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Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) (Include 2023 Newest Simulation Labs)

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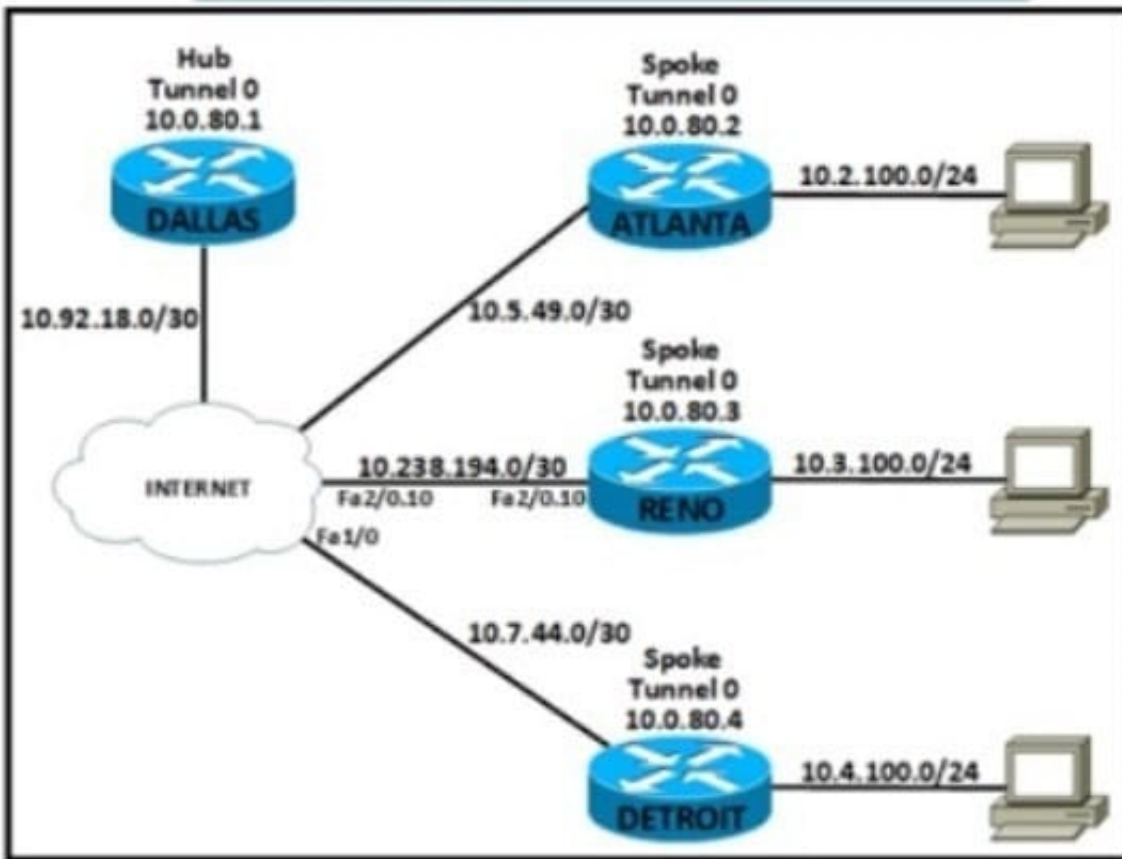
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QUESTION 1

Refer to the exhibit

An engineer must connect the Reno and Detroit spokes using DMVPN phase 2 Hub tunnel configuration is

```
Dallas
Interface Tunnel0
ip address 10.0.80.1 255.255.255.0
ip nhrp authentication cisco123
ip nhrp map multicast dynamic
ip nhrp network-id 5
tunnel source Serial0/0
tunnel mode gre multipoint
```

Which configuration accomplishes the task?

○ Reno
interface Tunnel0
ip address 10.0.80.3 255.255.255.0
ip nhrp authentication cisco321
ip nhrp map multicast 10.92.18.2
ip nhrp map 10.0.80.1 10.92.18.2
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.238.194.2
tunnel mode gre multipoint

Detroit
interface Tunnel0
ip address 10.0.80.4 255.255.255.0
ip nhrp authentication cisco321
ip nhrp map 10.0.80.1 10.92.18.2
ip nhrp map multicast 10.92.18.2
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.7.44.2
tunnel mode gre multipoint

