



Vendor: Huawei

Exam Code: H31-161

Exam Name: HCIE-Carrier IP (Written)

Version: DEMO

QUESTION 1

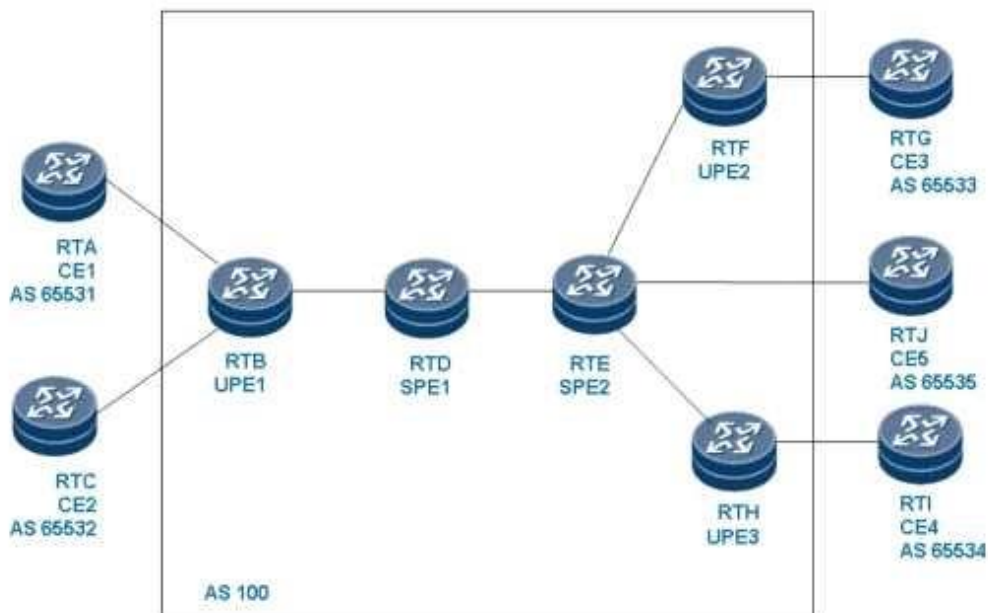
Which of the following statements about the relationship between the SPE and the UPE are false?

- A. The UPE provides access service for users. It maintains the routes of the VPN sites it is directly connected to and sometimes aggregates routes of remote VPN sites. In addition, a UPE allocates inner labels for routes of the sites directly connected to the UPE and advertises VPN routes with these labels to an SPE through MP-BGP.
- B. The SPE manages and advertises VPN routes. It maintains all routes on the VPN it is connected to through UPEs, including routes of local and remote sites. The SPE, however, does not advertise routes of remote sites to the UPE, but only advertises the labeled default routes or aggregate routes of VPN instances.
- C. The SPE and UPE are relative to each other. In a hierarchical PE structure, a PE on the upper layer is the SPE to PEs on the lower layer, and these lower-layer PEs are UPEs to the SPE. However, the hierarchical PE cannot coexist with common PEs on an MPLS network.
- D. When MP-IBGP is deployed between an SPE and UPEs, the SPE can function as the RR of these UPEs so that routes can be advertised between IBGP peers. It is not recommended that an SPE serving as the RR of UPEs still reflect routes between other PEs so that routes on UPEs can be reduced. A UPE and an SPE communicate through a physical interface, subinterface, or tunnel interface. When the tunnel interface is configured, only one MPLS network is allowed between them and labeled packets are transferred through tunnels. Their communication may fail if the MPLS network is replaced with an IP network.
- E. The SPE has a large routing table, which provides excellent forwarding performance and access capability, whereas the UPE has a small routing table and poor forwarding performance, but occupies fewer interface resources.

Answer: CE

QUESTION 2

Refer to the exhibit. As shown in the figure, basic BGP/MPLS IP VPN configuration has been completed on routers. Which of the following configurations is incorrect for advertising default routes in VPN instances on the SPE? Note: All configurations are performed on the SPE.



- A. Run the peer 2.2.2.2 enable command in the BGP-VPNv4 subsequent address family view to enable the peer to exchange BGP-VPNv4 routing information.
- B. Run the peer 2.2.2.2 upe command in the BGP-VPNv4 subsequent address family view to designate the peer as a UPE of the SPE.
- C. Run the peer default-originate vpn-instance command in the BGP-VPNv4 subsequent address family view.
- D. Configure the default-route imported command in the BGP-VPN instance view without importing default IGP routes, and then configure the peer default-originate vpn-instance command in the BGP-VPNv4 address family view.
- E. Configure the peer default-originate vpn-instance command in the BGP-VPNv4 address family view, and then configure the default-route imported command in the BGP-VPN instance view.

