

## Exam Questions 300-515

Implementing Cisco Service Provider VPN Services (SVPI)

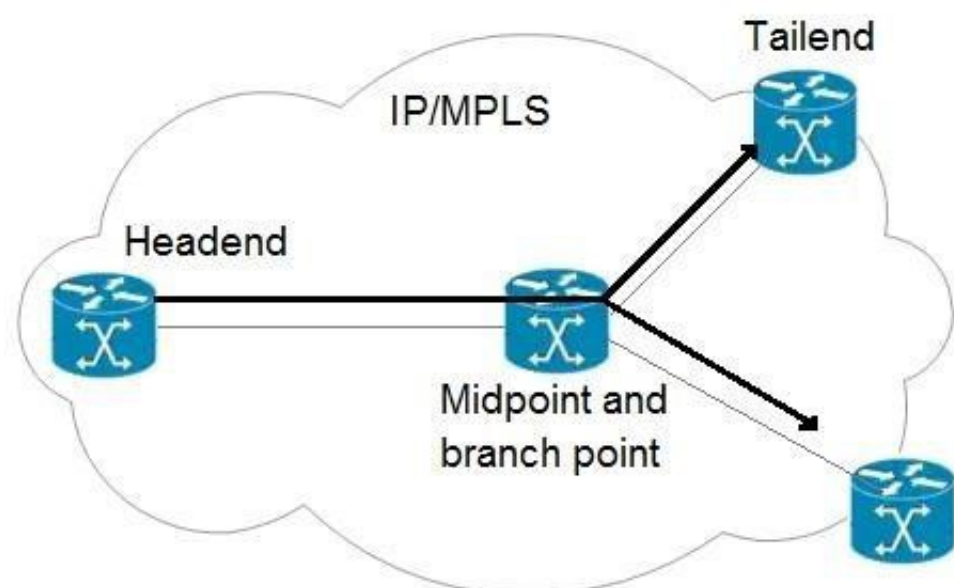
<https://www.2passeasy.com/dumps/300-515/>



#### NEW QUESTION 1

- (Exam Topic 1)

Refer to the exhibit.



An engineer is implementing an MPLS P2MP TE solution. Which type of router can serve as the midpoint router and the tailend router in this P2MP TE network implementation?

- A. headend
- B. source
- C. transit
- D. bud

**Answer:** D

#### Explanation:

[https://www.cisco.com/c/en/us/td/docs/routers/asr920/configuration/guide/mpls/mp-te-path-setup-xe-3s-asr920-book/mp-te-path-setup-xe-3s-asr920-book\\_chapter\\_01.html](https://www.cisco.com/c/en/us/td/docs/routers/asr920/configuration/guide/mpls/mp-te-path-setup-xe-3s-asr920-book/mp-te-path-setup-xe-3s-asr920-book_chapter_01.html)

#### NEW QUESTION 2

- (Exam Topic 1)

Which two BGP attributes prevent loops in a route reflector environment? (Choose two.)

- A. cluster ID
- B. local preference
- C. origin
- D. originator ID
- E. AS\_PATH

**Answer:** AD

#### Explanation:

Reference: <https://www.ciscopress.com/articles/article.asp?p=2756480&seqNum=10>

#### NEW QUESTION 3

- (Exam Topic 1)

An engineer is investigating an MPLS LDP issue. Which command should an engineer use on a Cisco IOS XE device to display the contents of the LFIB?

- A. show mpls forwarding-table
- B. show mpls ldp neighbors
- C. show mpls ldp labels
- D. show mpls ldp bindings

**Answer:** A

#### Explanation:

Reference: <https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mpls/command/mp-cr-book/mp-s2.html>

#### NEW QUESTION 4

- (Exam Topic 1)

Which two statements describe primary differences between MPLS Layer 2 and Layer 3 VPNs? (Choose two.)

