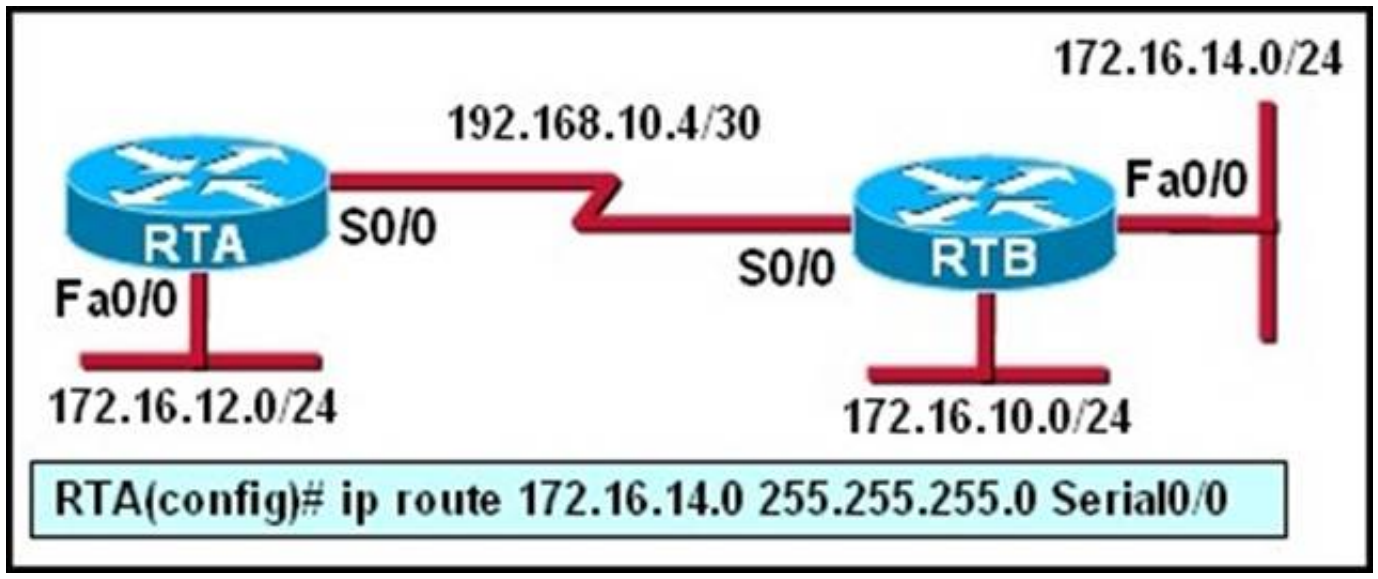
**NEW QUESTION 98**
Which two statements describe the process identifier that is used in the command to configure OSPF on a router? (Choose two.)
Router(config)# router ospf 1

A. All OSPF routers in an area must have the same process ID.
B. Only one process number can be used on the same router.
C. Different process identifiers can be used to run multiple OSPF processes
D. The process number can be any number from 1 to 65,535.
E. Hello packets are sent to each neighbor to determine the processor identifier.

**Answer:** CD

**Explanation:** The areas can be any number from 0 to 4.2 billion and 1 to 65,535 for the Process ID. The process ID is the ID of the OSPF process to which the interface belongs. The process ID is local to the router, and two OSPF neighboring routers can have different OSPF process IDs. (This is not true of Enhanced Interior Gateway Routing Protocol [EIGRP], in which the routers need to be in the same autonomous system). Cisco IOS Software can run multiple OSPF processes on the same router, and the process ID merely distinguishes one process from the other. The process ID should be a positive integer.

**NEW QUESTION 103**
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. A packet to host 172.16.14.225 will be dropped by router RTA.
C. Router RTA will send an ICMP packet to attempt to verify the route.
D. Because router RTB will send a poison reverse packet to router RTA, RTA will remove the route.

**Answer:** A

**Explanation:** Static routes remain in the routing table even if the specified gateway becomes unavailable. If the specified gateway becomes unavailable, you need

to remove the static route from the routing table manually. However, static routes are removed from the routing table if the specified interface goes down, and are reinstated when the interface comes back up. Therefore the static route will only be removed from the routing table if the S0/0 interface on RTA is shutdown.
Reference:
http://www.cisco.com/en/US/docs/security/asa/asa84/configuration/guide/route_static.html)

**NEW QUESTION 104**
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)

```
10.1.0.3 (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 255/255
        Load 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 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 1
```

C)

```
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 255/255
        Load 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 0x0
      Composite metric is (46763776/46251776), Route is External
      Vector metric:
        Minimum bandwidth is 56 Kbit
        Total delay is 41000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 2
```

A. Exhibit A
B. Exhibit B
C. Exhibit C
D. Exhibit D

**Answer:** B

**Explanation:** To be the feasible successor, the Advertised Distance (AD) of that route must be less than the Feasible Distance (FD) of the successor. From the output of the “show ip eigrp topology
10.0.0.5 255.255.255.255 we learn that the FD of the successor is 41152000.
Now we will mention about the answers, in the “Composite metric is (…/…)” statement the first parameter is the FD while the second parameter is the AD of that route. So we need to find out which route has the second parameter (AD) less than 41152000 -> only answer B satisfies this requirement with an AD of 128256.
Reference: http://networklessons.com/eigrp/eigrp-neighbor-and-topology-table-explained/

**NEW QUESTION 107**
Refer to the exhibit.

```
RouterD# show ip interface brief
Interface        IP-Address     OK?  Method  Status  Protocol
FastEthernet0/0  192.168.5.3    YES  manual  up      up
FastEthernet0/1  10.1.1.2       YES  manual  up      up
Loopback0        172.16.5.1     YES  NVRAM   up      up
Loopback1        10.154.154.1   YES  NVRAM   up      up
```

Given the output for this command, if the router ID has not been manually set, what router ID will OSPF use for this router?

A. 10.1.1.2
B. 10.154.154.1
C. 172.16.5.1
D. 192.168.5.3

**Answer:** C

**Explanation:** CCNA Tutorial: The OSPF Router ID (RID) http://www.thebryantadvantage.com/CCNACertificationExamTutorialOSPFRouterIDRID.ht m
When determining the Router ID (RID) of an OSPF-enabled router, OSPF will always use the numerically highest IP address on the router’s loopback interfaces, regardless of whether that loopback is OSPF-enabled.
What if there is no loopback? OSPF will then use the numerically highest IP address of the physical interfaces, regardless of whether that interface is OSPF-enabled.

**NEW QUESTION 108**
Which type of EIGRP route entry describes a feasible successor?

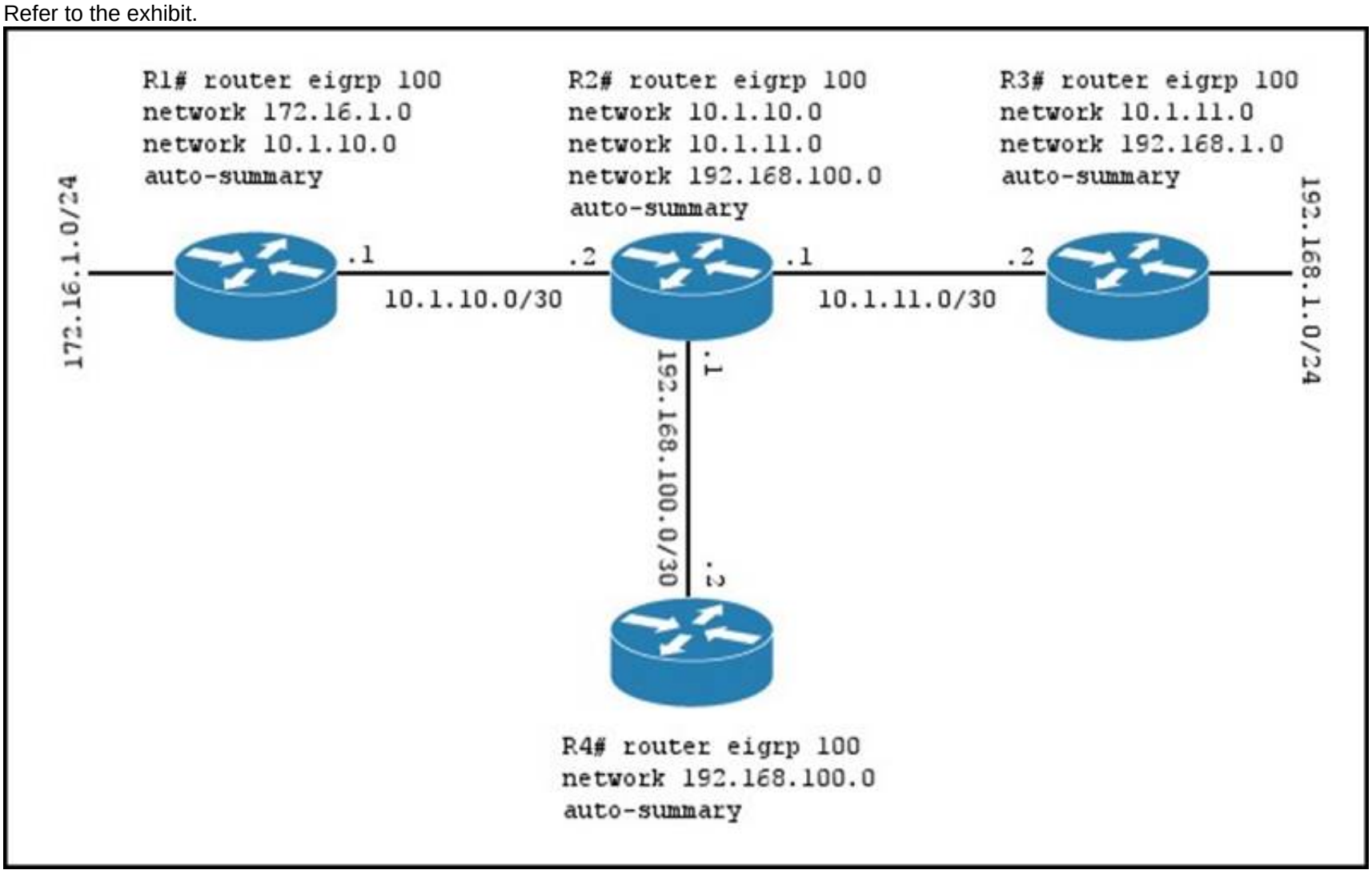
A. a backup route, stored in the routing table
B. a primary route, stored in the routing table
C. a backup route, stored in the topology table
D. a primary route, stored in the topology table

**Answer:** C

**Explanation:** http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080093f07.shtml
Feasible Successors
A destination entry is moved from the topology table to the routing table when there is a feasible successor. All minimum cost paths to the destination form a set. From this set, the neighbors that have an advertised metric less than the current routing table metric are considered feasible successors.
Feasible successors are viewed by a router as neighbors that are downstream with respect to the destination.
These neighbors and the associated metrics are placed in the forwarding table.

When a neighbor changes the metric it has been advertising or a topology change occurs in the network, the set of feasible successors may have to be re-evaluated. However, this is not categorized as a route recomputation.
Feasible successor is a route whose Advertised Distance (AD) is less than the Feasible Distance (FD) of the current best path. A feasible successor is a backup route, which is not stored in the routing table but, stored in the topology table.

**NEW QUESTION 109**
Refer to the exhibit.




Which three EIGRP routes will be present in the router R4's routing table? (Choose three.)

A. 172.16.1.0/24
B. 10.1.10.0/30
C. 10.0.0.0/8
D. 10.1.11.0/30
E. 172.16.0.0/16
F. 192.168.1.0/24

**Answer:** CEF

**Explanation:** EIGRP performs an auto-summarization each time it crosses a border between two different major networks, so when R2 advertises the routes to R4 it will advertise only the summarized routes of 10.0.0.0/8 and 172.16.0.0/16, along with the 192.168.1.0/24 route coming from R3.

**NEW QUESTION 114**
What can cause two OSPF neighbors to be stuck in the EXSTART state?

A. There is a low bandwidth connection between neighbors.
B. The neighbors have different MTU settings.
C. The OSPF interfaces are in a passive state.
D. There is only layer one connectivity between neighbors.

**Answer:** B

**Explanation:** Neighbors Stuck in Exstart/Exchange State
The problem occurs most frequently when attempting to run OSPF between a Cisco router and another vendor's router. The problem occurs when the maximum transmission unit (MTU) settings for neighboring router interfaces don't match. If the router with the higher MTU sends a packet larger that the MTU set on the neighboring router, the neighboring router ignores the packet.0 When this problem occurs, the output of the show ip ospf neighbor command displays output similar that shown below:
router-6# show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface 170.170.11.7 1 EXCHANGE/ - 00:00:36 170.170.11.7 Serial2.7
router-6#
router-7# show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface 170.170.11.6 1 EXSTART/ - 00:00:33 170.170.11.6 Serial0.6
Reference: http://www.cisco.com/c/en/us/support/docs/ip/open-shortest-path-first- ospf/13684-12.html

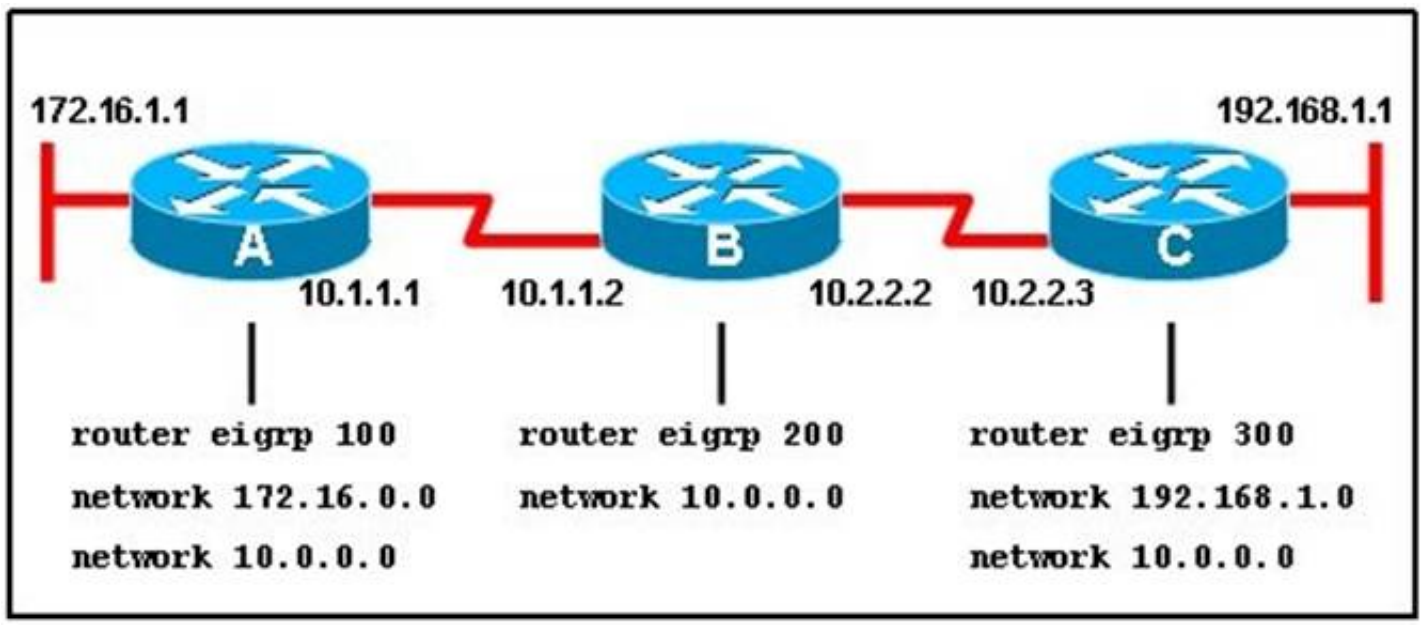
**NEW QUESTION 118**
Which statement describes the process ID that is used to run OSPF on a router?

A. It is globally significant and is used to represent the AS number.
B. It is locally significant and is used to identify an instance of the OSPF database.
C. It is globally significant and is used to identify OSPF stub areas.
D. It is locally significant and must be the same throughout an area.

**Answer:** B

**Explanation:** The Process ID for OSPF on a router is only locally significant and you can use the same number on each router, or each router can have a different number-it just
doesn't matter. The numbers you can use are from 1 to 65,535. Don't get this confused with area numbers, which can be from 0 to 4.2 billion.

**NEW QUESTION 120**
Refer to the exhibit.




When running EIGRP, what is required for RouterA to exchange routing updates with RouterC?

A. AS numbers must be changed to match on all the routers
B. Loopback interfaces must be configured so a DR is elected
C. The no auto-summary command is needed on Router A and Router C
D. Router B needs to have two network statements, one for each connected network

**Answer:** A

**Explanation:** Here we required same autonomous system between router A,B,C.Routing updated always exchange between in same EIGRP EIGRP autonomous system.you can configure more than one EIGRP autonomous system on the same router. This is typically done at a redistribution point where two EIGRP autonomous systems are interconnected. Individual router interfaces should only be included within a single EIGRP autonomous system. Cisco
does not recommend running multiple EIGRP autonomous systems on the same set of interfaces on the router. If multiple EIGRP autonomous systems are used with multiple points of mutual redistribution, it can cause discrepancies in the EIGRP topology table if correct filtering is not performed at the redistribution points. If possible, Cisco recommends you configure only one EIGRP autonomous system in any single autonomous system.
http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080093f07.shtml

**NEW QUESTION 122**
When a router undergoes the exchange protocol within OSPF, in what order does it pass through each state?