○ Reno
interface Tunnel0
ip address 10.0.80.3 255.255.255.0
ip nhrp authentication cisco123
ip nhrp map multicast 10.92.18.2
ip nhrp map 10.92.18.2 10.0.80.1
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.238.194.2
tunnel mode gre multipoint

Detroit
interface Tunnel0
ip address 10.0.80.4 255.255.255.0
ip nhrp authentication cisco123
ip nhrp map 10.92.18.2 10.0.80.1
ip nhrp map multicast 10.92.18.2
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.7.44.2
tunnel mode gre multipoint

○ Reno
interface Tunnel0
ip address 10.0.80.3 255.255.255.0
ip nhrp authentication cisco123
ip nhrp map broadcast 10.92.18.2
ip nhrp map 10.0.80.1 10.92.18.2
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.238.194.2
tunnel mode gre multipoint

Detroit
interface Tunnel0
ip address 10.0.80.4 255.255.255.0
ip nhrp authentication cisco123
ip nhrp map 10.0.80.1 10.92.18.2
ip nhrp map broadcast 10.92.18.2
ip nhrp network-id 5
ip nhrp nhs 10.0.80.1
tunnel source 10.7.44.2
tunnel mode gre multipoint

```
◯ Reno
  interface Tunnel0
   ip address 10.0.80.3 255.255.255.0
   ip nhrp authentication cisco123
   ip nhrp map multicast 10.92.18.2
   ip nhrp map 10.0.80.1 10.92.18.2
   ip nhrp network-id 5
   ip nhrp nhs 10.0.80.1
   tunnel source 10.238.194.2
   tunnel mode gre multipoint

  Detroit
  interface Tunnel0
   ip address 10.0.80.4 255.255.255.0
   ip nhrp authentication cisco123
   ip nhrp map 10.0.80.1 10.92.18.2
   ip nhrp map multicast 10.92.18.2
   ip nhrp network-id 5
   ip nhrp nhs 10.0.80.1
   tunnel source 10.7.44.2
   tunnel mode gre multipoint
```

A. Option A

B. Option B

C. Option C

D. Option D

Correct Answer: C

QUESTION 2

You can use a variety of commands to verify and troubleshoot the operation of route redistribution on your network.

Which command should you NOT use on routers that are overloaded?

A. trace

B. debug

C. show ip route

D. show ipx route

Correct Answer: B

The debug command uses a good deal of router CPU time, so you should not initiate this command on an already overloaded router. It often requires the router to do extensive examination of the packets, requiring heavy use of resources at

![Pass2Lead](https://Pass2Lead.com)
times.

You could also possibly overload the router just with the debug command. If the router is overloaded to the point that it is no longer responding to your EXEC session, you may need to reload the router to stop the debug output.

These additional steps can help to verify proper route redistribution:

On the router not performing the redistribution, use the show ip route command to see if the redistributed routes are displayed. On the router performing the redistribution, use the show ip protocol command to verify the redistribution

configuration, and use the show ip route command that to verify the proper routes are there from each routing protocol.

The trace command is used to discover the route that packets take to their destination.

The show ip route command displays the routing table.

The show ip protocols command displays information about each routing protocol running on the router.

Objective:

Layer 3 Technologies

Sub-Objective:

Configure and verify manual and autosummarization with any routing protocol
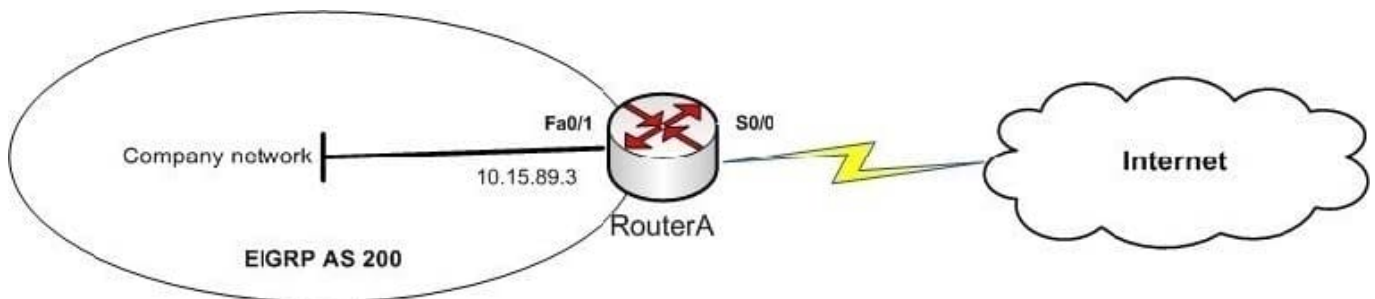
References:

Cisco > Home > Support > Technology Support > Dial and Access > ISDN, CAS > Design > Design Technotes > Important Information on Debug Commands > Document ID: 10374 Cisco > Cisco IOS Debug Command Reference > Using

Debug Commands

QUESTION 3

You manage the company network, as shown in the network diagram below:

You executed the following command on RouterA:

routerA(config)# ip route 0.0.0.0 0.0.0.0 S0/0 routerA(config)# router eigrp 200 routerA(config-router)# redistribute static metric 1000 1 255 1 1500

Which of the following statements are TRUE about the given set of commands? (Choose two.)

A. A static default route is created on RouterA

B. A summary default route is created on RouterA

C. The default route is redistributed into the EIGRP network

D. The default route is not advertised to the EIGRP network

Correct Answer: AC

The given set of commands creates a static default route on RouterA and redistributes this route into the EIGRP company network. The ip route 0.0.0.0 0.0.0.0 S0/0 command executed in the global configuration mode creates a static default route on the router. The ip route command allows you to specify a static route. The redistribute static metric 1000 1 255 1 1500 command then redistributes the static default route into the EIGRP autonomous system (AS) 200. This implies that the EIGRP network identifies the default route as an external route, and traffic to all unknown destination subnets will be diverted to the default route.

Alternatively, default routes can be advertised into EIGRP networks by either of the following methods: Using the network 0.0.0.0 command on the router Using the ip summary-address eigrp 200 0.0.0.0 0.0.0.0 command on the router

A summary default route is not created on RouterA in the scenario. If the ip summary-address eigrp 200 0.0.0.0 0.0.0.0 command was used on RouterA, then a summary default route would be created. The summary default route points to the

0.0.0.0 network with the null0 interface as the next-hop interface. Summary default routes are helpful for providing remote networks with a default route.

The default route is advertised to the EIGRP network because the redistribute command was executed. This command is used to advertise the default route to the EIGRP network.

Objective:

Layer 3 Technologies

Sub-Objective:

Configure and verify default routing

References:

Cisco > Support > Technology Support > IP > IP Routing > Design > Design TechNotes > Configuring a Gateway of Last Resort Using IP Commands Cisco > Support > Technology Support > IP > IP Routing > Technology Information >

Technology White Paper > Enhanced Interior Gateway Routing Protocol

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QUESTION 4

Examine the following diagram:
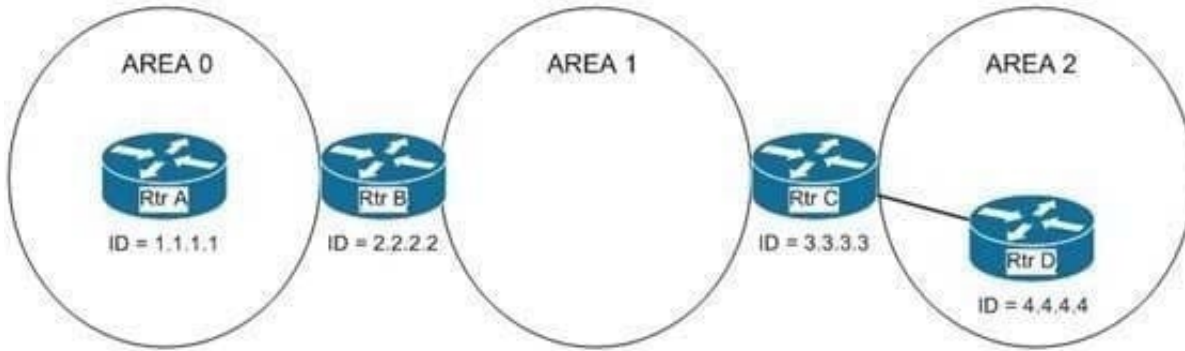
Routing updates are not being received on Router A from Router D. The partial output of the show run command for Router B and Router C is shown below:

```
hostname Router C
ipv6 router ospf 1 area 1
router-id 3.3.3.3
area 1 virtual link 4.4.4.4
```

```
hostname Router B
!
ipv6 router ospf 1 area 1
router-id 2.2.2.2
```

What commands should you run to ensure that routing updates are getting to Router A from Router D? (Choose all that apply.)