- A. Layer 2 VPNs use IPsec tunneling, but Layer 3 VPNs use L2TPv3 tunneling.
- B. Layer 2 VPNs use AToM, but Layer 3 VPNs use MPLS/BGP.
- C. Layer 2 VPNs use BGP, but Layer 3 VPNs use VPLS.
- D. Layer 2 VPNs use L2TPv3 tunneling, but Layer 3 VPNs use GRE tunneling.
- E. Layer 2 VPNs use IPsec tunneling, but Layer 3 VPNs use pseudowires to provide tunneling.

**Answer:** BD

#### NEW QUESTION 5

- (Exam Topic 1)  
Refer to the exhibit.

Router# show mpls forwarding-table					
Local	Outgoing	Prefix	Bytes label	Outgoing	Next Hop
label	label or VC	or Tunnel Id	switched	interface	
29	Pop tag	10.22.22.22/32	0	Gi1/1/0	172.32.0.1
32	0	10.24.24.24/32	0	Gi1/0/0	192.168.1.2
33	0	172.24.24.24/32	0	Gi1/0/0	192.168.1.2
34	0	192.168.0.0/8	0	Gi1/0/0	192.168.1.2
35	0	10.25.25.25/32	0	Gi1/0/0	192.168.1.2
36	0	172.16.0.0/8	0	Gi1/0/0	192.168.1.2
37	25	10.26.26.26/32	0	Gi1/0/0	192.168.1.22
38	0	10.34.34.34/32	0	Gi1/0/0	192.168.1.2

Which statement about this output is true?

- A. The router IP 192.168.1.2 sent an implicit null, and the output is from the penultimate LSR.
- B. The adjacent router is the egress LSR and has mpls ldp explicit-null configured.
- C. The adjacent LSR router configured mpls label range 0.
- D. The zero in the second column is the normal behavior of an egress router LSR.

**Answer:** B

#### NEW QUESTION 6

- (Exam Topic 1)

Which two are characteristics of using a non-MPLS peer-to-peer model over a traditional overlay model? (Choose two.)

- A. The model is suited for nonredundant configurations.
- B. The configuration on a newly added site PE is updated automatically.
- C. Provider routers know the customer network topology.
- D. The customer specifies the exact site-to-site traffic profile.
- E. Routing information is exchanged between the customer router and one or a few PEs.

**Answer:** CE

#### Explanation:

Reference:

<http://etutorials.org/Networking/MPLS+VPN+Architectures/Part+2+MPLS-based+Virtual+Private+Networks/Chapter+7.+Virtual+Private+Network+VPN+Implementation+Options/Overlay+and+Peer-to-peer+VPN+Model/>

#### NEW QUESTION 7

- (Exam Topic 1)

In a typical service provider environment, which two tools are used to help scale PE router connectivity requirements? (Choose two.)

- A. route reflectors
- B. VPNv4 address family
- C. originator ID
- D. cluster ID
- E. confederations

**Answer:** AE

#### NEW QUESTION 8

- (Exam Topic 1)

While configuring the VRF Selection feature, you get an error message after typing the below statement: Router(config)#no vrf selection source 172.16.0.0 255.255.0.0 vrf VRF1

Which action caused this message?

- A. the entry of an inconsistent IP address and mask for VRF Selection
- B. an attempt to configure a VRF instance on an interface that already has VRF Selection configured
- C. an attempt to remove a VRF Selection entry that does not exist
- D. an attempt to configure a VRF Selection table that does not exist

**Answer:** C

#### Explanation:

Reference: [https://www.cisco.com/c/en/us/td/docs/ios/12\\_2/12\\_2sz/feature/guide/122szvrf.html](https://www.cisco.com/c/en/us/td/docs/ios/12_2/12_2sz/feature/guide/122szvrf.html)

#### NEW QUESTION 9

- (Exam Topic 1)

In an Ethernet Virtual Circuit environment, which restriction do bridge domains have when STP is running?

- A. The STP mode must be RSTP or PVST+
- B. Bridge domains must be mapped to a different VLAN.

