



Implementing Cisco Service Provider VPN Services (SPVI)



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Exam 300-515

Implementing Cisco Service Provider VPN Services (300-515 SPVI)

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[Total Questions: 71]

Topic break down

Topic	No. of Questions
Topic 1: VPN Architecture	23
Topic 2: Layer 2 VPNs	13
Topic 3: Layer 3 VPNs	21
Topic 4: IPv6 VPNs	14

Topic 1, VPN Architecture

Question No : 1 - (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: B,D

Question No : 2 - (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

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

Question No : 3 - (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: A,E

Question No : 4 - (Topic 1)

Refer to the exhibit.

PE1 ip vrf CE1 rd 101:1 route-target export 100:1 route-target import 200:2	PE2 ip vrf CE2 rd 202:2 route-target export 200:2 route-target import 100:1
PE3 ip vrf CE3 rd 303:3 route-target export 300:3 route-target import 400:4	PE4 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: A,B

Question No : 5 - (Topic 1)

Refer to the exhibit.

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

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: A,D

Question No : 6 - (Topic 1)

Refer to the exhibit.

```
RP/0/0/CPU0:PE1#show run
evpn
no evi 100
no advertise-mac
!
!
vrf EVPN
address-family ipv4 unicast
import route-target
133:100
export route-target
133:100
!
!
interface BVI651
vrf EVPN
ipv4 address 192.168.100.1 255.255.255.0
mac-address 1337.1337.1337
```

A network operator is implementing EVPN IRB on PE1. Which two command placements enable the advertisement of Type 2 routes and what information do Type 2 routes contain? (Choose two.)

- A. The operator adds in “host-routing” under the VRF EVPN.
- B. Type 2 routes contain MAC/IP information.
- C. Type 2 routes contain Ethernet Auto-Discovery information.
- D. The operator adds in “host-routing” under the BVI651 interface.
- E. Type 2 routes contain inclusive source-specific multicast route information.

Answer: B,D

Reference: https://www.cisco.com/c/en/us/td/docs/iosxr/ncs5500/vpn/61x/b-ncs5500-l2vpn-configuration-guide-61x/b-ncs5500-l2vpn-configuration-guide-61x_chapter_01010.html

Question No : 7 - (Topic 1)

Which utility can you use to validate an LSP in an MPLS environment?

- A. uRPF
- B. MPLS LSP ping
- C. logging
- D. RSVP

Answer: B

Question No : 8 - (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

Reference:

https://www.cisco.com/c/en/us/td/docs/ios/12_2/12_2sz/feature/guide/122szvrf.html

Question No : 9 - (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

Question No : 10 - (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

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

Question No : 11 - (Topic 1)

An ISP provides a major client MPLS VPN for managed services. The MPLS engineering team needs to use the advanced VPN feature of selective VRF import so that only specific prefixes are present in the required VPNs.

Which aspect of this feature must the team consider?

- A. A route must pass the import route map first and then the route target import filter.
- B. The routers that are imported in the VRF can be BGP and IGP routes, so other match conditions in the route map, besides communities, can be used.

- C. The import-map command is applied under the PE interface that connects to the CE router.
- D. A route is imported into the VRF only when at least one RT that is attached to the route matches one RT that is configured in the VRF and the route is permitted by the import route map.

Answer: D

Reference: <https://www.ccexpert.us/mps/configuring-selective-vrf-import.html>

Question No : 12 - (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

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

Question No : 13 - (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: C,E

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/

Question No : 14 - (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

Reference: https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k_r5-3/mpls/configuration/guide/b-mpls-cg53x-asr9k/b-mpls-cg53x-asr9k_chapter_01000.html

Question No : 15 - (Topic 1)

Which tool identifies the point of failure in a P2MP LSP from the ingress LSR?

- A. Jitter TLV

- B. SPAN
- C. P2MP traceroute
- D. P2MP ping

Answer: C

Reference: https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k_r5-3/mps/configuration/guide/b-mpls-cg53x-asr9k/b-mpls-cg53x-asr9k_chapter_01000.html

Question No : 16 - (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: A,D

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

Question No : 17 - (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

Question No : 18 - (Topic 1)

Refer to the exhibit.