A. exstart state > loading state > exchange state > full state
B. exstart state > exchange state > loading state > full state
C. exstart state > full state > loading state > exchange state
D. loading state > exchange state > full state > exstart state

**Answer:** B

**Explanation:** OSPF states for adjacency formation are (in order) Down, Init, Attempt, 2-way, Exstart, Exchange, Loading and Full.
Reference:
Why Are OSPF Neighbors Stuck in Exstart/Exchange State? http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080093f0d.shtml

**NEW QUESTION 124**
Refer to the exhibit.

```
router# show ip route
  Codes: C - connected, S - static, I - IGRP, 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, E - EGP
  i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
  U - per-user static route, o - ODR

Gateway of last resort is 192.168.4.1 to network 0.0.0.0

 10.0.0.0/24 is subnetted, 3 subnets
C       10.0.2.0 is directly connected, Ethernet1
D       10.0.3.0 [90/2195456] via 192.168.1.2, 00:03:01, Serial0
D       10.0.4.0 [90/2195456] via 192.168.3.1, 00:03:01, Serial1
C    192.168.1.0/24 is directly connected, Serial0
D    192.168.2.0/24 [90/2681856] via 192.168.1.2, 00:03:01, Serial0
                    [90/2681856] via 192.168.3.1, 00:03:01, Serial1
C    192.168.3.0/24 is directly connected, Serial1
C    192.168.4.0/24 is directly connected, Serial2
```

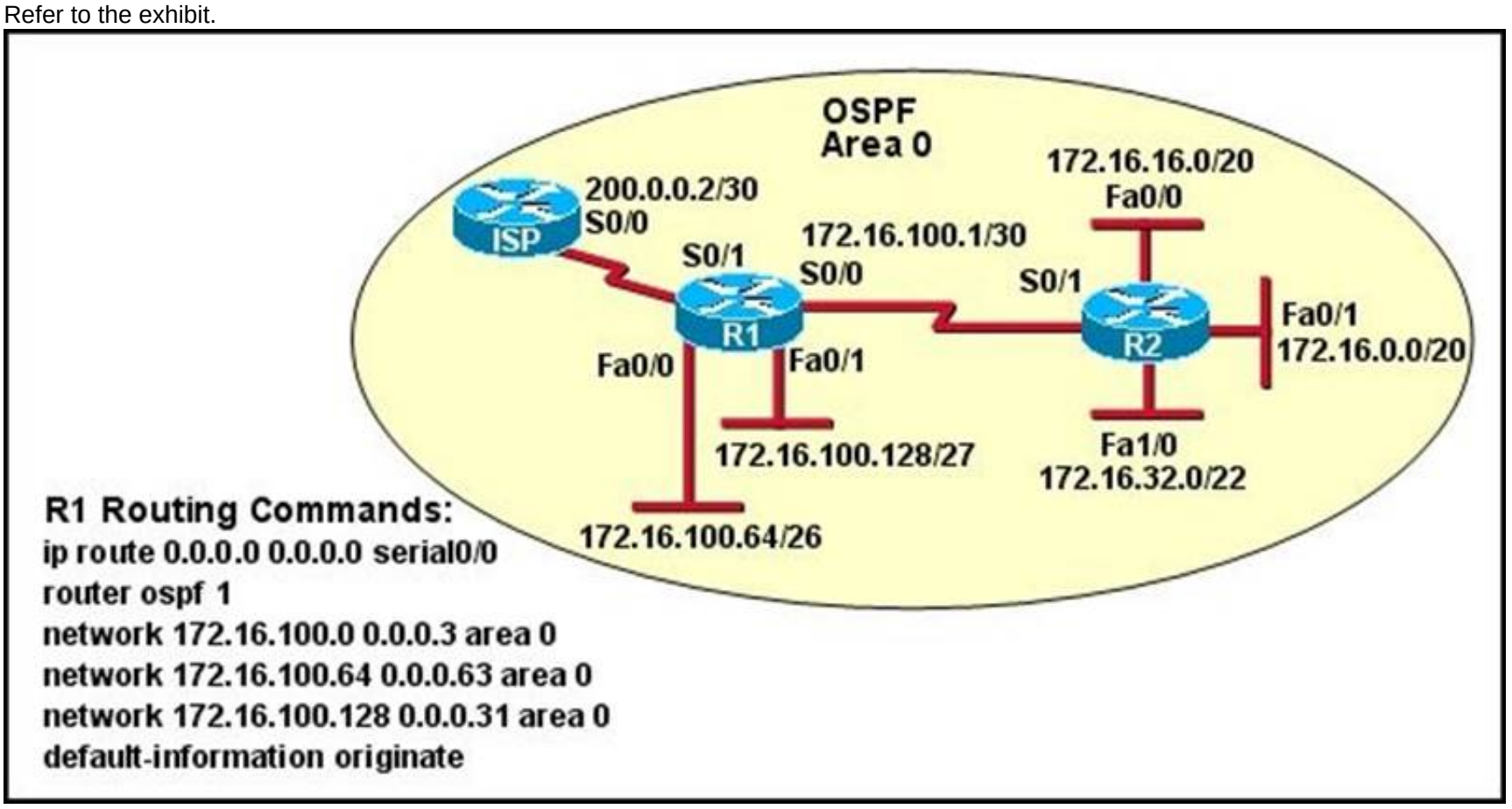
How will the router handle a packet destined for 192.0.2.156?

A. The router will drop the packet.
B. The router will return the packet to its source.
C. The router will forward the packet via Serial2.
D. The router will forward the packet via either Serial0 or Serial1.

**Answer:** C

**Explanation:** Router has pointed default router to 192.168.4.1 and this subnet is connected via serial 2 interface. Router does not have router for the 192.0.2.156. so it will use the default gateway 192.168.4.1. A default route identifies the gateway IP address to which the router sends all IP packets for which it does not have a learned or static route.

**NEW QUESTION 129**
Refer to the exhibit.




Assume that all router interfaces are operational and correctly configured. In addition, assume that OSPF has been correctly configured on router R2. How will the default route configured on R1 affect the operation of R2?

A. Any packet destined for a network that is not directly connected to router R1 will be dropped.
B. Any packet destined for a network that is not directly connected to router R2 will be dropped immediately.
C. Any packet destined for a network that is not directly connected to router R2 will be dropped immediately because of the lack of a gateway on R1.
D. The networks directly connected to router R2 will not be able to communicate with the 172.16.100.0, 172.16.100.128, and 172.16.100.64 subnetworks.
E. Any packet destined for a network that is not referenced in the routing table of router R2 will be directed to R1. R1 will then send that packet back to R2 and a routing loop will occur.

**Answer:** E

**Explanation:** First, notice that the more-specific routes will always be favored over less-specific routes regardless of the administrative distance set for a protocol.

In this case, because we use OSPF for three networks (172.16.100.0 0.0.0.3, 172.16.100.64 0.0.0.63, 172.16.100.128 0.0.0.31) so the packets destined for these networks will not be affected by the default route. The default route configured on R1 "ip route 0.0.0.0 0.0.0.0 serial0/0 will send any packet whose destination network is not referenced in the routing table of router R1 to R2, it doesn't drop anything so answers A, B and C are not correct. D is not correct too because these routes are declared in R1 and the question says that "OSPF has been correctly configured on router R2, so network directly connected to router R2 can communicate with those three subnetworks. As said above, the default route configured on R1 will send any packet destined for a network that is not referenced in its routing table to R2; R2 in turn sends it to R1 because it is the only way and a routing loop will occur.

**NEW QUESTION 132**
What are two drawbacks of implementing a link-state routing protocol? (Choose two.)

A. the sequencing and acknowledgment of link-state packets
B. the requirement for a hierarchical IP addressing scheme for optimal functionality
C. the high volume of link-state advertisements in a converged network
D. the high demand on router resources to run the link-state routing algorithm
E. the large size of the topology table listing all advertised routes in the converged network

**Answer:** BD

**Explanation:** Link State routing protocols, such as OSPF and IS-IS, converge more quickly than their distance vector routing protocols such as RIPv1, RIPv2, EIGRP and so on, through the use of flooding and triggered updates. In link state protocols, changes are flooded immediately and computed in parallel. Triggered updates improve convergence time by requiring routers to send an update message immediately upon learning of a route change. These updates are triggered by some event, such as a new link becoming available oor an existing link failing. The main drawbacks to link state routing protocols are the amount of CPU overhead involved in calculating route changes and memory resources that are required to store neighbor tables, route tables and a complete topology table. http://www.ciscopress.com/articles/article.asp?p=24090&seqNum=4

**NEW QUESTION 135**
What does a router do if it has no EIGRP feasible successor route to a destination network and the successor route to that destination network is in active status?

A. It routes all traffic that is addressed to the destination network to the interface indicated in the routing table.
B. It sends a copy of its neighbor table to all adjacent routers.
C. It sends a multicast query packet to all adjacent neighbors requesting available routing paths to the destination network.
D. It broadcasts Hello packets to all routers in the network to re-establish neighbor adjacencies.

**Answer:** C

**Explanation:** Introduction to EIGRP Reference:
http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080093f07.shtml
Feasible Successors
A destination entry is moved from the topology table to the routing table when there is a feasible successor. All minimum cost paths to the destination form a set. From this set, the neighbors that have an advertised metric less than the current routing table metric are considered feasible successors.
Feasible successors are viewed by a router as neighbors that are downstream with respect to the destination.
These neighbors and the associated metrics are placed in the forwarding table.
When a neighbor changes the metric it has been advertising or a topology change occurs in the network, the set of feasible successors may have to be re-evaluated. However, this is not categorized as a route recomputation.
Route States
A topology table entry for a destination can have one of two states. A route is considered in the Passive state when a router is not performing a route recomputation. The route is in Active state when a router is undergoing a route recomputation. If there are always feasible successors, a route never has to go into Active state and avoids a route recomputation.
When there are no feasible successors, a route goes into Active state and a route recomputation occurs. A route recomputation commences with a router sending a query packet to all neighbors. Neighboring routers can either reply if they have feasible successors for the destination or optionally return a query indicating that they are performing a route recomputation. While in Active state, a router cannot change the next- hop neighbor it is using to forward packets. Once all replies are received for a given query, the destination can transition to Passive state and a new successor can be selected.
When a link to a neighbor that is the only feasible successor goes down, all routes through that neighbor commence a route recomputation and enter the Active state.

**NEW QUESTION 140**
What are two enhancements that OSPFv3 supports over OSPFv2? (Choose two.)

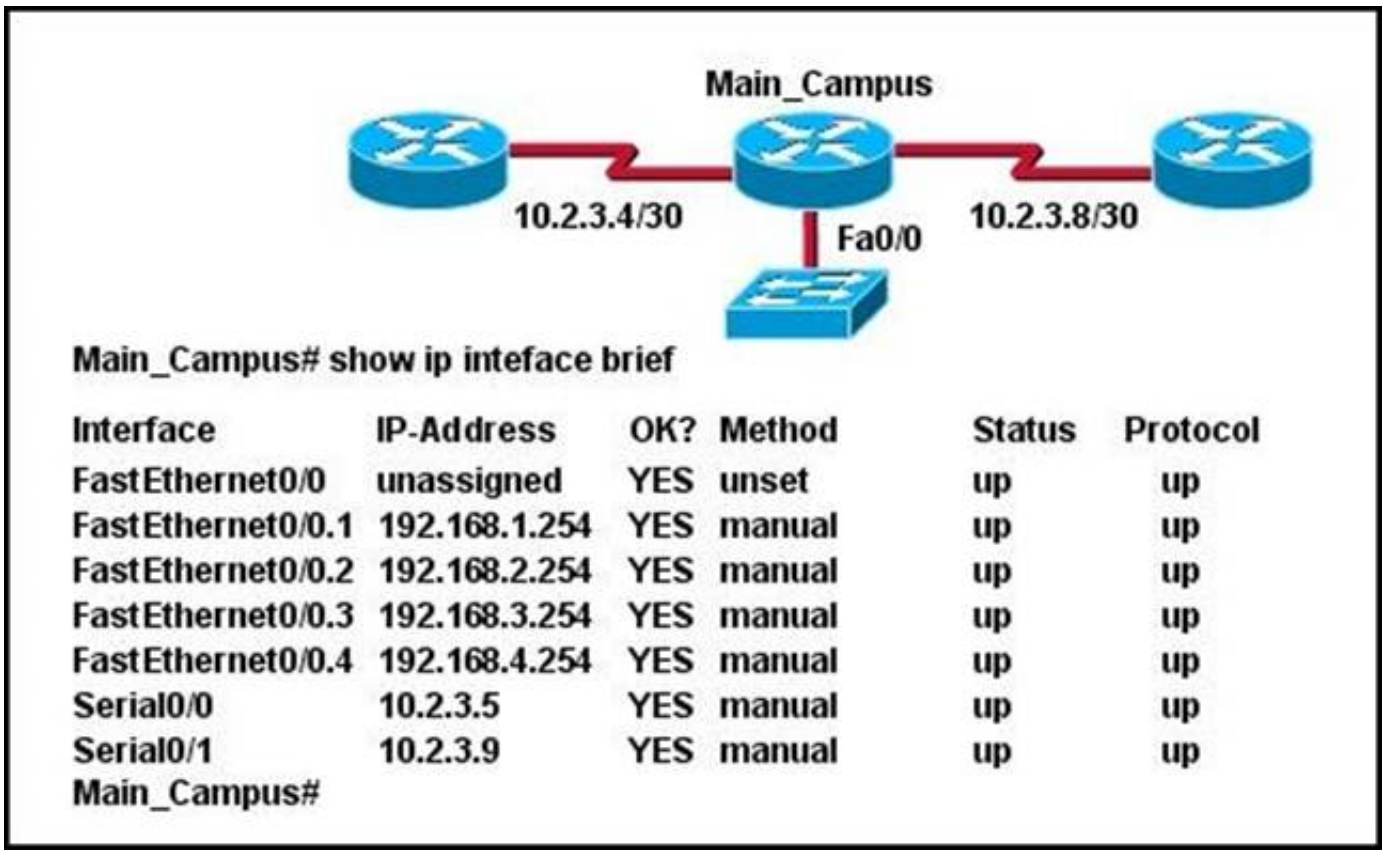
A. It requires the use of ARP.
B. It can support multiple IPv6 subnets on a single link.
C. It supports up to 2 instances of OSPFv3 over a common link.
D. It routes over links rather than over networks.

**Answer:** BD

**Explanation:** Here is a list of the differences between OSPFv2 and OSPFv3:
? They use different address families (OSPFv2 is for IPv4-only, OSPFv3 can be used for IPv6-only or both protocols
? OSPFv3 introduces new LSA types
? OSPFv3 has different packet format
? OSPFv3 uses different flooding scope bits (U/S2/S1)
? OSPFv3 adjacencies are formed over link-local IPv6 communications
? OSPFv3 runs per-link rather than per-subnet
? OSPFv3 supports multiple instances on a single link, Interfaces can have multiple IPv6 addresses
? OSPFv3 uses multicast addresses FF02::5 (all OSPF routers), FF02::6 (all OSPF DRs)
? OSPFv3 Neighbor Authentication done with IPsec (AH)
? OSPFv2 Router ID (RID) must be manually configured, still a 32-bit number

Reference: http://www.networkworld.com/article/2225270/cisco-subnet/ospfv3-for-ipv4-and- ipv6.html

**NEW QUESTION 145**
Refer to the exhibit.




Main_Campus# show ip inteface brief

| Interface | IP-Address | OK? | Method | Status | Protocol |
|---|---|---|---|---|---|
| FastEthernet0/0 | unassigned | YES | unset | up | up |
| FastEthernet0/0.1 | 192.168.1.254 | YES | manual | up | up |
| FastEthernet0/0.2 | 192.168.2.254 | YES | manual | up | up |
| FastEthernet0/0.3 | 192.168.3.254 | YES | manual | up | up |
| FastEthernet0/0.4 | 192.168.4.254 | YES | manual | up | up |
| Serial0/0 | 10.2.3.5 | YES | manual | up | up |
| Serial0/1 | 10.2.3.9 | YES | manual | up | up |

Main_Campus#

What information about the interfaces on the Main_Campus router is true?

A. The LAN interfaces are configured on different subnets.
B. Interface FastEthernet 0/0 is configured as a trunk.
C. The Layer 2 protocol of interface Serial 0/1 is NOT operational.
D. The router is a modular router with five FastEthernet interfaces.
E. Interface FastEthernet 0/0 is administratively deactivated.

**Answer:** B

**Explanation:** Interface fa0/0 breaks into sub-interfaces and Main_Campus router is connected with
switch via fa0/0 .Subinterfaces configured with different subnet masks so the same switch has multiple vlans and allows communication between these VLAN's.
For routing and inter- vlan we need to configure a trunk port. So B will be the correct answer.

**NEW QUESTION 150**
What is the advantage of using a multipoint interface instead of point-to-point subinterfaces
when configuring a Frame Relay hub in a hub-and-spoke topology?

A. It avoids split-horizon issues with distance vector routing protocols.
B. IP addresses can be conserved if VLSM is not being used for subnetting.
C. A multipoint interface offers greater security compared to point-to-point subinterface configurations.
D. The multiple IP network addresses required for a multipoint interface provide greater addressing flexibility over point-to-point configurations.

**Answer:** B

**Explanation:** You do not have to assign a separate subnet per sub-interface .if you're using a Class A network (10.x.x.x/8), you blow the whole network on a few connections (if you used VLSM, you could use a better mask, limit the addresses used). if you used 10.0.0.0/8, you would not be assigning the entire /8 to a single network. You would select a subnet mask for the network and then, you would have to use that mask with all subnets of the network. So if you chose a /24 mask, that would mean that you would have to use a /24 mask for even point-to-point links.

**NEW QUESTION 152**
What are two benefits of using NAT? (choose two)

A. NAT protects network security because private networks are not advertised.
B. NAT accelerates the routing process because no modifications are made on the packets.
C. Dynamic NAT facilitates connections from the outside of the network.
D. NAT facilitates end-to-end communication when IPsec is enable.
E. NAT eliminates the need to re-address all host that require external access.
F. NAT conserves addresses through host MAC-level multiplexing.

**Answer:** AE

**NEW QUESTION 153**
The command frame-relay map ip 10.121.16.8 102 broadcast was entered on the router. Which of the following statements is true concerning this command?