Answer: D

QUESTION 3

Refer to the exhibit.



OSPF process 1 is started on RTA and assigned to the vpn1 instance. After the vpn-instance-capability simple command is configured in the OSPF view, which of the following statements are false?

- A. Bit B is not set in the router LSA generated by RTA in area 1.
- B. When RTA receives a Type 3 summary LSA with the DN bit in area 1, it ignores the calculation of the LSA.
- C. After RTA imports a BGP route from the MPLS VPN backbone network, if Domain ID of the BGP route is the same as that used in the local OSPF area and the BGP route is an intra-area route, a Type 3 summary LSA is generated and flooded to area 1.
- D. When RTA imports a BGP route from OSPF process 1, an extended community identification must be carried to specify the OSPF attributes of the route.

Answer: BCD

QUESTION 4

On a BGP/MPLS VPN, a PE and a CE communicate with each other over OSPF. Which command cannot be configured on the PE?

- A. route-tag 3
- B. domain-id 3
- C. vpn-instance-capability simple
- D. sham-hello

Answer: C

QUESTION 5

Which statement about the OSPF VPN is true? (B)

- A. A VPN instance can include multiple OSPF processes. An OSPF process can be bound to multiple VPN instances.
- B. OSPF ASs are differentiated by domain ID. Therefore, devices within one AS must be configured with the same domain ID.
- C. An OSPF process can be configured with one or multiple primary domain IDs.
- D. When a PE is an OSPF ABR, the PE is connected to a CE only in a non-backbone OSPF area.

Answer: B

QUESTION 6

Refer to the exhibit.



As shown in the figure, VPN routes are transmitted between PE 1 and PE 2 through BGP. OSPF process 100 runs on both PEs and CEs. The following BGP route exists on PE 2.

```
[PE 2]display bgp vpnv4 vpn-instance red routing-table 43.1.1.0 BGP local router ID: 194.1.1.1
Local AS number: 100
Paths: 1 available, 1 best
BGP routing table entry information of 43.1.1.0/24:
Label information (Received/Applied): 15362/NULL
From: 1.1.1.1 (192.2.1.1)
Relay Nexthop: 0.0.0.0
Original nexthop: 1.1.1.1
Ext-Community: RT <100: 1>, <555: 0>, <0.0.0.0: 256>, <111.1.1.1: 0> Convergence Priority: 0
AS-path Nil, origin incomplete, MED 7, localpref 100, pref-val 0, valid, internal, best, pre 255
Not advertised to any peer yet
```

If the domain ID configured on PE 2 is 555, which statement is true?

- A. The domain ID in the BGP route is the same as that configured on PE 2 and the route type is specified by a Type 1 LSA. Therefore, PE 2 needs to generate a Type 1 LSA and send it to CE 2.
- B. The domain ID in the BGP route is the same as that configured on PE 2 and the route type is specified by a Type 1 LSA. Therefore, PE 2 needs to generate a Type 3 LSA and send it to CE 2.
- C. The domain ID in the BGP route is the same as that configured on PE 2 and the route type is specified by a Type 1 LSA. Therefore, PE 2 needs to generate a Type 5 LSA and send it to CE 2.
- D. The domain ID in the BGP route is different from that configured on PE 2 and the route type is specified by a Type 1 LSA. Therefore, PE 2 needs to generate a Type 5 LSA and send it to CE 2.

Answer: B

QUESTION 7

Which statement about the interworking between a VPN and the Internet is false?(D)

- A. For a VPN and the Internet to interwork, the user device used to access the Internet must have a route to the desired address on the Internet and a backhaul route.
- B. A VPN and the Internet can interwork through the PE, Internet gateway, or CE.
- C. A VPN and the Internet can interwork through the CE or PE.
- D. For a VPN and the Internet to interwork, network address translation (NAT) must be performed. NAT can be deployed on the interface of a PE used to connect to the Internet gateway, on the interface of a PE used to connect to a CE, or on the interface of a CE used to connect to a PE.

Answer: D

QUESTION 8

Refer to the exhibit.