- C. The STP mode must be MSTP  
D. Bridge domains must belong to different MST instances.

**Answer:** C

**Explanation:**

Reference: [https://www.cisco.com/c/en/us/td/docs/routers/asr920/configuration/guide/ce/b\\_ce\\_xe-313s-asr920-book/b\\_ce\\_xe-313s-asr920-book\\_chapter\\_01.html#reference\\_770349446ED24E83821EF701DDC46BFD](https://www.cisco.com/c/en/us/td/docs/routers/asr920/configuration/guide/ce/b_ce_xe-313s-asr920-book/b_ce_xe-313s-asr920-book_chapter_01.html#reference_770349446ED24E83821EF701DDC46BFD)

**NEW QUESTION 10**

- (Exam Topic 1)

The CTO of a company requires the support of a network consultant to deliver an MPLS solution without resigning to a certain degree of redundancy and scalability. Which solution effectively scales to hundreds or thousands of sites?

- A. L2VPN with the broadcast traffic processed at the ingress PE.  
B. L3VPN with direct LSP connectivity between all PEs.  
C. L2VPN by encapsulating multiple frame formats with interworking.  
D. L3VPN using a hierarchical topology of N-PEs and U-PEs.

**Answer:** D

**NEW QUESTION 10**

- (Exam Topic 1)

An engineer needs to improve MPLS network management by implementing a set of tools to support the NOC engineers in troubleshooting network failures. Which feature should the engineer implement to check the connectivity of the MPLS LSP between the ingress and egress PE routers?

- A. MPLS OAM  
B. MPLS-TP  
C. LDP autodiscovery  
D. extended ping

**Answer:** A

**Explanation:**

Reference:

[https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k\\_r5-3/mpls/configuration/guide/b-mpls-cg](https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k_r5-3/mpls/configuration/guide/b-mpls-cg)

**NEW QUESTION 13**

- (Exam Topic 1)

Refer to the exhibit.

<b>PE1</b> ip vrf CE1 rd 101:1 route-target export 100:1 route-target import 200:2	<b>PE2</b> ip vrf CE2 rd 202:2 route-target export 200:2 route-target import 100:1
<b>PE3</b> ip vrf CE3 rd 303:3 route-target export 300:3 route-target import 400:4	<b>PE4</b> ip vrf CE4 rd 404:4 route-target export 400:4 route-target import 300:3

A network engineer has been called to configure the four PE devices in order to enable full communication among the four CE devices connected to them. While starting to configure, he experienced a connectivity issue. Which two tasks should the engineer perform in order to begin the process correctly? (Choose two.)

- A. Configure PE3 to export route-targets 100:1 and 200:2.  
B. Configure PE3 to import route-targets 100:1 and 200:2.  
C. Configure PE4 to import route-targets 101:1 and 202:2.  
D. Configure PE2 to export route-targets 300:3 and 400:4.  
E. Configure PE1 to import route-targets 300:3 and 400:4.

**Answer:** AB

**NEW QUESTION 18**

- (Exam Topic 1)

An engineer is troubleshooting an ongoing network outage. Which command should he use that can display the live log files for a process or service running on a network device?

- A. traceroute  
B. show run  
C. ping  
D. debug

**Answer:** D



NEW QUESTION 22

- (Exam Topic 2)

Refer to the exhibit.

```
interface GigabitEthernet0/1
switchport trunk allowed vlan none
switchport mode trunk
service instance 2 ethernet
encapsulation dot1q 10
xconnect 192.168.2.2 22 encapsulation mpls
```

Drag and drop the EVC configuration items from the left onto the correct descriptions on the right.

switchport mode trunk	It denies globally defined VLANs from egressing and ingressing the port.
service instance 2 ethernet	It allows the port to operate as an 802.1q trunk.
switchport trunk allowed vlan none	It classifies traffic under a defined process.
xconnect 192.168.2.2 22 encapsulation mpls	It allows the port to process VLAN 10 traffic in Service Instance 2.
encapsulation dot1q 10	It defines the pseudowire parameters.

