Exam Questions 642-889

Implementing Cisco Service Provider Next-Generation Edge Network Services (SPEDGE)

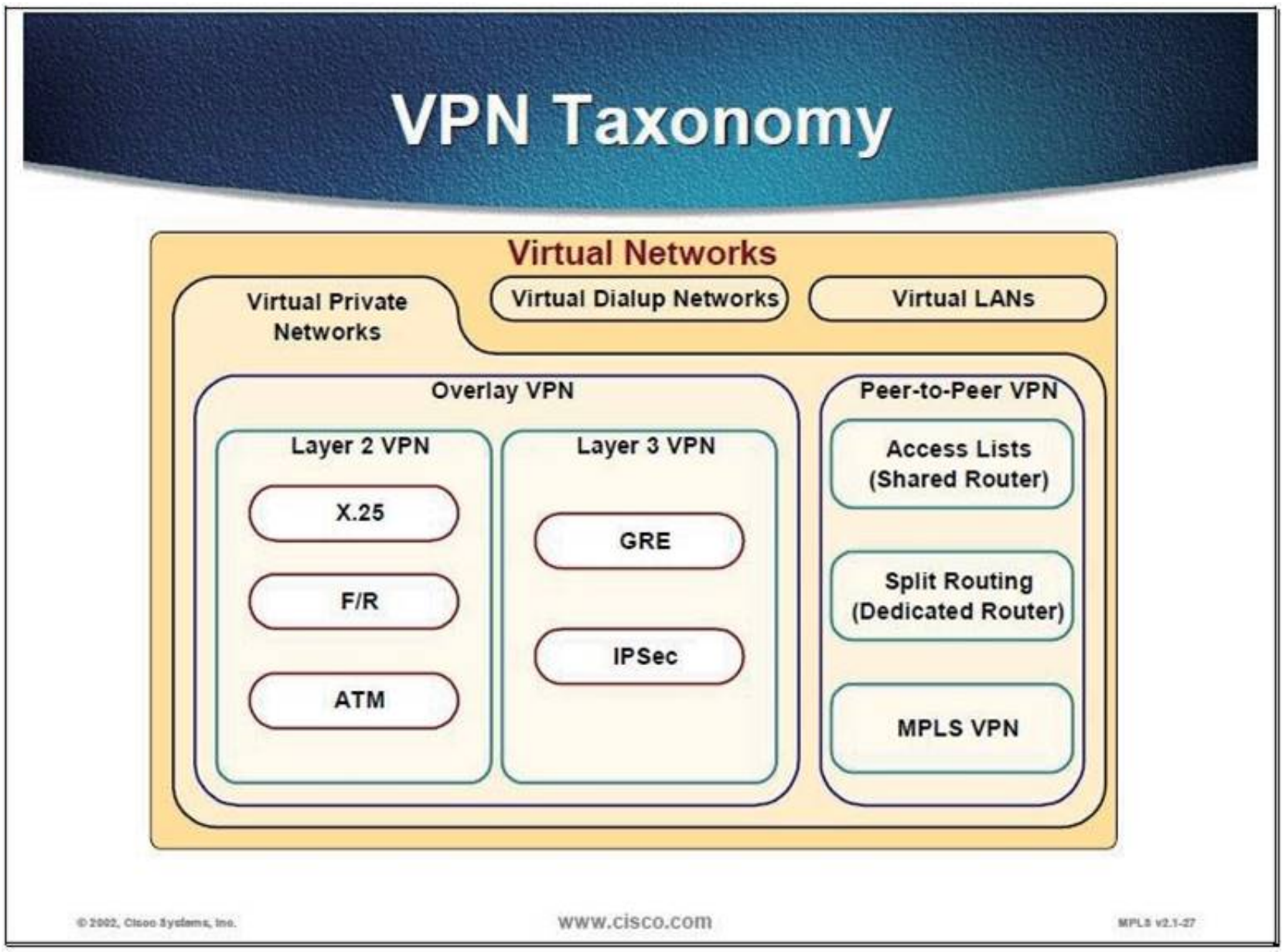
https://www.2passeasy.com/dumps/642-889/

NEW QUESTION 1
Which type of VPN requires a full mesh of virtual circuits to provide optimal site-to-site connectivity?

A. MPLS Layer 3 VPNs
B. Layer 2 overlay VPNs
C. GET VPNs
D. peer-to-peer VPNs

Answer: B

Explanation:



http://etutorials.org/Networking/MPLS+VPN+Architectures/Part+2+MPLSbased+Virtual+Private+Networks/Chapter+7.+Virtual+Private+Network+VPN+Implementation+Options/Overlay+and+Peer-to-peer+VPN+Model/
Two VPN implementation models have gained widespread use:
The overlay model, where the service provider provides emulated leased lines to the customer.
The service provider provides the customer with a set of emulated leased lines. These leased lines are called VCs, which can be either constantly available {PVCs} or established on demand {SVCs}. The QoS guarantees in the overlay VPN model usually are expressed in terms of bandwidth guaranteed on a certain VC {Committed Information Rate or CIR} and maximum bandwidth available on a certain VC {Peak Information Rate or PIR}. The committed bandwidth guarantee usually is provided through the statistical nature of the Layer 2 service but depends on the overbooking strategy of the service provider The peer-to-peer model, where the service provider and the customer exchange Layer 3 routing information and the provider relays the data between the customer sites on the optimum path between the sites and without the customer's involvement. The peer-to-peer VPN model was introduced a few years ago to alleviate the drawbacks of the overlay VPN model. In the peer-to-peer model, the Provider Edge {PE} device is a router {PE-router} that directly exchanges routing information with the CPE router. The Managed Network service offered by many service providers, where the service provider also manages the CPE devices, is not relevant to this discussion because it's only a repackaging of another service. The Managed Network provider concurrently assumes the role of the VPN service provider {providing the VPN infrastructure} and part of the VPN customer role {managing the CPE device}. The peer-to-peer model provides a number of advantages over the traditional overlay model:
Routing {from the customer's perspective} becomes exceedingly simple, as the customer router exchanges routing information with only one {or a few} PE-router, whereas in the overlay VPN network, the number of neighbor routers can grow to a large number.
Routing between the customer sites is always optimal, as the provider routers know the customer's network topology and can thus establish optimum inter-site routing.
Bandwidth provisioning is simpler because the customer has to specify only the inbound and outbound bandwidths for each site {Committed Access Rate [CAR] and Committed Delivery Rate [CDR]} and not the exact site-to-site traffic profile.
The addition of a new site is simpler because the service provider provisions only an additional site and changes the configuration on the attached PE-router. Under the overlay VPN model, the service provider must provision a whole set of VCs leading from that site to other sites of the customer VPN.
Prior to an MPLS-based VPN implementation, two implementation options existed for the peer-to-peer VPN model: The shared-router approach, where several VPN customers share the same PE-router.
The dedicated-router approach, where each VPN customer has dedicated PE-routers.
Overlay VPN paradigm has a number of drawbacks, most significant of them being the need for the customer to establish point-to-point links or virtual circuits between sites. The formula to calculate how many point-to-point links or virtual circuits you need in the worst case is {{n}{n-1}}/2, where n is the number of sites you need to connect. For example, if you need to have full-mesh connectivity between 4 sites, you will need a total of 6 point-to-point links or virtual circuits. To overcome this drawback and provide the customer with optimum data transport across the Service Provider backbone, the peer-to-peer VPN concept was introduced where the Service Provider actively participates in the customer routing, accepting customer routes, transporting them across the Service Provider backbone and finally propagating them to other customer sites.

NEW QUESTION 2
Refer to the Cisco IOS XR router output exhibit,

```
RP/0/RP1/CPU0:R1#show route vrf red ipv6

Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - ISIS, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, su - IS-IS summary null, * - candidate default
       U - per-user static route, o - ODR, L - local
Gateway of last resort is not set
B    2001:db80:beef:1::/64
     [200/0] via ::ffff:192.168.253.6 (nexthop in vrf default),07:04:14
```

which method is being used to transport IPv6 traffic over the service provider network?
A. 6PE
B. 6VPE
C. native IPv6
D. native IPv4
E. dual stack

Answer: B

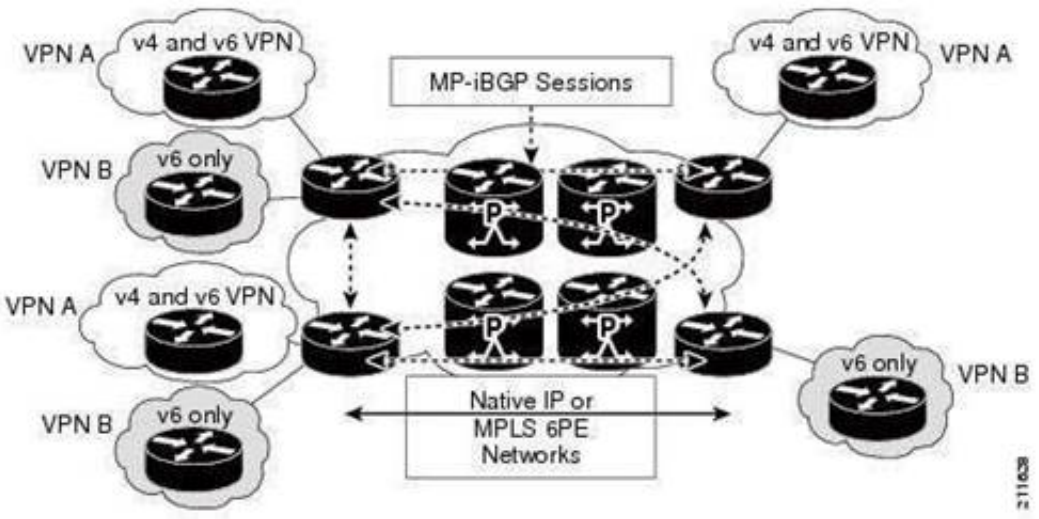
Explanation: NOT SURE THIS MATCHES ANSWER

IPv6 VPN Provider Edge Router (6VPE)

Cisco Systems's 6VPE solution smoothly introduces IPv6 VPN service in a scalable way, without any IPv6 addressing restrictions. It does not jeopardize a well-controlled service provider IPv4 backbone or any customer networks. VPN service backbone stability is a key issue for those service providers who have recently stabilized their IPv4 infrastructure. For IPv4 VPN customers, IPv6 VPN service is exactly the same as MPLS VPN for IPv4.

The IPv6 MPLS VPN service model is similar to that of IPv4 MPLS VPNs. Service providers who have already deployed MPLS IPv4 VPN services over an IPv4 backbone can deploy IPv6 MPLS VPN services over the same IPv4 backbone by upgrading the PE router IOS version and dual-stack configuration, without any change on the core routers. IPv4 services can be provided in parallel with IPv6 services. A PE-CE link can be an IPv4 link, an IPv6 link, or a combination of an IPv4 and IPv6 link, as shown in Figure 4-1.

Figure 4-1 6VPE Deployment



IPv6 VPN service is exactly the same as MPLS VPN for IPv4. 6VPE offers the same architectural features as MPLS VPN for IPv4. It offers IPv6 VPN and uses the same components, such as:

- Multiprotocol BGP (MP-BGP) VPN address family
- Route distinguishers
- VPN Routing and Forwarding (VRF) instances
- Site of Origin (SoO)
- Extended community
- MP-BGP

The 6VPE router exchanges either IPv4 or IPv6 routing information through any of the supported routing protocols, and switches IPv4 and IPv6 traffic using the respective fast switching CEF or distributed CEF path over the native IPv4 and IPv6 VRF interfaces. The 6VPE router exchanges reachability information with the other 6VPE routers in the MPLS domain using Multiprotocol BGP, and shares a common IPv4 routing protocol (such as OSPF or IS-IS) with the other P and PE devices in the domain. Separate routing tables are maintained for the IPv4 and IPv6 stacks. A hierarchy of MPLS labels is imposed on an incoming customer IPv6 packet at the edge LSR:

- Outer label (IGP Label) for iBGP next-hop, distributed by LDP.
- Inner label (VPN Label) for the IPv6 prefix, distributed by MP-BGP.

Incoming customer IPv6 packets at the 6VPE VRF interface are transparently forwarded inside the service provider's IPv4 core, based on MPLS labels. This eliminates the need to tunnel IPv6 packets. P routers inside the MPLS core are unaware that they are switching IPv6 labelled packets.

NEW QUESTION 3
Which flavor of MPLS Layer 3 VPN has MPLS enabled on PE-CE links?

A. basic
B. CSC
C. inter-AS
D. AToM
E. VPLS

Answer: B

Explanation: http://www.cisco.com/en/US/docs/ios/12_0st/12_0st14/feature/guide/csc.html

CE router: A customer edge router is part of a customer network and interfaces to a provider edge (PE) router. In this document, the CE router sits on the edge of the customer carrier network.

PE router: A provider edge router is part of a service provider's network connected to a customer edge (CE) router. In this document, the PE routers sits on the edge of the backbone carrier network.

ASBR: In this document, an autonomous system boundary router connects one autonomous system to another.

See the Glossary for the complete definitions of these terms.

In this example, only the backbone carrier uses MPLS. The customer carrier (ISP) uses only IP. As a result, the backbone carrier must carry all the Internet routes of the customer carrier, which could be as many as 100,000 routes. This poses a scalability problem for the backbone carrier. To solve the scalability problem, the backbone carrier is configured as follows:

- The backbone carrier allows only internal routes of the customer carrier (IGP routes) to be exchanged between the CE routers of the customer carrier and the PE routers of the backbone carrier.
- MPLS is enabled on the interface between the CE router of the customer carrier and the PE router of the backbone carrier.

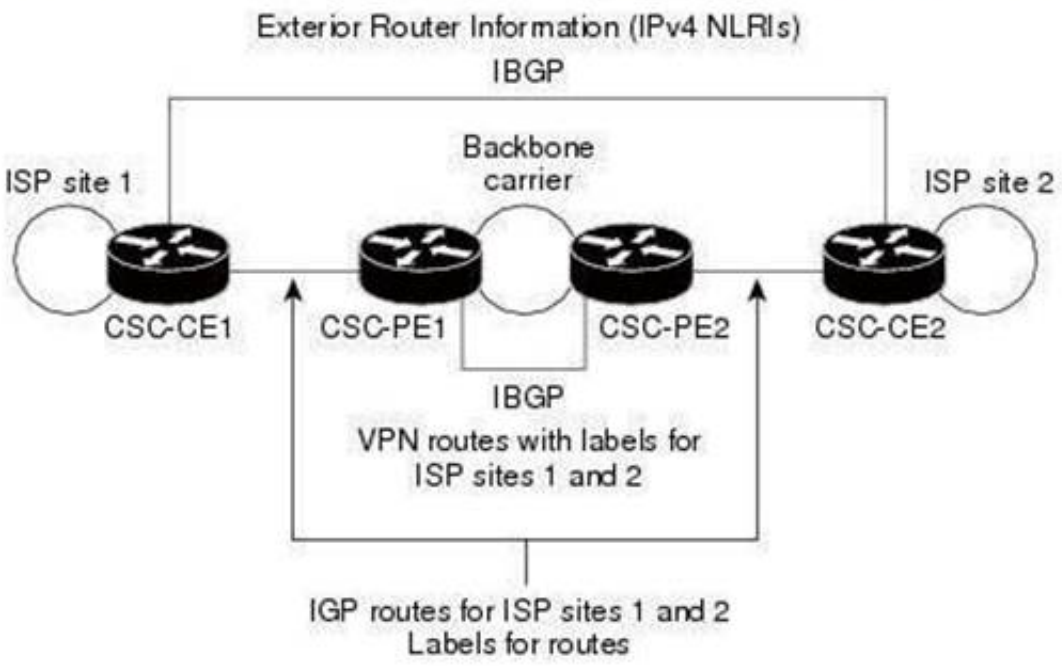
Internal and external routes are differentiated this way:

- Internal routes go to any of the routers within the ISP.
- External routes go to the Internet.

The number of internal routes is much smaller than the number of external routes. Restricting the routes between the CE routers of the customer carrier and the PE routers of the backbone carrier significantly reduces the number of routes that the PE router needs to maintain.

Since the PE routers do not have to carry external routes in the VRF routing table, they can use the incoming label in the packet to forward the customer carrier Internet traffic. Adding MPLS to the routers provides a consistent method of transporting packets from the customer carrier to the backbone carrier. MPLS allows the exchange of an MPLS label between the PE and the CE routers for every internal customer carrier route. The routers in the customer carrier have all the external routes either through IBGP or route redistribution to provide Internet connectivity. Figure 2 shows how information is exchanged when the network is configured in this manner.

Figure 2 Backbone Carrier Exchanging Routing Information with a Customer Carrier Who Is an ISP



NEW QUESTION 4
In MPLS Layer 3 VPN implementations, what is used on the PE router to isolate potential overlapping routing information between different customers?

A. route targets
B. VRFs
C. VC IDs
D. pseudowire IDs
E. pseudowire classes

Answer: B

NEW QUESTION 5
Within the service provider IP/MPLS core network, what must be implemented to enable Layer 3 MPLS VPN services?

A. IS-IS or OSPF on all the PE and P routers

B. MP-BGP between the PE routers
C. RSVP on all the PE and P routers
D. targeted LDP between the PE routers
E. LDP between the CE and PE routers

Answer: B

NEW QUESTION 6
Which statement regarding the Cisco IOS BGP configuration exhibit is correct?

```
router bgp 65101
no bgp default ipv4-unicast
neighbor 172.16.1.1 remote-as 65101
neighbor 172.16.2.1 remote-as 65101
neighbor 172.16.3.1 remote-as 65101
!
address-family ipv4
neighbor 172.16.1.1 activate
neighbor 172.16.3.1 activate
!
address-family vpnv4
neighbor 172.16.2.1 activate
neighbor 172.16.3.1 activate
```

A. None of the routers will receive IPv4 BGP routes.
B. Only the 172.16.2.1 and 172.16.3.1 neighbors will receive both VPNv4 routes and IPv4 BGP routes.
C. Only the 172.16.3.1 neighbor will receive both VPNv4 routes and IPv4 BGP routes.
D. All three neighbors {172.16.1.1, 172.16.2.1, and 172.16.3.1} will receive both VPNv4 routes and IPv4 BGP routes.
E. All three neighbors {172.16.1.1, 172.16.2.1, and 172.16.3.1} will receive IPv4 BGP routes.

Answer: C

NEW QUESTION 7
When implementing MPLS Layer 3 VPNs with customers running OSPF as the CE-PE routing protocol, the service provider MPLS backbone looks like what to the CE routers?

A. the backbone {Area 0}
B. an external routing domain
C. a superbackbone that is transparent to the CE OSPF routers
D. a transit area {similar to a transit area for supporting virtual links}

Answer: C

NEW QUESTION 8
When implementing MPLS Layer 3 VPNs with customers running OSPF as the CE-PE routing protocol, which situation will require a sham link to be implemented in the MPLS backbone?