A. This command should be executed from the global configuration mode.
B. The IP address 10.121.16.8 is the local router port used to forward data.

C. 102 is the remote DLCI that will receive the information.
D. This command is required for all Frame Relay configurations.
E. The broadcast option allows packets, such as RIP updates, to be forwarded across the PVC.

**Answer:** E

**Explanation:** The command frame-relay map ip 10.121.16.8 102 broadcast means to map the remote IP 10.121.16.8 to the local DLCI 102. When the “broadcast” keyword is included, it turns Frame Relay network as a broadcast network, which can forward broadcasts.

**NEW QUESTION 158**
Which two statement about proxy ARP are true ? (Choose two)

A. It is supported on networks without ARP.
B. It allows machines to spoof packets.
C. It requires larger ARP tables.
D. It reduces the amount of ARP traffic.

**Answer:** BC

**NEW QUESTION 163**
In which solution is a router ACL used?

A. filtering packets that are passing through a router
B. to change the default administrative distance of a route in the route table
C. protecting a server from unauthorized access
D. controlling path selection, based on the route metric

**Answer:** A

**NEW QUESTION 164**
Which encapsulation type is a Frame Relay encapsulation type that is supported by Cisco routers?

A. IETF
B. ANSI Annex D
C. Q9333-A Annex A
D. HDLC

**Answer:** A

**Explanation:** Cisco supports two Frame Relay encapsulation types: the Cisco encapsulation and the
IETF Frame Relay encapsulation, which is in conformance with RFC 1490 and RFC 2427. The former is often used to connect two Cisco routers while the latter is used to connect a Cisco router to a non-Cisco router. You can test with your Cisco router when typing the command Router(config-if)#encapsulation frame-relay ? on a WAN link.
Note: Three LMI options are supported by Cisco routers are ansi, Cisco, and Q933a. They represent the ANSI Annex D, Cisco, and ITU Q933-A (Annex A) LMI types, respectively. HDLC is a WAN protocol same as Frame-Relay and PPP so it is not a Frame Relay encapsulation type.

```
R1(config-if)#encapsulation frame-relay ?
  ietf  Use RFC1490/RFC2427 encapsulation
  <cr>
```

**NEW QUESTION 169**
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:** High-Level Data Link Control (HDLC) - HDLC is the default encapsulation type on point-to- point, dedicated links, and circuit-switched connections. It is used typically when communicating between two Cisco devices. It is a bit-oriented synchronous data link layer protocol.
Point-to-Point Protocol (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, such as IP, and IPX. PPP also has built in security mechanisms such as PAP and CHAP X.25/Link Access Procedure, Balanced (LAPB) - ITU-T standard that defines how connections between DTE and DCE are maintained for remote terminal access and computer communications in public data networks. X.25 specifies LAPB, a data line layer protocol. X.25 is a predecessor to Frame Relay.
Frame Relay - Industry standard, switched data link layer protocol that handles multiple virtual circuits. It is a next-generation to X.25 that is streamlined to eliminate some of the time-consuming processes (such as error correction and flow control) that were employed in X.25.

| Field | Description |
|---|---|
| Serial 1 (administratively down) | Identifies a Frame Relay interface and its status (up or down). |
| ip 131.108.177.177 | Destination IP address. |
| dlci 177 (0xB1,0x2C10) | DLCI that identifies the logical connection being used to reach this interface. This value is displayed in three ways: its decimal value (177), its hexadecimal value (0xB1), and its value as it would appear on the wire (0x2C10). |
| static | Indicates whether this is a static or dynamic entry. |
| CISCO | Indicates the encapsulation type for this map; either CISCO or IETF. |
| TCP/IP Header Compression (inherited), passive (inherited) | Indicates whether the TCP/IP header compression characteristics were inherited from the interface or were explicitly configured for the IP map. |

**NEW QUESTION 170**
If primary and secondary root switches with priority 16384 both experience catastrophic losses, which tertiary switch can take over?

A. a switch with priority 20480
B. a switch with priority 8192
C. a switch with priority 4096
D. a switch with priority 12288

**Answer:** A

**NEW QUESTION 175**
What command is used to verify the DLCI destination address in a Frame Relay static configuration?

A. show frame-relay pvc
B. show frame-relay lmi
C. show frame-relay map
D. show frame relay end-to-end

**Answer:** C

**Explanation:** Cisco Frame Relay Configurations http://www.ciscopress.com/articles/article.asp?p=170741&seqNum=9 show frame-relay map
The show frame-relay map privileged EXEC mode command shows the contents of the next hop protocol address to DLCI mapping table on the router. The table contains both dynamic mapped and static mapped entries. The below example shows a sample output of the show frame-relay map command.
Router#show frame-relay map
Serial1/2 (up): ip 172.16.1.4 dlci 401(0x191,0x6410), dynamic, broadcast,, status defined, active
Serial1/2 (up): ip 172.16.1.5 dlci 501(0x1F5,0x7C50), dynamic, broadcast,, status defined, active
Serial1/2 (up): ip 172.16.1.2 dlci 301(0x12D,0x48D0), dynamic, broadcast,, status defined, active

**NEW QUESTION 178**
Which WAN solution is secured by default?

A. VPN
B. DSL
C. LCP
D. PPP

**Answer:** A

**NEW QUESTION 179**
The command show frame-relay map gives the following output:
Serial 0 (up): ip 192.168.151.4 dlci 122, dynamic, broadcast, status defined, active Which statements represent what is shown?(Choose three.)

A. 192.168.151.4 represents the IP address of the remote router
B. 192.168.151.4 represents the IP address of the local serial interface
C. DLCI 122 represents the interface of the remote serial interface
D. DLCI 122 represents the local number used to connect to the remote address
E. broadcast indicates that a dynamic routing protocol such as RIP v1 can send packets across this PVC
F. active indicates that the ARP process is working

**Answer:** ADE

**Explanation:** http://www.cisco.com/en/US/docs/ios/12_2/wan/command/reference/wrffr4.html#wp102934 3

| Field | Description |
|---|---|
| Serial 1 (administratively down) | Identifies a Frame Relay interface and its status (up or down). |
| ip 131.108.177.177 | Destination IP address. |
| dlci 177 (0xB1,0x2C10) | DLCI that identifies the logical connection being used to reach this interface. This value is displayed in three ways: its decimal value (177), its hexadecimal value (0xB1), and its value as it would appear on the wire (0x2C10). |
| static | Indicates whether this is a static or dynamic entry. |
| CISCO | Indicates the encapsulation type for this map; either CISCO or IETF. |
| TCP/IP Header Compression (inherited), passive (inherited) | Indicates whether the TCP/IP header compression characteristics were inherited from the interface or were explicitly configured for the IP map. |

**NEW QUESTION 183**
Which form of NAT maps multiple private IP addresses to a single registered IP address by using different ports?

A. static NAT
B. dynamic NAT
C. overloading
D. overlapping
E. port loading

**Answer:** C

**NEW QUESTION 185**
Which WAN topology provides a direct connection 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 190**
Which WAN technology uses labels to make decisions about data forwarding?

A. Metro Ethernet
B. Frame Relay
C. MPLS
D. ISDN
E. VSAT

**Answer:** C

**NEW QUESTION 192**
Which three approaches can be used while migrating from an IPv4 addressing scheme to an IPv6 scheme? (Choose three)

A. enable dual-stack routing
B. configure IPv6 directly
C. configure IPv4 tunnels between IPv6 islands
D. use proxying and translation to translate IPv6 packets into IPv4 packets
E. statically map IPv4 addresses to IPv6 addresses
F. use DHCPv6 to map IPv4 addresses to IPv6 addresses

**Answer:** ACD

**NEW QUESTION 196**
What is the purpose of LCP?

A. to perform authentication

B. to negotiate control options
C. to encapsulate multiple protocols
D. to specify asynchronous versus synchronous

**Answer:** B

**Explanation:** In order to be sufficiently versatile to be portable to a wide variety of environments, PPP provides a Link Control Protocol (LCP). The LCP is used to automatically agree upon the encapsulation format options, handle varying limits on sizes of packets, detect a looped-back link and other common misconfiguration errors, and terminate the link. Other optional facilities provided are authentication of the identity of its peer on the link, and determination when a link is functioning properly and when it is failing.
Reference: Link Control Protocol
http://www.ietf.org/rfc/rfc1661.txt

**NEW QUESTION 197**
Which command allows you to verify the encapsulation type (CISCO or IETF) for a Frame Relay link?

A. show frame-relay lmi
B. show frame-relay map
C. show frame-relay pvc
D. show interfaces serial

**Answer:** B

**Explanation:** map will show frame relay encapsulation (cisco or ietf) http://www.cisco.com/en/US/docs/ios/12_2/wan/command/reference/wrffr4.html#wp102934 3 "show frame-relay map" will show frame relay encapsulation type (CISCO or IETF)

| Field | Description |
|---|---|
| Serial 1 (administratively down) | Identifies a Frame Relay interface and its status (up or down). |
| ip 131.108.177.177 | Destination IP address. |
| dlci 177 (0xB1,0x2C10) | DLCI that identifies the logical connection being used to reach this interface. This value is displayed in three ways: its decimal value (177), its hexadecimal value (0xB1), and its value as it would appear on the wire (0x2C10). |
| static | Indicates whether this is a static or dynamic entry. |
| CISCO | Indicates the encapsulation type for this map; either CISCO or IETF. |
| TCP/IP Header Compression (inherited), passive (inherited) | Indicates whether the TCP/IP header compression characteristics were inherited from the interface or were explicitly configured for the IP map. |

**NEW QUESTION 199**
Which two statements about static NAT translations are true? (choose two)

A. They are always present in the NAT table.
B. They allow connection to be initiated from the outside.
C. They can be configured with access lists, to allow two or more connections to beinitiated from the outside.
D. They require no inside or outside interface markings because addresses are statically defined.

**Answer:** AB

**NEW QUESTION 203**
What three pieces of information can be used in an extended access list to filter traffic? (Choose three)

A. VLAN number
B. TCP or UDP port numbers
C. source switch port number
D. source IP address and destination IP address
E. protocol
F. source MAC address and destination MAC address

**Answer:** BDE

**NEW QUESTION 204**
Which of the following HSRP router states does an active router enter when it is preempted by a higher priority router?

A. Active
B. Speak
C. Learn
D. Listen
E. Init
F. Standby

**Answer:** B

**NEW QUESTION 209**
Which three commands must you enter to create a trunk that allows VLAN 20? (Choose three)

A. Switch(config-if)#switchport mode dynamic auto
B. Switch(config-if)#switchport mode trunk
C. Switch(config-if)#switchport trunk allowed vlan 20
D. Switch(config-if)#switchport mode dynamic desirable
E. Switch(config-if)#switchport trunk encapsulation dotlq
F. Switch(config-if)#switchport trunk native vlan 20

**Answer:** BCE

**NEW QUESTION 210**
Which command do you enter to view EIGRPv6 adjacencies?

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

**Answer:** C

**NEW QUESTION 213**
Which feature can you implement to reserve bandwidth for voip calls across the call path?

A. PQ
B. Round Robin
C. CBWFQ
D. RSPV

**Answer:** D

**NEW QUESTION 215**
What does the frame-relay interface-dlci command configure?

A. local DLCI on the subinterface
B. remote DLCI on the main interface
C. remote DCLI on the subinterface
D. local DLCI on the main interface

**Answer:** A

**Explanation:** Frame Relay for ICND Exam http://www.ciscopress.com/articles/article.asp?p=100603&seqNum=3
To assign a data-link connection identifier (DLCI) to a specified Frame Relay subinterface on the router or access server, or to assign a specific permanent virtual circuit (PVC) to a DLCI, or to apply a virtual template configuration for a PPP session, use the frame-relay interface-dlci interface configuration command
Example 4-23 Example of frame-relay interface-dlci Command and the Output of show frame-relay map
R4(config)#interface s1/2.403 point-to-point R4(config-subif)#frame-relay interface-dlci ?
<16-1007> Define a switched or locally terminated DLCI R4(config-subif)#frame-relay interface-dlci 403 ?
cisco Use CISCO Encapsulation
ietf Use RFC1490/RFC2427 Encapsulation
ppp Use RFC1973 Encapsulation to support PPP over FR protocol Optional protocol information for remote end
<cr>
R4#show frame-relay map
Serial1/2.403 (up): point-to-point dlci, dlci 403(0xC9,0x3090), broadcast status defined, active
R4#

**NEW QUESTION 217**
Which purpose of the network command in OSPF configuration mode is true?

A. It defines a wildcard mask to identify the size of 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 218**

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 220**
What are two characteristics of Frame Relay point-to-point subinterfaces? (Choose two.)

A. They create split-horizon issues.
B. They require a unique subnet within a routing domain.
C. They emulate leased lines.
D. They are ideal for full-mesh topologies.
E. They require the use of NBMA options when using OSPF.

**Answer:** BC

**Explanation:** http://www.ciscopress.com/articles/article.asp?p=170741&seqNum=5
Configuring Frame Relay Subinterfaces
On partially meshed Frame Relay networks, the problem of split horizon can be overcome by using Frame Relay subinterfaces. Frame Relay provides a mechanism to allow a physical interface to be partitioned into multiple virtual interfaces. In a similar way, using subinterfaces allows a partially meshed network to be divided into a number of smaller, fully meshed point-to-point networks. Generally, each point-to-point subnetwork is assigned a unique network address. This allows packets received on one physical interface to be sent out from the same physical interface, albeit forwarded on VCs in different subinterfaces.
There are two types of subinterfaces supported by Cisco routers: point-to-point and multipoint subinterfaces.

**NEW QUESTION 222**
Which two options are valid WAN connectivity methods? (Choose two.)

A. PPP
B. WAP
C. DSL
D. L2TPv3
E. Ethernet

**Answer:** AC

**Explanation:** On each WAN connection, data is encapsulated into frames before itcrosses the WAN link. The following are typical WAN protocols:1. High-level Data Link Control (HDLC): The Cisco default encapsulation type onpoint-to-point connections, dedicated links, and circuit- switches connections.2. PPP: Provides router-to-router and host-to-network connections over synchronous andasynchronous circuits. PPP was designed to work with several network layer protocols,including IP.3. Frame-relay: A successor to X.25. This protocol is an industry-standard, switchesdata-link layer protocol that handles multiple virtual circuits
http://en.wikipedia.org/wiki/Wide_area_network

**NEW QUESTION 223**
In a GLBP network, who is responsible for the arp request?

A. AVF
B. AVG
C. Actve Router
D. Standby Router

**Answer:** B

**NEW QUESTION 224**
It has become necessary to configure an existing serial interface to accept a second Frame Relay virtual circuit. Which of the following are required to solve this? (Choose three)

A. configure static frame relay map entries for each subinterface network.
B. remove the ip address from the physical interface
C. create the virtual interfaces with the interface command
D. configure each subinterface with its own IP address
E. disable split horizon to prevent routing loops between the subinterface networks
F. encapsulate the physical interface with multipoint PPP

**Answer:** BCD

**Explanation:** How To Configure Frame Relay Subinterfaces
http://www.orbit-computer-solutions.com/How-To-Configure-Frame-Relay- Subinterfaces.php
Step to configure Frame Relay subinterfaces on a physical interface:
1. Remove any network layer address (IP) assigned to the physical interface. If the physical interface has an address, frames are not received by the local subinterfaces.
2. Configure Frame Relay encapsulation on the physical interface using the encapsulation frame-relay command.
3. For each of the defined PVCs, create a logical subinterface. Specify the port number, followed by a period (.) and the subinterface number. To make troubleshooting easier, it is suggested that the subinterface number matches the DLCI number.

4. Configure an IP address for the interface and set the bandwidth.
5. Configure the local DLCI on the subinterface using the frame-relay interface-dlci command.
Configuration Example: R1>enable R1#configure terminal
R1(config)#interface serial 0/0/0 R1(config-if)#no ip address
R1(config-if)#encapsulation frame-relay
R1(config-if)#no shutdown R1(config-if)#exit
R1(config-subif)#interface serial 0/0/0.102 point-to-point R1(config-subif)#ip address 192.168.1.245 255.255.255.252
R1(config-subif)#frame-relay interface-dlci 102 R1(config-subif)#end
R1#copy running-config startup-config

**NEW QUESTION 226**
Which protocol specified by RFC 2281 provides network redundancy for IP networks, ensuring that user traffic immediately and transparently recovers from first-hop failures in network edge devices or access circuits?

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

**Answer:** C

**NEW QUESTION 228**
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 229**
At which layer of the OSI model does PPP perform?

A. Layer 2
B. Layer 3
C. Layer 4
D. Layer 5

**Answer:** A

**Explanation:** Point-to-Point Protocol (PPP) is a data link protocol commonly used in establishing a direct connection between two networking nodes. It can provide connection authentication, transmission encryption (using ECP, RFC 1968), and compression.

**NEW QUESTION 233**
Refer to the exhibit.

```
RouterA#show interface pos8/0/0
POS8/0/0 is up, line protocol is up
  Hardware is Packet over Sonet
  Keepalive set (10 sec)
  Scramble disabled
  LMI enq sent  2474988, LMI stat recvd 2474969, LMI upd recvd 0, DTE LMI up
  Broadcast queue 0/256, broadcasts sent/dropped 25760668/0, interface broadcasts 25348176
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters 40w6d
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 39000 bits/sec, 60 packets/sec
     63153396 packets input, 4389121455 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
              0 parity
     44773 input errors, 39138 CRC, 0 frame, 0 overrun, 0 ignored, 27 abort
     945596253 packets output, 62753244360 bytes, 0 underruns
     0 output errors, 0 applique, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
```

Which WAN protocol is being used?