A. routerC(config-router)# area 1 virtual-link 2.2.2.2

B. routerC(config-router)# no area 1 virtual-link 4.4.4.4 routerC(config-router)# area 0 virtual-link 2.2.2.2

C. routerB(config-router)# area 0 virtual-link 3.3.3.3

D. routerB(config-router)# area 1 virtual-link 3.3.3.3

E. routerC(config-router)# no area 1 virtual-link 4.4.4.4 routerC(config-router)# area 1 virtual-link 2.2.2.2

F. routerB(config-router)# area 1 virtual-link 4.4.4.4

G. routerB(config-router)# no area 1 virtual-link 4.4.4.4

Correct Answer: DE

The problem is that the virtual link that provides a connection from area 2 to area 0 is misconfigured on Router C, and is missing entirely from Router B. The current configuration on Router C uses the router ID 4.4.4.4 in the virtual link statement, but the neighbor that is on the other end of the link (Router B) has an ID of 2.2.2.2. Therefore, you must remove the incorrect statement with this command:

routerC(config-router)# no area 1 virtual-link 4.4.4.4

Then, you would recreate it correctly with the following command:

routerC(config-router)# area 1 virtual-link 2.2.2.2

The configuration of the virtual link on Router B is missing completely. To add it, you would use the area 1 virtual-link command and configure the neighbor as Router C at 3.3.3.3:

routerB(config-router)# area 1 virtual-link 3.3.3.3

You should not run the following command on Router C:

routerC(config-router)# area 1 virtual-link 2.2.2.2

This would apply a correct statement, but leave in the incorrect statement.

You should not run any of the following sets of commands:

routerC(config-router)# no area 1 virtual-link 4.4.4.4

routerC(config-router)# area 0 virtual-link 2.2.2.2

or

routerB(config-router)# area 0 virtual-link 3.3.3.3

These commands all incorrectly include the area 0 syntax. The area in the command should be the area being transited to get to area 0, which is area 1.

You should not run the routerB(config-router)# area 1 virtual-link 4.4.4.4 command on Router B. This command uses an incorrect router ID. The neighbor for Router B should be Router C, 3.3.3.3

You should not run the routerB(config-router)# no area 1 virtual-link 4.4.4.4 command on Router B. There is no virtual link to remove from Router B.

Objective:

Layer 3 Technologies

Sub-Objective:

Configure and verify network types, area types, and router types

References:

Home>Support>Technology Support>IP>IP Routing>Configure>Configuration Examples and Technotes>OSPF virtual link

Cisco > Home > Support > Technology Support > IP > IP Routing > Design > Design Technotes > What Are OSPF Areas and Virtual Links?

QUESTION 5

Users were moved from the local DHCP server to the remote corporate DHCP server. After the move, none of the users were able to use the network.Which two issues will prevent this setup from working properly? (Choose two)

A. Auto-QoS is blocking DHCP traffic.

B. The DHCP server IP address configuration is missing locally

![Pass2Lead](https://Pass2Lead.com)
C. 802.1X is blocking DHCP traffic

D. The broadcast domain is too large for proper DHCP propagation

E. The route to the new DHCP server is missing

Correct Answer: BE

QUESTION 6

You instructed your assistant to configure redistribution of OSPF routes into EIGRP on Router 9. The routes are not being advertised to EIGRP and you are troubleshooting the problem. The EIGRP process ID is 100 and the OSPF process ID is 20. When you ask your assistant what commands were executed, you are shown the following:

Router9(config)# router eigrp 100 Router9(config-router)# redistribute ospf 20

What is the problem?

A. no metric was configured

B. the process IDs are incorrect

C. the redistribute command is executed at the interface configuration prompt

D. the redistribute command is executed at the global configuration prompt

Correct Answer: A

The problem is that the metric was not configured. Some routing protocols require that a metric be provided for the redistributed routing protocol or route redistribution will not occur successfully. RIP and EIGRP both require that a metric be

provided. IS-IS and OSPF do not have this requirement.

When you redistribute traffic into EIGRP without specifying a metric, then the default metric applied is zero, the route will be treated as unreachable, and the route will not be advertised. The addition of the metric parameter as shown below

would solve this issue:

Router9(config)# router eigrp 100

Router9(config-router)# redistribute ospf 20 metric 10000 100 255 1 1500

In this example, 1000 is the bandwidth, 100 is the delay, 255 is the reliability, 1 is the load, and 1500 is the MTU.

