



**Cisco**

## **Exam Questions 300-515**

Implementing Cisco Service Provider VPN Services (SVPI)

#### NEW QUESTION 1

- (Exam Topic 1)

You are troubleshooting ARP connectivity issues for an Ethernet interface on an IOS XR network that runs IS-IS. You verify that the IGP protocol is running, but an ARP entry has not yet been created.

Which action should you take?

- A. debug ping packets
- B. debug ARP
- C. ping the connected neighbor
- D. verify the RIB table routes

**Answer:** C

#### NEW QUESTION 2

- (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 3

- (Exam Topic 1)

You try to configure MPLS VPN VRF Selection based on a source IP address on an interface that has VRF configured, but you receive an error.

Which action must you take to correct the problem?

- A. Change the source IP address.
- B. Add the IP address to the VRF table.
- C. Remove the VRF from the interface.
- D. Configure static routes for the VRF.

**Answer:** C

#### Explanation:

Reference: [https://www.cisco.com/c/en/us/td/docs/ios/12\\_0s/feature/guide/vrfselec.html](https://www.cisco.com/c/en/us/td/docs/ios/12_0s/feature/guide/vrfselec.html)

#### NEW QUESTION 4

- (Exam Topic 1)

Refer to the exhibit.

|  |   |
|--|---|
| <b>PE1</b><br>ip vrf celvpn<br>rd 111:1<br>route-target export 111:1<br>route-target import 222:2<br><br>interface FastEthernet0/0/0<br>ip vrf forwarding celvpn<br>ip address 192.168.0.1 255.255.255.0<br><br>router ospf 1 vrf celvpn<br>network 192.168.0.0 0.0.0.255 area 1 | <b>CE1</b><br>interface FastEthernet0/0/0<br>ip address 192.168.0.2 255.255.255.0<br><br>interface FastEthernet0/0/1<br>ip address 192.168.1.2<br>255.255.255.252<br><br>router ospf 100<br>network 192.168.0.0 0.0.0.255 area1<br><br>router bgp 65600<br>neighbor 192.168.1.1 remote-as 65600 |
|--|---|

If the two devices are operating normally, which two conclusions can you draw from this configuration? (Choose two.)

- A. CE1 must use OSPF to establish a neighbor relationship with PE1.
- B. PE1 labels the routes it learns from CE1 with the route-target 222:2 and shares them with its VPNv4 peers.
- C. PE1 labels the routes it learns from CE1 with the route-target 111:1 and shares them with its VPNv4 peers.
- D. The PE-CE routes between the devices are being exchanged by OSPF
- E. CE1 is supporting CSC.

**Answer:** AD

#### NEW QUESTION 5

- (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 6

- (Exam Topic 2)

While troubleshooting EoMPLS configuration problems, which three parameters should an engineer match between the two ends of the pseudowire configurations? (Choose three.)

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

Answer: DEF

Explanation:

Reference:

<https://www.cisco.com/c/en/us/support/docs/multiprotocol-label-switching-mpls/mpls/213238-mpls-l2vpn-pseudowire.html>