A. Mastered

B. Not Mastered

Answer: A

Explanation:

switchport mode trunk	switchport trunk allowed vlan none
service instance 2 ethernet	switchport mode trunk
switchport trunk allowed vlan none	service instance 2 ethernet
xconnect 192.168.2.2 22 encapsulation mpls	encapsulation dot1q 10
encapsulation dot1q 10	xconnect 192.168.2.2 22 encapsulation mpls

NEW QUESTION 25

- (Exam Topic 2)

```
configure
router bgp 64520
 address-family 12vpn evpn
  neighbor 192.168.1.1

configure
12vpn
 xconnect group evpn-test
 p2p evpn12
  interface TenGigE0/1/0/1
  neighbor evpn evi 12 target 10 source 11
```

Which effect of this configuration is true?

- A. It configures VPWS multihomed.
- B. It configures VPWS single homed.
- C. It configures an IPv4 peering with 192.168.1.1
- D. It configures MPLS traffic engineering.

**Answer:** B

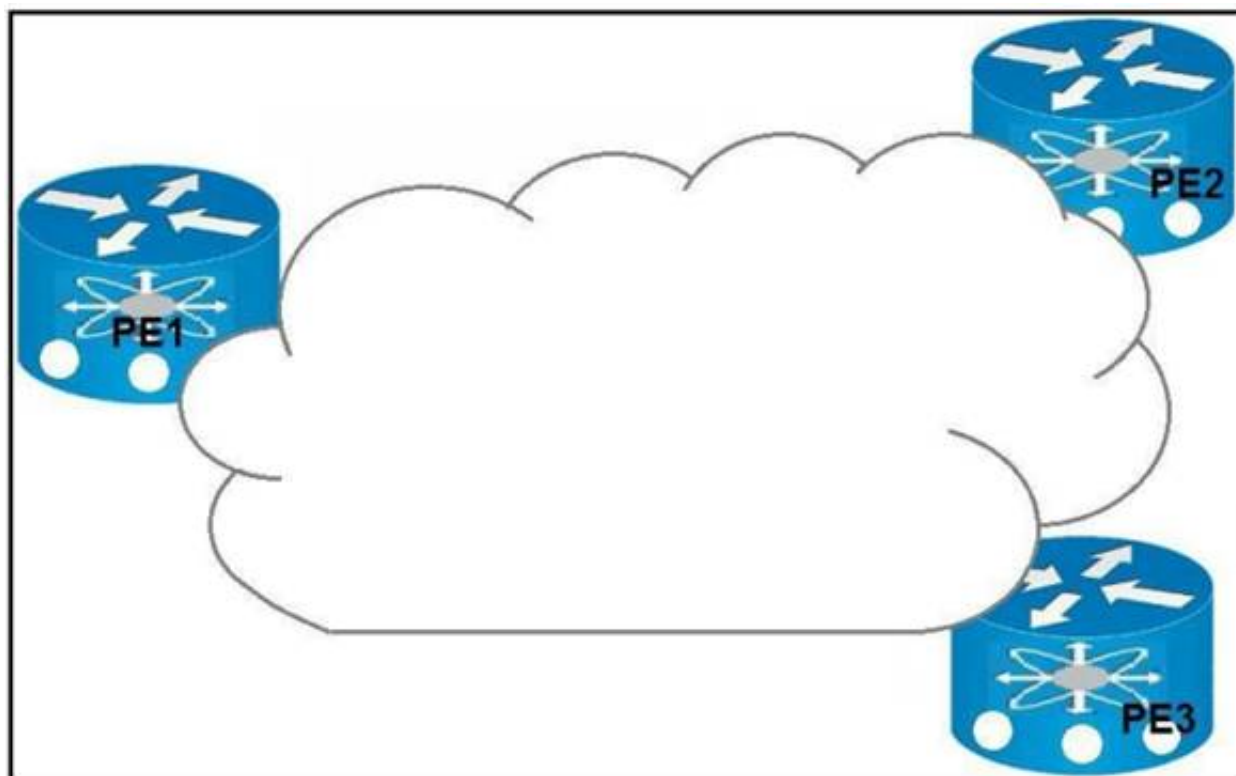
**Explanation:**

Reference: <https://www.ciscolive.com/c/dam/r/ciscolive/emea/docs/2019/pdf/BRKSPG-2798.pdf>

### NEW QUESTION 30

- (Exam Topic 2)

Refer to the exhibit.