A. ATM
B. HDLC
C. Frame Relay
D. PPP

**Answer:** C

**Explanation:** "Show interface pos8/0/0" command showing LMI enq sent which show frame-relay encapsulation enabled on this interface. Cisco supports three

different Local Management Interface (LMI) types for Frame Relay: Cisco, ANSI Annex D, and Q933-A Annex A
http://www.ciscopress.com/articles/article.asp?p=170741&seqNum=3

**NEW QUESTION 235**
Refer to the exhibit.

```
R10-1# show interfaces serial 0/1
Serial0/1 is up, line protocol is up
  Hardware is cxBus Serial
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, reliability 255/255,
       txload 1/255, rxload 1/255
  Encapsulation HDLC, crc 16, loopback not set
  Keepalive set (10 sec)
  Last input 00:00:09, output 00:00:07, output hang 5w2d
  Last clearing of "show interface" counters 00:39:17
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
    Conversations  0/1/256 (active/max active/max total)
    Reserved Conversations 0/0 (allocated/max allocated)
 5 minute input rate 0 bits/sec, 0 packets/sec
 5 minute output rate 0 bits/sec, 0 packets/sec
    277 packets input, 16980 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    277 packets output, 17106 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
    0 carrier transitions
    RTS up, CTS up, DTR up, DCD up, DSR up
```

The show interfaces serial 0/1 command was issued on the R10-1 router. Based on the output displayed which statement is correct?

A. The cable connected to the serial 0/1 interface of the R10-1 router is a DTE cable.
B. The R10-1 router can ping the router interface connected to the serial 0/1 interface.
C. The clock rate used for interface serial 0/1 of the R10-1 router is 1,544,000 bits per second.
D. The CSU used with the serial 0/1 interface of the R10-1 router has lost connection to the service provider.
E. The interface of the remote router connected to the serial 0/1 interface of the R10-1 router is using the default serial interface encapsulation.

**Answer:** E

**Explanation:** Cisco High-Level Data Link Controller (HDLC) is the Cisco proprietary protocol for Cisco HDLC is the default encapsulation type for the serial interfaces.

**NEW QUESTION 237**
Routers R1 and R2 are on the same network segment, and both routers use interface Ethernet0/0. If R1 loses communication to R2, which two terns should you check as you begn GigabitEthernetO/0. If R1 lose: troubleshooting? (Choose two )

A. Verify that R2 is using 802 1q encapsulation
B. Verify that the GigabrtEthernet0/0 interfaces on R1 and R2 are configured with the same subnet mask.
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. that the R1 GigabitEthernet0/0 interface is up and the line protocol is up.

**Answer:** BC

**NEW QUESTION 240**
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 242**
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. The system 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 245**
What are three valid reasons to assign ports to VLANs on a switch? (Choose three)

A. to make VTP easier to implement
B. to isolate broadcast traffic
C. to increase the size of the collision domain
D. to allow more devices to connect to the network
E. to logically group hosts according to function
F. to increase network security

**Answer:** BEF

**NEW QUESTION 246**
Which feature can you use to restrict SNMP queries to a specific OID tree?

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

**Answer:** C

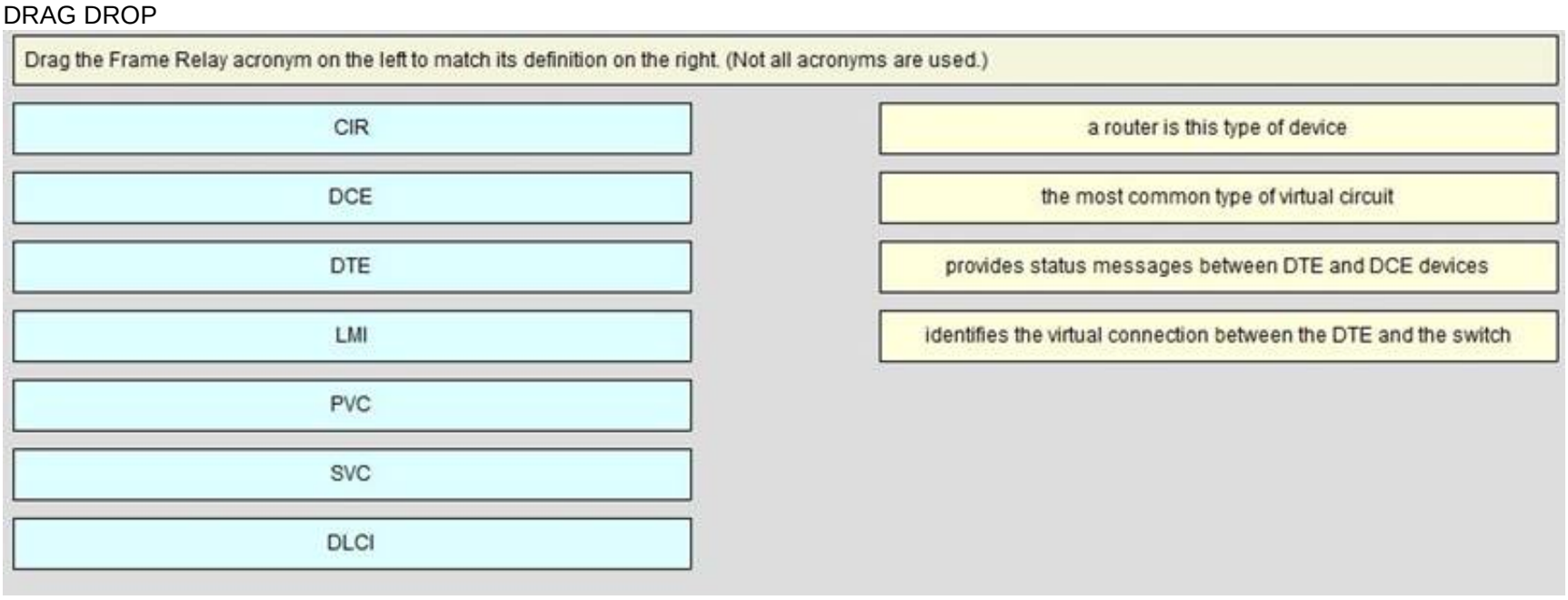
**Explanation:** The Setup SNMP view command can block the user with only access to limited Management Information Base (MIB). By default, there is no SNMP view entry exists. This command is configured at the global configuration mode and first introduced in Cisco IOS Software version 10.3. It works similar to access-list in that if you have any SNMP View on certain MIB trees, every other tree is denied inexplicably. However, the sequence is not important and it goes through the entire list for a match before it stops.

**NEW QUESTION 247**
What command can you enter to assign an interface to the default VLAN?

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

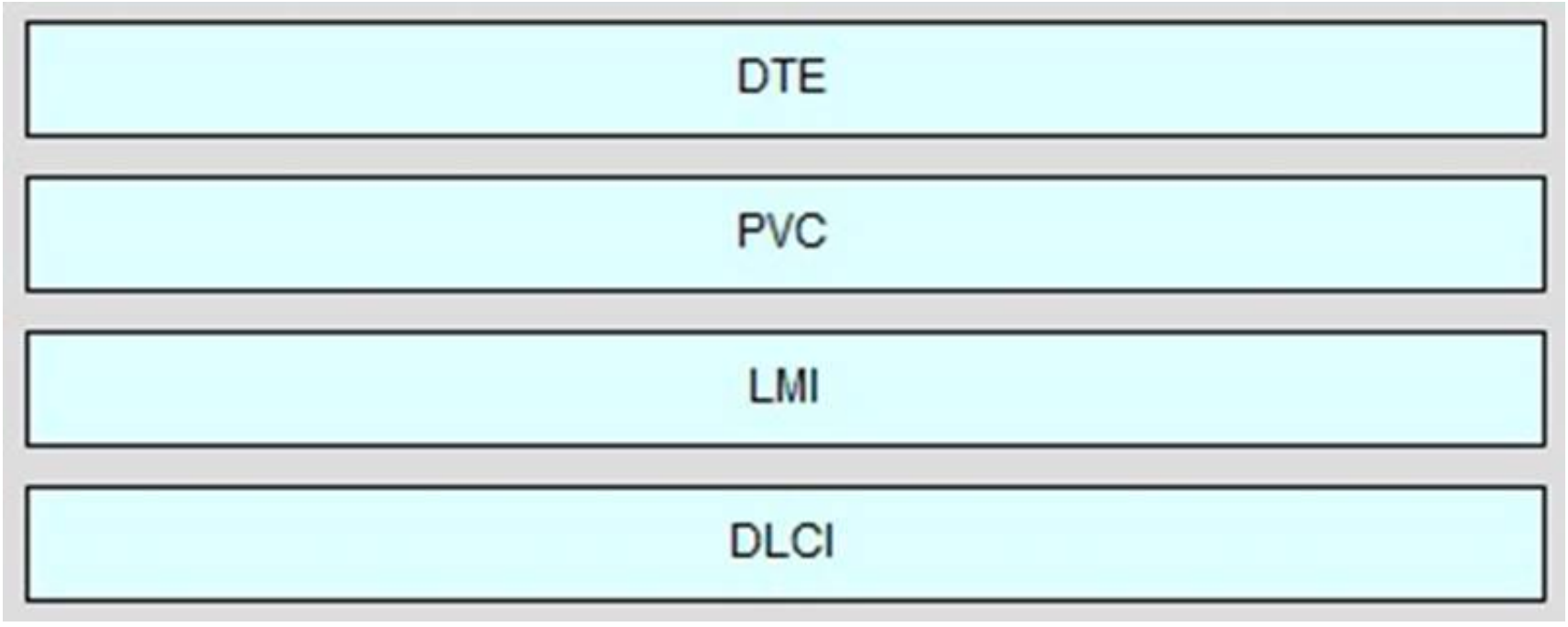
**Answer:** B

**NEW QUESTION 252**
DRAG DROP




**Answer:**

**Explanation:** 1) a router is this type of device: DTE2) the most common type of virtual circuit: PVC3) provides status messages between DTE and DCE devices: LMI4) identifies the virtual connection between the DTE and the switch: DLCI




CCNA Certification Test Prep Case Study http://www.thebryantadvantage.com/CCNACertificationExamTutorialDirectlyConnectedSeri alInterfaces.htm
Configuring the LMI Type on a Frame Relay Interface http://www.ciscopress.com/articles/article.asp?p=170741&seqNum=3 Frame Relay DLCIs And Mappings http://www.mcmcse.com/cisco/guides/frame_relay_dlci.shtml

**NEW QUESTION 255**
Refer to the exhibit.

City#show ip interface brief

| Interface | IP-Address | OK? | Method | Status | Protocol |
|---|---|---|---|---|---|
| FastEthernet0/0 | 192.168.12.48 | YES | manual | up | up |
| FastEthernet0/1 | 192.168.12.65 | YES | manual | up | up |
| Serial0/0 | 192.168.12.121 | YES | manual | up | up |
| Serial0/1 | unassigned | YES | unset | up | up |
| Serial0/1.102 | 192.168.12.125 | YES | manual | up | up |
| Serial0/1.103 | 192.168.12.129 | YES | manual | up | up |
| Serial0/1.104 | 192.168.12.133 | YES | manual | up | up |

City#

A network associate has configured OSPF with the command: City(config-router)# network 192.168.12.64 0.0.0.63 area 0
After completing the configuration, the associate discovers that not all the interfaces are participating in OSPF. Which three of the interfaces shown in the exhibit will participate in OSPF according to this configuration statement? (Choose three.)

A. FastEthernet0 /0
B. FastEthernet0 /1
C. Serial0/0
D. Serial0/1.102
E. Serial0/1.103
F. Serial0/1.104

**Answer:** BCD

**Explanation:** The “network 192.168.12.64 0.0.0.63 equals to network 192.168.12.64/26. This network has:Increment: 64 (/26= 1111 1111.1111 1111.1111 1111.1100 0000)Network address:
192.168.12.64
Broadcast address: 192.168.12.127Therefore all interface in the range of this network will join OSPF - B C D are correct.

**NEW QUESTION 258**
Which command should you enter to allow carrying voice, options:

A. switchport
B. switchport access
C. switchport trunk
D. switchport host

**Answer:** B

**NEW QUESTION 259**
What is the maximum cost for hello and dead packets in OSPF? (Choose two)

A. hello 10
B. hello 60
C. dead 40
D. dead 120

**Answer:** AC

**NEW QUESTION 261**
Which interface counter can you use to diagnose a duplex mismatch problem?

A. runts
B. CRC errors
C. no carrier
D. late collisions
E. deferred
F. giants

**Answer:** B

**NEW QUESTION 264**
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 266**
What command visualizes the general NetFlow data on the command line?

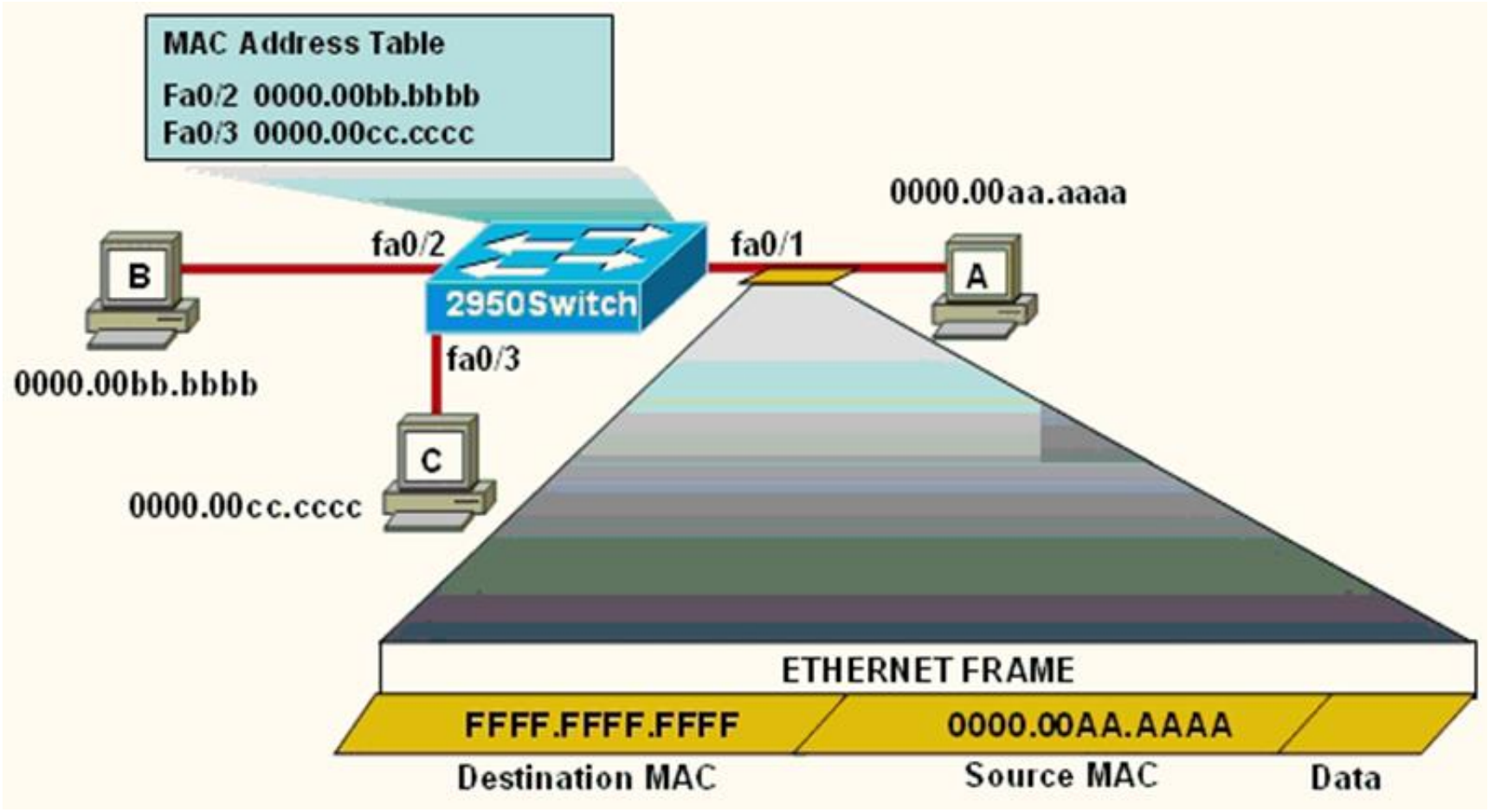
A. show ip flow export
B. show ip flow top-talkers
C. show ip cache flow
D. show mls sampling
E. show mls netflow ip

**Answer:** C

**Explanation:** The following is an example of how to visualize the NetFlow data using the CLI. There are three methods to visualize the data depending on the version of Cisco IOS Software. The traditional show command for NetFlow is "show ip cache flow" also available are two forms
of top talker commands. One of the top talkers commands uses a static configuration to view top talkers in the network and another command called dynamic top talkers allows real-time sorting and aggregation of NetFlow data. Also shown is a show MLS command to view the hardware cache on the Cisco Catalyst 6500 Series Switch.
The following is the original NetFlow show command used for many years in Cisco IOS Software. Information provided includes packet size distribution; basic statistics about number of flows and export timer setting, a view of the protocol distribution statistics and the NetFlow cache.
R3#show ip cache flow
IP packet size distribution (469 total packets):
1-32 64 96 128 160 192 224 256 288 320 352 384 416 448 480
000 .968 .000 .031 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000
512 544 576 1024 1536 2048 2560 3072 3584 4096 4608
000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000
IP Flow Switching Cache, 278544 bytes 7 active, 4089 inactive, 261 added 1278 ager polls, 0 flow alloc failures Active flows timeout in 30 minutes Inactive flows timeout in 15 seconds
IP Sub Flow Cache, 25736 bytes
1 active, 1023 inactive, 38 added, 38 added to flow
0 alloc failures, 0 force free
1 chunk, 1 chunk added
last clearing of statistics never
Protocol Total Flows Packets Bytes Packets Active(Sec) Idle(Sec)
-------- Flows /Sec /Flow /Pkt /Sec /Flow /Flow TCP-WWW 71 0.0 1 40 0.1 1.3 1.2
TCP-BGP 35 0.0 1 40 0.0 1.3 1.2
TCP-other 108 0.1 1 40 0.1 1.3 1.2
UDP-other 37 0.0 1 52 0.0 0.0 15.4
ICMP 3 0.0 5 100 0.0 0.0 15.3
Total: 254 0.2 1 42 0.4 1.1 3.5
(NetFlow cache below)
SrcIf SrcIPaddress DstIf DstIPaddress Pr SrcP DstP Pkts Et1/0 172.16.7.2 Null 224.0.0.9 11 0208 0208 1
Et1/0 172.16.10.2 Et0/0 172.16.1.84 06 0087 0087 1
Et1/0 172.16.10.2 Et0/0 172.16.1.84 06 0050 0050 1
Et1/0 172.16.10.2 Et0/0 172.16.1.85 06 0089 0089 1
Et1/0 172.16.10.2 Et0/0 172.16.1.85 06 0050 0050 1
Et1/0 172.16.10.2 Et0/0 172.16.1.86 06 00B3 00B3 1
Et1/0 172.16.10.2 Et0/0 172.16.1.86 06 0185 0185 2
Reference: Reference: http://www.cisco.com/c/en/us/products/collateral/ios-nx-os- software/ios-netflow/prod_white_paper0900aecd80406232.html

**NEW QUESTION 267**

Refer to the exhibit.