Router# show mpls forwarding-table					
Local label	Outgoing label or VC	Prefix or Tunnel Id	Bytes label switched	Outgoing interface	Next Hop
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

Question No : 19 - (Topic 1)

Which two frames can be configured on an Ethernet flow point? (Choose two.)

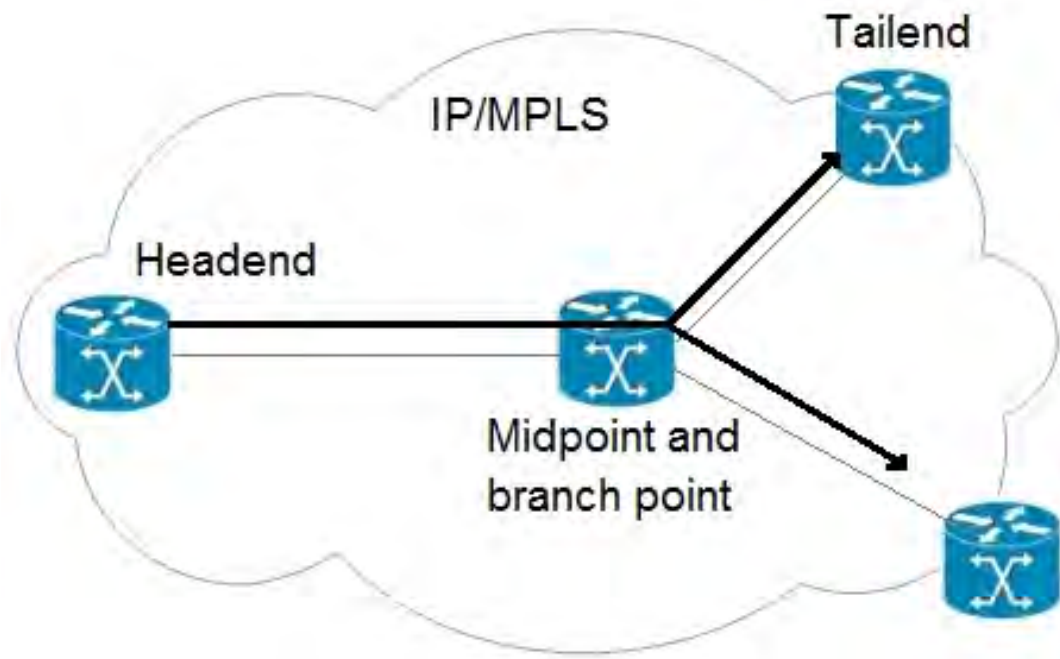
- A. of a specific VLAN
- B. with different type of service values
- C. with identical type of service value
- D. with different class of service values
- E. with no tags

Answer: A,E

Reference: <https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cether/configuration/xes/asr903/16-5-1/b-ce-xe-16-5-asr900/trunk-efp-support.html>

Question No : 20 - (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

Question No : 21 - (Topic 1)

An engineer is investigating an EVPN traffic flow issue. Which type of traffic should the engineer allow in an EVPN Tree Service in order to fix this issue?

- A. known unicast from a leaf to another leaf
- B. unknown unicast from a leaf to another leaf
- C. multicast from a leaf to another leaf
- D. known unicast from a root to another root

Answer: D

Reference: <https://tools.ietf.org/html/draft-ietf-bess-evpn-etree-14>

Question No : 22 - (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

Question No : 23 - (Topic 1)

What is the primary function of a VRF on a router?

- A. It enables the router to support multiple separate routing tables, which allows the device to handle overlapping IP addresses.
- B. It enables a router to run BGP and a distance vector routing protocol at the same time, which allows it to serve as a VPN endpoint between remote sites.
- C. It enables a router to configure VLANs locally, which provides segregation between networks.
- D. It enables the router to provide faster switching through the network by using labels to identify the input and output interfaces for neighbor routers.

Answer: A

Topic 2, Layer 2 VPNs

Question No : 24 - (Topic 2)

What do EVPN single-active and all-active have in common?