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**Nokia**

# 4A0-115

*Nokia Ethernet Virtual Private Network Services*



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### Question: 60

In an EVPN solution, what is the purpose of the Ethernet A-D per EVI (EAD per EVI) route?

- A. It identifies the Ethernet VPN instance for a specific route.
- B. It provides information about the capabilities of an Ethernet segment.
- C. It specifies the next hop for the route.
- D. It carries information about Ethernet segment membership within an EVI.

### Answer:

- D. It carries information about Ethernet segment membership within an EVI.

Explanation: The Ethernet A-D per EVI (EAD per EVI) route in an EVPN solution carries information about Ethernet segment membership within an Ethernet VPN instance (EVI). It allows devices within the EVPN network to discover and learn about other devices and their associated Ethernet segments within a specific EVI, facilitating proper connectivity and communication.

### Question: 61

In an EVPN solution, what is the purpose of the IP Virtual Gateway (IP-VG) extended community attribute?

- A. It identifies the Ethernet VPN instance for a specific route.
- B. It associates IP routes with a virtual gateway.

C. It specifies the next hop for the route.

D. It provides information about the capabilities of an Ethernet segment.

**Answer: B**

Explanation: The IP Virtual Gateway (IP-VG) extended community attribute in an EVPN solution is used to associate IP routes with a virtual gateway. It helps in the proper identification and forwarding of IP traffic to the appropriate virtual gateway within the EVPN network.

**Question: 62**

Which EVPN route type is responsible for advertising multicast Ethernet segments?

A. Type 3

B. Type 4

C. Type 6

D. Type 5

**Answer: D**

Explanation: EVPN Type 5 routes are responsible for advertising multicast Ethernet segments in an Ethernet Virtual Private Network (EVPN) solution. These routes carry information about multicast group addresses and associated Ethernet segments, enabling proper multicast forwarding within the EVPN network.

**Question: 63**

In an EVPN solution, what is the purpose of the IP Prefix route type?

- A. It identifies the Ethernet VPN instance for a specific route.
- B. It provides information about the capabilities of an Ethernet segment.
- C. It carries information about IP prefixes associated with an Ethernet segment.
- D. It specifies the next hop for the route.

**Answer: C**

Explanation: The IP Prefix route type in an EVPN solution carries information about IP prefixes associated with an Ethernet segment. It aids in the proper routing and forwarding of IP traffic within the EVPN network, ensuring efficient connectivity and communication.

### **Question: 64**

Which EVPN route type is responsible for advertising IP multicast group addresses?

- A. Type 3
- B. Type 4
- C. Type 6
- D. Type 5

**Answer: C**

Explanation: EVPN Type 6 routes are responsible for advertising IP multicast group addresses in an Ethernet Virtual Private Network (EVPN) solution. These routes carry information about IP multicast group addresses and associated Ethernet segments, enabling proper multicast forwarding within the EVPN network.

## **Question: 65**

In an EVPN solution, what is the purpose of the Route Distinguisher (RD) extended community attribute?

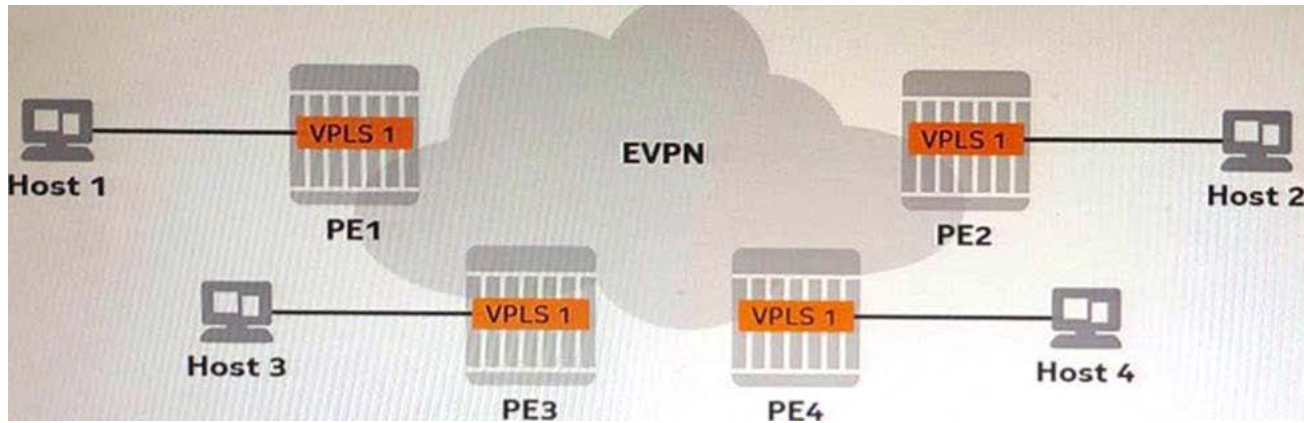
- A. It indicates the administrative value of the route.
- B. It identifies the Ethernet VPN instance for a specific route.
- C. It specifies the next hop for the route.
- D. It provides unique identification for VPN routes.

**Answer: B**

Explanation: The Route Distinguisher (RD) extended community attribute in an EVPN solution is used to identify the Ethernet VPN instance for a specific route. It helps in the proper classification and separation of routes within the EVPN network, ensuring that each route is associated with the correct VPN instance.

### Question: 66

Which of the following statements about the EVPN data plane is FALSE?