Which result occurs when PE1 learns a new MAC address and all three PEs are enabled with EVPN native?

- A. A system notification is sent to the network administrator that triggers the manual configuration of the new MAC address on PE2 and PE3.
- B. The new MAC address is sent by BGP to PE2 and PE3 as a Type 2 BGP route.
- C. The MAC address is entered into the CAM table and is classified for use on the native VLAN
- D. The MAC address is entered into the CAM table only if it is learned on the native VLAN.

**Answer:** B

**Explanation:**

Reference: [https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r6-4/lxvpn/configuration/guide/b-l2vpn-cg-asr9000-64x/b-l2vpn-cg-asr9000-64x\\_chapter\\_01011.html](https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r6-4/lxvpn/configuration/guide/b-l2vpn-cg-asr9000-64x/b-l2vpn-cg-asr9000-64x_chapter_01011.html)

### NEW QUESTION 32

- (Exam Topic 2)

Which mechanism reduces the network flooding caused by host ARP learning behavior?

- A. ARP suppression
- B. storm control
- C. root guard
- D. BPDU guard

**Answer:** A

**Explanation:**

Reference: <https://www.cisco.com/c/en/us/products/collateral/switches/nexus-7000-series-switches/white-paper-c11-735015.html>



#### NEW QUESTION 34

- (Exam Topic 2)

```
interface Loopback0
 ip address 1.1.1.1 255.255.255.255
 ip ospf 1 area 0
!
interface GigabitEthernet0/1/0
 ip address 10.0.2.1 255.255.255.252
!
service instance 101 ethernet
 encapsulation dot1q 101
 rewrite ingress tag pop 1 symmetric

12vpn evpn instance 100 point-to-point
!
vpws context vc100
 service target 2 source 1
 member GigabitEthernet0/1/0 service-instance 101
!
interface GigabitEthernet0/1/1
 ip address 10.0.1.1 255.255.255.0
 ip ospf 1 area 0
 mpls ip
!
router bgp 65500
 bgp router-id 1.1.1.1
 neighbor 2.2.2.2 remote-as 65501
 neighbor 2.2.2.2 update-source Loopback0
!
 address-family ipv4
  neighbor 2.2.2.2 activate
 exit-address-family
!
 address-family 12vpn evpn
  neighbor 2.2.2.2 activate
 exit-address-family
!
12vpn evpn instance 100 point-to-point
!
vpws context vc100
 service target 2 source 1
 member GigabitEthernet0/0/0
!
```

An engineer is trying to configure an EVPN VWPS. What is the issue with this configuration?

- A. The member in the VPWS context should be the PE-facing interface.
- B. The 12vpn evpn command should be instance 101.
- C. Interface GigabitEthernet0/1/0 should not have any IP address.
- D. The service instance and the EVPN instance are different.

**Answer:** C

#### Explanation:

Reference: [https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp\\_l2\\_vpns/configuration/xr-3s/asr903/16-7-1/b-mpls-l2-vpns-xr-16-7-asr900/epvn\\_vpws\\_single\\_homed.pdf](https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_l2_vpns/configuration/xr-3s/asr903/16-7-1/b-mpls-l2-vpns-xr-16-7-asr900/epvn_vpws_single_homed.pdf)

#### NEW QUESTION 37

- (Exam Topic 3)

Which condition must be met before an environment can support CSC?