A. to connect customer sites in different OSPF areas
B. to connect customer sites in the same OSPF area
C. to prevent OSPF routing loops when a customer site has redundant CE-PE connections
D. if there is a backdoor link between the CE routers, to ensure that the backdoor link is used only to back up the primary connection through the MPLS VPN

Answer: D

Explanation: http://www.cisco.com/en/US/docs/ios/12_2t/12_2t8/feature/guide/ospfshmk.html

NEW QUESTION 9
On Cisco IOS and IOS XE Layer 3 MPLS VPN implementations, when redistributing the customer RIP routes into MP- BGP, the RIP metric is copied into which BGP attribute?

A. local preference
B. weight
C. MED
D. extended community

Answer: C

Explanation: https://supportforums.cisco.com/thread/191993
Use the red bgp <asn> metric transparent command to preserve the RIP metrics.
When RIP routes are redistributed into BGP, the route metric is stored in the BGP MED value. When BGP routes are redistributed into RIP, and the transparent keyword used, the MED value is copied back as the RIP metric. Without the transparent keyword, the metric value specified is applied to all the routes.

NEW QUESTION 10
Which option is used as a loop prevention mechanism to support MPLS VPN customers with multihomed sites?

A. BGP down bit
B. sham links
C. AS override
D. SOO extended BGP community
E. allow as-in

Answer: D

Explanation: http://www.cisco.com/en/US/docs/ios/12_4t/12_4t11/htbgpsoo.html Site of Origin BGP Community Attribute
The site-of-origin {SoO} extended community is a BGP extended community attribute that is used to identify routes that have originated from a site so that the readvertisement of that prefix back to the source site can be prevented. The SoO extended community uniquely identifies the site from which a router has learned a route. BGP can use the SoO value associated with a route to prevent routing loops.

NEW QUESTION 10
Refer to the partial Cisco IOS XR PE router configuration exhibit for supporting a Layer 3 MPLS VPN customer using BGP as the CE-to-PE routing protocol.

```
router bgp 64500
address-family vpnv4 unicast
vrf Customer_A
address-family ipv4 unicast
!
neighbor 10.1.1.1
remote-as 64501
address-family ipv4 unicast
!
```

The service provider AS number is 64500, the customer AS number is 64501, and the customer CE router is 10.1.1.1. What is missing in the configuration?

A. The route distinguisher has not been configured under router bgp 64500 vrf Customer_A.
B. The import and export route targets have not been configured under router bgp 64500 vrf Customer_A.
C. The 10.1.1.1 BGP neighbor has not been activated for IPv4 unicast routing.
D. The 10.1.1.1 BGP neighbor has not been activated for the VPNv4 address family.

Answer: A

Explanation: http://www.cisco.com/en/US/docs/ios/12_2sr/12_2sra/feature/guide/srbgprid.html Route Distinguisher
A router distinguisher {RD} creates routing and forwarding tables and specifies the default route distinguisher for a VPN. The RD is added to the beginning of an IPv4 prefix to change it into a globally unique VPN-IPv4 prefix. An RD can be composed in one of two ways: with an autonomous system number and an arbitrary number or with an IP address and an arbitrary number. You can enter an RD in either of these formats:
•Enter a 16-bit autonomous system number, a colon, and a 32-bit number. For example: 45000:3
•Enter a 32-bit IP address, a colon, and a 16-bit number. For example: 192.168.10.15:1

	Command or Action	Purpose

Step 1	`enable`
	
	Example:
	`Router> enable`
		Enables privileged EXEC mode.
		• Enter your password if prompted.

Step 2	`configure terminal`
	
	Example:
	`Router# configure terminal`
		Enters global configuration mode.

Step 3	`ip vrf vrf-name`
	
	Example:
	`Router(config)# ip vrf vrf_trans`
		Defines a VRF instance and enters VRF configuration mode.

Step 4	`rd route-distinguisher`
	
	Example:
	`Router(config-vrf)# rd 45000:2`
		Creates routing and forwarding tables for a VRF and specifies the default RD for a VPN.
		• Use the *route-distinguisher* argument to specify the default RD for a VPN. There are two formats you can use to specify an RD. For more details, see the "Route Distinguisher" section.
		• In this example, the RD uses an autonomous system number with the number 2 after the colon.

Step 5	`route-target {import | both} route-target-ext-community`
	
	Example:
	`Router(config-vrf)# route-target import 55000:5`
		Creates a route-target extended community for a VRF.
		• Use the import keyword to import routing information from the target VPN extended community.
		• Use the **both** keyword to both import routing information from and export routing information to the target VPN extended community.
		• Use the *route-target-ext-community* argument to specify the VPN extended community.

Step 6	`route-target {export | both} route-target-ext-community`
	
	Example:
	`Router(config-vrf)# route-target export 55000:1`
		Creates a route-target extended community for a VRF.
		• Use the **export** keyword to export routing information to the target VPN extended community.
		• Use the **both** keyword to both import routing information from and export routing information to the target VPN extended community.
		• Use the *route-target-ext-community* argument to specify the VPN extended community.

Step 7	`exit`
	
	Example:
	`Router(config-vrf)# exit`
		Exits VRF configuration mode and returns to global configuration mode.

Step 8	Repeat Step 3 through Step 7 for each VRF to be defined.	—

NEW QUESTION 15
Based on the Cisco IOS XR VRF configuration exhibit,

```
!
vrf CustomerA-C
description Customer A Central Site
address-family ipv4 unicast
import route-target
1:210
1:1000
export route-target
1:210
1:1000
!
vrf CustomerB-C
description Customer B Central Site
address-family ipv4 unicast
import route-target
1:220
1:1000
export route-target
1:220
1:1000
!
vrf CustomerA
description Customer A Site
address-family ipv4 unicast
import route-target
1:210
export route-target
1:210
!
vrf CustomerB
description Customer B Site
address-family ipv4 unicast
import route-target
1:220
export route-target
1:220
!
```

Which two data flows between the MPLS VPNs will be allowed? {Choose two.}

A. The CustomerA central site can communicate with the CustomerB central site.
B. The CustomerA central site can communicate with all CustomerA sites.
C. The CustomerA central site can communicate with all CustomerB sites.
D. The CustomerA sites can communicate with all CustomerB sites.

Answer: AB

NEW QUESTION 18
Refer to the partial Cisco IOS XR PE router VRF configuration exhibit.

```
vrf customer1
address-family ipv4 unicast
import route-target
 1:1
 2:1
export route-target
 1:1
 2:2
!
vrf customer2
address-family ipv4 unicast
import route-target
 1:2
 2:1
export route-target
 1:2
 2:2
!
```

To implement a central-service VPN supporting both customer1 and customer2, what will be the required corresponding VRF configuration on the central-service-server PE router?

A. vrf central-service-server address-family ipv4 unicast import route-target3:12:2export route-target 3:12:1!
B. vrf central-service-server address-family ipv4 unicast import route-target3:12:1export route-target 3:12:2!
C. vrf central-service-server address-family ipv4 unicast import route-target3:11:11:2export route-target 3:11:11:2!
D. vrf central-service-server address-family ipv4 unicastimport route-target 3:11:11:22:12:2export route-target 3:11:11:22:12:2!

Answer: A

NEW QUESTION 21
Which two statements about implementing a separate MPLS VPN to provide customers Internet access are correct? {Choose two.}

A. The Internet gateway router will act as a CE router.
B. Customers will use separate interfaces for VPN and Internet access.
C. Customers are assigned to the Internet VPN.
D. Internet routes will be leaked from the PE global routing table to the customer VRF.

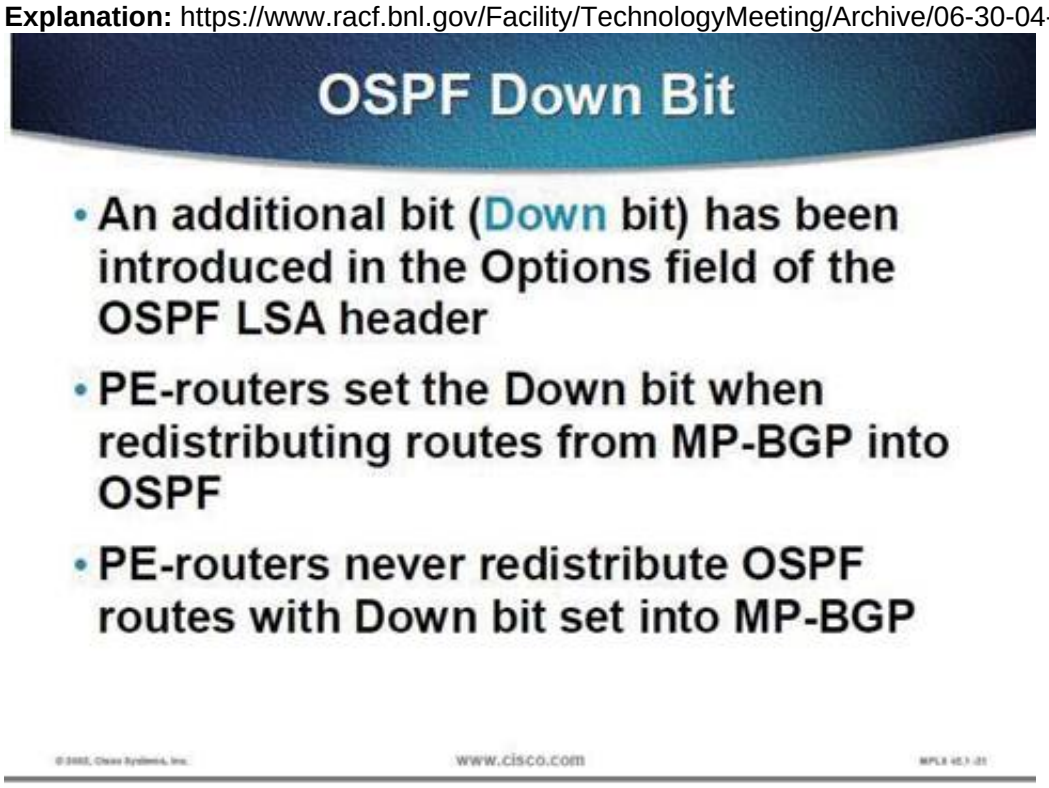
Answer: AC

NEW QUESTION 25
Which CE-to-PE routing protocol implements the down bit as a loop prevention mechanism?

A. RIPv2
B. EIGRP
C. IS-IS
D. OSPF
E. BGP

Answer: D

Explanation: https://www.racf.bnl.gov/Facility/TechnologyMeeting/Archive/06-30-04-CISCO/Using-OSPF-in-MPLS- VPNEnvironment.pdf



One of the options bit in the LSA header has been allocated to be the *down* bit.

The *down* bit is used between the PE-routers to indicate which routes were inserted into the OSPF topology database from the MPLS VPN super-backbone and thus shall not be redistributed back in the MPLS VPN super-backbone. The PE-router that redistributes the MP-BGP route as OSPF route into the OSPF topology database sets the *down* bit. Other PE-routers use the *down* bit to prevent this route from being redistributed back into MP-BGP.

NEW QUESTION 27
When you are using OSPF as the CE-to-PE routing protocol in MPLS VPN implementations, an OSPF route from customerA site 1 in Area 0 will appear as which kind of OSPF route in customerA site 2, also in Area 0?

A. intra-area
B. interarea
C. E1
D. E2

Answer: B

NEW QUESTION 30
In Layer 3 MPLS VPN implementations, if some of the VPNv4 routes on one PE router do not appear on another PE router, what could be the problem?

A. RD mismatch between the PE routers
B. RT export and import configuration errors
C. RD export and import configuration errors
D. VRF name mismatch between the PE routers

Answer: B

Explanation: http://blog.initialdraft.com/archives/1537/

NEW QUESTION 34
When implementing CSC services, which two methods can be used to exchange label information between the downstream CSC customer carrier and the CSC

backbone carrier? {Choose two.}

A. using MP-BGP
B. using RSVP
C. using IGP and LDP
D. using back-to-back VRF
E. using front VRF and internal VRF

Answer: AC

Explanation: http://www.cisco.com/en/US/docs/net_mgmt/ip_solution_center/4.0/mpls/user/guide/9_iscqsg.html
Since the CSC-PE routers do not have to carry external routes in the VRF routing table, they can use the incoming label in the packet to forward the customer carrier Internet traffic. Adding MPLS to the routers provides a consistent method of transporting packets from the customer carrier to the backbone carrier. MPLS allows the exchange of an MPLS label between the CSC-PE and the CSC-CE routers for every internal customer carrier route. The routers in the customer carrier have all the external routes either through IBGP or route redistribution to provide Internet connectivity.
When a backbone carrier and the customer carrier both provide BGP/MPLS VPN services, the method of transporting data is different from when a customer carrier provides only ISP services. The following list highlights those differences.
•When a customer carrier provides BGP/MPLS VPN services, its external routes are VPN-IPv4 routes. When a customer carrier is an ISP, its external routes are IP routes.
•When a customer carrier provides BGP/MPLS VPN services, every site within the customer carrier must use MPLS. When a customer carrier is an ISP, the sites do not need to use MPLS.

NEW QUESTION 37
The Cisco IOS XR address-family ipv4 labeled-unicast and the Cisco IOS/IOS XE neighbor send-label commands are used in which MPLS implementation?

A. Cisco MPLS TE
B. CSC using MP-BGP for label exchange
C. back-to-back VRF
D. AToM
E. VPLS

Answer: B

Explanation: http://www.cisco.com/en/US/docs/ios/12_0s/feature/guide/fscscleb.pdf
The MPLS VPN-Carrier Supporting Carrier-IPv4 BGP Label Distribution feature lets you configure your carrier- supporting-carrier network to enable Border Gateway Protocol {BGP} to transport routes and Multiprotocol Label Switching {MPLS} labels between the backbone carrier provider edge {PE} routers and the customer carrier customer edge {CE} routers using multiple paths. Previously, you had to use Label Distribution Protocol {LDP} to carry the labels and an Internal Gateway Protocol {IGP} to carry the routes between PE and CE routers to achieve the same goal.
The benefits of using BGP to distribute IPv4 routes and MPLS label routes are:
• BGP takes the place of an IGP and LDP in a Virtual Private Network {VPN} forwarding/routing instance {VRF} table. You can use BGP to distribute routes and MPLS labels. Using a single protocol instead of two simplifies the configuration and troubleshooting.
• BGP is the preferred routing protocol for connecting two Internet service providers {ISPs}, mainly because of its routing policies and ability to scale. ISPs commonly use BGP between two providers.
This feature enables those ISPs to use BGP.

NEW QUESTION 38
When implementing Layer 3 MPLS VPNs on Cisco IOS/IOS XE PE routers, which PE-to-CE routing protocol requires a separate routing process to be created for each VRF?

A. EIGRP
B. RIPv2
C. OSPF
D. BGP

Answer: C

NEW QUESTION 43
In Layer 3 MPLS VPN implementations, if a customer is using the same AS number at both customer sites and the PE- to-CE routing protocol is BGP, what must be enabled on the PE router?

A. BGP AS override
B. BGP allowas-in
C. BGP SOO extended community
D. BGP AS path prepending

Answer: A

Explanation: https://supportforums.cisco.com/docs/DOC-21837
Loop prevention in BGP is done by verifying the AS number in the AS Path. If the receiving router sees its own AS number in the AS Path of the received BGP packet, the packet is dropped. The receiving Router assumes that the packet was originated from its own AS and has reached the same place from where it originated initially.
The feature could be a disaster if customers are using same AS number along the various sites and disallows customer sites having identical AS numbers to be linked by another AS number. In such a scenario, routing updates from one site will be dropped when the other site receives them.
To override this feature, AS-Override function causes to replace the AS number of originating router with the AS number of the sending BGP router. The command is neighbor ip-address as-override and can only be executed under the VPNv4 address-family

NEW QUESTION 47
Which three functions are performed by the PE router in an MPLS Layer 3 VPN? {Choose three.}

A. exchanges routing updates with the CE router
B. translates the CE routing information into VPNv4 routes
C. exchanges VPNv4 routes with other PE routers over MP-BGP
D. imports and exports RTs that are received from the P routers
E. exchanges RDs with the P routers
F. exchanges VPN labels with the CE routers

Answer: ABC

Explanation: http://www.cisco.com/en/US/docs/routers/crs/software/crs_r4.1/lxvpn/configuration/guide/vc41v3.html How MPLS L3VPN Works
MPLS VPN functionality is enabled at the edge of an MPLS network. The PE router performs the following tasks:
•Exchanges routing updates with the CE router
•Translates the CE routing information into VPN version 4 {VPNv4} and VPN version 6 {VPNv6} routes
•Exchanges VPNv4 and VPNv6 routes with other PE routers through the Multiprotocol Border Gateway Protocol {MP- BGP}

NEW QUESTION 48
Which BGP extended community is used to control the distribution of VPN routing information and to identify routers that may receive a set of routes that carry the community?

A. SOO
B. RT
C. opaque
D. route origin
E. RD

Answer: B

Explanation: http://blog.initialdraft.com/archives/1537/
Route Target is a 64-bits BGP community used for tagging prefixes. When exporting prefixes from the VRF, we add to the prefixes a Route-Target community, so when the PE in the remote site has to import prefixes into the VRF, it can easily identify which prefixes to import.

NEW QUESTION 50
Refer to the exhibit.

```
route-policy filter
  pass
  end-policy
!
router bgp 1234
 bgp router-id 10.2.2.2
 address-family ipv4 unicast
  network 192.168.0.0/24
  network 192.168.1.0/24
 !
 neighbor-group share
  remote-as 1234
  update-source Loopback0
  address-family ipv4 unicast
   route-policy filter in
   route-reflector-client
  !
 !
 neighbor 10.1.1.1
  use neighbor-group share
 !
 !
 vrf INTERNET
  rd 1:1
  address-family ipv4 unicast
   redistribute connected
  !
 !
!
```

Given the output shown, which two statements are true? {Choose two.}

A. The configured remote AS for neighbor 10.1.1.1 is 1234.
B. Both prefixes that are referenced by network commands will be visible with the show bgp command from the information that is shown in the output.
C. The neighbor 10.1.1.1 cannot learn any routes from this router.
D. The router cannot learn any routes for neighbor 10.1.1.1.
E. Routes from the Internet VRF that are injected into BGP through redistribution will be advertised to neighbor 10.1.1.1.