As shown in the figure, a CE requires access to the Internet, and PE 1 is connected to the Internet gateway. Configurations on PE 1 are as follows:

PE 1:

```
#
nat address-group 0 175.31.1.3 175.31.1.10
#
ip vpn-instance vrf1 route-distinguisher 192.168.1.1:100 vpn-target 100:1 export-extcommunity
vpn-target 100:1 import-extcommunity
#
acl number 2000
rule 5 permit vpn-instance vrf1
#
#
interface Serial0/0/1:0
link-protocol ppp
ip binding vpn-instance vrf1
ip address 150.1.1.1 255.255.0.0
nat outbound acl 2000 address-group 0
#
interface Pos2/1/0
clock master
link-protocol ppp
ip address 175.31.1.1 255.255.0.0
#
bgp 100
group ibgp internal
peer ibgp connect-interface LoopBack0 peer 192.168.1.2 as-number 100 peer 192.168.1.2 group
```

```
ibgp
#
ipv4-family unicast
undo synchronization
peer ibgp enable
peer 192.168.1.2 enable
peer 192.168.1.2 group ibgp
#
ipv4-family vpnv4
policy vpn-target
peer ibgp enable
peer 192.168.1.2 enable
peer 192.168.1.2 group ibgp
#
ipv4-family vpn-instance vrf1
default-route imported
import-route direct
import-route static
group nei_vrf1 external
peer nei_vrf1 as-number 65004
peer 150.1.1.2 as-number 65004peer 150.1.1.2 group nei_vrf1 #
ip route-static vpn-instance vrf1 0.0.0.0 0.0.0.0 175.31.1.2
```

PE 1 is connected to the Internet gateway through interface 175.31.1.2. CE 1 and CE 2 cannot ping this interface. Which of the following statements are true?

- A. A default route must be configured on CE 1 and CE 2.
- B. A private network route must be configured on the Internet gateway.
- C. The public parameter of a static default route must be configured.
- D. NAT translation must be configured on interface pos2/1/0 instead of interface s0/0/1:0.

Answer: CD

QUESTION 9

CR-LSP and GRE are selected as tunneling policies. CR-LSP has a higher priority and a maximum of three tunnels can be configured for load balancing. Which statement about tunnel selection is false?

- A. The CR-LSP tunnel in the Up state is preferred. If less than three CR-LSP tunnels are in the Up state, GRE tunnels in the Up state are also selected until there are three available tunnels.
- B. One GRE tunnel is selected. If a new CR-LSP tunnel is added or a CR-LSP tunnel becomes Up, the selected GRE tunnel will be replaced with an active CR-LSP.
- C. If the number of tunnels used for load balancing is less than the configured value and CR-LSP or GRE tunnels become Up, these tunnels will also be configured for load balancing.
- D. When three CR-LSP tunnels are used for load balancing, the three CR-LSP tunnels must be in different

Answer: D

QUESTION 10

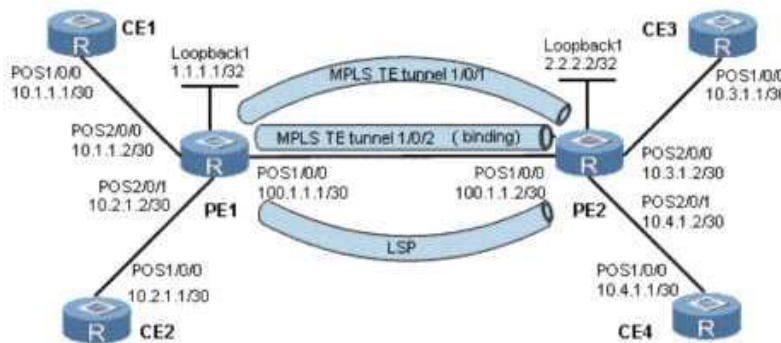
Which statement about the tunnel policy configuration is false?(A)

- A. The tunnel policy is configured in the system view. You can run the tunnel-policy policy-name command to create tunnel policies and enter the tunnel policy view. One VPN instance supports multiple tunnel policies, and multiple VPN instances can share a tunnel policy.
- B. You can run tunnel select-seq { gre | lsp | cr-lsp } * load-balance-number load-balance-number in the tunnel policy view to configure the priorities of tunnels and the number of tunnels among which load is balanced.
- C. You can run the tnl-policy policy-name command in the VPN instance view to apply tunnel policies to VPN instances. If the required tunnel policy does not exist, the configuration is saved but does not take effect. If you create this tunnel policy in the system view later, the saved configuration will take effect.
- D. If a VPN instance does not have a tunnel policy, an LSP is used and the number of tunnels configured for load balancing is set to 1

Answer: A

QUESTION 11

Refer to the exhibit.