NEW QUESTION 7

- (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
```

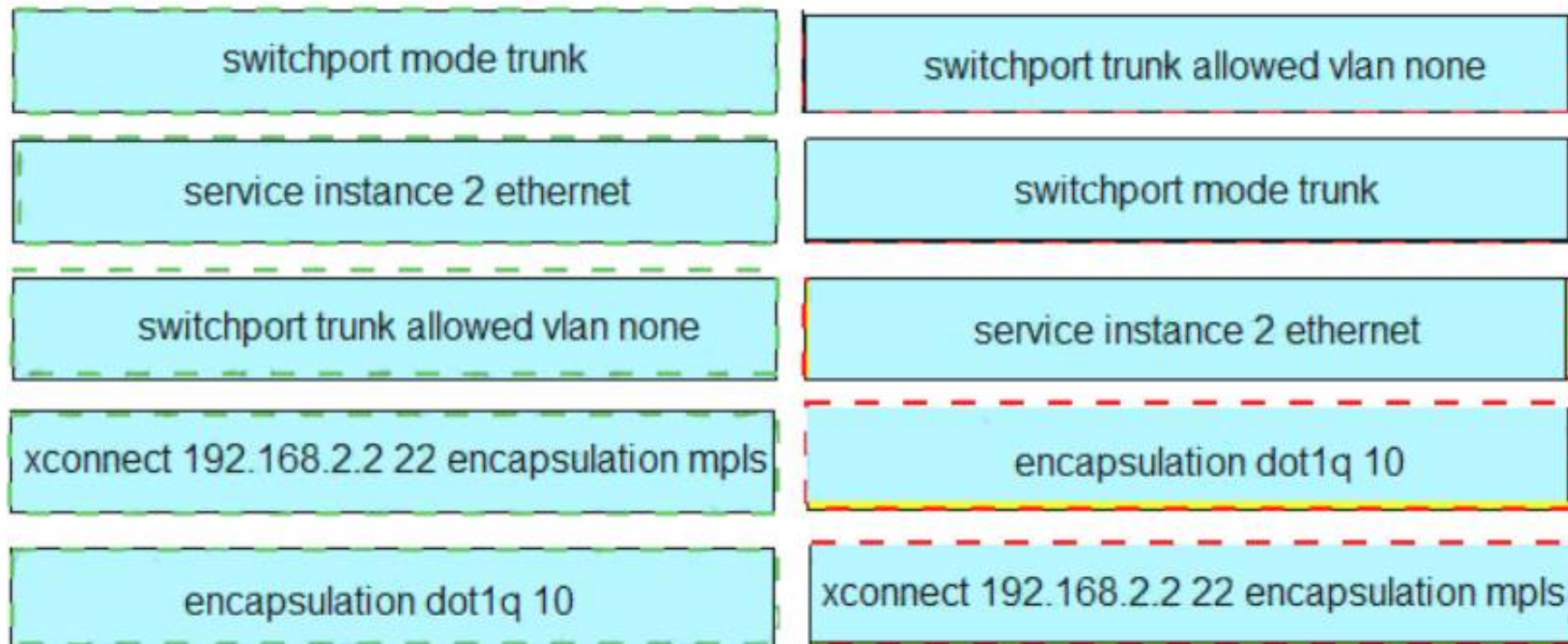
Drag and drop the EVC configuration items from the left onto the correct descriptions on the right.

|  |  |
|--|--|
| 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:



#### NEW QUESTION 8

- (Exam Topic 2)

While troubleshooting an AToM L2VPN service, a network consultant notices that the AC Layer 2 encapsulations are different. Which action should the consultant take in order to make the MPLS L2VPN work?

- A. tag-rewrite on the ingress and egress PE router
- B. interworking IP configuration on the last PE router before label disposition
- C. nonrouted interworking setup to properly translate only the Layer 2 information from the AC
- D. interworking IP configuration on both the AC terminations on the PEs

**Answer:** D

#### Explanation:

Reference:

[https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp\\_l2\\_vpns/configuration/xr-16-11/mp-l2-vpns-xr-16-11-book/l2vpn-interworking.html](https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_l2_vpns/configuration/xr-16-11/mp-l2-vpns-xr-16-11-book/l2vpn-interworking.html)

#### NEW QUESTION 9

- (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 10

- (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/evpn\\_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/evpn_vpws_single_homed.pdf)

**NEW QUESTION 10**

- (Exam Topic 3)

Which BGP feature causes to replace the AS number of originating router with the AS number of the sending router?

- A. route reflectors
- B. route dampening
- C. confederations
- D. AS override

**Answer:** D

**Explanation:**

Reference: <https://community.cisco.com/t5/networking-documents/understanding-bgp-as-override-feature/ta-p/3111967>

#### NEW QUESTION 15

- (Exam Topic 3)

A network engineer is 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. RIPv2
- B. OSPF
- C. BGP
- D. EIGRP

Answer: B

#### NEW QUESTION 18

- (Exam Topic 3)

Refer to the exhibit.

```
CE Router

router bgp 65001
  address-family ipv4 unicast
    redistribute ospf 1
    allocate-label all
  neighbor 192.168.1.25
    remote-as 65012