Answer: AC

NEW QUESTION 53
What are the two AToM interworking modes? {Choose two.}

A. bridged {interworking ethernet}
B. routed {interworking ip}
C. label-switched {interworking mpls}
D. transparent {interworking transparent}

Answer: AB

Explanation: http://www.cisco.com/en/US/docs/ios/ios_xe/mpls/configuration/guide/mp_l2vpn_intrntwkg_xe.html
Interworking is a transforming function that is required to interconnect two heterogeneous attachment circuits {ACs}. Several types of interworking functions exist. The function that is used would depend on the type of ACs being used, the type of data being carried, and the level of functionality required. The two main Layer 2 Virtual Private Network {L2VPN} interworking functions supported in Cisco IOS XE software are bridged and routed interworking.
Layer 2 {L2} transport over multiprotocol label switching {MPLS} and IP already exists for like-to-like ACs, such as Ethernet-to-Ethernet or Point-to-Point Protocol {PPP}-to-PPP. L2VPN Interworking builds on this functionality by allowing disparate ACs to be connected. An interworking function facilitates the translation between different L2 encapsulations.

NEW QUESTION 54
Which method is used to provide inter-AS AToM services?

A. back-to-back VRF
B. targeted LDP
C. pseudowire stitching
D. AToM interworking
E. Cisco MPLS TE tunnels
F. autodiscovery

Answer: C

Explanation: http://www.cisco.com/en/US/docs/optical/cpt/r9_3/configuration/guide/cpt93_configuration_chapter_0111.html

Understanding L2VPN Pseudowire Stitching

L2VPN Pseudowire Stitching defines a static or dynamically configured set of two or more pseudowire segments that behave and function as a single point-to-point pseudowire. L2VPN Pseudowire Stitching enables L2VPN pseudowires to extend across two separate MPLS networks or across an inter-AS boundary, as shown in Figure 1 and Figure 2.

L2VPN Pseudowire Stitching connects two or more contiguous pseudowire segments to form an end-to-end multihop pseudowire. This end-to-end pseudowire functions as a single point-to-point pseudowire.

As shown in Figure 2, L2VPN Pseudowire Stitching enables you to keep the IP addresses of the edge PE routers private across inter-AS boundaries. You can use the IP address of the Autonomous System Boundary Routers (ASBRs) and treat them as pseudowire aggregation (PE-agg) routers. The ASBRs join the pseudowires of the two domains.

Figure 7. L2VPN Pseudowire Stitching in an Intra-AS Topology

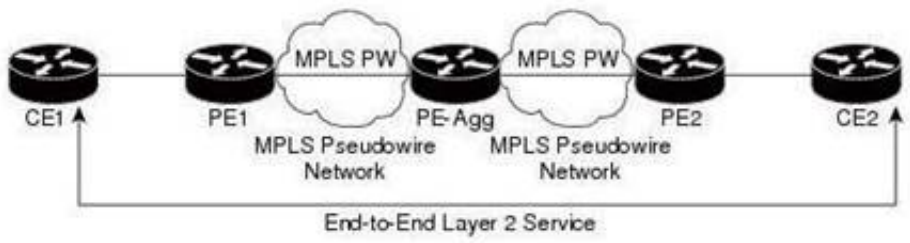
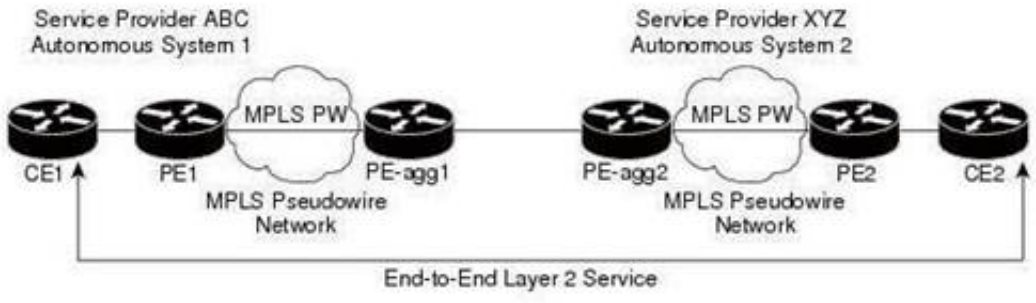


Figure 8. L2VPN Pseudowire Stitching in an Inter-AS Topology



Restrictions for L2VPN Pseudowire Stitching

- L2VPN Pseudowire Stitching is supported with AToM.
- Only static, on-box provisioning is supported.
- Sequencing numbers in AToM packets are not processed by L2VPN Pseudowire Stitching. The feature passes the sequencing data through the cross-connect packet paths, a process that is called transparent sequencing. The end point PE to CE connections enforce the sequencing.
- You can ping the adjacent next-hop PE router. End-to-end LSP pings are not supported.
- Do not configure IP or Ethernet interworking on a router where L2VPN Pseudowire Stitching is enabled. Instead, configure interworking on the routers at the edge PEs of the network.
- The control word negotiation results must match. If either segment does not negotiate the control word, the control word is disabled for both segments.
- AToM Graceful Restart is negotiated independently on each pseudowire segment. If there is a transient loss of the LDP session between two AToM PE routers, packets continue to flow.
- Per-pseudowire QoS is not supported. The TE tunnel selection is supported.
- Attachment circuit interworking is not supported.
- NTP-J34 Configure the Pseudowire Stitching Using Cisco IOS Commands

NTP-J34 Configure the Pseudowire Stitching Using Cisco IOS Commands

Purpose	This procedure configures L2VPN Pseudowire Stitching on each of the PE routers.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

NEW QUESTION 57
When troubleshooting EoMPLS configuration problems, which three parameters must match between the two ends of the pseudowire configurations? {Choose three.}

A. control word usage
B. MTU size
C. pseudowire ID
D. Xconnect group name
E. EFP subinterface number

Answer: ABC

Explanation: Provisioning an AToM Static Pseudowire
In this configuration task, you use options in the xconnect Ethernet interface configuration command to specify a static connection, and mpls commands in xconnect mode to statically set the following pseudowire parameters:
•Set the local and remote pseudowire labels
•Enable or disable sending the MPLS control word

Step 1	`enable`
	Example:
	`Router> enable`
		Enables privileged EXEC mode.
		• Enter your password if prompted.

Step 2	`configure terminal`
	Example:
	`Router# configure terminal`
		Enters global configuration mode.

Step 3	`interface Ethernet-type interface-number`
	Example:
	`Router(config)# interface Ethernet 1/0`
		Enters configuration mode for the specified interface.

Step 4	`xconnect peer-ip-address vcid encapsulation mpls manual pw-class class-name`
	Example:
	`Router(config-if)# xconnect 10.131.191.252 100 encapsulation mpls manual pw-class mpls`
		Configures a static AToM pseudowire and enters xconnect configuration mode where the local and remote pseudowire labels are set.

Step 5	`mpls label local-pseudowire-label remote-pseudowire-label`
	Example:
	`Router(config-if-xconn)# mpls label 100 150`
		Sets the local and remote pseudowire labels .
		• The label must be an unused static label within the static label range configured using the **mpls label range** command.
		• The **mpls label** command checks the validity of the label entered and displays an error message if it is not valid. The label supplied for the *remote-pseudowire-label* argument must be the value of the peer PE's local pseudowire label.

Step 6	`[no] mpls control-word`
	Example:
	`Router(config-if-xconn)# no mpls control-word`
		Sets whether or not the MPLS control word is sent.
		• This command must be set for Frame Relay data -link connection identifier (DLCI) and ATM adaptation layer 5 (AAL5) attachment circuits. For other attachment circuits, the control word is included by default.
		• If you enable inclusion of the control word, it must be enabled on both ends of the connection for the circuit to work properly.
		• Inclusion of the control word can be explicitly disabled using the **no mpls control-word** command.

Haven't been able to find where MTU Must match

NEW QUESTION 60
Which Layer 2 protocol parameters can be carried inside the control word when implementing AToM service?

A. PW ID
B. Frame Relay FECN, BECN, and DE bits
C. encapsulation type
D. VC type

Answer: B

Explanation: http://www.cisco.com/en/US/products/ps6603/products_qanda_item09186a008009d4e3.shtml#wp39173
Q. How does Frame Relay over MPLS work?
A. Traffic is encapsulated in MPLS packets and forwarded across the MPLS network. When encapsulating Frame Relay over MPLS, the Frame Relay header and the frame check sequence {FCS} are stripped from the packet. The bits for Backward Explicit Congestion Notification {BECN}, Forward Explicit Congestion Notification {FECN}, Discard Eligibility {DE} and Command/Response {C/R} are carried across the MPLS network in the "Control Word" header.

NEW QUESTION 64
Which two methods can be used for VPLS PW signaling? {Choose two.}

A. static
B. BGP
C. IGP
D. LDP
E. RSVP

Answer: BD

Explanation: VPLS Discovery and Signaling

VPLS is a Layer 2 multipoint service and it emulates a LAN service across a WAN. VPLS enables service providers to interconnect several LAN segments over a packet-switched network and make them behave as a single LAN. Service providers can provide a native Ethernet access connection to customers using VPLS.

The VPLS control plane consists of two important components, autodiscovery and signaling:

- VPLS Autodiscovery eliminates the need to manually provision VPLS neighbors. VPLS Autodiscovery enables each VPLS PE router to discover other provider edge (PE) routers that are part of the same VPLS domain.
- Once the PEs are discovered, pseudowires (PWs) are signaled and established across pairs of PE routers, forming a full mesh of PWs across PE routers in a VPLS domain.

Figure 10 VPLS Autodiscovery and Signaling

L2-VPN	Multipoint	
Discovery	BGP	
Signaling Protocol	LDP	BGP
Tunneling Protocol	MPLS	

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BGP-based VPLS Autodiscovery

An important aspect of VPN technologies, including VPLS, is the ability of network devices to automatically signal information to other devices, about any association with a particular VPN. Autodiscovery requires this information to be distributed to all members of a VPN. VPLS is a multipoint mechanism for which BGP is well-suited.

BGP-based VPLS autodiscovery eliminates the need to manually provision VPLS neighbors. VPLS autodiscovery enables each VPLS PE router to discover other provider edge (PE) routers that are part of the same VPLS domain. VPLS Autodiscovery also tracks occurrences when PE routers are added to, or removed from, the VPLS domain. When the discovery process is complete, each PE router has the information required to setup VPLS pseudowires (PWs).

BGP Auto Discovery With BGP Signaling

The implementation of VPLS in a network requires the establishment of a full mesh of PWs between the provider edge (PE) routers. The PWs can be signaled using BGP signaling.

NEW QUESTION 66
When implementing nonhierarchical VPLS with eight PE routers, how many total PWs will be required between the PE routers?

A. 8
B. 16
C. 28
D. 32
E. 64

Answer: C

Explanation: 8* {8-1} /2

NEW QUESTION 69
VPWS/EoMPLS offers which type of Ethernet services as defined by the MEF?

A. E-Tree
B. E-LAN
C. E-Line
D. E-Interworking

Answer: C

Explanation:
• E-Line is based on a point-to-point Ethernet Virtual Connection. Two E-Line services are defined:
- Ethernet Private Line {EPL}: A very simple and basic point-to-point service characterized by low frame delay, frame delay variation, and frame loss ratio. No

service multiplexing is allowed, and other than a committed information rate {CIR} no class of service {CoS} {Bandwidth Profiling} is allowed.
- Ethernet Virtual Private Line {EVPL}: A point-to-point service wherein service multiplexing {more than one Ethernet Virtual Connection} is allowed. The individual Ethernet Virtual Circuits can be defined with a rich set of Bandwidth Profiles and Layer 2 Control Protocol Processing methods as defined by the Metro Ethernet Forum.

NEW QUESTION 74
When using the Cisco EVC software infrastructure, a double-tagged frame with a customer VLAN of 10 and a service provider VLAN of 150 will be best matched by which encapsulation configuration?

A. encapsulation dot1q 10 second-dot1q any
B. encapsulation dot1q 10 second-dot1q 150
C. encapsulation dot1q 10 second-dot1q 50-200
D. encapsulation dot1q 10
E. encapsulation dot1q 150

Answer: E

NEW QUESTION 76
When implementing H-VPLS with QinQ access on Cisco Metro Ethernet switches, which two commands enable the QinQ tagging? {Choose two.}

A. encapsulation dot1q {customer-vlan} second-tag {sp-vlan}
B. encapsulation dot1q {sp-vlan} second-tag {customer-vlan}
C. switchport mode dot1q-tunnel
D. switchport mode trunk
E. switchport access vlan {sp-vlan}
F. switchport access vlan {customer-vlan}

Answer: CE

NEW QUESTION 81
Implementing H-VPLS instead of VPLS reduces which requirement?

A. having a full mesh of PWs between all the PE routers in the service provider MPLS core
B. having a full mesh of PWs between all the UPE routers
C. having to implement QinQ tagging between the UPE and the NPE
D. having to implement MPLS LDP between the UPE and the NPE
E. the overhead of using BGP or LDP autodiscovery

Answer: A

Explanation: Hierarchical VPLS Overview

Hierarchical VPLS (H-VPLS) provides scaling by only interconnecting the core MPLS NPE routers with a full mesh of PWs. The many UPE VPLS devices are then connected hierarchically by PWs to the NPE devices, not to each other. When there is redundancy, as shown in Figure 4-12, the software in the UPE blocks the PWs to all but the highest NPE IP address. H-VPLS partitions the network into several edge domains that are interconnected using an MPLS core.

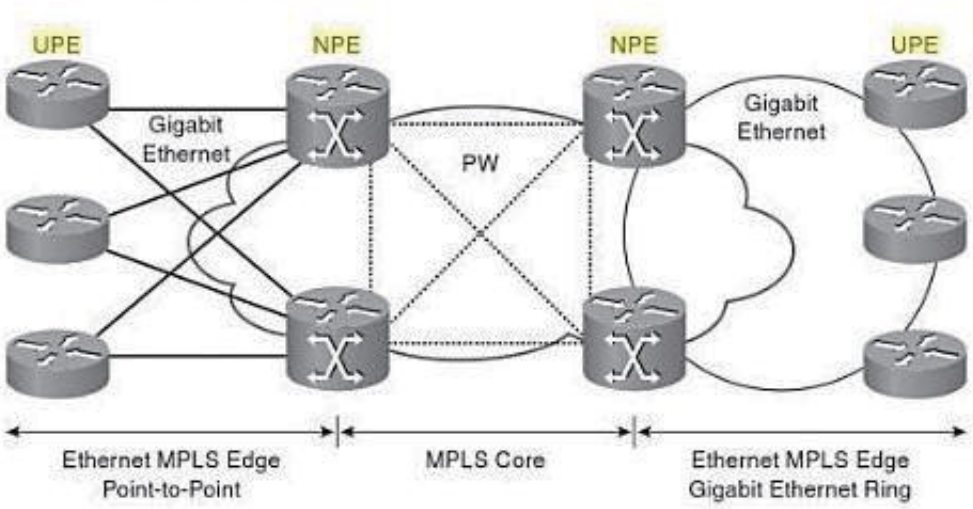


Figure 4-12 *Hierarchical VPLS Overview*

One advantage of the H-VPLS approach for the service provider is that the core of the network is an MPLS network, which may also be used for the transport of Layer 3 MPLS VPNs and other traffic. The MPLS core also serves to limit any edge spanning-tree domains, speeding up STP convergence and reducing any potential instability.

The physical topology of Ethernet edge H-VPLS (EE H-VPLS) can comprise point-to-point Ethernet connections, or Ethernet rings using an STP to provide redundancy and loop avoidance. Other edge architectures use an aggregation layer between the UPE and NPE, or use Ethernet over SONET/SDH (EoS), or RPR as a transport between the UPE and NPE.

NEW QUESTION 86

When implementing VPLS on Cisco IOS XR routers, the customer-facing subinterfaces on the PE routers are assigned to which Cisco EVC component?

A. bridge group
B. bridge domain
C. VFI
D. Layer 2 transport
E. BVI

Answer: B

Explanation:

l2vpn **Example:** `RP/0/RSP0/CPU0:router (config-subif)#l2vpn`	Enters L2VPN configuration mode.
bridge group *bridge-group-name* **Example:** `RP/0/RSP0/CPU0:router (config-l2vpn)#bridge group ce-doc-examples`	Enters configuration mode for the named bridge group. This command creates a new bridge group or modifies the existing bridge group if it already exists. A bridge group organizes bridge domains.
bridge-domain domain-name **Example:** `RP/0/RSP0/CPU0:router (config-l2vpn-bg)#bridge-domain ac-example`	Enters configuration mode for the named bridge domain. This creates a new bridge domain modifies the existing bridge domain if it already exists.
interface [GigabitEthernet | TenGigE] instance.subinterface **Example:** `RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd)#interface GigabitEthernet0/5/0/0.20`	Assigns the matching VLAN Id and Ethertype to the interface.
interface [GigabitEthernet | TenGigE] instance.subinterface **Example:** `RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd-ac)#interface GigabitEthernet0/5/0/1.15`	Adds an interface to a bridge domain that allows packets to be forwarded and received from other interfaces that are part of the same bridge domain. The interface now becomes an attachment circuit on this bridge domain.

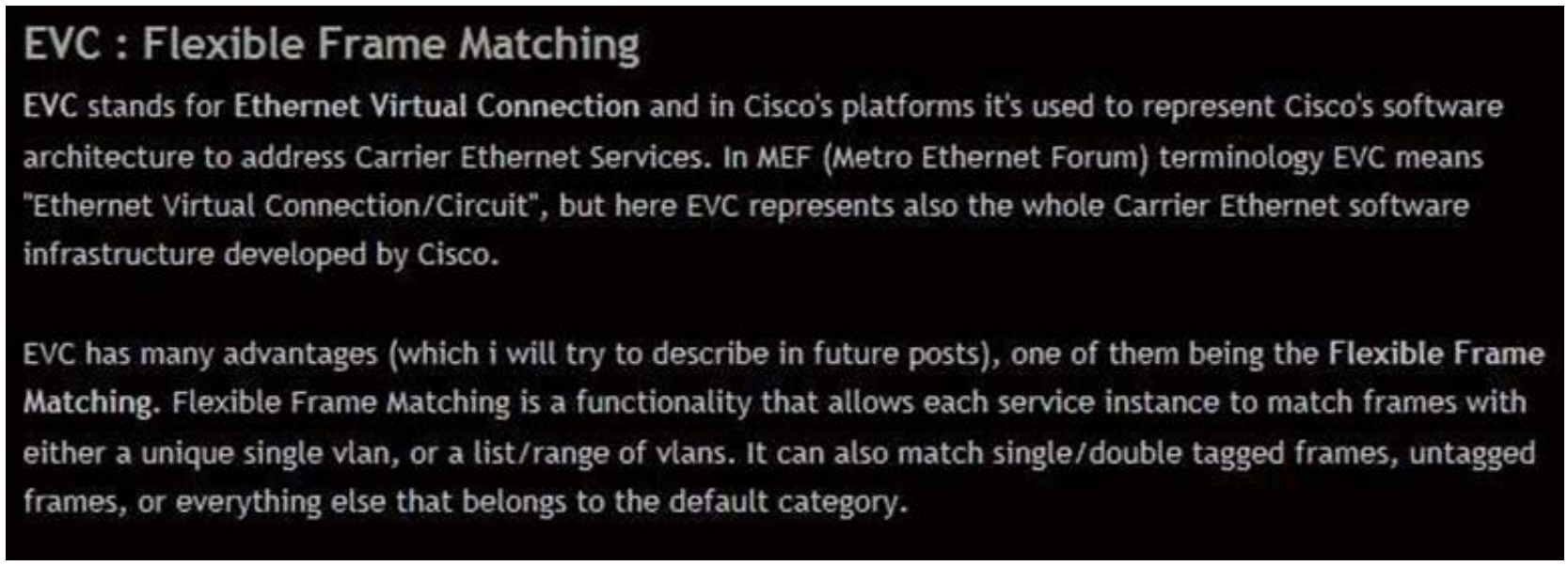
end
or
commit
 	
Example:
`RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd-ac)# end`
or
`RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd-ac)# commit`
	Saves configuration changes.
	• When you issue the **end** command, the system prompts you to commit changes:
	`Uncommitted changes found, commit them before exiting(yes/no/cancel)?`
	`[cancel]:`
	– Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode.
	– Entering **no** exits the configuration session and returns the router to EXEC mode without committing the configuration changes.
	– Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.