The process IDs are correct in the original scenario, and the command was executed in the correct context.
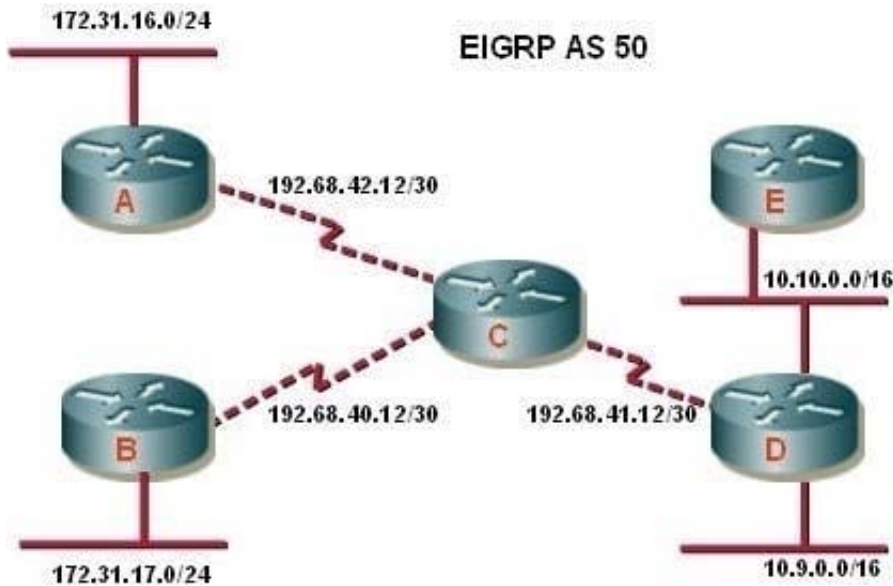
Objective:

Layer 3 Technologies

Sub-Objective:

Configure and verify redistribution between any routing protocols or routing sources

---

References:

Cisco > Home > Support > Technology Support > IP > IP Version 6 > Configure > Configuration Examples and Technotes > Redistributing Routing Protocols

---

QUESTION 7

Examine the exhibit.

What additional EIGRP configuration is required to ensure that all destination networks are reachable if all routers are running pre- 15.0 versions of the IOS?

A. The eigrp stub receive only command should be executed on routers A and B.

B. A static route to 10.10.0.0/16 via the interface to router D should be configured at router C.

C. The no auto-summary router configuration command should be executed on router C.

D. The passive interface command should be executed on routers A and B.

E. The no auto-summary command should be executed on routers A and B.

Correct Answer: E

To ensure the full network is reachable, routers A and B must advertise their networks without first summarizing them to the class B 172.31.0.0/16 address in updates to router C. Otherwise, router C would incorrectly assume that it has two

paths to the 172.31.0.0 classful network: one via router A and the other via router B. Therefore, routers A and B should be configured with the no auto-summary command so that they advertise 172.31.16.0/24 and 172.31.17.0/24,

respectively. Starting with version 15, EIGRP auto summarization is disabled by default

Summarization is beneficial in most cases. It reduces the number of routes in the neighboring router tables and effectively contains EIGRP queries. The problem with discontiguous networks (or subnets) using EIGRP is that EIGRP will

automatically summarize on the classful network boundary. By configuring the router to disable automatic summarization with the no auto-summary command, the routers will be able to see all of the individual subnets, not just a summary.

The no auto-summary command must be issued from router configuration mode as shown below:

router(config-router)# no auto-summary

Note that auto summarization is effective only on directly connected routes. For example, in the scenario exhibit, router C does not need to have auto summarization disabled in order to advertise the subnets to routers D and E. Since those

subnet routes were learned via a route advertisement, they will be advertised to routers D and E without summarization.

In some situations, it may be necessary to turn off auto summarization globally while still summarizing specific networks. If you need to manually summarize a set of networks, the following command when executed in EIGRP configuration

mode can summarize those specific networks while auto summarization is disabled:

ip summary-address [eigrp as-number] [address] [mask]

For example:

router10(config)# int Ethernet0/0

router10(config-if)# ip summary-address eigrp

Objective:

Layer 3 Technologies

Sub-Objective:

Configure and verify manual and autosummarization with any routing protocol

References:

Summarization and Auto-summarization in EIGRP

QUESTION 8

What is the function of BFD?