The following commands are executed on interface fa0/1 of 2950Switch.
2950Switch(config-if)# switchport port-security
2950Switch(config-if)# switchport port-security mac-address sticky 2950Switch(config-if)# switchport port-security maximum 1
The Ethernet frame that is shown arrives on interface fa0/1. What two functions will occur when this frame is received by 2950Switch? (Choose two.)

A. The MAC address table will now have an additional entry of fa0/1 FFFF.FFFF.FFFF.
B. Only host A will be allowed to transmit frames on fa0/1.
C. This frame will be discarded when it is received by 2950Switch.
D. All frames arriving on 2950Switch with a destination of 0000.00aa.aaaa will be forwarded out fa0/1.
E. Hosts B and C may forward frames out fa0/1 but frames arriving from other switches will not be forwarded out fa0/1.
F. Only frames from source 0000.00bb.bbbb, the first learned MAC address of 2950Switch, will be forwarded out fa0/1.

**Answer:** BD

**Explanation:** The first command 2950Switch(config-if)#switchport port-security is to enable the port- security in a switch port.
In the second command 2950Switch(config-if)#switchport port-security mac-address sticky, we need to know the full syntax of this command is switchport port-security mac-address sticky [MAC]. The STICKY keyword is used to make the MAC address appear in the running configuration and you can save it for later use.
If you do not specify any MAC addresses after the STICKY keyword, the switch will dynamically learn the attached MAC Address and place it into your running-configuration. In this case, the switch will dynamically learn the MAC address 0000.00aa.aaaa of host A and add this MAC address to the running configuration.
In the last command 2950Switch(config-if)#switchport port-security maximum 1 you limited the number of secure MAC addresses to one and dynamically assigned it (because no MAC address is mentioned, the switch will get the MAC address of the attached MAC address to interface fa0/1), the workstation attached to that port is assured the full bandwidth of the port.Therefore only host A will be allowed to transmit frames on fa0/1 -> B is correct.
After you have set the maximum number of secure MAC addresses for interface fa0/1, the secure addresses are included in the “Secure MAC Address” table (this table is similar to the Mac Address Table but you can only view it with the show port-security address command). So in this question, although you don’t see the MAC address of host A listed in the MAC Address Table but frames with a destination of 0000.00aa.aaaa will be forwarded
out of fa0/1 interface -> D is correct.

**NEW QUESTION 272**
What are three benefits of GLBP? (Choose three.)

A. GLBP supports up to eight virtual forwarders per GLBP group.
B. GLBP supports clear text and MD5 password authentication between GLBP group members.
C. GLBP is an open source standardized protocol that can be used with multiple vendors.
D. GLBP supports up to 1024 virtual routers.
E. GLBP can load share traffic across a maximum of four routers.
F. GLBP elects two AVGs and two standby AVGs for redundancy.

**Answer:** BDE

**Explanation:** http://www.cisco.com/en/US/docs/ios/12_2s/feature/guide/fs_glbp2.html
Load Sharing
You can configure GLBP in such a way that traffic from LAN clients can be shared by multiple routers, thereby sharing the traffic load more equitably among available routers. Multiple Virtual Routers GLBP supports up to 1024 virtual routers (GLBP groups) on each physical interface of a router, and up to four virtual forwarders per group.
Preemption
The redundancy scheme of GLBP enables you to preempt an active virtual gateway with a higher priority backup virtual gateway that has become available. Forwarder preemption works in a similar way, except that forwarder preemption uses weighting instead of priority and is enabled by default.
Authentication
You can use a simple text password authentication scheme between GLBP group members to detect configuration errors. A router within a GLBP group with a different authentication string than other routers will be ignored by other group members.
http://www.cisco.com/en/US/docs/switches/datacenter/sw/5_x/nx- s/unicast/configuration/guide/l3_glbp.html
GLBP Authentication
GLBP has three authentication types: MD5 authentication

Plain text authentication No authentication
MD5 authentication provides greater security than plain text authentication. MD5 authentication allows each GLBP group member to use a secret key to generate a keyed MD5 hash that is part of the outgoing packet. At the receiving end, a keyed hash of an incoming packet is generated. If the hash within the incoming packet does not match the generated hash, the packet is ignored. The key for the MD5 hash can either be given directly in the configuration using a key string or supplied indirectly through a key chain. You can also choose to use a simple password in plain text to authenticate GLBP packets, or choose no authentication for GLBP.

**NEW QUESTION 273**
Which command enables IPv6 forwarding on a Cisco router?

A. ipv6 local
B. ipv6 host
C. ipv6 unicast-routing
D. ipv6 neighbor

**Answer:** C

**Explanation:** http://www.ciscopress.com/articles/article.asp?p=31948&seqNum=4
The first step of enabling IPv6 on a Cisco router is the activation of IPv6 traffic forwarding to forward unicast IPv6 packets between network interfaces. By default, IPv6 traffic forwarding is disabled on Cisco routers.
The ipv6 unicast-routing command is used to enable the forwarding of IPv6 packets between interfaces on the router. The syntax for this command is as follows:
Router(config)#ipv6 unicast-routing
The ipv6 unicast-routing command is enabled on a global basis.

**NEW QUESTION 274**
What are the benefit of using Netflow? (Choose three.)

A. Network, Application & User Monitoring
B. Network Planning
C. Security Analysis
D. Accounting/Billing

**Answer:** ACD

**Explanation:** NetFlow traditionally enables several key customer applications including:
Network Monitoring—NetFlow data enables extensive near real time network monitoring capabilities. Flowbased analysis techniques may be utilized to visualize traffic patterns associated with individual routers and switches as well as on a network-wide basis (providing aggregate traffic or application based views) to provide proactive problem detection, efficient troubleshooting, and rapid problem resolution.
Application Monitoring and Profiling—NetFlow data enables network managers to gain a detailed, timebased, view of application usage over the network. This information is used to plan, understand new services, and allocate network and application resources (e.g. Web server sizing and VoIP deployment) to responsively meet customer demands.
User Monitoring and Profiling—NetFlow data enables network engineers to gain detailed understanding of customer/user utilization of network and application resources. This information may then be utilized to efficiently plan and allocate access, backbone and application resources as well as to detect and resolve potential security and policy violations.
Network Planning—NetFlow can be used to capture data over a long period of time producing the opportunity to track and anticipate network growth and plan upgrades to increase the number of routing devices, ports, or higher- bandwidth interfaces. NetFlow services data optimizes network planning including peering, backbone upgrade planning, and routing policy planning. NetFlow helps to minimize the total cost of network operations
while maximizing network performance, capacity, and reliability. NetFlow detects unwanted WAN traffic, validates bandwidth and Quality of Service (QOS) and allows the analysis of new network applications.
NetFlow will give you valuable information to reduce the cost of operating your network. Security Analysis—NetFlow identifies and classifies DDOS attacks, viruses and worms in
real-time. Changes in network behavior indicate anomalies that are clearly demonstrated in
NetFlow data. The data is also a valuable forensic tool to understand and replay the history of security incidents.
Accounting/Billing—NetFlow data provides fine-grained metering (e.g. flow data includes details such as IP addresses, packet and byte counts, timestamps, type-of-service and application ports, etc.) for highly flexible and detailed resource utilization accounting. Service providers may utilize the information for billing based on time-of-day, bandwidth usage, application usage, quality of service, etc. Enterprise customers may utilize the information for departmental charge-back or cost allocation for resource utilization.
NetFlow Data Warehousing and Data Mining—NetFlow data (or derived information) can be warehoused for later retrieval and analysis in support of proactive marketing and customer service programs (e.g. figure out which applications and services are being utilized by internal and external users and target them for improved service, advertising, etc.). In addition, NetFlow data gives Market Researchers access to the "who", "what", "where", and "how long" information relevant to enterprises and service providers.

**NEW QUESTION 279**
What are three factors a network administrator must consider before implementing Netflow in the network? (Choose three.)

A. CPU utilization
B. where Netflow data will be sent
C. number of devices exporting Netflow data
D. port availability
E. SNMP version
F. WAN encapsulation

**Answer:** ABC

**Explanation:** NetFlow has a reputation for increasing CPU utilization on your network devices. Cisco's
performance testing seems to indicate that newer hardware can accommodate this load pretty well, but you will still want to check it out before you turn on the feature. Some symptoms of high CPU utilization are very large jitter and increased delay. Services running on the device may also be affected.

Another thing to keep in mind is the amount of data you're going to be sending across the network. Depending on how much traffic you have and how you configure it, the traffic can be substantial. For example, you may not want to send NetFlow data from a datacenter switch to a NetFlow collector on the other side of a small WAN circuit. Also bear in mind that the flows from aggregating large numbers of devices can add up.
Reference: http://searchenterprisewan.techtarget.com/tip/How-the-NetFlow-protocol-monitors-your-WAN

**NEW QUESTION 283**
Which statement describes VRRP object tracking?

A. It monitors traffic flow and link utilization.
B. It ensures the best VRRP router is the virtual router master for the group.
C. It causes traffic to dynamically move to higher bandwidth links.
D. It thwarts man-in-the-middle attacks.

**Answer:** B

**Explanation:** VRRP object tracking provides a way to ensure the best VRRP router is virtual router master for the group by altering VRRP priorities to the status of tracked objects such as interface or IP route states.
Reference: http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipapp_fhrp/configuration/xe-3s/fhp-xe-3s-book/fhp-vrrp.html

**NEW QUESTION 285**
A network administrator needs to configure port security on a switch. Which two statements are true? (Choose two.)

A. The network administrator can apply port security to dynamic access ports.
B. When dynamic MAC address learning is enabled on an interface, the switch can learn new addresses, up to the maximum defined.
C. The sticky learning feature allows the addition of dynamically learned addresses to the running configuration.
D. The network administrator can configure static secure or sticky secure MAC addresses in the voice VLAN.
E. The network administrator can apply port security to EtherChannels.

**Answer:** BC

**Explanation:** Follow these guidelines when configuring port security:
+ Port security can only be configured on static access ports, trunk ports, or 802.1Q tunnel ports. -> A is not correct.
+ A secure port cannot be a dynamic access port.
+ A secure port cannot be a destination port for Switched Port Analyzer (SPAN).
+ A secure port cannot belong to a Fast EtherChannel or Gigabit EtherChannel port group.
-> E is not correct
+ You cannot configure static secure or sticky secure MAC addresses on a voice VLAN. -> D is not correct.
+ When you enable port security on an interface that is also configured with a voice VLAN, you must set the maximum allowed secure addresses on the port to at least two.
+ If any type of port security is enabled on the access VLAN, dynamic port security is automatically enabled on the voice VLAN.
+ When a voice VLAN is configured on a secure port that is also configured as a sticky secure port, all addresses seen on the voice VLAN are learned as dynamic secure addresses, and all addresses seen on the access VLAN (to which the port belongs) are learned as sticky secure addresses.
+ The switch does not support port security aging of sticky secure MAC addresses.
+ The protect and restrict options cannot be simultaneously enabled on an interface.

**NEW QUESTION 287**
In GLBP, which router will respond to client ARP requests?

A. The active virtual gateway will reply with one of four possible virtual MAC addresses.
B. All GLBP member routers will reply in round-robin fashion.
C. The active virtual gateway will reply with its own hardware MAC address.
D. The GLBP member routers will reply with one of four possible burned in hardware addresses.

**Answer:** A

**Explanation:** GLBP Virtual MAC Address Assignment
A GLBP group allows up to four virtual MAC addresses per group. The AVG is responsible for assigning the virtual MAC addresses to each member of the group. Other group members request a virtual MAC address after they discover the AVG through hello messages. Gateways are assigned the next MAC address in sequence. A virtual forwarder that is assigned a virtual MAC address by the AVG is known as a primary virtual forwarder. Other members of the GLBP group learn the virtual MAC addresses from hello messages. A virtual forwarder that has learned the virtual MAC address is referred to as a secondary virtual forwarder.
Reference: http://www.cisco.com/en/US/docs/ios/12_2t/12_2t15/feature/guide/ft_glbp.html