NEW QUESTION 88
What is an advantage of using the Cisco EVC infrastructure to implement carrier-class Ethernet services that are not available on non-EVC-capable platforms?

A. PW redundancy
B. interworking support
C. PW stitching support
D. flexible frame-matching support and VLAN tag manipulation
E. local cross-connect support

Answer: D

Explanation: http://www.cisco.com/web/YU/events/expo_08/pdfs/Carrier_Ethernet_Marek_Moskal.pdf



NEW QUESTION 90
When implementing a Layer 2 transport subinterface on a Cisco IOS XR router, which encapsulation option is used to match any packets that are not matched by any other service instances?

A. default
B. untagged
C. any
D. tag

Answer: A

Explanation:

Command	Description
encapsulation dot1q	Defines the matching criteria to map 802.1Q frames ingress on an interface to the appropriate service instance.
encapsulation dot1ad dot1q	Defines the matching criteria to be used in order to map single-tagged 802.1ad frames ingress on an interface to the appropriate service instance.
encapsulation dot1q second-dot1q	Defines the matching criteria to map Q-in-Q ingress frames on an interface to the appropriate service instance.
encapsulation untagged	Defines the matching criteria to map untagged ingress Ethernet frames on an interface to the appropriate service instance.

encapsulation default

To configure the default service instance on a port, use the **encapsulation default** command in the Interface configuration mode. To delete the default service instance on a port, use the **no** form of this command.

encapsulation default

no encapsulation default

Syntax Description

This command has no keywords or arguments.

Command Default

No default service instance is configured on the port.

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing yo from using a command, contact your AAA administrator for assistance.

If the default service instance is the only one configured on a port, the **encapsulation default** command matches all ingress frames on that port. If the default service instance is configured on a port that has other non-default service instances, the **encapsulation default** command matches frames that are unmatched by those non-default service instances (anything that does not meet the criteria of other services instances on the same physical interface falls into this service instance).

Only a single default service instance can be configured per interface. If you attempt to configure more than one default service instance per interface, the **encapsulatio default** command is rejected.

Only one encapsulation command must be configured per service instance.

NEW QUESTION 92
When configuring VPLS on the Cisco ASR 9000, which three configurations are required under the l2vpn configuration mode? {Choose three.}

A. bridge-group
B. bridge-domain
C. xconnect
D. vfi
E. encapsulation

Answer: ABD

Explanation:

l2vpn **Example:** RP/0/RSP0/CPU0:router (config-subif)#l2vpn	Enters L2VPN configuration mode.
bridge group *bridge-group-name* **Example:** RP/0/RSP0/CPU0:router (config-l2vpn)#bridge group ce-doc-examples	Enters configuration mode for the named bridge group. This command creates a new bridge group or modifies the existing bridge group if it already exists. A bridge group organizes bridge domains.
bridge-domain domain-name **Example:** RP/0/RSP0/CPU0:router (config-l2vpn-bg)#bridge- domain ac-example	Enters configuration mode for the named bridge domain. This creates a new bridge domain modifies the existing bridge domain if it already exists.
interface [GigabitEthernet | TenGigE] instance.subinterface **Example:** RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd)#inter face GigabitEthernet0/5/0/0.20	Assigns the matching VLAN Id and Ethertype to the interface.
interface [GigabitEthernet | TenGigE] instance.subinterface **Example:** RP/0/RSP0/CPU0:router (config-l2vpn-bg-bd-ac)#in terface GigabitEthernet0/5/0/1.15	Adds an interface to a bridge domain that allows packets to be forwarded and received from other interfaces that are part of the same bridge domain. The interface now becomes an attachment circuit on this bridge domain.

end
or
commit
 	
Example:
RP/0/RSP0/CPU0:router
(config-l2vpn-bg-bd-ac)#
end
or
RP/0/RSP0/CPU0:router
(config-l2vpn-bg-bd-ac)#
commit
	Saves configuration changes.
	• When you issue the **end** command, the system prompts you to commit changes:
	`Uncommitted changes found, commit them before exiting(yes/no/cancel)?`
	`[cancel]:`
	– Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode.
	– Entering **no** exits the configuration session and returns the router to EXEC mode without committing the configuration changes.
	– Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.

Restrictions for Implementing Virtual Private LAN Services on Cisco IOS XR Software

The following restrictions are listed for implementing VPLS:

- All attachment circuits in a bridge domain on an Engine 3 line card must be the same type (for example, port, dot1q, qinq, or qinany), value (VLAN ID), and EtherType (for example, 0x8100, 0x9100, or 0x9200). The Cisco CRS-1 router supports multiple types of attachment circuits in a bridge domain.
- The Engine 3 line cards, cannot simultaneously have attachment circuits and MPLS-enabled on any one of its interfaces. The line card cannot be Edge-facing and Core-facing at the same time. Line cards on the Cisco CRS-1 router can be Edge-facing and Core-facing at the same time.
- The line card requires ternary content addressable memory (TCAM) Carving configuration. The Cisco CRS-1 router however, does not require the TCAM Carving configuration.
- Virtual Forwarding Instance (VFI) names have to be unique, because a bridge domain can have only one VFI.
- On the Cisco CRS-1 router, a VPLS pseudowire (PW) can be configured only under VFI.
- The Cisco CRS-1 router does not support VPLS with TE core tunnels.
- A PW cannot belong to both a peer-to-peer (P2P) cross-connect group and a VPLS bridge-domain. This means that the neighboring IP address and the pseudowire ID have to be unique on the router, because the pseudowire ID is signaled to the remote provider edge.
- You cannot manually set up a PW on one PE and use auto-discovery on the other PE to configure the same PW in the other direction. The auto-discovery feature is supported only on the Cisco XR 12000 Series Router.

NEW QUESTION 96
Which option is the correct command to define an interface as Layer 2 on the Cisco ASR 9000?

A. RP/0/RSP0/CPU0:R1{config}#int gigabitEthernet 0/6/0/0 l2transport
B. RP/0/RSP0/CPU0:R1{config}#int gigabitEthernet 0/6/0/0 layer2
C. RP/0/RSP0/CPU0:R1{config}#int gigabitEthernet 0/6/0/0 switchport
D. RP/0/RSP0/CPU0:R1{config}#int gigabitEthernet 0/6/0/0 xconnect

Answer: A

Explanation:

Configuring Layer 2 Protocol Tunneling: Example

This section includes configuration examples for L2PT in the forward and reverse modes.

Configuring L2PT in forward mode

The following example shows how to configure L2PT in the forward mode:

At the customer facing router (encapsulation end):

```
!
interface GigabitEthernet0/1/0/1
 negotiation auto
!
interface GigabitEthernet0/1/0/1.1 l2transport
 encapsulation default
 l2protocol cpsv tunnel
!
interface GigabitEthernet0/1/0/2
 negotiation auto
!
interface GigabitEthernet0/1/0/2.1 l2transport
 encapsulation default
!
l2vpn
 xconnect group examples
  p2p r1-connect
   interface GigabitEthernet0/1/0/1.1
   interface GigabitEthernet0/1/0/2.1
  !
 !
!
```

NEW QUESTION 98
When implementing MPLS Layer 3 VPN services, which CE-PE routing method does not require the use of the redistribute command to enable the customer routes to be advertised through the MPLS cloud between the customer sites?

A. EIGRP
B. OSPF
C. IS-IS
D. BGP
E. static routing
F. OSPF or IS-IS

Answer: D

NEW QUESTION 103
Refer to the partial Cisco IOS XR PE router configuration exhibit for supporting a Layer 3 MPLS VPN customer using EIGRP AS 20 as the CE-to-PE routing protocol.

```
router eigrp 10
vrf Customer_A
address-family ipv4
default-metric 10000 100 255 1 1500
autonomous-system 20
redistribute bgp 64500
interface GigabitEthernet0/0/0/0
!
router bgp 64500
vrf Customer_A
rd 64500:1
address-family ipv4 unicast
redistribute eigrp 10
!
```

The MPLS VPN customer is having problems receiving the EIGRP routes on the different customer site CE routers.
What is wrong with this configuration that is causing the problem?

A. The router eigrp command is referencing the wrong AS number.
B. The redistribute eigrp command is missing the metric transparent option.
C. The redistribute eigrp command is referencing the wrong AS number.
D. The redistribute bgp command is missing the subnets option.
E. The redistribute eigrp command is missing the subnets option.

Answer: C

NEW QUESTION 107
In which Cisco IOS XR configuration mode is the redistribute static command applied to enable the redistribution of static VRF routes between the PE routers?

A. RP/0/RP0/CPU0:PE{config-router}#
B. RP/0/RP0/CPU0:PE{config-bgp}#
C. RP/0/RP0/CPU0:PE{config-bgp-vrf}#
D. RP/0/RP0/CPU0:PE{config-bgp-vrf-af}#

Answer: D

Explanation: http://www.cisco.com/en/US/docs/routers/asr9000/software/routing/configuration/guide/rcasr9kstat.html#wp1041 359

	Command or Action	Purpose
Step 1	**configure** **Example:** RP/0/RSP0/CPU0:router# configure	Enters global configuration mode.
Step 2	**router static** **Example:** RP/0/RSP0/CPU0:router(config) # router static	Enters static route configuration mode.
Step 3	**vrf** *vrf-name* **Example:** RP/0/RSP0/CPU0:router(config-static)# vrf vrf_A	(Optional) Enters VRF configuration mode. If a VRF is not specified, the static route is configured under the default VRF.
Step 4	**address-family** {**ipv4** | **ipv6**} {**unicast** | **multicast**} **Example:** RP/0/RSP0/CPU0:router(config-static-vrf)# address family ipv6 unicast	Enters address family mode.
Step 5	*prefix mask* [**vrf** *vrf-name*] {*ip-address* | *interface-type interface-instance*} [*distance*] [**description** *text*] [**tag** *tag*] [**permanent**] **Example:** RP/0/RSP0/CPU0:router(config-static-vrf-afi)# 2 001:0DB8::/32 2001:0DB8:3000::1 201	Configures an administrative distance of 201.
Step 6	**end** or **commit** **Example:** RP/0/RSP0/CPU0:router(config-static-vrf-afi)# e nd or RP/0/RSP0/CPU0:router(config-static-vrf-afi)# commit	Saves configuration changes. • When you issue the **end** command, the system prompts you to commit changes: Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]: – Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode. – Entering **no** exits the configuration session and returns the router to EXEC mode without committing the configuration changes. – Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes. • Use the **commit** command to save the configuration changes to the running configuration file and remain within the configuration session.

NEW QUESTION 108
When implementing VPLS on Cisco IOS XR routers, the VPLS PW neighbors can be statically defined under which configuration mode?

A. bridge group
B. bridge-domain
C. vfi
D. mpls ldp
E. l2transport

Answer: C

Explanation:

Restrictions for Implementing Virtual Private LAN Services on Cisco IOS XR Software

The following restrictions are listed for implementing VPLS:

- All attachment circuits in a bridge domain on an Engine 3 line card must be the same type (for example, port, dot1q, qinq, or qinany), value (VLAN ID), and EtherType (for example, 0x8100, 0x9100, or 0x9200). The Cisco CRS-1 router supports multiple types of attachment circuits in a bridge domain.
- The Engine 3 line cards, cannot simultaneously have attachment circuits and MPLS-enabled on any one of its interfaces. The line card cannot be Edge-facing and Core-facing at the same time. Line cards on the Cisco CRS-1 router can be Edge-facing and Core-facing at the same time.
- The line card requires ternary content addressable memory (TCAM) Carving configuration. The Cisco CRS-1 router however, does not require the TCAM Carving configuration.
- Virtual Forwarding Instance (VFI) names have to be unique, because a bridge domain can have only one VFI.
- On the Cisco CRS-1 router, a VPLS pseudowire (PW) can be configured only under VFI.
- The Cisco CRS-1 router does not support VPLS with TE core tunnels.
- A PW cannot belong to both a peer-to-peer (P2P) cross-connect group and a VPLS bridge-domain. This means that the neighboring IP address and the pseudowire ID have to be unique on the router, because the pseudowire ID is signaled to the remote provider edge.
- You cannot manually set up a PW on one PE and use auto-discovery on the other PE to configure the same PW in the other direction. The auto-discovery feature is supported only on the Cisco XR 12000 Series Router.

NEW QUESTION 109
On Cisco IOS XR platforms using the EVC infrastructure, which command is used to enable a Layer 2 VPN subinterface?

A. interface gi0/0/0/0.10 switchport access vlan 10
B. interface gi0/0/0/0.10 switchport mode tunnel dot1q-tunnel
C. interface gi0/0/0/0.10 switchport mode trunk
D. interface gi0/0/0/0.10 bridge-group 10
E. interface gi0/0/0/0.10 l2transport

Answer: E

Explanation:

	Command or Action	Purpose

Step 1	`configure`
	Example:
	`RP/0/RP0/CPU0:router# configure`
		Enters global configuration mode.

Step 2	`interface type interface-id`
	Example:
	`RP/0/RP0/CPU0:router (config)# interface GigabitEthernet 0/0/0/0`
		Enters interface configuration mode and configures an interface.

Step 3	`l2transport`
	Example:
	`RP/0/RP0/CPU0:router (config-if)# l2transport`
		Enables L2 transport on the selected interface.

Step 4	`exit`
	Example:
	`RP/0/RP0/CPU0:router (config-if-l2)# exit`
		Exits the current configuration mode.

Step 5	`interface type interface-id`
	Example:
	`RP/0/RP0/CPU0:router (config)# interface GigabitEthernet0/0/0/0`
		Enters interface configuration mode and configures an interface.

Step 6	`dot1q native vlan vlan ID`
	Example:
	`RP/0/RP0/CPU0:router (config-if)# dot1q vlan 1`
		Assigns the native VLAN ID of a physical interface trunking 802.1Q VLAN traffic.

Step 7	`end`
	or
	`commit`
	Example:
	`RP/0/RP0/CPU0:router (config-if)# end`
	or
	`RP/0/RP0/CPU0:router (config-if)# commit`
		Saves configuration changes.
		• When you issue the **end** command, the system prompts you to commit changes:
		`Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]:`
		– Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode.
		– Entering **no** exits the configuration session and returns the router to EXEC mode without committing the configuration changes.
		– Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.
		• Use the **commit** command to save the configuration changes to

NEW QUESTION 110
In Layer 3 MPLS VPN implementations, which protocol is used to carry the VPNv4 routes from PE to PE?

A. RSVP
B. IGP
C. MP-BGP
D. LDP

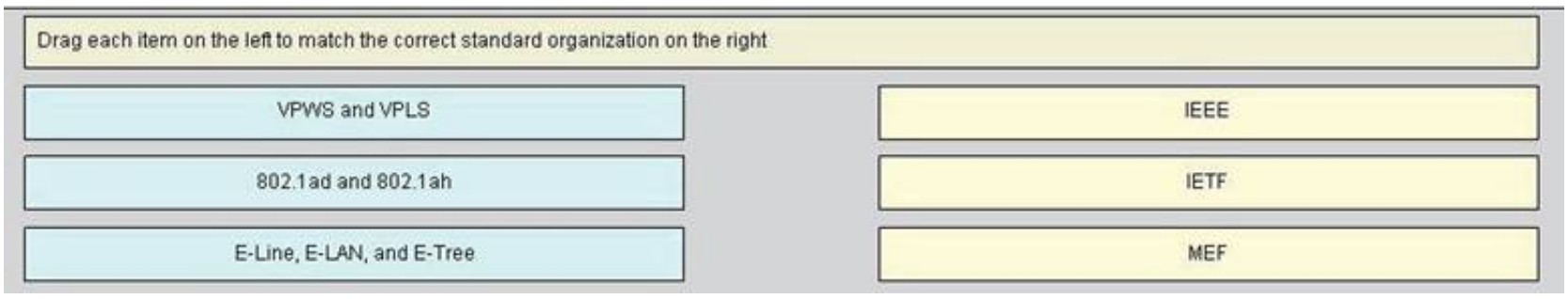
Answer: C

NEW QUESTION 113
What happens if the destination MAC address is not present in the table for the packets that are received on one of the ACs in VPLS?

A. Packets are switched only to the PW.
B. Packets are flooded only to the other local ACs.
C. Packets are flooded on all other ACs and on all PWs that are associated with the bridge domain.
D. Packets are dropped.

Answer: C

NEW QUESTION 116
DRAG DROP



Answer:

Explanation: http://www.cisco.com/application/pdf/en/us/guest/tech/tk891/c1482/cdccont_0900aecd80162184.pdf

CISCO SYSTEMS

VPLS AND VPWS—AT-A-GLANCE

WHY SHOULD I CARE ABOUT LAYER 2 VPNS?