A. It provides uniform failure detection regardless of media type.

B. It creates high CPU utilization on hardware deployments.

C. It negotiates to the highest version if the neighbor version differs.

D. It provides uniform failure detection on the same media type.

Correct Answer: A

QUESTION 9

Examine the output of the show frame-relay map command:

```
R1#shcw frame-relay map
Serial0/0 (up): ip 10.55.123.2 dlci 122(0x7A,0x1CA0), dynamic,
          broadcast,, status defined, active
Serial0/0 (up): ip 10.55.123.3 dlci 123(0x7B,0x1CB0), dynamic,
          broadcast,, status defined, active
R1#
```

Which of the following statements is true of the configuration of R1?

A. Neither PVC is up

B. A frame-relay map statement was used to manually map the IP address to the DLCI on both PVCs

C. The DLCIs for both PVCs were learned using inverse ARP

D. Broadcast traffic is not allowed on either PVCs

Correct Answer: C

The output shows that the Data Link Connection identifiers (DLCI) for both PVCs were learned using inverse ARP. In a Frame Relay topology, Layer 2 addresses are called DLCSI. Each end of a Frame Relay circuit can learn the DLCI of the

other end through manual configuration, using the frame-relay map command, or it can be learned dynamically, using a process called inverse ARP. When the addresses are learned using inverse ARP, the output of the show frame-relay

map command will indicate that by designating the circuit as dynamic. Both PVCs are up, as indicated by the word active in the output for both PVCs.

A frame-relay map statement not was used to manually map the IP addresses to the DLCI on both PVCs. Were that the case, the output would indicate static in the place where it says dynamic.

Broadcast and multicast traffic are both allowed across both PVCs, as indicated by the word broadcast after each entry.

Objective:

Layer 2 Technologies

Sub-Objective:

Explain Frame Relay

References:

Home > Support > Technology Support > Wan > Frame relay > Troubleshoot and alerts > Troubleshooting TechNotes > Comprehensive Guide to Configuring and Troubleshooting Frame Relay

QUESTION 10

Refer to the exhibit.

![Pass2Lead](https://Pass2Lead.com)
```
R2#show ip eigrp topology 10.10.10.0 255.255.255.0
IP-EIGRP (AS 1): Topology entry for 10.10.10.0/24
   State is Passive, Query origin flag is 1, 1 Successor(s), FD
is 256005120
   Routing Descriptor Blocks:
   10.20.20.3 (FastEthernet0/1), from 10.20.20.3, Send flag is
0x0
        Composite metric is (256005120/256002560), Route is
External
        Vector metric:
          Minimum bandwidth is 10 Kbit
          Total delay is 200 microseconds
          Reliability is 10/255
          Load is 10/255
          Minimum MTU is 10
          Hop count is 1
        External data:
          Originating router is 10.1.1.1
          AS number of route is 1
          External protocol is OSPF, external metric is 0
          Administrator tag is 0 (0x00000000)

R1#sh run | s eigrp
router eigrp 1
 router-id 10.1.1.1
 network 10.2.2.0 0.0.0.255
 no auto-summary
```
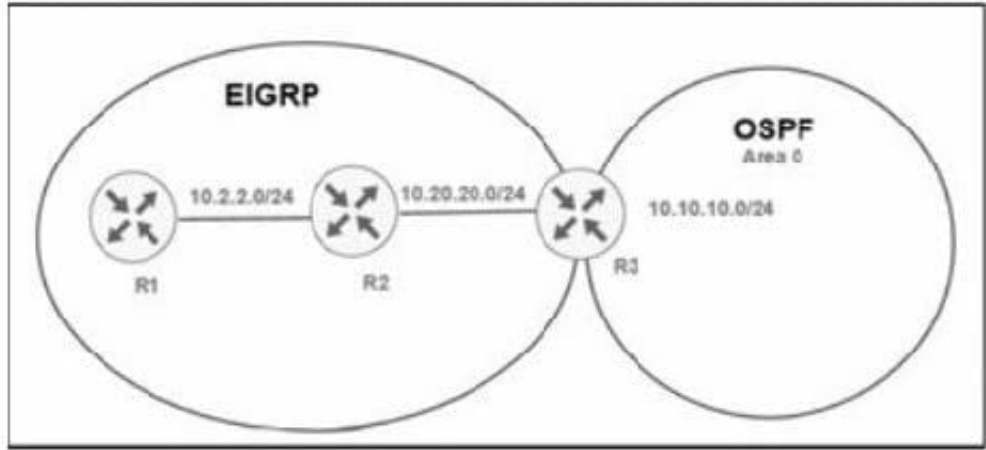

An engineer configured router R3 to redistribute the prefix 10.10.10.0/24 from OSPF into EIGRP R1 has no connectivity to the prefix. Which action enables receipt of prefixes on R1?