**NEW QUESTION 290**
Which command can be used from a router to verify the Layer 3 path to a host?

A. tracert address
B. traceroute address
C. telnet address
D. ssh address

**Answer:** B

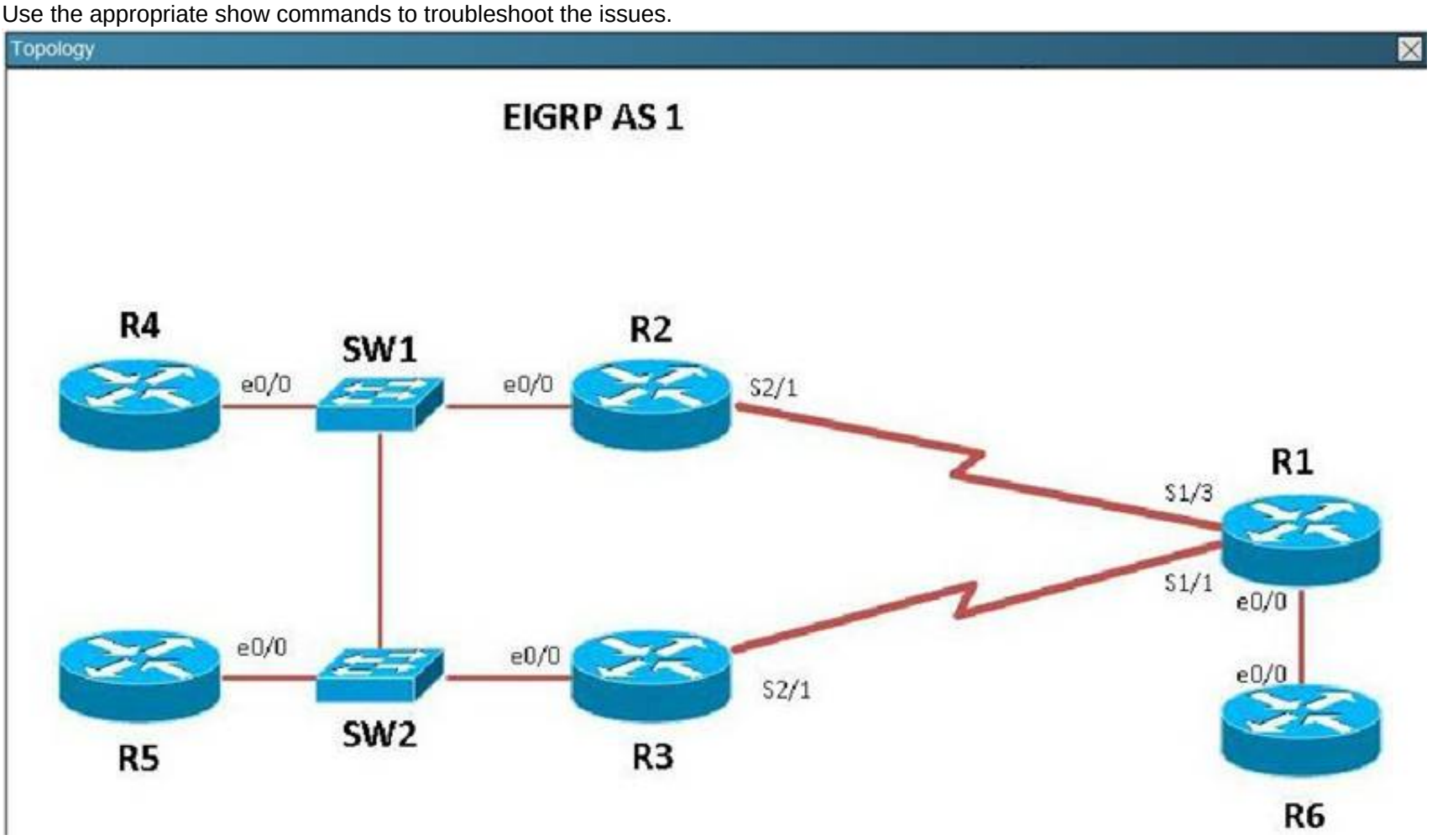
**NEW QUESTION 295**

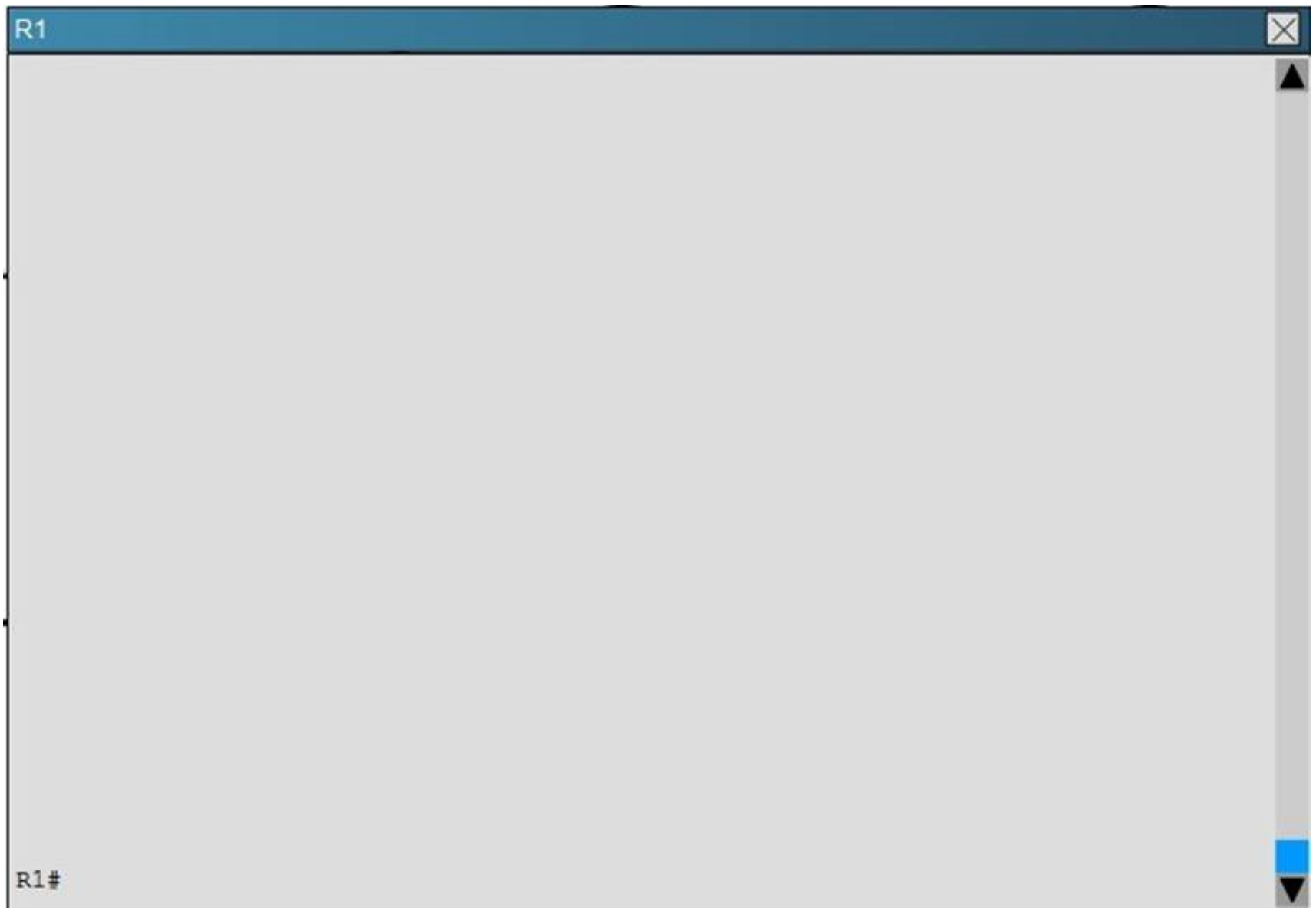
A network administrator has configured access list 173 to prevent Telnet and ICMP traffic from reaching a server with the address of 192.168.13.26. Which commands can the administrator issue to verify that the access list is working properly? (Choose three.)

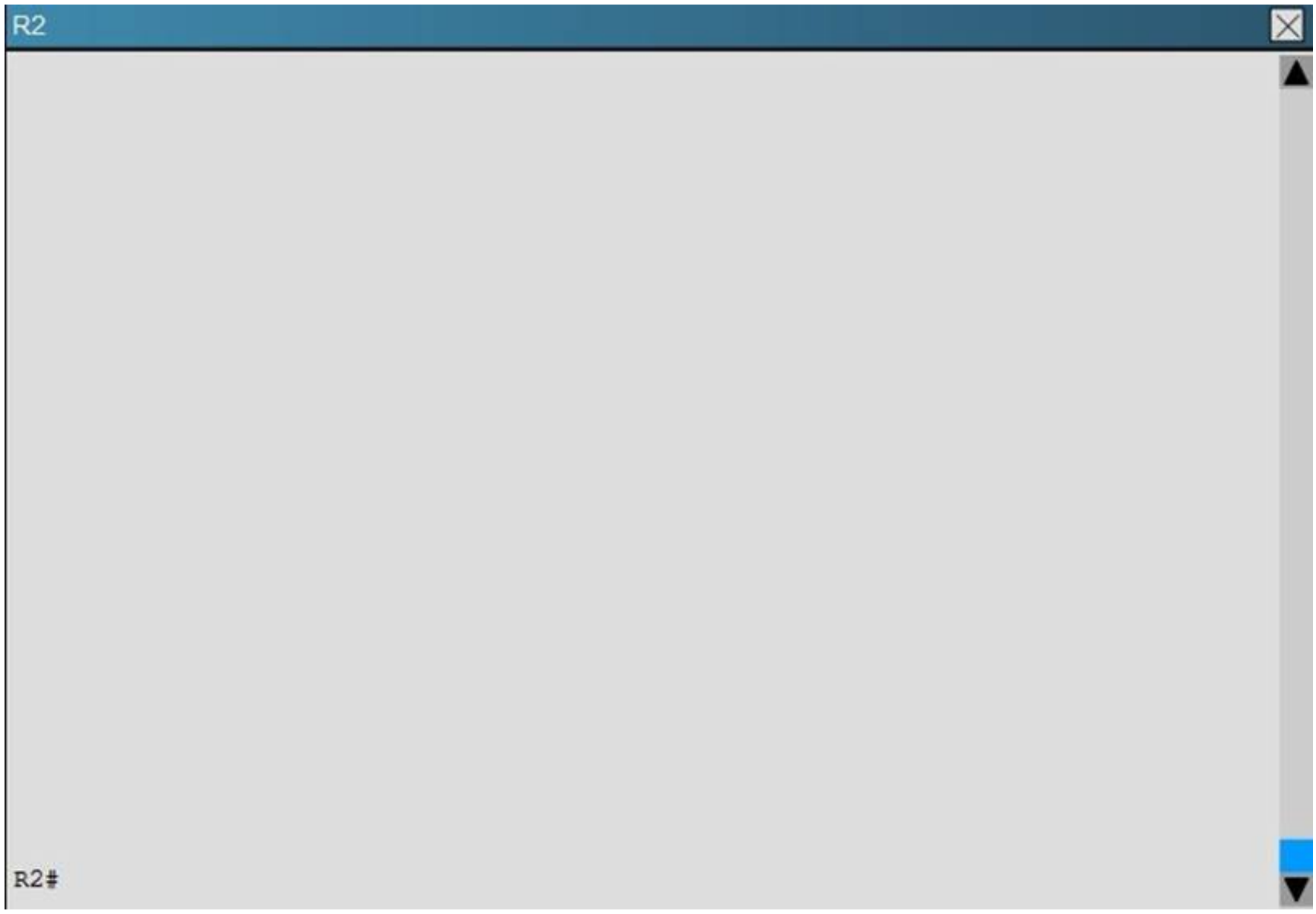
A. Router# ping 192.168.13.26
B. Router# debug access-list 173
C. Router# show open ports 192.168.13.26
D. Router# show access-lists
E. Router# show ip interface

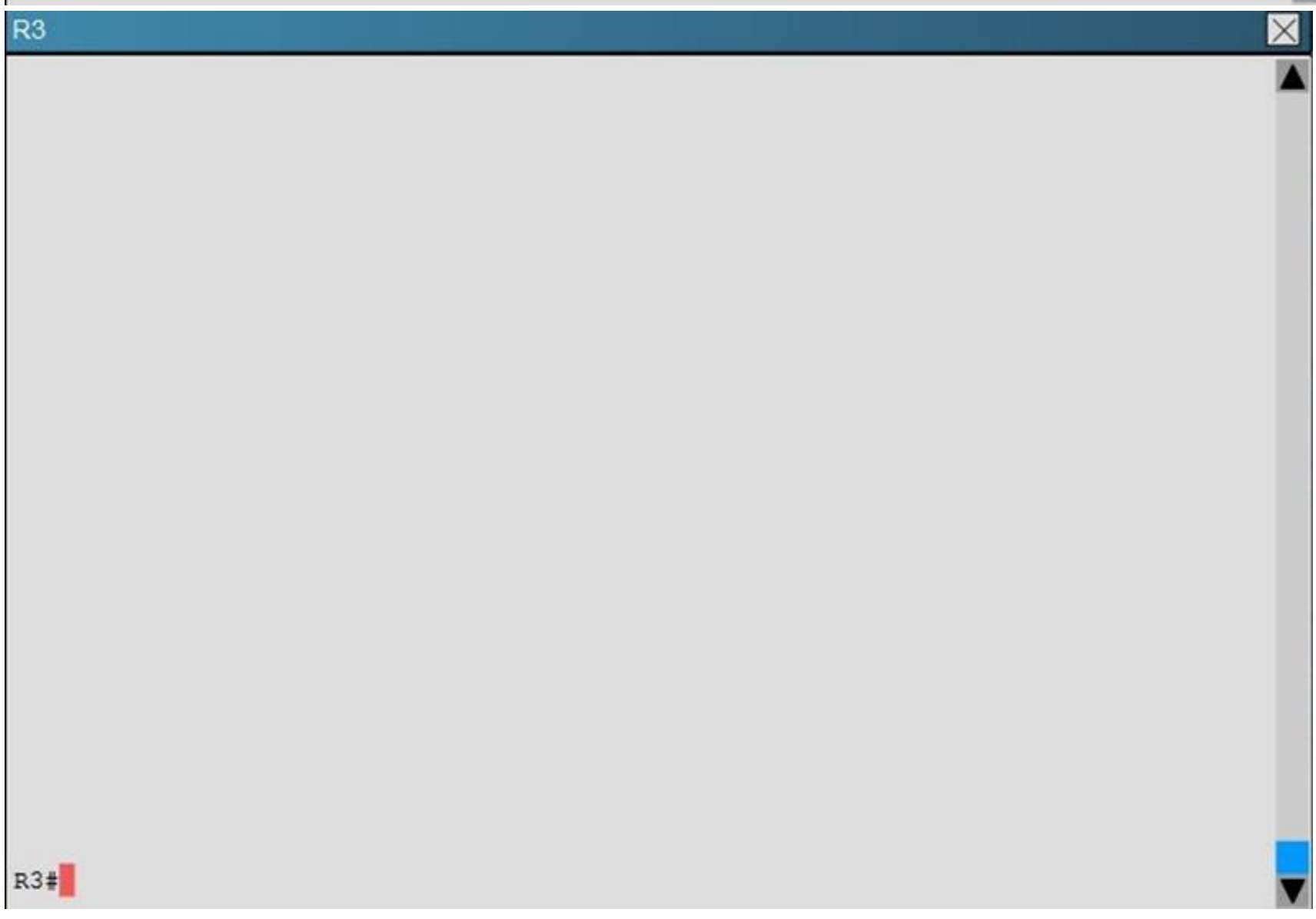
**Answer:** ADE

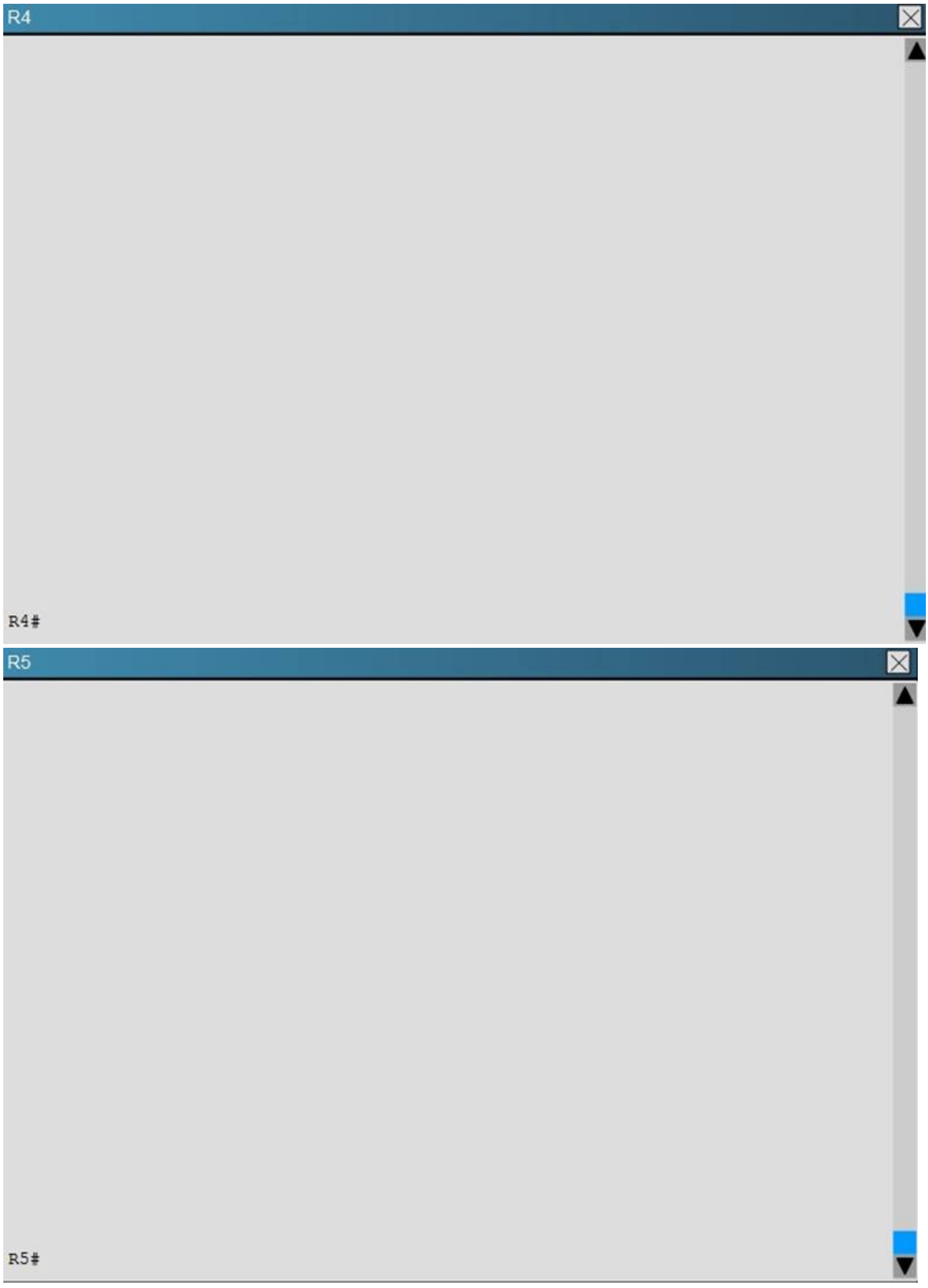
**NEW QUESTION 296**
Scenario
Refer to the topology. Your company has connected the routers R1. R2. and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.
The EIGRP routing protocol is configured.
You are required to troubleshoot and resolve the EIGRP issues between the various routers.
Use the appropriate show commands to troubleshoot the issues.