- A. The CSC-PE and CSC-CE must each be able to ping an interface in its respective global routing table.
- B. The CSC-PE and the CSC-CE must support IPv6.
- C. The CSC-PE and CSC-CE devices must be able to send labels to one another using BGP.
- D. The CSC-CE must support OSPFv3.

**Answer:** C

#### NEW QUESTION 39

- (Exam Topic 3)

```
R1

router bgp 65010
no bgp default ipv4-unicast
neighbor 192.168.1.1 remote-as 65010
address-family ipv4
neighbor 192.168.1.1 activate
```

Which statement describes the result of this BGP configuration?

- A. R1 operates using IPv4 and VPNv4 address families.
- B. R1 operates on IPv6 only because the bgp default ipv4-unicast command is missing.
- C. R1 establishes a VPNv4 eBGP relationship with neighbor 192.168.1.1.
- D. R1 establishes an iBGP relationship with peer 192.168.1.1.

**Answer:** D

#### NEW QUESTION 43

- (Exam Topic 3)

```
ip vrf mvpn-extranet
rd 12:1
vpn id 12:1
route-target import 12:2
route-target export 12:3
mdt default mpls mldp 192.168.1.2
exit
ip multicast-routing vrf mvpn-extranet
```

What is the effect of this configuration?

- A. The mroute table is cleared.
- B. Router 1 accepts multicast routes with a tag of 12:1
- C. A Cisco MPLS TE tunnel is generated with 192.168.1.2 as the source IP address of router 1.
- D. An LSP virtual interface tunnel is created.

**Answer:** B

#### NEW QUESTION 44

- (Exam Topic 3)

Refer to the exhibit.

```
R1#sho run sec router isis
ip router isis
router isis
net 49.0002.1010.2021.00
is-type level-1
spf-interval 110

R2#sho run sec router isis
ip router isis
router isis
net 49.0001.1010.2020.00
is-type level-2-only
set-overload-bit
spf-interval 100
redistribute static ip
```

A technician is troubleshooting a connectivity issue and notices that there is no IS-IS adjacency between R1 and R2. What can the technician change to bring the IS-IS adjacency up?

- A. Change R2's net address to be in the same area as R1.
- B. Change R1's is-type to level-2-only
- C. Change R1's net address to be in the same area as R2.
- D. Change R2's configuration to no longer set the overload bit.

**Answer:** B

#### NEW QUESTION 46

- (Exam Topic 3)



While implementing Layer 3 MPLS VPN, which feature should an engineer use at the PEs to transform the customer IPv4 prefixes into a unique 96-bit prefix

- A. RT
- B. VC ID
- C. RD
- D. PW ID

**Answer:** C

#### NEW QUESTION 48

- (Exam Topic 3)

Which kind of traffic is supported in an MVPN Extranet?

- A. PIM dense mode with Reverse Path Forwarding
- B. PIM dense mode
- C. PIM sparse mode
- D. Bidirectional PIM

**Answer:** C

#### Explanation:

Reference:

[https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipmulti\\_mvpn/configuration/xr-16/imc-mvpn-xr-16-book/imc-mc-vpn-extranet.html](https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipmulti_mvpn/configuration/xr-16/imc-mvpn-xr-16-book/imc-mc-vpn-extranet.html)

#### NEW QUESTION 53

- (Exam Topic 3)

Which statement describes the no bgp default route-target filter command?

- A. Prefixes that are received with route targets and distinguisher are accepted.
- B. Prefixes that are received with route targets and distinguisher are not accepted.
- C. Prefixes that are received with route targets that are not imported at the PE are not accepted.
- D. Prefixes that are received with route targets that are not imported at the PE are accepted.

**Answer:** D

#### NEW QUESTION 57

- (Exam Topic 4)

What do routers on the network use to avoid routing loops when OSPF is running as the PE-CE routing protocol on a service provider network?