A. R3 is advertising the 10.20.20 0\\'24 prefix with a TTL of 1, R3 must set the TTL to 2 for this prefix.

B. R1 docs not have a neighbor relationship with R2. The EIGRP process should be cleared on R1.

C. Duplicate router IDs on R1 and R3, R1 should modify its router ID.

D. R1 is not receiving the next-hop IP address of R3. R2 must enable the network 10 20.20.0V24 within EIGRP.

Correct Answer: B

![Pass2Lead](https://Pass2Lead.com)
QUESTION 11

Which two components are required for MPLS Layer 3 VPN configuration? (Choose two)

A. Use MP-BGP for customer routes.

B. Use LDP for customer routes.

C. Use a unique RD per customer VRF.

D. Use pseudowire for Layer 2 routes

E. Use OSPF between PE and CE

Correct Answer: AC

QUESTION 12

Refer to the exhibit.

```
RD#show  ip bgp 192.168.1.1
Advertised to update-groups:
       3
  65101
    10.10.10.2 (metric 2) from 10.10.10.2 (10.10.10.2)
      Origin IGP, metric 100, localpref 100, weight 65535, valid, external,
best
  65101
    10.0.0.17 (metric 2) from 10.10.10.6 (172.16.20.1)
      Origin IGP, metric 0, localpref 100, valid, internal

RB#show  ip bgp 192.168.1.1
BGP routing table entry for 192.168.1.1/32, version 10
Paths: (1 available, best #1, table Default-IP-Routing-Table)
  Advertised to update-groups:
       2
  Local
    10.10.10.1 (metric 2) from 10.10.10.1 (192.168.1.1)
      Origin IGP, metric 0, localpref 100, valid, internal, best
```
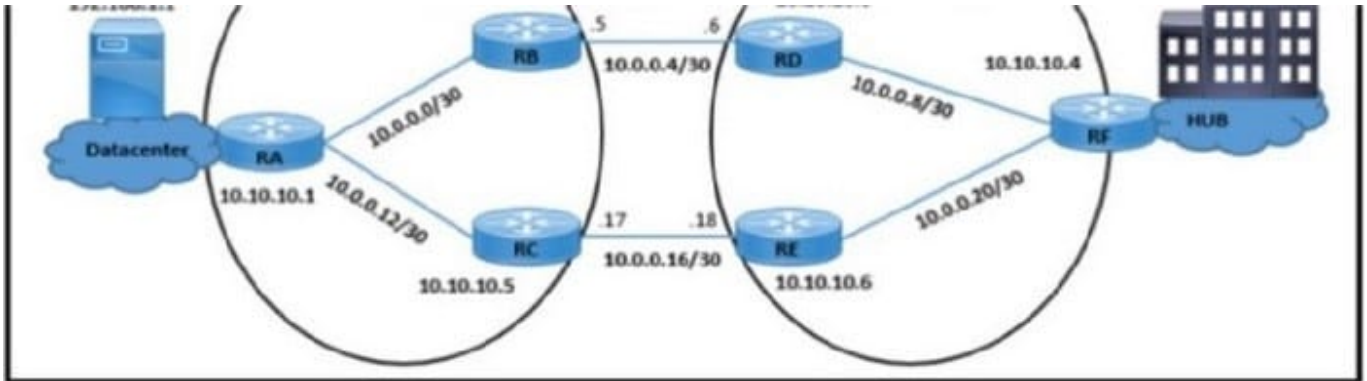
A customer finds that traffic from the application server (192.168.1.1) to the HUB site passes through a congested path that causes random packet drops. The NOC team influences the BGP path with MED on RB. but RD still sees that traffic coming from RA is not taking an alternate route. Which configuration resolves the issue?

A.

```
RD(config)#router bgp 65201
RD(config-router)#no neighbor 10.10.10.2 weight 65535
```

B.

```
RB(config)#router bgp 65101
RB(config-router)#no neighbor 10.10.10.3 route-map HIGH-LP out
```

C.

```
RB(config)#router bgp 65101
RB(config-router)#neighbor 10.10.10.3 weight 50
```

D.

```
RC(config)#router bgp 65101
RC(config-router)#neighbor 10.10.10.6 route-map HIGH-LP out
```

A. Option A

B. Option B

C. Option C

D. Option D

Correct Answer: D

QUESTION 13

Routers R1 and R2 have been configured to use Bidirectional Forwarding Detection? What is the advantage of doing this?