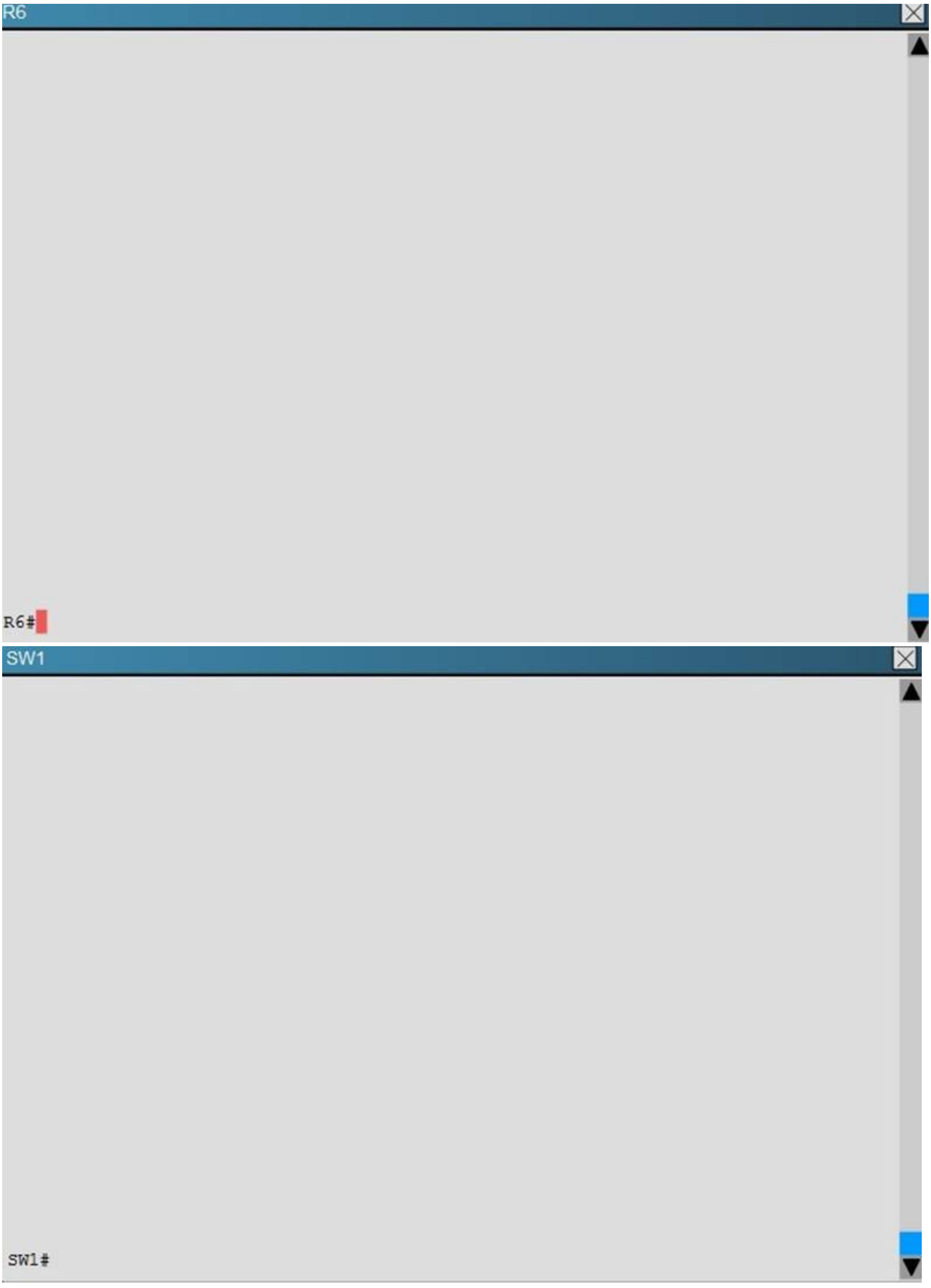


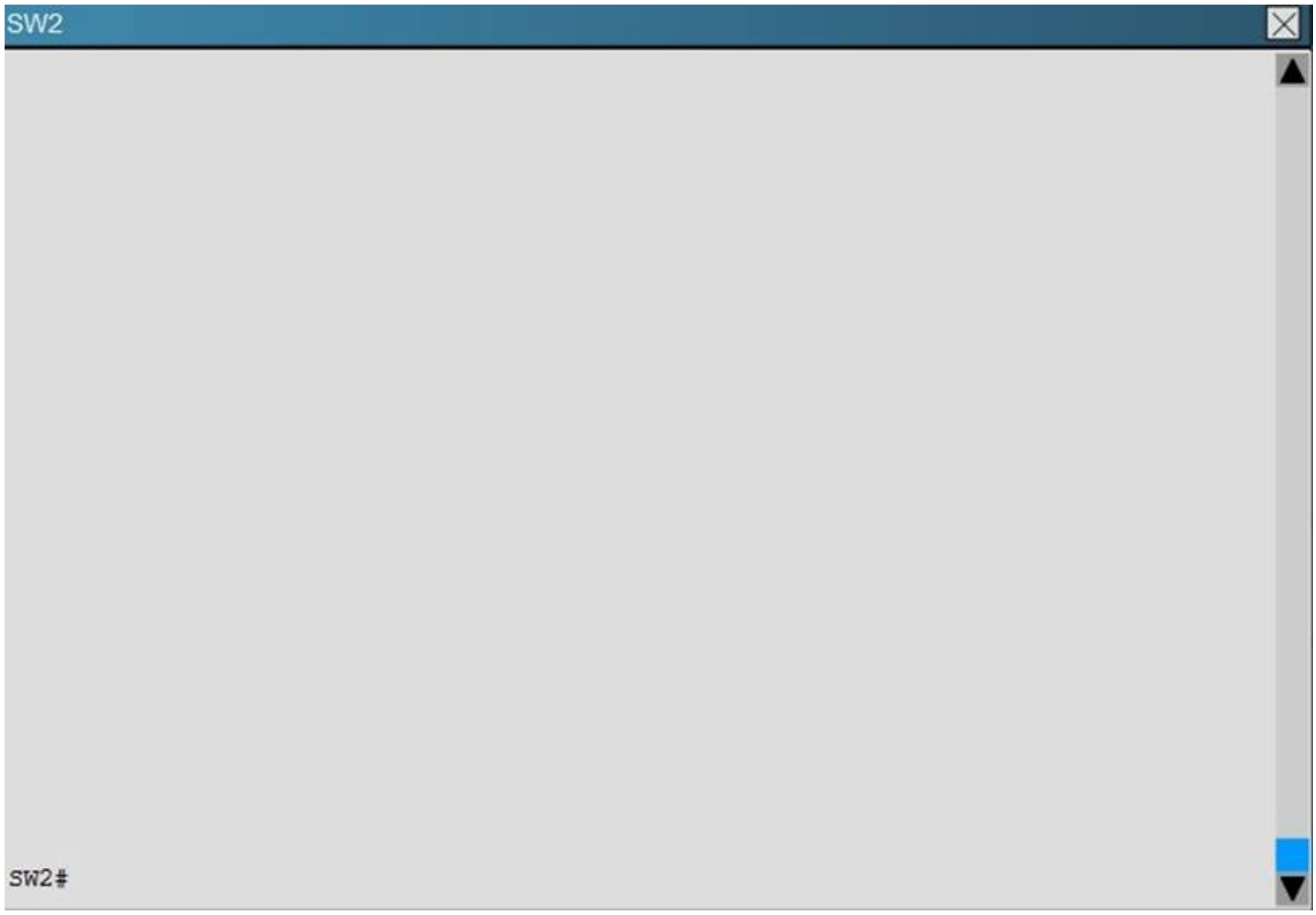




R2
R2#


R3
R3#


R4
R4#
R5
R5#


R6
R6#
SW1
SW1#

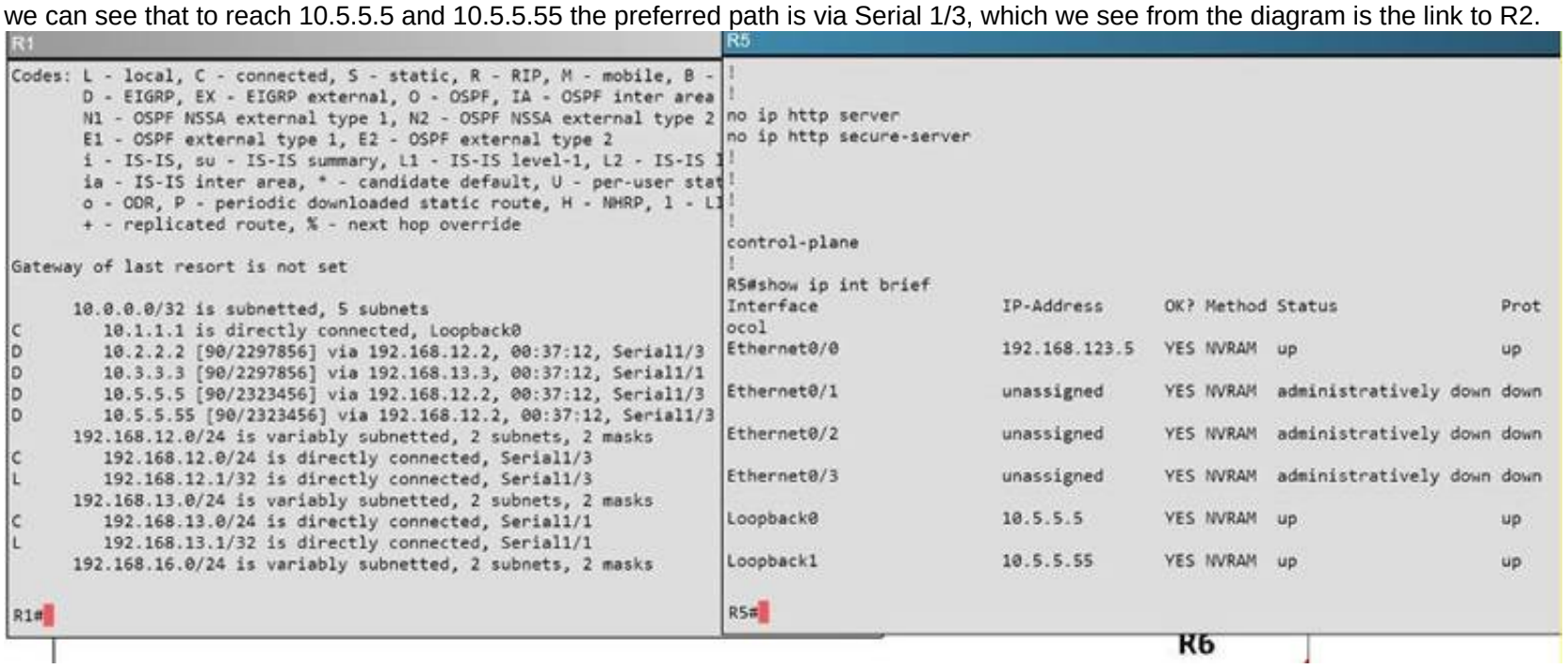



Which path does traffic take from R1 to R5?

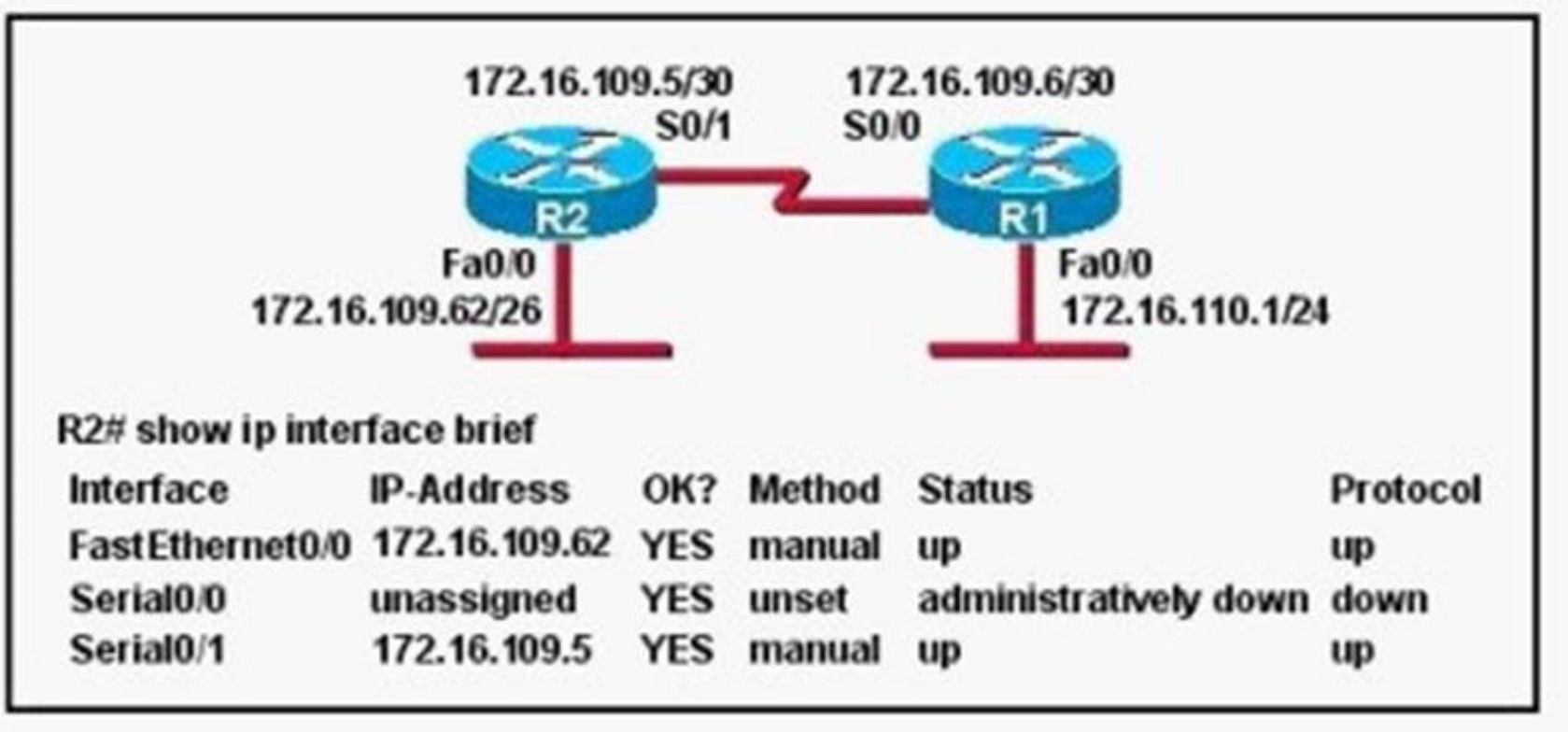
A. The traffic goes through R2.
B. The traffic goes through R3.
C. The traffic is equally load-balanced over R2 and R3.
D. The traffic is unequally load-balanced over R2 and R3.

**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 300**
Refer to the exhibit.



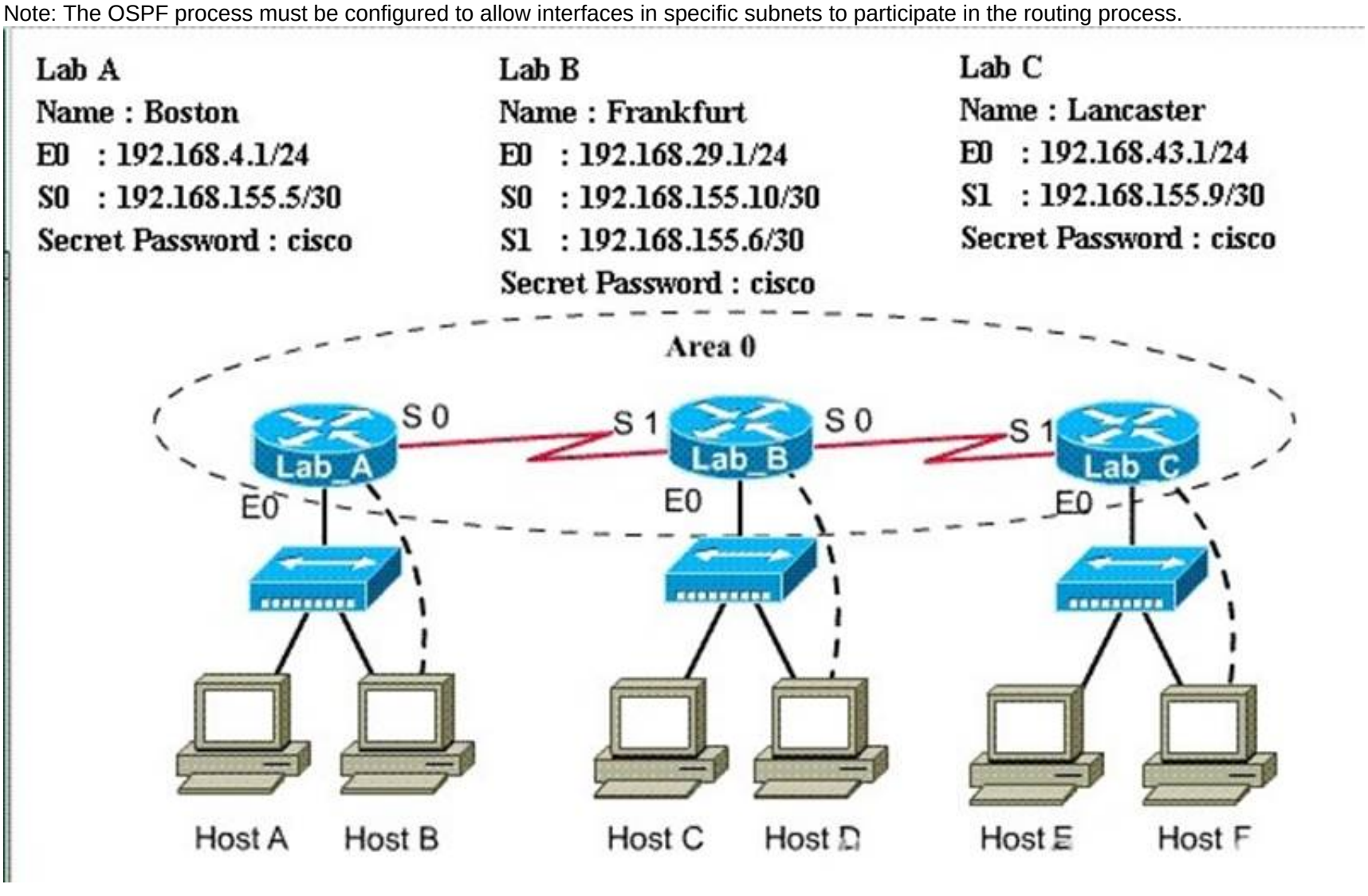

Assuming that the entire network topology is shown, what is the operational status of the interfaces of R2 as indicated by the command output shown?

A. One interface has a problem.
B. Two interfaces have problems.
C. The interfaces are functioning correctly.
D. The operational status of the interfaces cannot be determined from the output shown.

**Answer:** C

**Explanation:** R2 has setup with two interface s0/1 and fa0/0 and both are interfaces configured with IP address and up. "show ip interface brief" showing the status of R2 interfaces.

**NEW QUESTION 304**
CORRECT TEXT
A sporting goods manufacturer has decided to network three (3) locations to improve efficiency in inventory control. The routers have been named to reflect the location: Boston, Frankfurt, and Lancaster.
The necessary networking has been completed at each location, and the routers have been configured with single area OSPF as the routing protocol. The Boston router was recently installed but connectivity is not complete because of incomplete routing tables. Identify and correct any problem you see in the configuration.
Note: The OSPF process must be configured to allow interfaces in specific subnets to participate in the routing process.