This figure shows the MPLS L3VPN networking. CE 1 and CE 3 belong to VPN A. CE 2 and CE 4 belong to VPN B. Two MPLS TE tunnels (5 Mbit/s and 10 Mbit/s) and an LSP tunnel are set up between PE 1 and PE 2. It is expected that a tunnel policy is configured on PE 1 to distribute traffic in the three tunnels and MPLS TE tunnels are preferred. Configurations on PE1:

Configuration of PE 1

```
#
sysname PE1
#
ip vpn-instance vpna
 route-distinguisher 100:1
 tnl-policy policy1
 vpn-target 111:1 export-extcommunity
 vpn-target 111:1 import-extcommunity
#
ip vpn-instance vpnb
 route-distinguisher 100:2
 tnl-policy policy2
 vpn-target 222:2 export-extcommunity
 vpn-target 222:2 import-extcommunity
#
mpls lsr-id 1.1.1.1
mpls mpls te
```

```
mpls rsvp-te
mpls te cspf
#
mpls ldp
#
interface Pos1/0/0
link-protocol ppp
ip address 100.1.1.1 255.255.255.252
mpls
mpls te
mpls te max-link-bandwidth 20000
mpls te max-reservable-bandwidth 15000
mpls rsvp-te
mpls ldp
#
interface Pos2/0/0
link-protocol ppp
ip binding vpn-instance vpna
ip address 10.1.1.2 255.255.255.252
#
interface Pos2/0/1
link-protocol ppp
ip binding vpn-instance vpnb
ip address 10.2.1.2 255.255.255.252
#
interface LoopBack1
ip address 1.1.1.1 255.255.255.255
#
interface Tunnel1/0/1
ip address unnumbered interface LoopBack1
tunnel-protocol mpls te
destination 2.2.2.2
mpls te tunnel-id 11
mpls te bandwidth bc0 5000
mpls te commit
#
interface Tunnel1/0/2
ip address unnumbered interface LoopBack1
tunnel-protocol mpls te
destination 2.2.2.2mpls te tunnel-id 22
mpls te bandwidth bc0 10000
mpls te reserved-for-binding
mpls te commit
#
bgp 100
peer 2.2.2.2 as-number 100
peer 2.2.2.2 connect-interface LoopBack1
#
ipv4-family unicast
undo synchronization
peer 2.2.2.2 enable
#
ipv4-family vpnv
policy vpn-target
peer 2.2.2.2 enable
#
```



```

ipv4-family vpn-instance vpna
import-route direct
#
ipv4-family vpn-instance vpnb
import-route direct
#
ospf 1
opaque-capability enable
area 0.0.0.0
network 100.1.1.0 0.0.0.3
network 1.1.1.1 0.0.0.0
mpls-te enable
#
tunnel-policy policy1
tunnel binding destination 2.2.2.2 to Tunnel1/0/2
#
tunnel-policy policy2
tunnel select-seq cr-lsp lsp load-balance-number 3
#
Return
    
```

Under the preceding configurations, traffic cannot be distributed to the three tunnels. To implement load balancing, which of the following modifications are correct?

- A. Delete policy 1 from PE 1.
- B. Delete policy 1 in the vpna instance view.
- C. Create a TE tunnel to 2.2.2.2 on PE 1.
- D. Create a GRE tunnel to 2.2.2.2 on PE 1.

Answer: AC

QUESTION 12

Refer to the exhibit.



As shown in the figure, CE 1 and CE 2 belong to VPN A, both LDP and TE tunnels are configured between PE 1 and PE 2, the QPPB feature is configured on PE 2, and a tunnel policy is configured and applied to VPNs under PE 2 to make TE tunnels be preferred. 11.11.11.11/32 is a static route on CE 1 and is learned by CE 2. CE 2, however, fails to apply resource isolation VPN to PE 2. What is the possible cause?

- A. The primary TE tunnel is down.

- B. The MPLS TE LSP between PEs is established incorrectly.
- C. MPLS TE is not enabled on PE 1.
- D. Resource isolation VPN tunnels are established incorrectly

Answer: D

QUESTION 13

Which message does the pseudo wire emulation edge-to-edge (PWE3) add for LDP signaling extension compared with Martini VLL?

- A. Request
- B. Mapping
- C. Withdraw
- D. Release
- E. Notification

Answer: E

QUESTION 14

In which L2VPN technology is L2VPN information transferred through the extended LDP signaling?

- A. Cross circuit connection (CCC)
- B. Martini
- C. Kompella
- D. SVC

Answer: B

QUESTION 15

Which of the following methods can be used to ensure loop-free and reachable Martini VPLS links?

- A. Split horizon
- B. Poison reverse
- C. Spanning tree algorithm
- D. Full-meshed PEs

Answer: AD

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