A. It is able to discover local link failures at layer 1 and provide automatic re-routing

B. It is able to discover local link failures at layer 1 and provide automatic re-routing

C. It is able to discover local link failures at layer 1 only and provides detection for this in less than one second.

D. It is able to discover local link failures at layers 1 and 2 and provides detection for this in less than one second.

Correct Answer: D

QUESTION 14

Which IGPs are supported by the MPLS LDP autoconfiguration feature?

A. RIPv2 and OSPF

B. OSPF and EIGRP

C. OSPF and ISIS

D. ISIS and RIPv2

Correct Answer: C

The MPLS LDP Autoconfiguration feature enables you to globally enable Label Distribution Protocol (LDP) on every interface associated with an Interior Gateway Protocol (IGP) instance. This feature is supported on Open Shortest Path First (OSPF) and Intermediate System-to-Intermediate System (IS-IS) IGPS.

QUESTION 15

Refer to the exhibit.
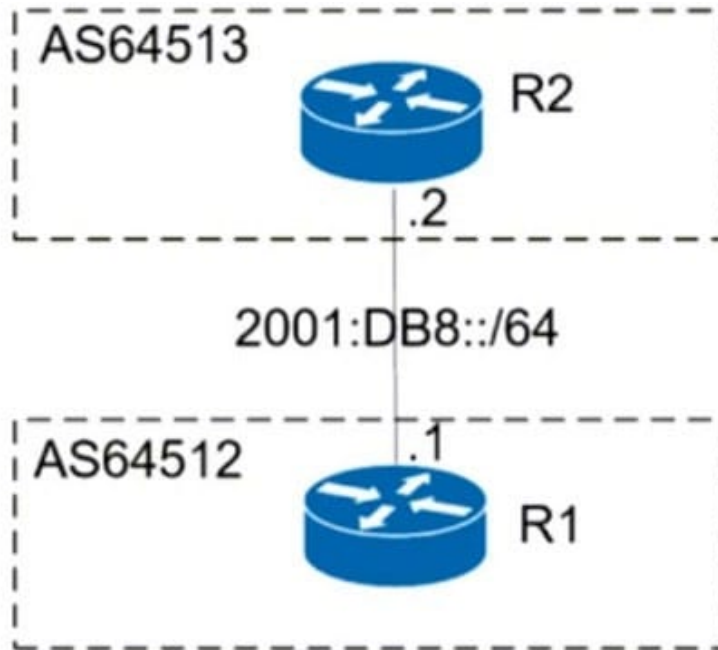
AS64513

R2

.2

2001:DB8::/64

AS64512

.1

R1

```
R1#show ipv6 access-list

IPv6 access list inbound-acl

    permit tcp host 2001:DB8::2 eq bgp host 2001:DB8::1 (75 matches) sequence 20

    permit tcp host 2001:DB8::2 host 2001:DB8::1 eq bgp (17 matches) sequence 30

    deny ipv6 2001:DB8::/32 any (77 matches) sequence 40

    permit ipv6 any (20 matches) sequence 1000

R1#ping ipv6 2001:DB8::2


Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 2001:DB8::2, timeout is 2 seconds:

.....

Success rate is 0 percent (0/5)

R1#show ipv6 access-list

IPv6 access list inbound-acl

    permit tcp host 2001:DB8::2 eq bgp host 2001:DB8::1 (77 matches) sequence 20

    permit tcp host 2001:DB8::2 host 2001:DB8::1 eq bgp (19 matches) sequence 30

    deny ipv6 2001:DB8::/32 any (95 matches) sequence 40

    permit ipv6 any (23 matches) sequence 1000

R1#
```

An engineer applied filter on R1 The interface flapped between R1 and R2 and cleaning the BGP session did not restore the BGP session and failed Which action must the engineer take to restore the BGP session from R2 to R1?

A. Apply the IPv6 traffic filter in the outbound direction on the interface

B. ICMPv6 must be permitted by the IPv6 traffic filter

C. Enable the BGP session, which went down when the session was cleared.

D. Swap the source and destination IP addresses in the IPv6 traffic filter

Correct Answer: B

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