PE Router

router bgp 65012
  vrf custrouter
    rd 65001:65012
    address-family ipv4 unicast
      allocate-label all
      redistribute static
    neighbor 192.168.1.24
      remote-as 65001
    address-family ipv4 labeled-unicast
```

The CE router has established a BGP peering with the PE router, and the CE will use the core infrastructure of the PE as a backbone carrier to support CSC. Which additional task can you perform to complete the configuration?

- A. Configure static routing on the CE router.
- B. Configure the address-family ipv4 labeled-unicast command under the neighbor configuration of the CE router for the PE.
- C. Change the rd value to 65001:65001 under the VRF section of the PE router.
- D. Configure OSPF on the PE router.

Answer: D

#### NEW QUESTION 23

- (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 26

- (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 27

- (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 31

- (Exam Topic 3)

With Layer 3 MPLS VPN implementations on Cisco IOS XR PE routers, an interface is assigned to a VRF using the vrf command in which configuration mode?

- A. RP/0/RP0/CPU0:PE(config-bgp)#
- B. RP/0/RP0/CPU0:PE(config-if)#
- C. RP/0/RP0/CPU0:PE(config-bgp-af)#
- D. RP/0/RP0/CPU0:PE(config-vrf)#

**Answer:** B

#### Explanation:

Reference:

[https://www.cisco.com/c/en/us/td/docs/ios\\_xr\\_sw/iosxr\\_r3-7/mpls/configuration/guide/gc37v3.html](https://www.cisco.com/c/en/us/td/docs/ios_xr_sw/iosxr_r3-7/mpls/configuration/guide/gc37v3.html)

#### NEW QUESTION 34

- (Exam Topic 3)

Refer to the exhibit.

|  |   |
|--|---|
| <b>PE1</b><br>ip vrf CE1<br>rd 111:1<br>route-target export 100:1<br>route-target import 200:2                                   | <b>PE2</b><br>ip vrf CE2<br>rd 112:2<br>route-target export 200:2<br>route-target import 100:1<br>route-target import 300:3 |
| <b>PE3</b><br>ip vrf Internet<br>rd 333:3<br>route-target export 300:3<br>route-target import 100:1<br>route-target import 200:2 |   |

PE1 and PE2 are exchanging VPNv4 routes for CE1 and CE2, and PE3 contains the default route to the internet. If the three devices are operating normally, which two conclusions describe this configuration? (Choose two.)

- A. The CE1 and CE2 VRFs can exchange routes only between their respective VRFs on PE1 and PE2.
- B. All three routers must be running a distance-vector routing protocol.
- C. All three routers must be running MP-BGP.
- D. The CE1 and CE2 VRFs can access the default route provided by the Internet VRF.
- E. Only the CE2 VRF can access the default route provided by the Internet VRF.

**Answer:** AC

#### NEW QUESTION 38

- (Exam Topic 4)

Refer to the exhibit:

```
R1
interface FastEthernet0/0
ip address 10.1.12.1 255.255.255.0
duplex full
end
!
!
!
R1(config)#interface FastEthernet0/0
R1(config-if)#ospfv3 1 area 1 ipv4
% IPv6 routing not enabled
```

A network engineer is implementing an OSPF configuration. Based on the output, which statement is true?

- A. In the ospfv3 1 area 1 ipv4 command, area 0 must be configured instead of area 1.
- B. OSPFv3 does not run for IPv4 on FastEthernet0/0 until IPv6 routing is enabled on the router and IPv6 is enabled on interface FastEthernet0/0.
- C. OSPFv3 cannot be configured for IPv4; OSPFv3 works only for IPv6.
- D. "IPv6 routing not enabled" is just an informational message and OSPFv3 runs for IPv4 on interface FastEthernet0/0 anyway.

**Answer: B**

#### NEW QUESTION 41

- (Exam Topic 4)

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

- 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 is used more than once globally.

**Answer: C**

#### NEW QUESTION 43

- (Exam Topic 4)

Refer to the exhibit.

| PE1#show mpls forwarding |                |                 |                    |             |                |
|--------------------------|----------------|-----------------|--------------------|-------------|----------------|
| Local Label              | Outgoing Label | Prefix or ID    | Outgoing Interface | Next Hop    | Bytes Switched |
| 22095                    | Pop            | 192.168.10.1/32 | Hu0/0/0/2          | 192.168.1.2 | 100000         |
| 22096                    | 22286          | 192.168.20.1/32 | Hu0/0/0/2          | 192.168.1.2 | 1000           |
| 22098                    | 22288          | 192.168.30.1/32 | Hu0/0/0/2          | 192.168.1.2 | 250000         |
| <output omitted>         |                |                 |                    |             |                |

What is shown in this output?

- A. Local and outgoing labels are updated in hardware.
- B. BGP is used between neighbors that are exchanging MPLS labels.
- C. LDP neighbor statuses.
- D. The labels received and advertised on PE1.

**Answer: D**

#### NEW QUESTION 44

- (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 PE 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 47

- (Exam Topic 4)

Refer to the exhibit.



Router 1:

```
router bgp 65515
no bgp default ipv4-unicast
bgp router-id 192.168.0.1
neighbor 191.168.0.2 remote-as 65515

address-family ipv4
neighbor 191.168.0.2 route-reflector-client

address-family vpnv4
neighbor 191.168.0.2 activate
neighbor 100.1.3.3 send-community extended
```

Router 1 is a route reflector client within a service provider core PE1 cannot see VPNv4 routes received from the ASBR PE1 only has an iBGP relationship with Router 1. Which action resolves this issue?

- A. Activate PE1 as a neighbor under the IPv4 address family.
- B. Configure Router 1 as a route reflector for PE1 under the VPNv4 address family.
- C. Configure PE1 to have an eBGP relationship with Router 1.
- D. Enable BGP default ipv4-unicast

**Answer: B**

#### NEW QUESTION 52

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