Originally designed using network technologies at Layer 2 (for example, Frame Relay), VPNs now are being augmented by packet-based technologies such as IP and Multiprotocol Label Switching (MPLS). IP and MPLS allow continued support of existing Layer 2 VPNs while adding support for new Layer 3 services, such as MPLS VPNs, over a single infrastructure. Supporting Layer 2 VPNs over an IP or MPLS infrastructure offers the following benefits:

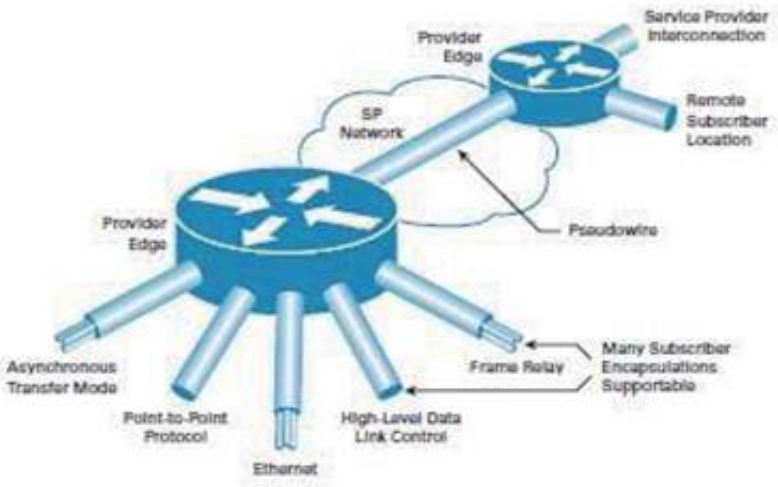
- Consolidation of multiple Layer 2 networks within enterprise or service providers environments into one core network with Layer 2 services running over a common IP/MPLS core. See Figure 1.
- The ability to seamlessly extend LANs as private virtual LANs across a service provider's network and to deliver multipoint Ethernet services.

WHAT PROBLEMS ARE SOLVED?

A shift is underway within service provider networks from circuit-switched to packet-based technology. It presents opportunities for increased revenues and cost containment from consolidation and better utilization of infrastructure. Virtual Private LAN Service (VPLS) and Virtual Private Wire Service (VPWS) represent advanced packet-switched VPN solutions that blend Layer 2 and Layer 3 technologies to make it possible to operate private, point-to-point, and multipoint virtual LANs through public networks.

Multiple Layer 2 networks can be consolidated within enterprise or service provider environments into single networks with Layer 2 services running over a common IP/MPLS core. LANs also can be smoothly extended as private virtual LANs across a WAN.

Figure 1. Layer 2 VPN



A Layer 2 VPN comprises switched connections between subscriber endpoints over a shared network. Non-subscribers do not have access to those same endpoints.

COMPARISONS

VPLS

VPLS is an attractive option for service providers because it uses a Layer 2 architecture to offer multipoint Ethernet VPNs that connect multiple sites over a metropolitan-area network (MAN) or WAN. Other technologies also enable Ethernet across the WAN, including Ethernet over MPLS, Ethernet over Layer 2 Tunneling Protocol Version 3 (L2TPv3), Ethernet over SONET/SDH, and Ethernet bridging over Any-Transport over MPLS AToM. However, they provide only point-to-point connectivity and VPLS is designed for applications that require multipoint or broadcast access.

For larger VPLS networks supporting applications requiring multipoint or broadcast access, VPLS scalability is achieved by using a hierarchy to reduce the signaling overhead and packet replication requirements for the provider edge.

Using VPLS, service providers can create a Layer 2 "virtual switch" over an MPLS core to establish a distributed Network Access Point (NAP). The NAP allows transparent private peering between multiple ISPs and delivers robust connections to multiple sites within a specific metro region. Service provider-to-service provider VPLS can be supported using either Border Gateway Protocol (BGP) or Label Distribution Protocol (LDP). LDP provides more granular control of communication and quality of service between VPLS nodes, more control per node, and is a consistent signaling option to support MPLS, VPLS, or VPWS. BGP is less versatile because typically it communicates the same information to all nodes participating in a VPLS.

The hierarchical VPLS architecture includes customer edge devices connected to provider edge routers that aggregate VPLS traffic before it reaches the network provider edge routers, where the VPLS forwarding takes place.

VPWS

VPWS makes the integration of existing Layer 2 and Layer 3 services possible on a point-to-point basis across a service provider's IP/MPLS cloud.

Two pseudowire technologies are available from Cisco Systems®: AToM is the Cisco® pseudowire technology that targets MPLS networks; and L2TPv3 is the Cisco pseudowire technology for native IP networks.

Both AToM and L2TPv3 support the transport of Frame Relay, ATM, High-Level Data Link Control (HDLC), and Ethernet traffic over an IP or MPLS core.

NEW QUESTION 117

Refer the exhibit.

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on the router icon to gain access to the console of the router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

For example, the show running-config command is NOT supported in this simulation.

All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on the CE7 and PE7 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

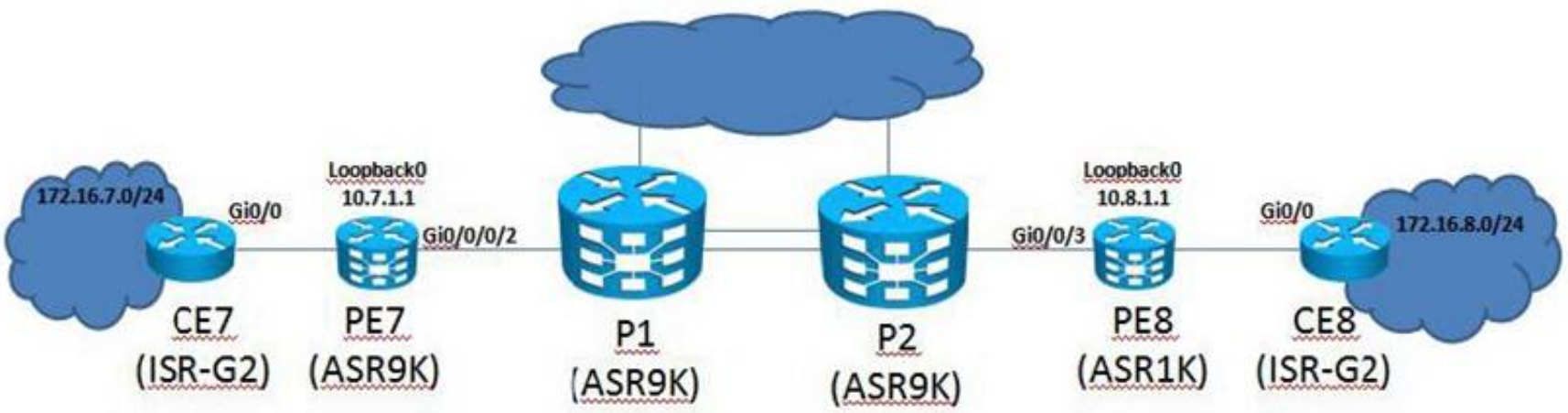
The CE7 router is an ISR-G2 router and the PE7 router is an ASR9K router.

OSPF is the IGP running between all the PE and P routers and LDP is also running between all the PE and P routers.

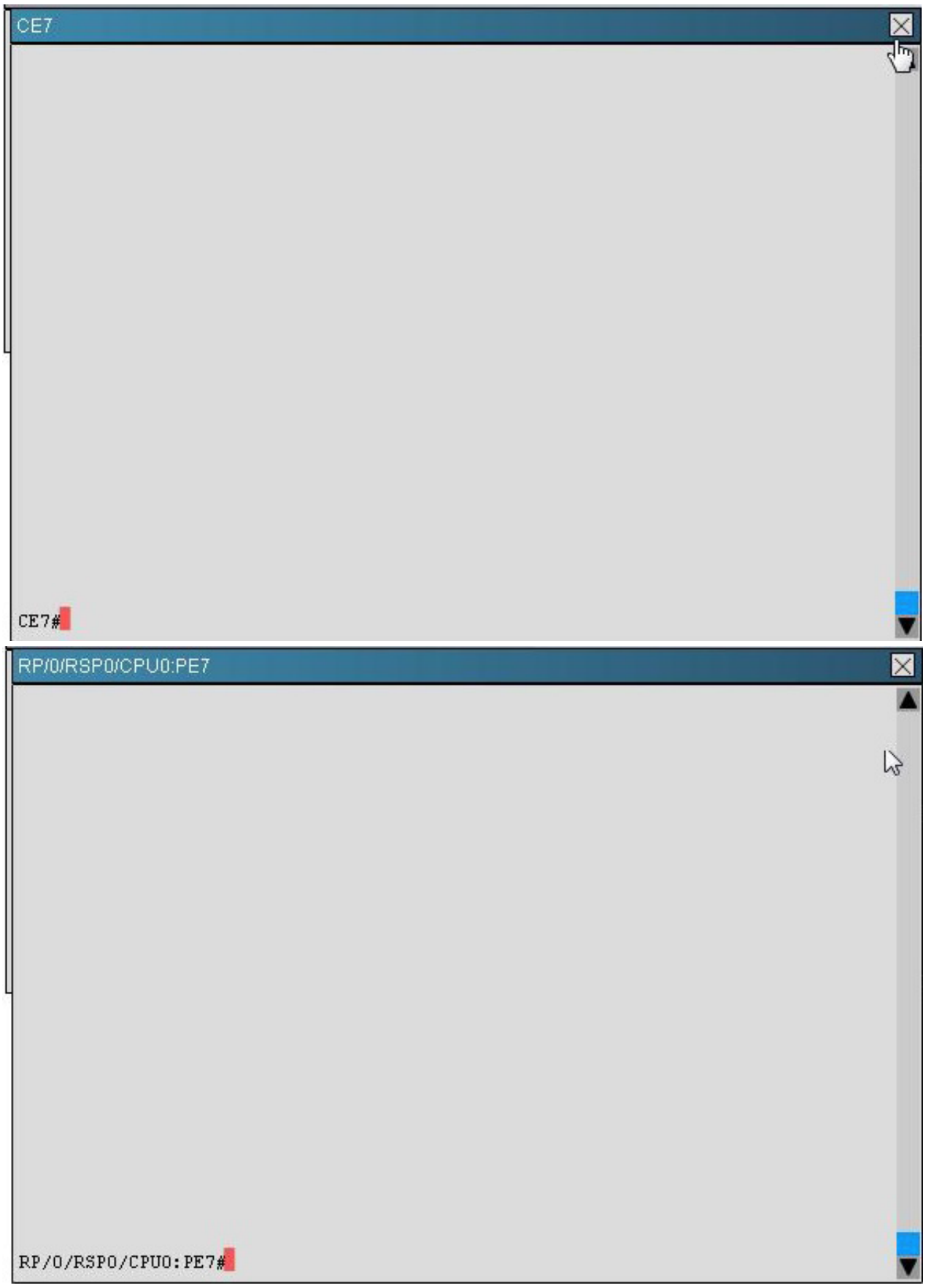
The questions in this simulation are regarding the MPLS layer 3 VPN configurations on the PE routers where CE7

Scenario | Instructions | Topology | CE7 | RP/0/RSP0/CPU0:PE7 | Questions

Topology



In this simulation, you will only have access to the PE7 and CE7 consoles
Click on the PE7 and CE7 router icon to access the respective console



What type of routing is used between CE7 and PE7?

A. OSPF
B. BGP
C. is-is
D. RIPv2
E. Static routing

Answer: E

Explanation: # show ip route

NEW QUESTION 120
Refer the exhibit.

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on the router icon to gain access to the console of the router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

For example, the show running-config command is NOT supported in this simulation.

All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on the CE7 and PE7 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

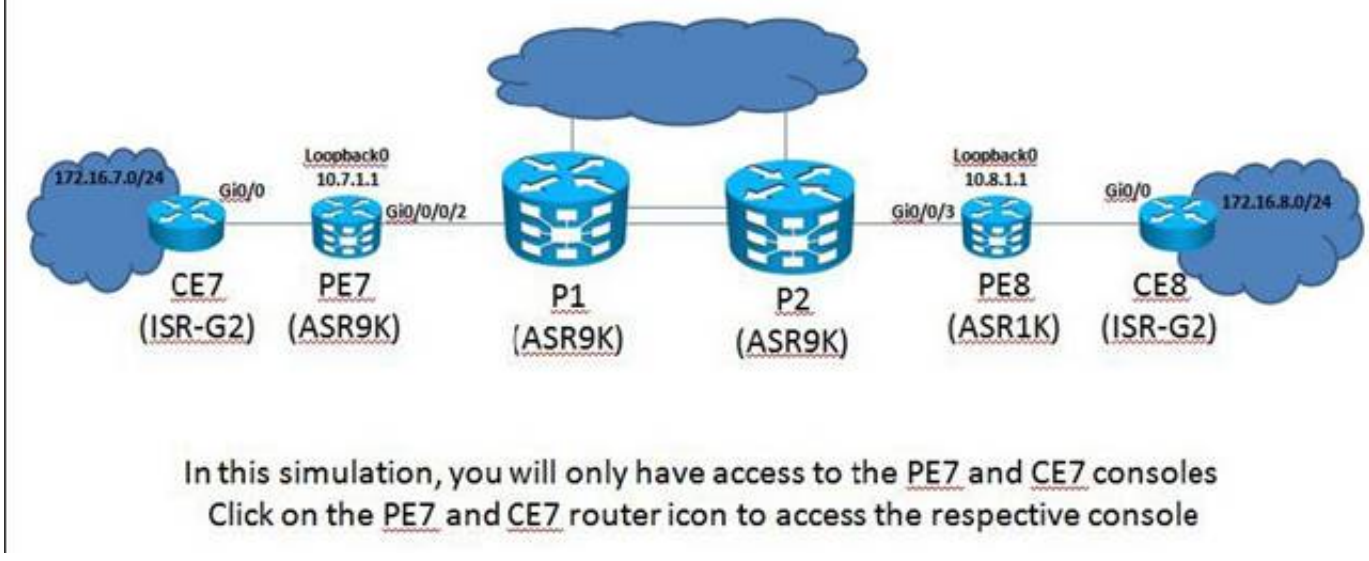
The CE7 router is an ISR-G2 router and the PE7 router is an ASR9K router.

OSPF is the IGP running between all the PE and P routers and LDP is also running between all the PE and P routers.

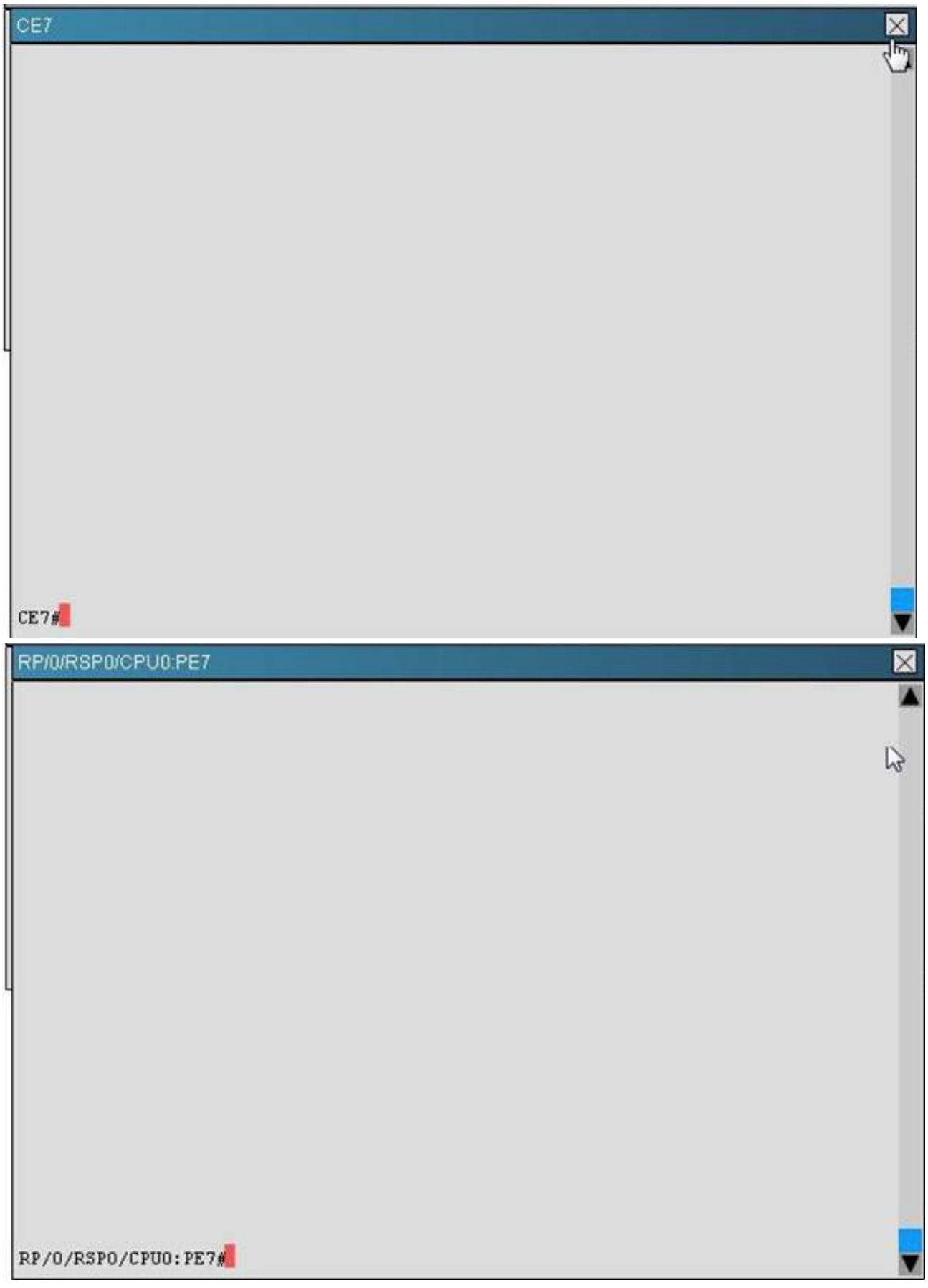
The questions in this simulation are regarding the MPLS layer 3 VPN configurations on the PE routers where CE7

Scenario | Instructions | Topology | CE7 | RP/0/RSP0/CPU0:PE7 | Questions

Topology



In this simulation, you will only have access to the PE7 and CE7 consoles
Click on the PE7 and CE7 router icon to access the respective console



On PE7, how many multiprotocol IBGP routes are learned from PE8 and what is the next-hop IP address? {Choose two.}

A. 1
B. 2
C. 3
D. 10.8.1.1
E. 172.16.8.1
F. 192.168.108.81

Answer: BE

Explanation: Show ip bgp vpnv4 all --- i tag field is the answer

NEW QUESTION 124
Refer the exhibit.

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on the router icon to gain access to the console of the router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

For example, the show running-config command is NOT supported in this simulation.