- A. the AS-Override feature
- B. the DN bit with type 3, 5, or 7 LSA
- C. the domain tag for type 2 LSA
- D. sham links to create a super backbone over the service provider network

**Answer:** B

#### NEW QUESTION 61

- (Exam Topic 4)

How do Ethernet virtual circuits provide a way for service providers to maximize the use of VLAN tags'-1

- A. They add an additional tag to VLANs that allows up to two switch ports to use the same globally configured VLAN ID.
- B. They redefine the VLAN tag to include classification, forwarding, and QoS using MPLS labels and EXP bits
- C. They separate the classification and forwarding concepts for VLAN tagging which allows multiple switch ports to use the same VLAN ID without it being configured globally.
- D. They assign VLAN IDs to VTP domains so that the same VLAN ID are used more than once globally.

**Answer:** C

#### NEW QUESTION 66

- (Exam Topic 4)

How do PE routers exchange CE routes between remote sites?

- A. by converting CE routes into VPNv4 routes and exchanging them using MP-BGP
- B. by establishing BGP neighbor relationships between all connected CEs to exchange routing information
- C. by learning IPv4 routes from connected CEs and redistributing them into the global IGP
- D. by converting CE routes into VPNv4 routes and exchanging them using the global IGP

**Answer:** A

#### NEW QUESTION 68

- (Exam Topic 4)

What is a requirement to share VRF reachability information to all members of a VPN when using IPv6?

- A. PE and CE routers must be running BGP as the PE-CE routing protocol
- B. PE routers must have MPLS disabled and be running MP-BGP between all P and PE routers.
- C. PE routers must be running MP-BGP and bgp default ipv4-unicast must be disabled
- D. All PEs must have the same VRFs configured.

Answer: D

### NEW QUESTION 73

- (Exam Topic 4)

Refer to the exhibit.

```
Router 1:

vrf ciscotest
 address-family ipv4 unicast
  import route-target
    101:102
    301:202

  export route-target
    201:202
    401:402
```

An engineer has configured router 1 to provide shared services to clients behind router 2. To complete the implementation so that routes from router 1 are accepted, what must the engineer configure on router 2?

- A. with import route targets 101:102 and 202:201
- B. with import route targets 201:202 and 401:402
- C. with export route targets 301:202 and 101:102
- D. with export route targets 201:202 and 401:402

Answer: B

### NEW QUESTION 75

- (Exam Topic 4)

Refer to the exhibit.

```
R1
vfi ciscotest manual
 vpn id 101
 neighbor 192.168.1.2 encapsulation mpls
 neighbor 192.168.10.2 encapsulation mpls
 neighbor 192.168.20.2 encapsulation mpls
```

An organization is running H-VPLS on a network comprising four routers in a hub-and-spoke topology with R1 as the hub. An engineer added a new spoke with multiple VCs to the network, and now traffic cannot flow properly. How should the engineer update the configuration on R1 to correct the problem?

- A. Disable spanning tree to allow loops to occur within the hub-and-spoke topology.
- B. Disable split horizon to allow multiple VCs per spoke.
- C. Disable Cisco Discovery Protocol to allow MPLS to share labels between the designated spokes.
- D. Disable Cisco Discovery Protocol to allow for neighbor discovery.

Answer: B

### NEW QUESTION 78

- (Exam Topic 4)

The network engineering group of a large ISP needs to harden the management plane of its Cisco 9000 Series ASRs. While addressing IPv6 ICMP issues, they realized they have to limit the rate at which IPv6 ICMP error messages are sent out on the network. Which command do they need to apply?

- A. icmp ipv6 rate-limit unreachable 1000
- B. ipv6 rate-limit 1000
- C. icmp ipv4 rate-limit unreachable 1000
- D. ipv6 icmp error-interval 50 20

Answer: D

#### Explanation:

Reference:

[https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6\\_basic/configuration/xr-3s/ipv6b-xr-3s-book/ipv6-icmp-rate-lmt-xr.html](https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6_basic/configuration/xr-3s/ipv6b-xr-3s-book/ipv6-icmp-rate-lmt-xr.html)

### NEW QUESTION 79

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