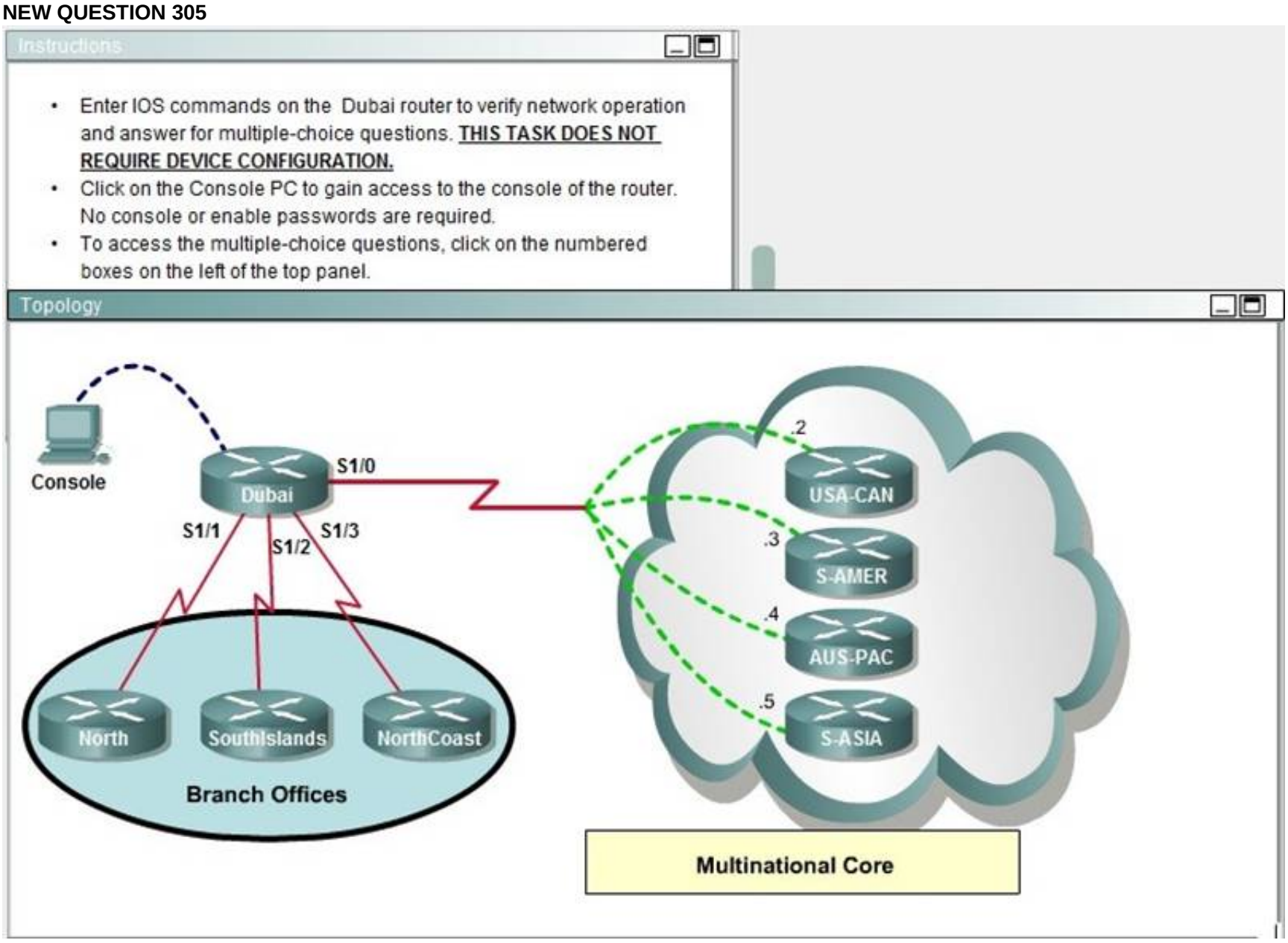

**Answer:**

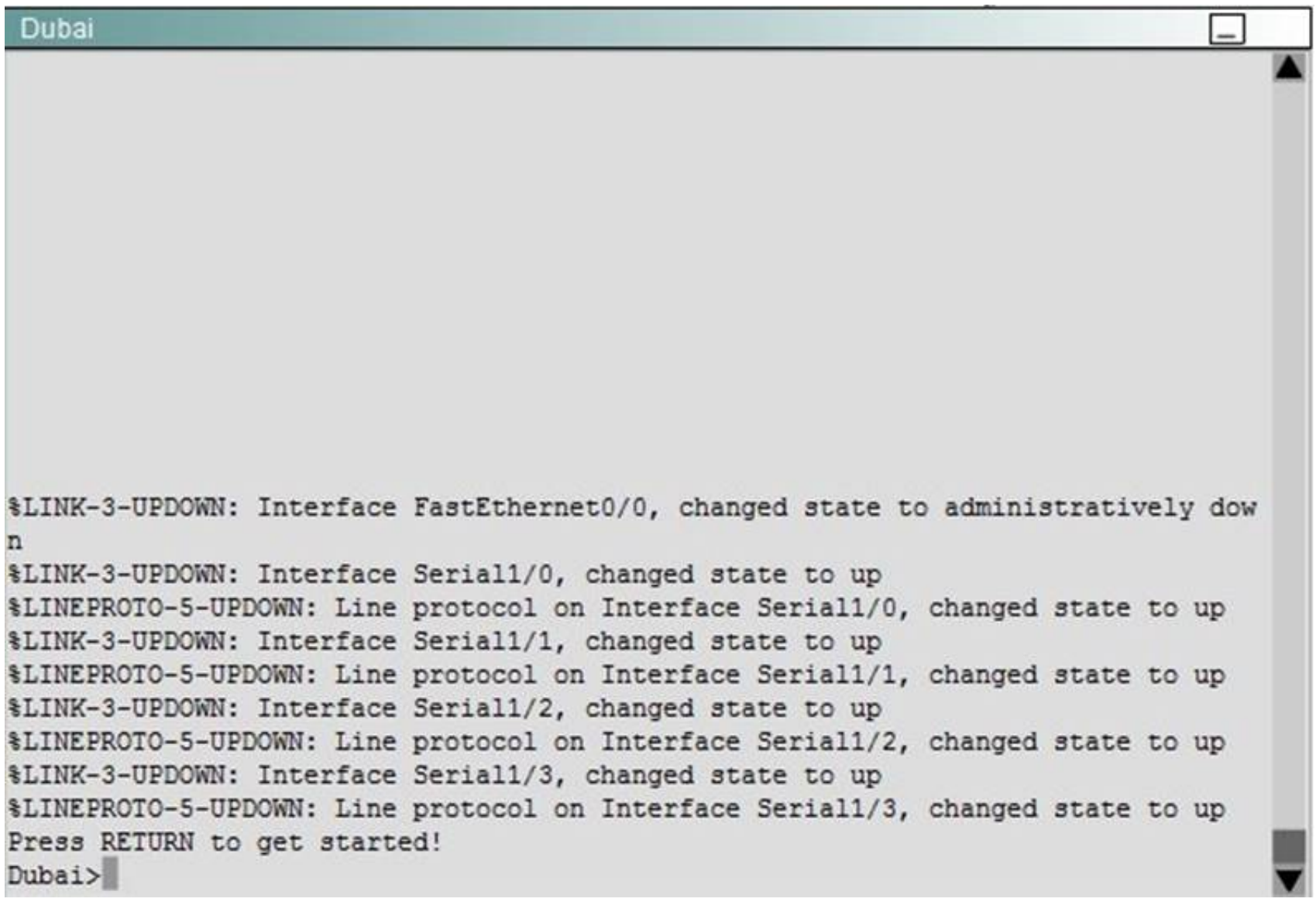
**Explanation:** Boston>enable (type cisco as its password here) Boston#show running-config

```
Boston#show running-config
<output omitted>
!
router ospf 2
 log-adjacency-changes
 network 192.168.4.0 0.0.0.255 area 0
 network 192.168.155.0 0.0.0.3 area 0
!
<output omitted>
```

First, remember that the current OSPF Process ID is 2 because we will need it for later configuration. Next notice that in the second “network” command the network and wildcard mask are 192.168.155.0 and 0.0.0.3 which is equivalent to 192.168.155.0 255.255.255.252 in term of subnet mask. Therefore this subnetwork’s range is from 192.168.155.0 to 192.168.155.3 but the ip address of s0/0 interface of Boston router is 192.168.155.5 which don’t belong to this range -> this is the reason why OSPF did not recognize s0 interface of Boston router as a part of area 0. So we need to find a subnetwork that s0 interface belongs to.
IP address of S0 interface: 192.168.155.5/30
Subnet mask: /30 = 1111 1111.1111 1111.1111 1111.1111 1100
Increment: 4
Network address (which IP address of s0 interface belongs to): 192.168.155.4 (because 4 * 1 = 4 < 5)
Therefore we must use this network instead of 192.168.155.0 network Boston#configure terminal
Boston(config)#router ospf 2
Boston(config-router)#no network 192.168.155.0 0.0.0.3 area 0
Boston(config-router)#network 192.168.155.4 0.0.0.3 area 0 Boston(config-router)#end
Boston#copy running-config startup-config
Finally, you should issue a ping command from Boston router to Lancaster router to make sure it works well.
Boston#ping 192.168.43.1

**NEW QUESTION 305**




Dubai
%LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to administratively dow
n
%LINK-3-UPDOWN: Interface Serial1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/0, changed state to up
%LINK-3-UPDOWN: Interface Serial1/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/1, changed state to up
%LINK-3-UPDOWN: Interface Serial1/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/2, changed state to up
%LINK-3-UPDOWN: Interface Serial1/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/3, changed state to up
Press RETURN to get started!
Dubai>

```
Dubai#sh frame-relay map
Serial1/0 (up): ip 172.30.0.2 dlci 825 (0x7B,0x1CB0), dynamic,
                broadcast,, status defined, active
Serial1/0 (up): ip 172.30.0.3 dlci 230 (0xEA,0x38A0), dynamic,
                broadcast,, status defined, active
Serial1/0 (up): ip 172.30.0.4 dlci 694 (0x159,0x5490), dynamic,
                broadcast,, status defined, active
Serial1/0 (up): ip 172.30.0.5 dlci 387 (0x1C8,0x7080), dynamic,
                broadcast,, status defined, active
Dubai#
interface FastEthernet0/0
 no ip address
 shutdown
!
interface Serial1/0
 ip address 172.30.0.1 255.255.255.240
 encapsulation frame-relay
 no fair-queue
!
interface Serial1/1
 ip address 192.168.0.1 255.255.255.252
!
interface Serial1/2
 ip address 192.168.0.5 255.255.255.252
 encapsulation ppp
!
interface Serial1/3
 ip address 192.168.0.9 255.255.255.252
 encapsulation ppp
 ppp authentication chap
!
router rip
 version 2
 network 172.30.0.0
 network 192.168.0.0
 no auto-summary
!
line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4
 password Tlnet
 login
!
end
```

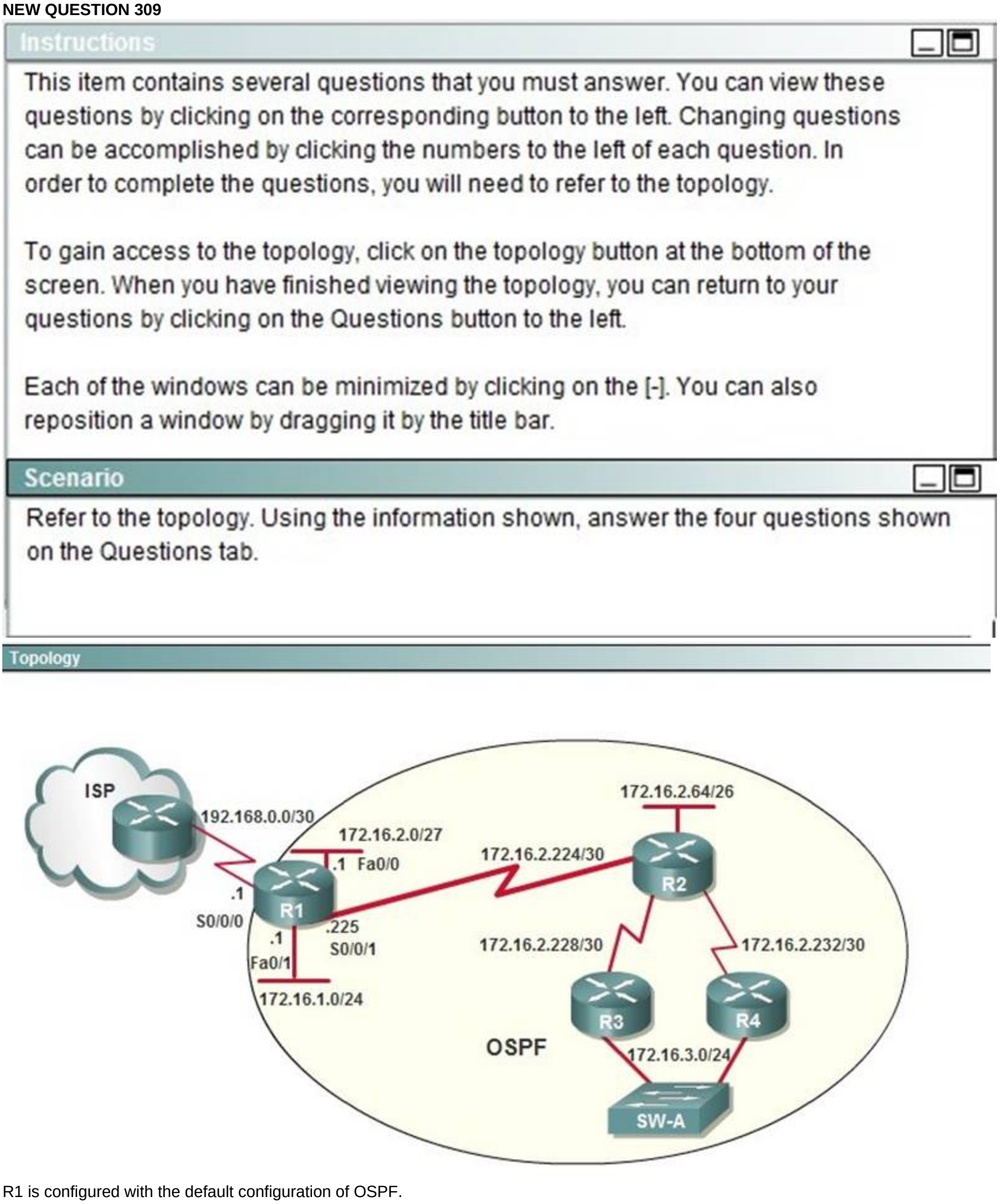
A static map to the S-AMER location is required. Which command should be used to create this map?

A. frame-relay map ip 172.30.0.3 825 broadcast
B. frame-relay map ip 172.30.0.3 230 broadcast
C. frame-relay map ip 172.30.0.3 694 broadcast
D. frame-relay map ip 172.30.0.3 387 broadcast

**Answer:** B

**Explanation:** Frame-relay map ip 172.30.0.3 230 broadcast
172.30.0.3 is S-AMER router ip address and its configure on 230 dlci value. Check "show frame-relay map " output in the diagram.

**NEW QUESTION 309**



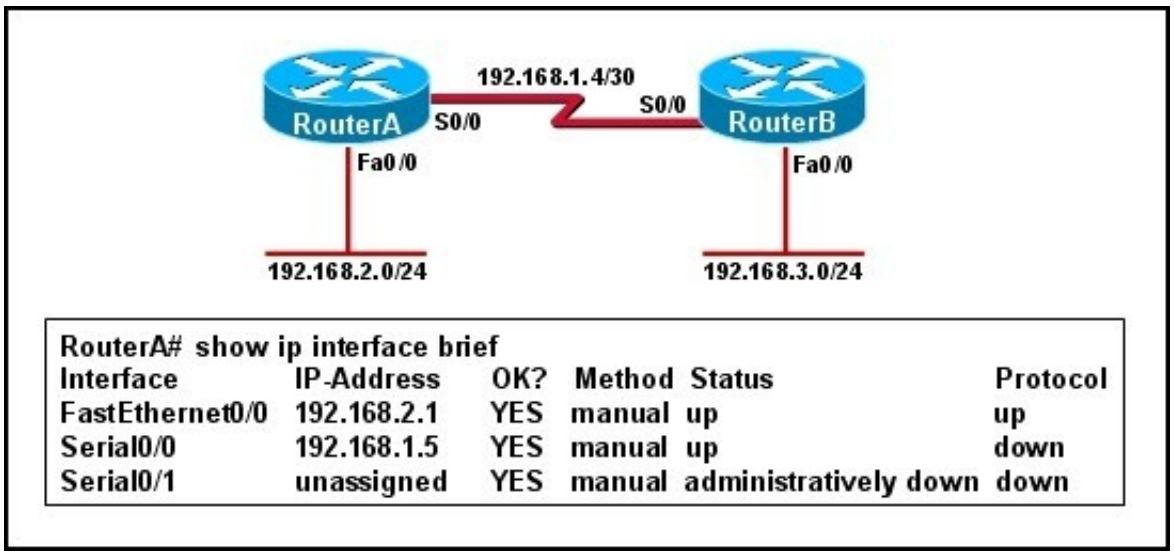

R1 is configured with the default configuration of OSPF.
From the following list of IP addresses configured on R1, which address will the OSPF process select as the router ID?

A. 192.168.0.1
B. 172.16.1.1
C. 172.16.2.1
D. 172.16.2.225

**Answer:** A

**Explanation:** The Router ID (RID) is an IP address used to identify the router and is chosen using the following sequence:
+ The highest IP address assigned to a loopback (logical) interface.
+ If a loopback interface is not defined, the highest IP address of all active router's physical interfaces will be chosen.
+ The router ID can be manually assigned
In this case, because a loopback interface is not configured so the highest active IP address 192.168.0.1 is chosen as the router ID.

**NEW QUESTION 313**
Refer to the exhibit.




```
RouterA# show ip interface brief
Interface          IP-Address      OK?  Method  Status                  Protocol
FastEthernet0/0    192.168.2.1     YES  manual  up                      up
Serial0/0          192.168.1.5     YES  manual  up                      down
Serial0/1          unassigned      YES  manual  administratively down  down
```

Hosts in network 192.168.2.0 are unable to reach hosts in network 192.168.3.0. Based on the output from RouterA, what are two possible reasons for the failure? (Choose two.)

A. The cable that is connected to S0/0 on RouterA is faulty.
B. Interface S0/0 on RouterB is administratively down.
C. Interface S0/0 on RouterA is configured with an incorrect subnet mask.
D. The IP address that is configured on S0/0 of RouterB is not in the correct subnet.
E. Interface S0/0 on RouterA is not receiving a clock signal from the CSU/DSU.
F. The encapsulation that is configured on S0/0 of RouterB does not match the encapsulation that is configured on S0/0 of RouterA.

**Answer:** EF

**Explanation:** http://www.cisco.com/en/US/docs/routers/access/800/819/software/configuration/Guide/6se r_conf.html

**NEW QUESTION 318**
.....

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