All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on the CE7 and PE7 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

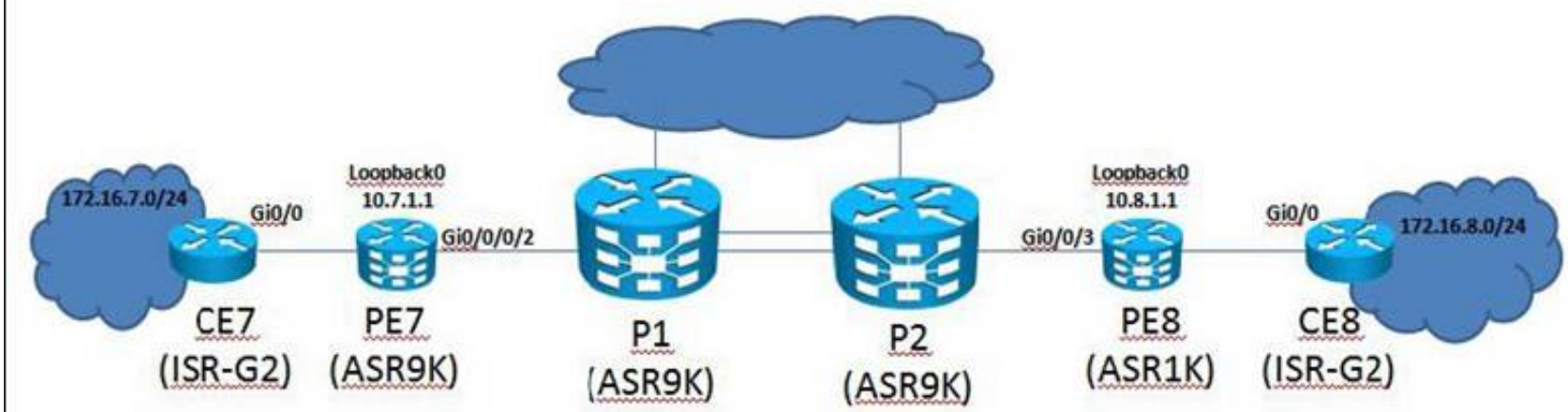
The CE7 router is an ISR-G2 router and the PE7 router is an ASR9K router.

OSPF is the IGP running between all the PE and P routers and LDP is also running between all the PE and P routers.

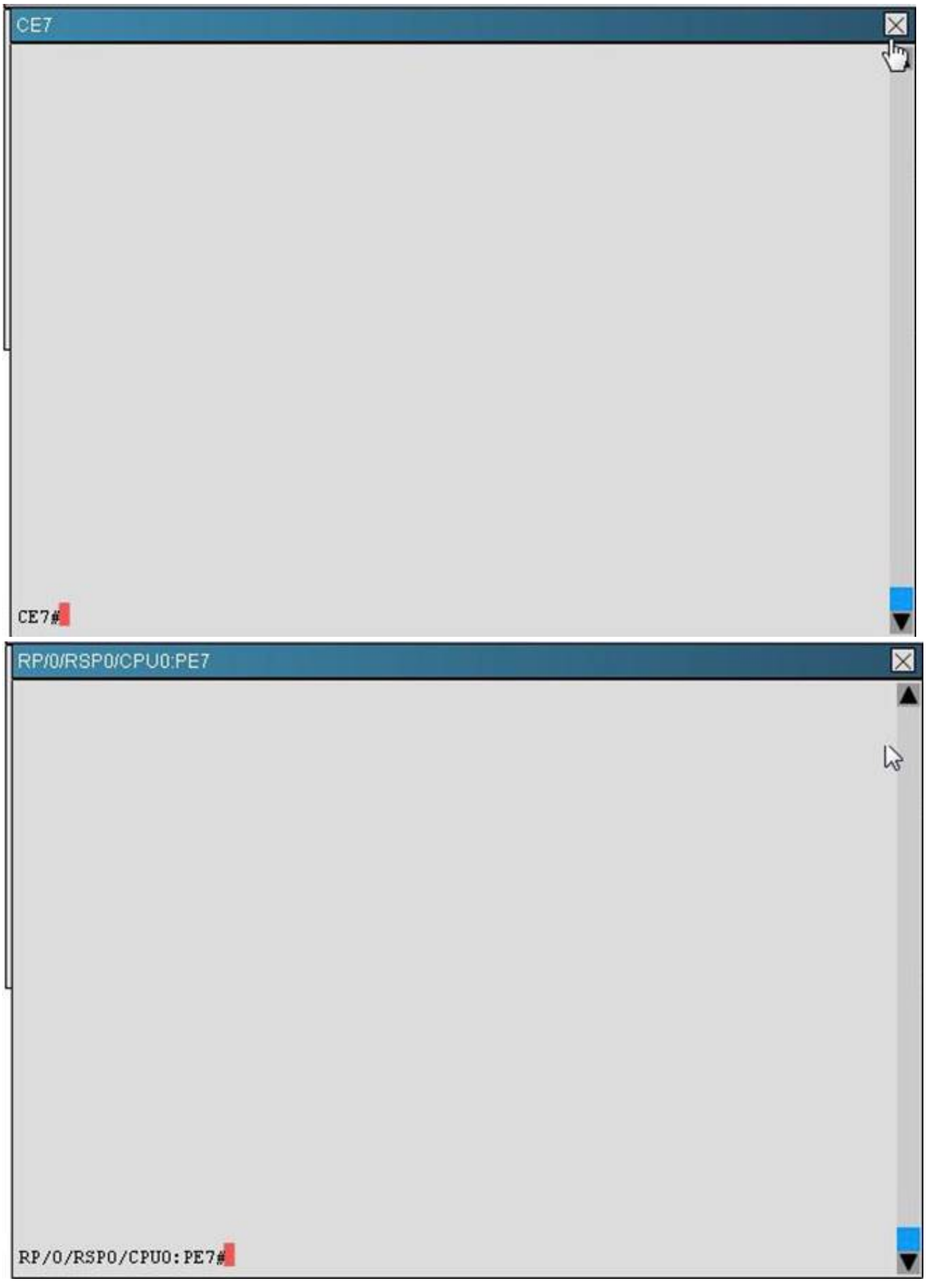
The questions in this simulation are regarding the MPLS layer 3 VPN configurations on the PE routers where CE7

Scenario | Instructions | Topology | CE7 | RP/0/RSP0/CPU0:PE7 | Questions

Topology



In this simulation, you will only have access to the PE7 and CE7 consoles
Click on the PE7 and CE7 router icon to access the respective console



On PE7, which three statements are correct regarding the MPLS VPN configurations used to support the connectivity between the CE7 and CE8 sites? {Choose three.}

A. The RD is 1:1
B. The import and export RTs are 1:1
C. Interface GiO/0/0/0 is associated to the "default" VRF
D. The network that connects PE7to CE7 is redistributed into multiprotocol IBGP
E. The multiprotocol IBGP routes learned have a BGP origin code of "i"

Answer: BCE

Explanation: # show ip route show ip vrf
show ip vrf detail

NEW QUESTION 126
Refer the exhibit.

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on the router icon to gain access to the console of the router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

For example, the show running-config command is NOT supported in this simulation.

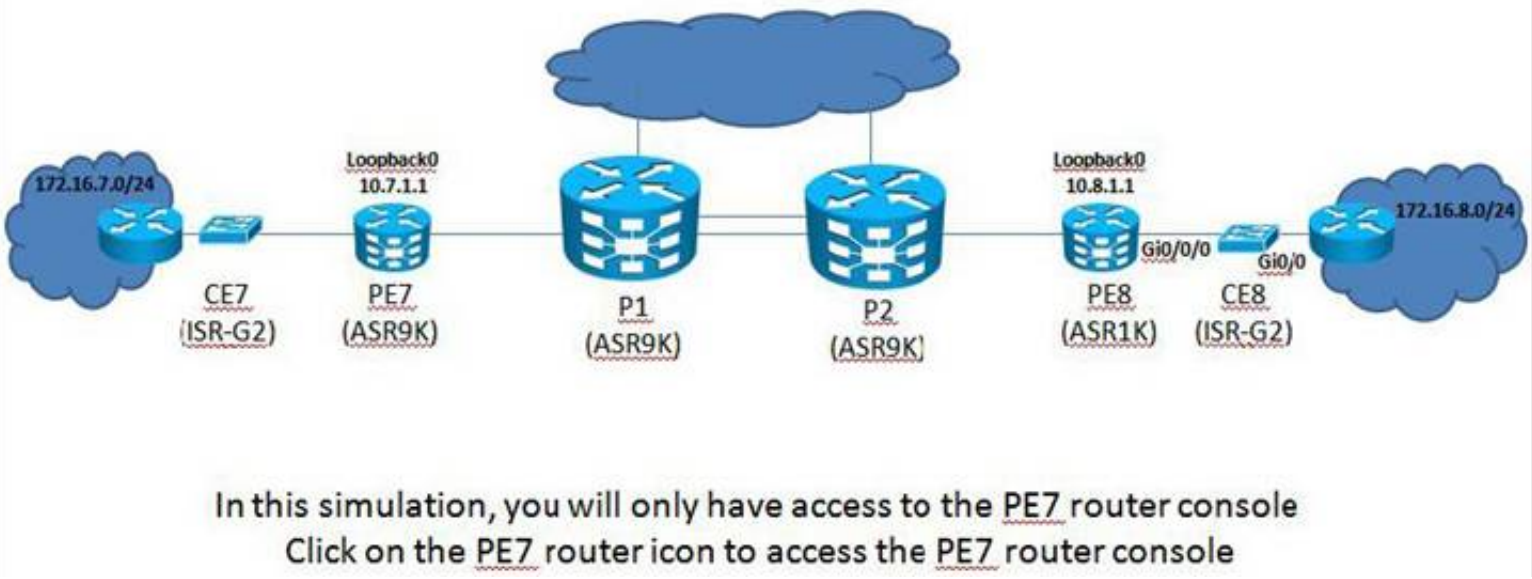
All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on PE7 router and interpret the supported CLI commands outputs to answer the four multiple choice questions.

The PE7 router is an ASR9K router.

Topology



RP/0/RSP0/CPU0:PE7

```
RP/0/RSP0/CPU0:PE7#
```

On PE7, what is the pseudowire ID that connects to the 10.8.1.1 neighbor?

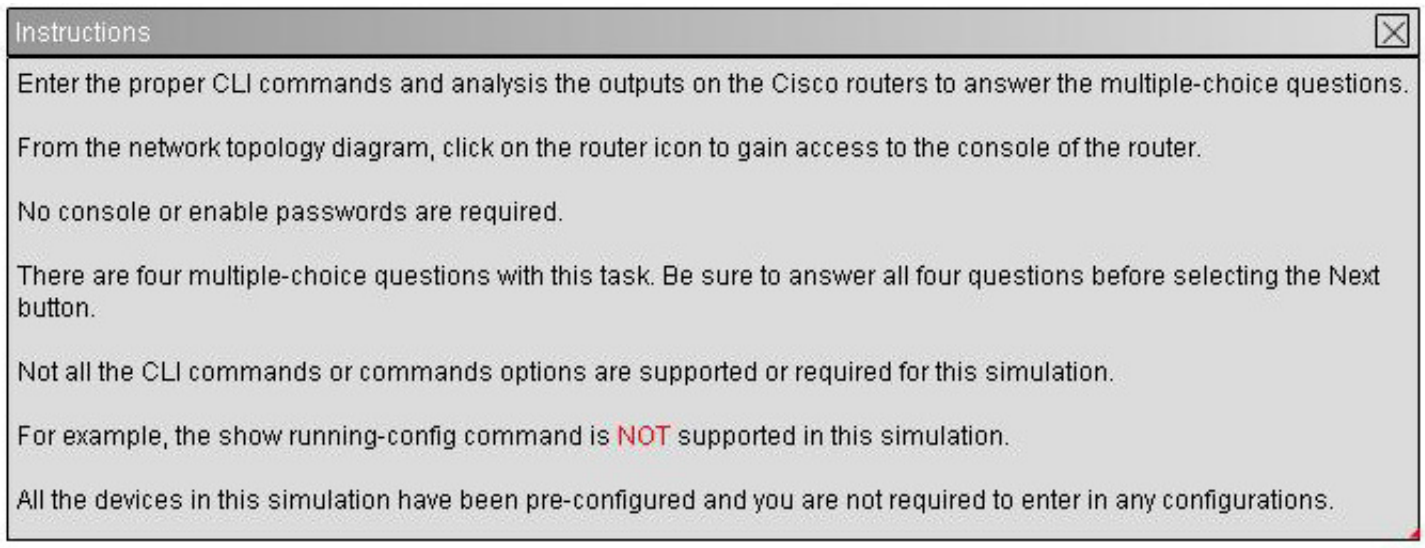
A. 70
B. 80
C. 123
D. 0x840001

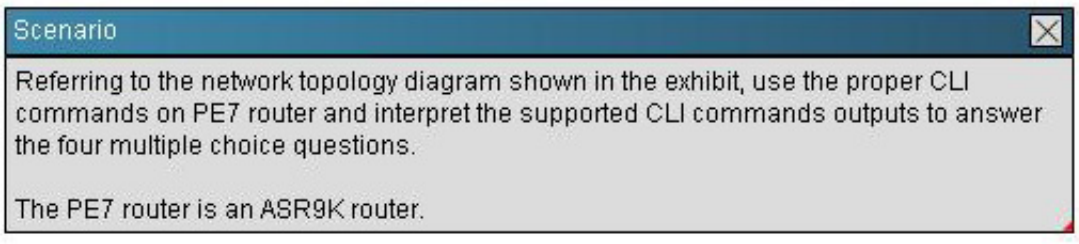
E. 0x4000080

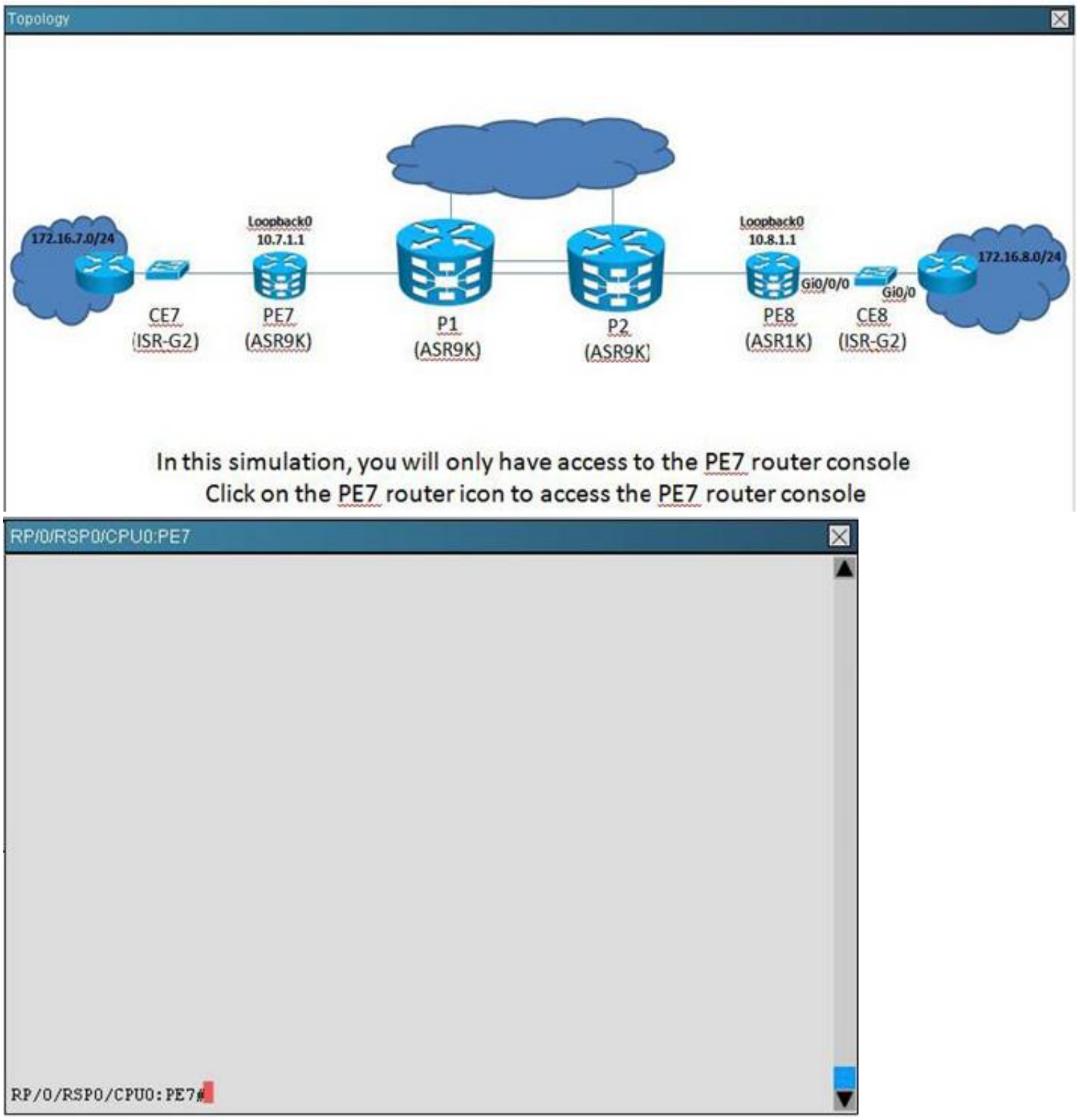
Answer: C

Explanation: # show vfi

NEW QUESTION 131
Refer the exhibit.







On PE7, which encapsulation method is used on the pseudowire that connects to the 10.8.1.1 neighbor?

A. MPLS
B. L2TPv3
C. IP
D. LDP
E. Ethernet

Answer: B

Explanation:
show xconnect all
check value is mpls or l2tp or Ethernet etc in segment field

NEW QUESTION 135
Refer the exhibit.

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on the router icon to gain access to the console of the router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

For example, the show running-config command is NOT supported in this simulation.

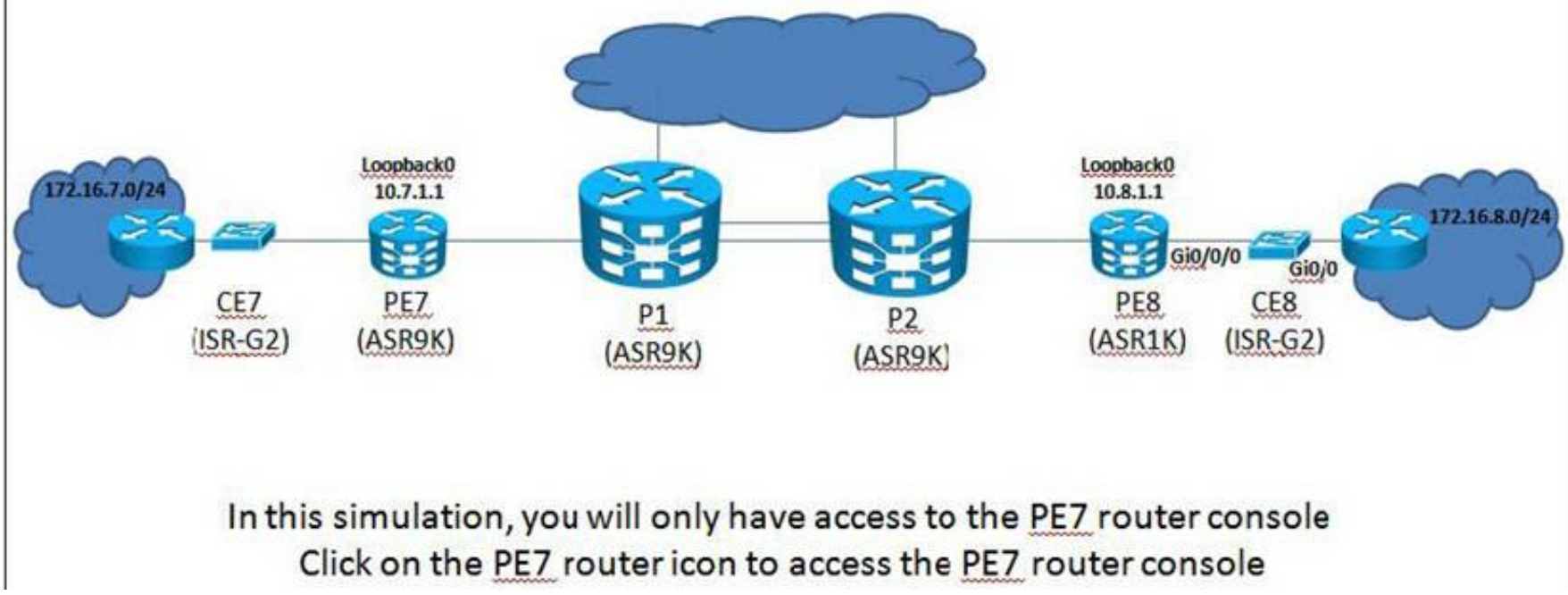
All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on PE7 router and interpret the supported CLI commands outputs to answer the four multiple choice questions.

The PE7 router is an ASR9K router.

Topology



On PE7, what is the PWtype on the p2p ac-pw named "testpw"?

A. MPLS
B. L2TPv3
C. PPP
D. LDP
E. Ethernet

Answer: B

Explanation: show mpls l2transport vc testpw detail

NEW QUESTION 140
Which VPN technology allows remote sites with dynamic IP addresses to connect to a central hub?

A. static IPsec tunnels
B. site-to-site VPN
C. DMPVN
D. VRFs

Answer: C

NEW QUESTION 145
A customer wants two separated sites to be connected via a pseudo-wire. Which solution provides the simplest implementation?

A. AToM
B. Layer 3 VPN
C. VPLS
D. GETVPN

Answer: A

NEW QUESTION 147
Which three options are features of MPLS Layer 2 VPNs? {Choose three.}

A. Routing occurs on customer devices.
B. Routing occurs on service provider and customer devices.
C. Customer sites appear to be on the same LAN.
D. Customer sites appear to be on different LANs in the same routing domain.
E. A routing protocol must be configured between the CE and PE device.
F. Traffic between CE and PE is forwarded in Layer 2 format.

Answer: ACF

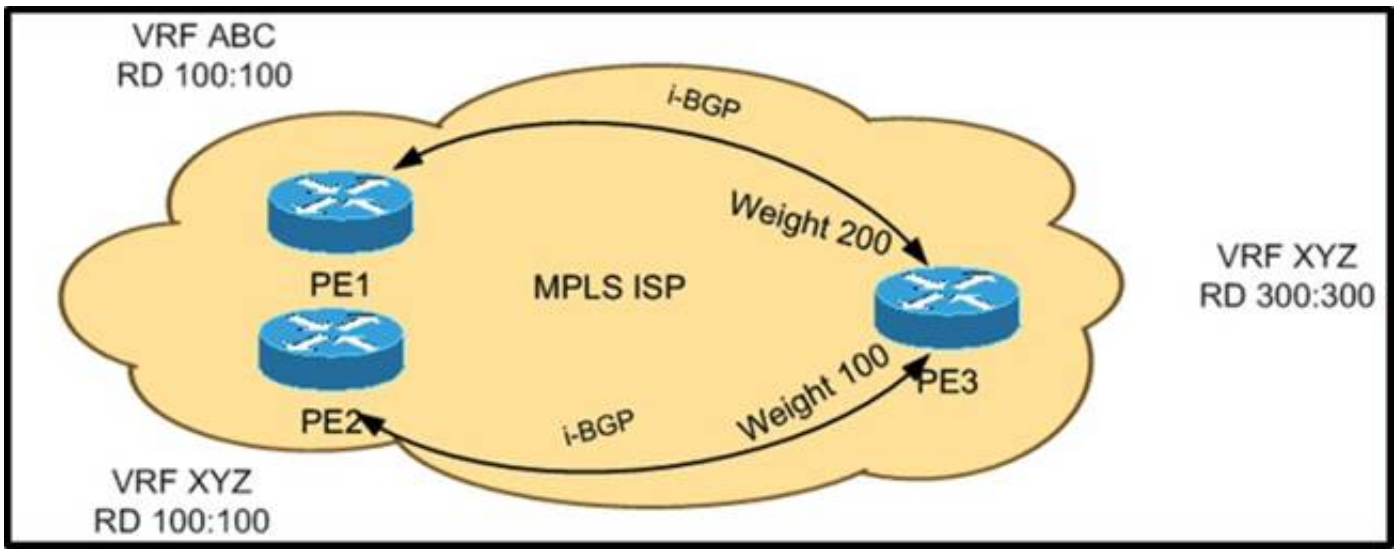
NEW QUESTION 150
What is the purpose of the route distinguisher in a service provider network?

A. to identify which prefixes should be imported
B. to identify customer local prefixes
C. to identify customer global prefixes

D. to identify which prefixes should be exported from BGP

Answer: C

NEW QUESTION 155
Refer to the exhibit.

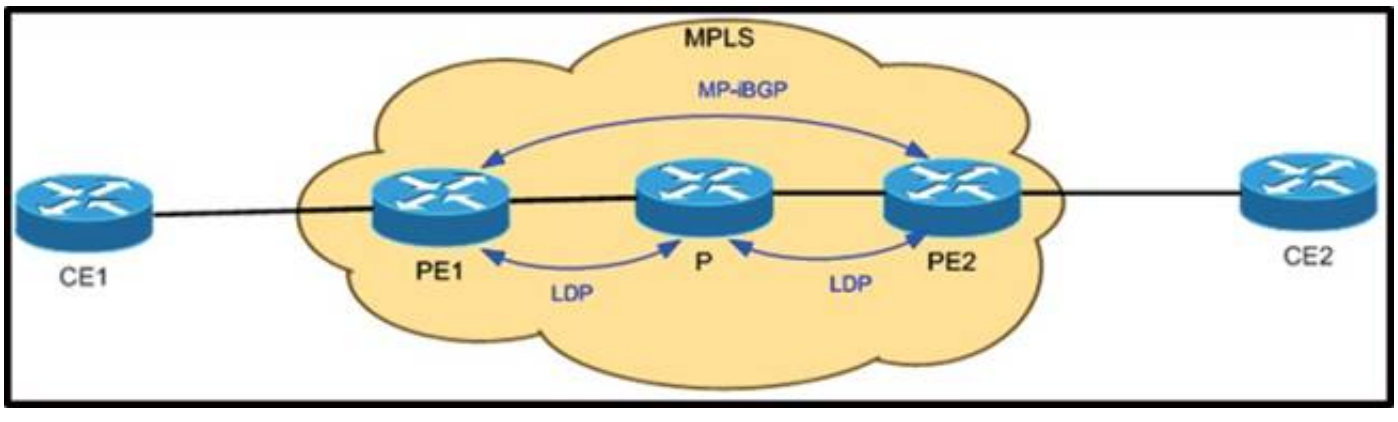


PE1 and PE2 are advertising the same subnet 10.10.10.0/24 and export route-target to PE3. Which PE advertised subnet is installed at the PE3 BGP table?

A. PE1 subnet only, due to higher BGP assigned weight.
B. PE2 subnet only because it is a member in the same VRF.
C. PE1 and PE2 subnets
D. PE1 and PE2 subnets as 300:300:10.10.10.0/24

Answer: C

NEW QUESTION 156
Refer to the exhibit.



A customer wants to deploy an IPv6 VPN network over the MPLS provider. Which option describes what must be enabled on the MPLS provider to support this request?

A. IPv6 should be deployed inside the core network of the provider.
B. LDP also should be configured to provide labels for IPv6 routes.
C. MP-iBGP VPNv6 session should be configured with current IPv4 addresses.
D. MP-iBGP IPv6 session should be configured with current IPv4 addresses.

Answer: C

NEW QUESTION 159
A Cisco IOS XR device is acting as a PE. It must have an iBGP VPNv4 session with the other PE 2.2.2.2 using source loopback 0. Which configuration achieves this goal?
A}

```
router bgp 100
     neighbor 2.2.2.2
     remote-as 100
     update-source Loopback0
     address-family vpnv4 unicast
```

B}

```
router bgp 100
     address-family vpnv4 unicast
     neighbor 2.2.2.2
        remote-as 100
        update-source Loopback0
        address-family vpnv4 unicast
```

C}

```
router bgp 100
     address-family vpnv4 unicast
     neighbor 2.2.2.2 remote-as 100
     neighbor 2.2.2.2 update-source Loopback0
     address-family vpnv4 unicast
```

D}

```
router bgp 100
     neighbor 2.2.2.2 remote-as 100
     neighbor 2.2.2.2 update-source Loopback0
     address-family vpnv4
     neighbor 2.2.2.2 activate
```

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

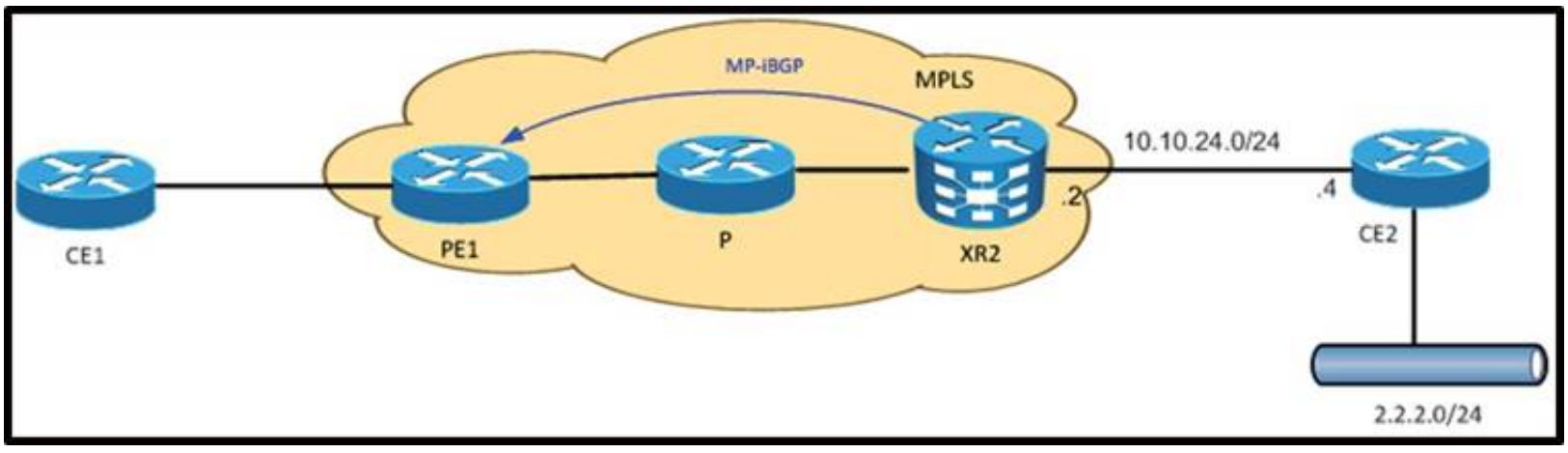
Answer: B

NEW QUESTION 160
A customer is connecting to a Cisco IOS XR PE device via BGP. The peering session is up and the customer is advertising routes, but the provider is not receiving any. Which issue is the most likely cause?

A. The IOS XR device drops inbound routing updates on eBGP peers without an inbound route-policy.
B. The IOS XR device requires as-override on all eBGP customer peers.
C. The IOS XR device requires labeled-unicast peering sessions to eBGP customers.
D. The IOS XR device drops inbound routing updates on eBGP peers that do not send extended communities.

Answer: A

NEW QUESTION 163
Refer to the exhibit.



XR2 must be configured with a static route for 2.2.2.0/24 subnet toward CE2 into the VRF ABC table. Which configuration achieves this goal?

A. router static vrf ABC2.2.2.0/24 10.10.24.2
B. router static vrf ABC2.2.2.0/24 10.10.24.2address-family ipv4 unicast
C. router static vrf ABCaddress-family ipv4 unicast 2.2.2.0/24 10.10.24.2
D. router staticaddress-family ipv4 unicast vrf ABC2.2.2.0/24 10.10.24.2

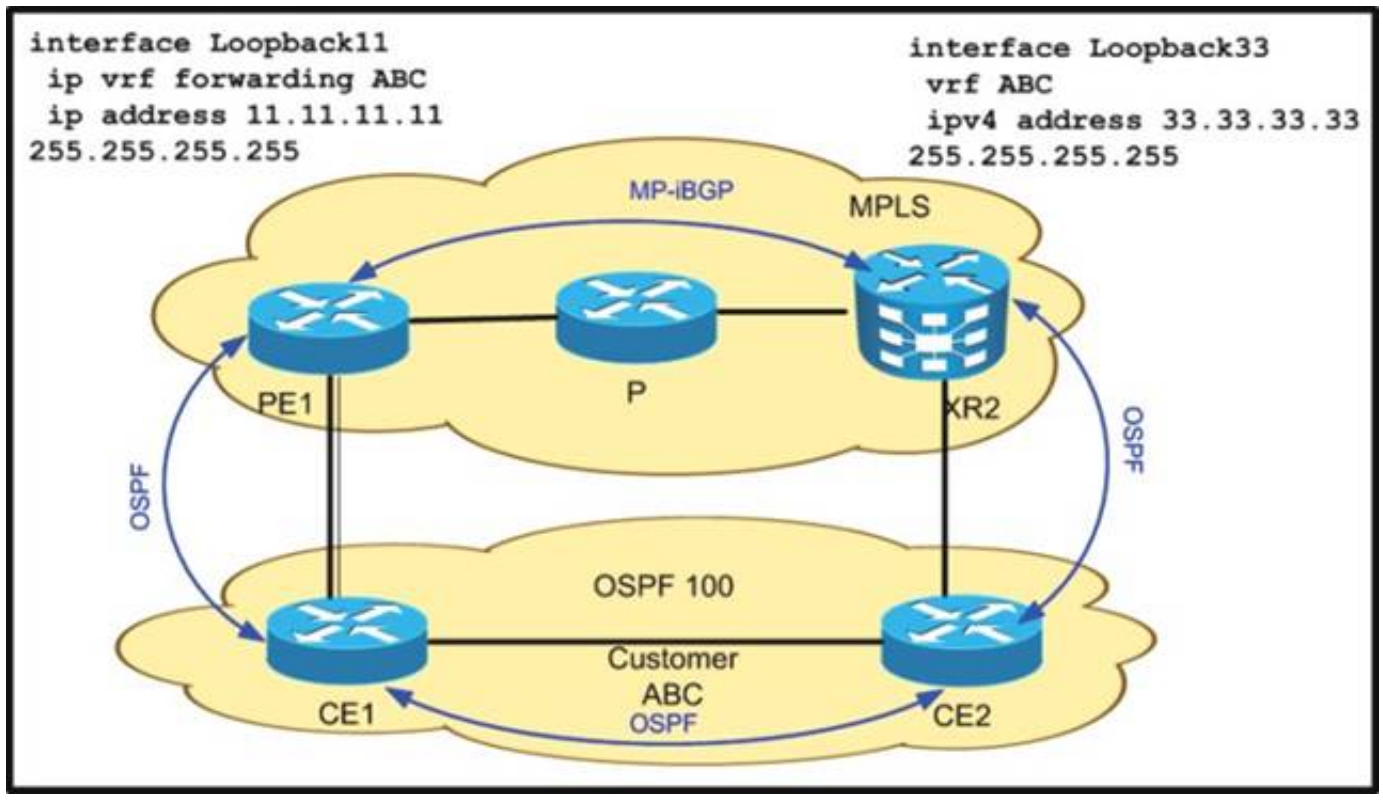
Answer: C

NEW QUESTION 166
A Cisco IOS XR router is acting as a PE and is running EIGRP as the CE-PE routing protocol. SOO must be configured. Under which subconfiguration mode should SOO be configured?

A. RP/0/0/CPU0:XR1{config-eigrp}
B. RP/0/0/CPU0:XR1{config-eigrp-vrf-af-if}
C. RP/0/0/CPU0:XR1{config-eigrp-vrf}
D. RP/0/0/CPU0:XR1{config-eigrp-vrf-af}

Answer: B

NEW QUESTION 167
Refer to the exhibit.

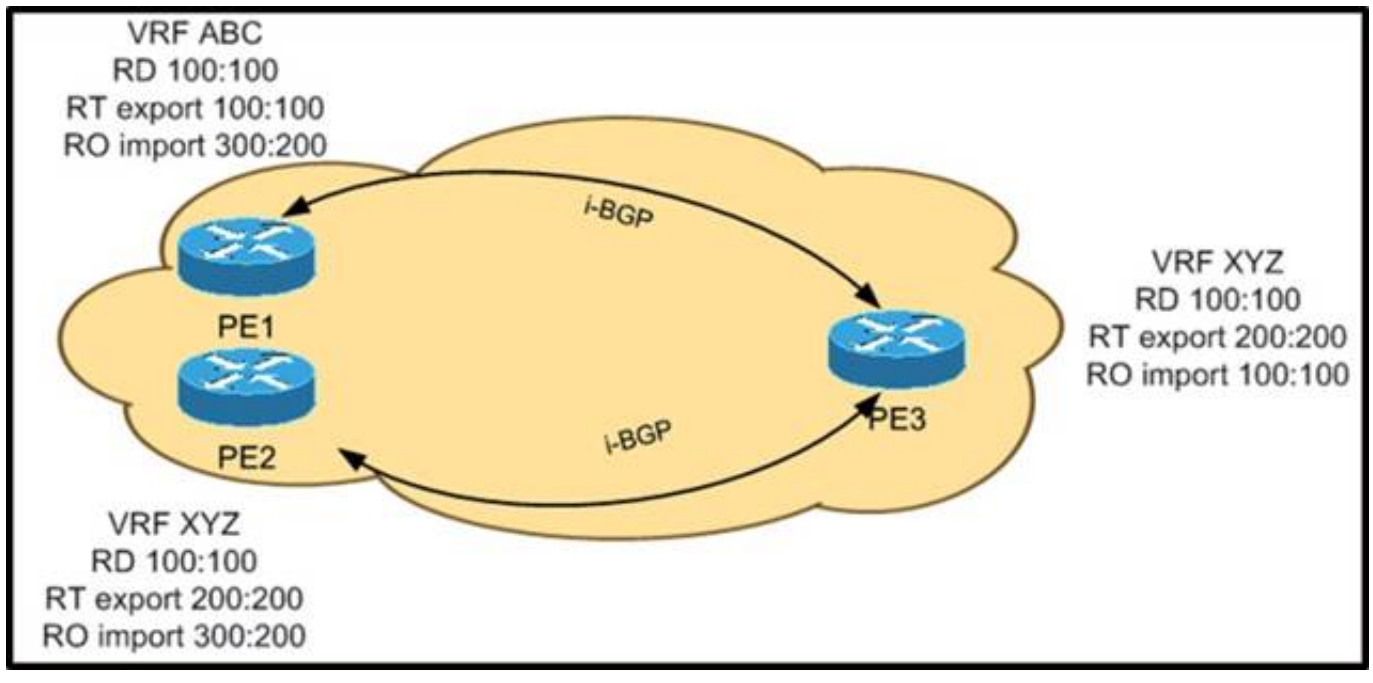


XR2 must be configured with OSPF sham-link to PE1. Which configuration achieves this goal?

A. router ospf 100 area 0sham-link 11.11.11.11 33.33.33.33
B. router ospf 100vrf ABC area 0sham-link 33.33.33.33 11.11.11.11
C. router ospf 100area 0 sham-link 33.33.33.33 11.11.11.11
D. router ospf 100 vrf ABCarea 0 sham-link 11.11.11.11 33.33.33.33

Answer: B

NEW QUESTION 169
Refer to the exhibit.

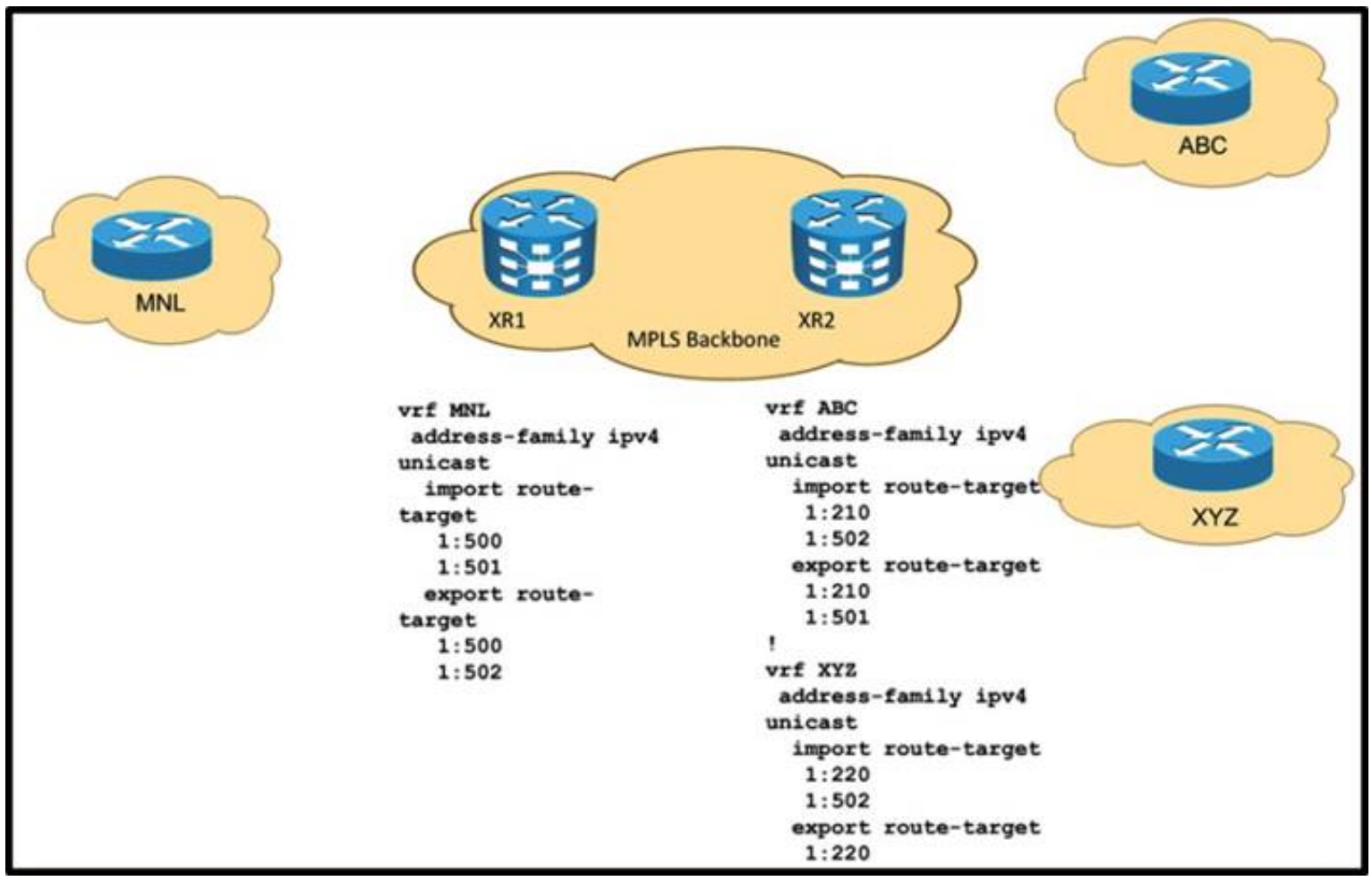


PE1 and PE2 are advertising the same subnet 10.10.10.0/24 to PE3. Which PE advertised subnet is installed at the PE3 XYZ BGP table?

A. PE2 subnet because it has the same RD value as PE3
B. PE2 subnet because it has the same export RT value as export RT on PE3
C. PE1 subnet because it has the same RD value as PE3
D. PE1 subnet because it has the same export RT value as import RT on PE3

Answer: D

NEW QUESTION 172
Refer to the exhibit.



Which two descriptions outline the traffic flow among the three sites? {Choose two.}

A. The MNL site communicates with the XYZ and ABC sites.
B. The XYZ and ABC sites communicate using the default route that points to the MNL site.
C. XYZ sees the MNL and ABC routes.
D. ABC sees the MNL and XYZ routes.
E. The MNL site acts as a central site for the ABC and XYZ sites.

Answer: AE

NEW QUESTION 173
A PE configured with VRF ABC needs to export only subnet 1.1.1.1/32 with RT 100:100 without losing its original RT 200:200 to a remote PE. Which configuration is correct?

A}
```
ip access-list standard EXPORT
      permit 1.1.1.1
!
 route-map EXPORT permit 10
      match ip address prefix-list EXPORT
      set extcommunity rt 100:100 additive
```

B}
```
ip prefix-list EXPORT seq 5 permit 1.1.1.1/32
!
 route-map EXPORT permit 10
      match ip address EXPORT
      set extcommunity rt 100:100 additive
```

C}
```
ip access-list standard EXPORT
      permit 1.1.1.1
!
route-map EXPORT permit 10
      match ip address EXPORT
      set extcommunity rt 100:100 additive
```

D}
```
ip prefix-list EXPORT seq 5 permit 1.1.1.0/24 le 32
!
 route-map EXPORT permit 10
      match ip address prefix-list EXPORT
      set extcommunity rt 100:100 additive
```

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

Answer: C

NEW QUESTION 176
Which three possible misconfigurations can occur on the backbone IGP section of an MPLS Layer 3 VPN setup? {Choose three.}

A. configuring the LDP router ID with an incorrect loopback interface
B. configuring the wrong AS number on a client eBGP peering

C. configuring the wrong area number on a PE-CE OSPF link
D. decreasing the MPLS MTU
E. disabling MPLS on a core link
F. disabling MPLS LDP sync in the IGP routing process

Answer: ADE

NEW QUESTION 181
Which organization provides and promotes a standards-based description of service provider services offering?

A. MEF
B. IETF
C. IEEE
D. ITU

Answer: A

NEW QUESTION 184
Which option is the minimal configuration required inside the L2VPN section of a Cisco IOS XR PE router to activate VPLS functionality?

A. l2vpnbridge group test bridge-domain testinterface TenGigE0/0/0/1.30!vfi testvpn-id 600 autodiscovery bgp rd 10.10.10.1:30route-target 1:300 signaling-protocol bgp ve-id 10
B. l2vpnbridge group test bridge-domain testinterface TenGigE0/0/0/1.30!vfi testneighbor 10.10.10.2 pw-id 1400mpls static label local 1400 remote 1500
C. l2vpnbridge group test bridge-domain testinterface TenGigE0/0/0/1.30!vfi testneighbor 10.10.10.2 pw-id 1400
D. l2vpnbridge group test bridge-domain testinterface TenGigE0/0/0/1.30!vfi testvpn-id 600 autodiscovery bgp rd 10.10.10.1:30route-target 1:300 signaling-protocol bgp
E. l2vpnbridge group test bridge-domain test vfi test autodiscovery bgp rd 10.10.10.1:30route-target 1:300 signaling-protocol bgp ve-id 10

Answer: C

NEW QUESTION 186
An engineer is configuring VPLS BGP-based autodiscovery on a Cisco IOS XE PE router. Which two configurations must be included for proper implementation? {Choose two.}

A. router bgp 61000neighbor 172.16.10.2 remote-as 61000
B. router bgp 61000address-family l2vpn vpls send-community extended
C. router bgp 61000neighbor 172.16.10.2 remote-as 62000
D. router bgp 61000address-family l2vpn vpls send-community-eBGP
E. l2vpn vfi context vpls1 autodiscovery bgp signaling ldp router bgp 61000neighbor 172.16.10.2 remote-as 62000
F. l2vpn vfi context vpls1 autodiscovery bgp signaling ldp router bgp 61000neighbor 172.16.10.2 remote-as 61000

Answer: AB

NEW QUESTION 189
Which option describes what differentiates a U-PE from N-PE?

A. U-PE has all BGP routes from different BGP AFIs.
B. N-PE has VRF configured and exported via BGP.
C. U-PE is configured to peer BGP with all other BGP neighbors.
D. N-PE is used to physically connect customer edge routers.

Answer: A

NEW QUESTION 192
Which technology does an N-PE most likely use to pass traffic to the U-PE that is destined for the access switch?

A. pseudowire
B. MPLS TE
C. OSPF
D. IS-IS

Answer: A

NEW QUESTION 195
A service provider wants to scale MAC address advertisements in its next generation E-LAN and E-TREE designs. Which technology can be used in the service provider cloud to reach this goal?

A. PBB EVPN
B. VPLS
C. 802.1Q
D. 802.3ad

Answer: A

NEW QUESTION 200

When using H-VPLS, the PE router may use an IRB interface. How many VLAN tags can be processed by an IRB?

A. 1
B. 2
C. 3

Answer: A

NEW QUESTION 204
Which two protocols can be used for VPLS signaling on a Cisco IOS XR router? {Choose two.}

A. BGP
B. LDP
C. TDP
D. RSVP
E. PBB

Answer: AB

NEW QUESTION 208
Which two MPLS QoS models described by RFC3270 are used for CE-PE QoS implementation? {Choose two.}

A. best effort
B. pipe
C. uniform
D. integrated services
E. differentiated services

Answer: BC

NEW QUESTION 211
A company recently completed a third company acquisition and is requesting to deploy a point-to-point VPN technology over the IP core network to extend their IGP domain. The company core network is not MPLS-enabled yet. Which technology matches these requirements?

A. Any Transport over MPLS
B. Layer 2 Tunneling Protocol version 3
C. Virtual Private LAN Service
D. Point-to-Point Protocol

Answer: B

NEW QUESTION 213
An engineer is deploying L2VPN service between two different Layer 2 encapsulations. Which feature should be set up to accomplish this task?

A. interworking VLAN on both the provider edge routers
B. interworking Ethernet on both the provider edge routers with VLAN tagging
C. interworking IPv4 on both the customer edge routers
D. interworking IPv4 on both the provider edge routers

Answer: D

NEW QUESTION 218
Which Layer 2 encapsulations can AToM solution support with interworking IP feature enable?

A. Ethernet to ATM AAL5
B. ATM AAL5 to Frame Relay
C. PPP to Frame Relay
D. multipoint PPP to Frame Relay

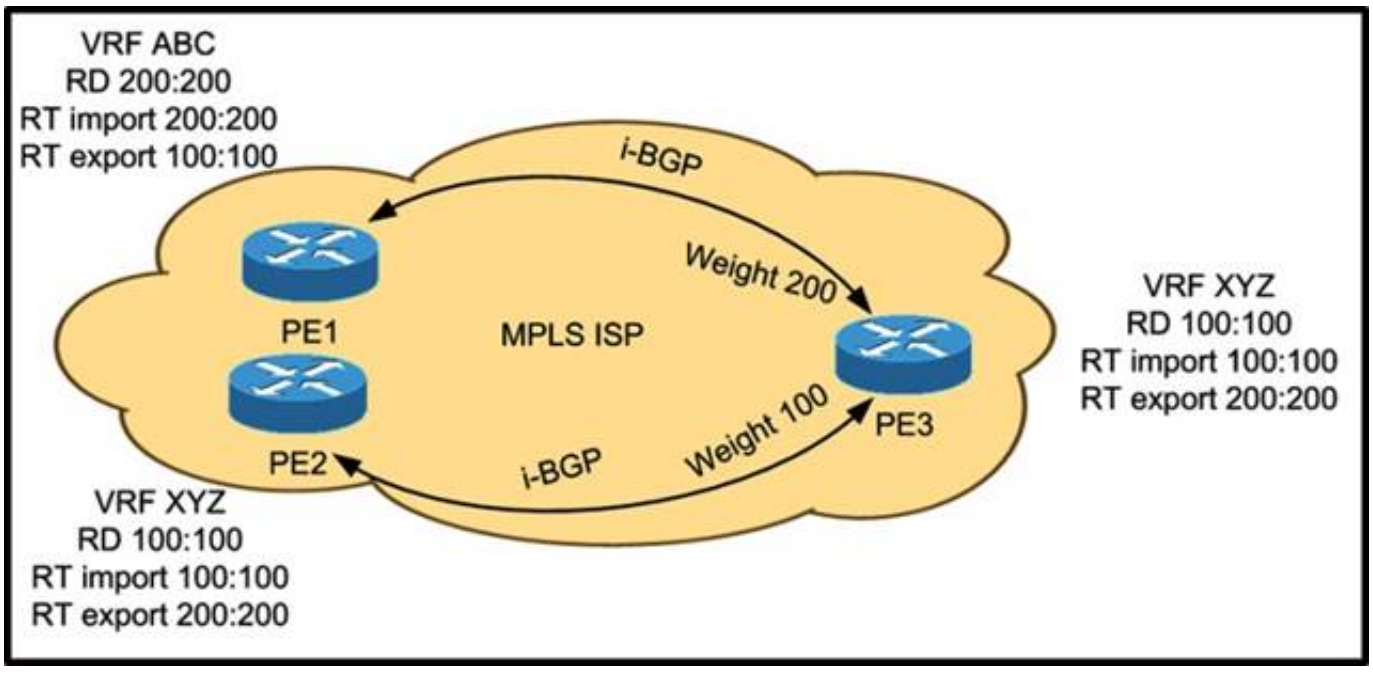
Answer: A

NEW QUESTION 220
A service provider is tasked to write up a template for the network operations center to set up a Layer 2 VPN. Which command is the first command to issue on a Cisco IOS XR router?

A. xconnect peer_ip vc_id encapsulation encapsulation_type
B. connect name_pw interface_path_id dlci_value l2transport
C. l2vpn
D. pseudowire-class class_name

Answer: C

NEW QUESTION 225
Refer to the exhibit.



PE1 and PE2 are advertising the same subnet 196.168.10.0/24 to PE3. Which PE advertised subnet is installed at PE3 BGP table?

A. PE2 subnet only due to the same RD value with PE1
B. PE2 subnet only due to the same RD value with PE3
C. Both PE1 and PE2 subnets due to exported subnet with RT matches import RT on PE3
D. PE1 subnet only due to exported subnet with RT matches import RT on PE3

Answer: D

NEW QUESTION 230
A customer needs Internet and MPLS services from the service provider and needs to ensure traffic from the Internet network does not constrain MPLS traffic. Which shared MPLS/Internet service type best accommodates this requirement?

A. partial separation
B. full separation
C. Multisite Internet Access
D. Internet tunnel over MPLS

Answer: B

NEW QUESTION 232
A customer requests Internet through its MPLS provider. Which Internet design model guarantees maximum security and easier provisioning?

A. Internet access through global routing
B. Internet access through route leaking
C. Internet access through a separate VPN service
D. Internet access through multisite

Answer: C

NEW QUESTION 234
Which option is the primary purpose of central service MPLS VPNs?

A. provide customer access to provider resources while ensuring customers cannot communicate directly
B. provide the provider access to customer resources while ensuring customers cannot communicate directly
C. provide other service providers access to provider resources
D. provide other service providers access to customer resources

Answer: A

NEW QUESTION 236
A network engineer is troubleshooting an MPLS Layer 3 VPN and discovers that routes are being learned by CE routers, but there is no IP connectivity. Which option is the most likely cause?

A. The provider does not have an end-to-end label switch path.
B. The customer does not have an end-to-end label switch path.
C. The customer is not sharing labels with the provider.
D. The provider is not sharing labels with the customer.
E. The providers PE to CE routing protocol is misconfigured.
F. The customers PE to CE routing protocol is misconfigured.

Answer: A

NEW QUESTION 241
Which option is a valid Cisco IOS XR BGP Layer 3 IPv4 MPLS VPN configuration?

A. router bgp 65001no bgp default ipv4-unicast bgp log-neighbor-changesneighbor 1.2.3.4 remote-as 65001 neighbor 1.2.3.4 update-source Loopback0 address-family vpnv4neighbor 1.2.3.4 activateneighbor 1.2.3.4 send-community extended exit-address-familyaddress-family ipv4 vrf VPN redistribute ospf 100

B. router bgp 65001no bgp default ipv4-unicast bgp log-neighbor-changesneighbor 1.2.3.4 remote-as 65001 neighbor 1.2.3.4 update-source Loopback0 address-family vpnv4neighbor 1.2.3.4 activate exit-address-familyaddress-family ipv4 vrf VPN redistribute ospf 100
C. router bgp 100address-family vpnv4 unicast neighbor 2.2.2.2remote-as 100update-source Loopback0 address-family vpnv4 unicast!vrf VPN_A rd 100:1address-family ipv4 unicast redistribute ospf 100
D. router bgp 100address-family vpnv4 unicast neighbor 2.2.2.2remote-as 100update-source Loopback0 address-family ipv4 unicast!vrf VPN_A rd 100:1address-family ipv4 unicast redistribute ospf 100

Answer: C

NEW QUESTION 243
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