- A. 1
- B. 2
- C. 3
- D. 4

### Answer: B

Explanation:

There are two MAC-VRFs in the exhibit, one for each EVI. A MAC-VRF is a logical entity that contains the MAC forwarding information for a given EVI1.

Reference: Ethernet Virtual Private Networks (EVPNs)

### Question: 67

Which of the following statements about multi-homing for a Layer-2 service is TRUE?

- A. In the single-active mode, the CE requires a LAG to be configured between the CE and all attached PEs.
- B. In the single-active mode, the CE forwards traffic to all attached PES and receives traffic from a single P
- C. In the all-active mode, all PES attached to a CE can forward traffic to and from the C
- D. The Nokia 7750 SR supports a CE being multi-homed to a maximum of two PEs.

### Answer: B

Explanation:

In the all-active mode, all PEs attached to a CE can forward traffic to and from the CE. This provides load balancing and redundancy for the CE. The CE does not require a LAG to be configured between the CE and all attached PEs1.

Reference: Ethernet Virtual Private Networks (EVPNs)

### Question:68

Which of the following statements about PE-to-PE MAC address advertisement is FALSE?

- A. The service distinguisher (label or VNI) is advertised with the MAC/IP EVPN update.
- B. Route targets are used to uniquely identify routes between EVIS in the case of MAC address overlaps.
- C. A PE uses a single MP-BGP session with a remote peer to exchange the routes for all EVIs.
- D. A PE advertises locally-learned MAC addresses to remote PES using EVPN type-2 routes.

### Answer: B

Explanation:

Route targets are not used to uniquely identify routes between EVIs in the case of MAC address overlaps. Route targets are used to control the import and export of routes between different EVIs or VRFs. The service distinguisher (label or VNI) is used to uniquely identify each service1.

Reference: Ethernet Virtual Private Networks (EVPNs)

### Question: 69

Which of the following statements about EVPN Layer-3 services that utilize the interface-full model is TRUE?

- A. EVPN MAC/IP routes are used to advertise the IP prefixes of subnets attached to a VPR
- B. VPRN instances are interconnected using a supplementary broadcast domain (SBD) VPL
- C. Intra-subnet traffic is carried over the tunnels provided by the SBD VPL
- D. The MAC/IP routing information is used to populate the VPRN routing table at the remote PEs.

### Answer: B

Explanation:

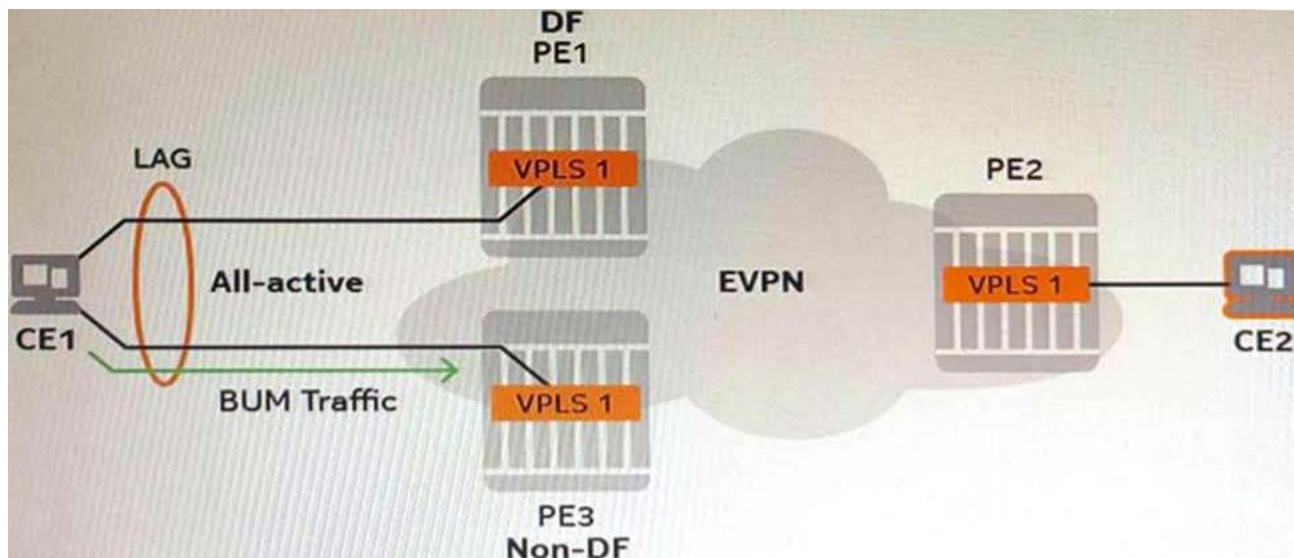
In the interface-full model, VPRN instances are interconnected using a supplementary broadcast domain (SBD) VPLS. Intra-subnet traffic is carried over the tunnels provided by the SBD VPLS. The MAC/IP routing information is not used to populate the VPRN routing table at the remote PEs, but rather to populate the FDB of the SBD VPLS2.

Reference: Nokia Ethernet Virtual Private Network Services Course | Nokia

### Question: 70

Based upon the exhibit,





Which of the following statements about the forwarding of BUM traffic is FALSE?

- A. PE3 replicates the traffic and sends it to all PES in its VPLS I flooding list.
- B. PE3 adds an ESI label to packets forwarded to PE1 because PE1 is connected to the same Ethernet segment.
- C. PE1 forwards the traffic received from PE3 to CE1, and CE1 discards it based upon the ESI label.
- D. PE2 decapsulates the packets received from PE3 and forwards the frames to CE2.

**Answer: B**

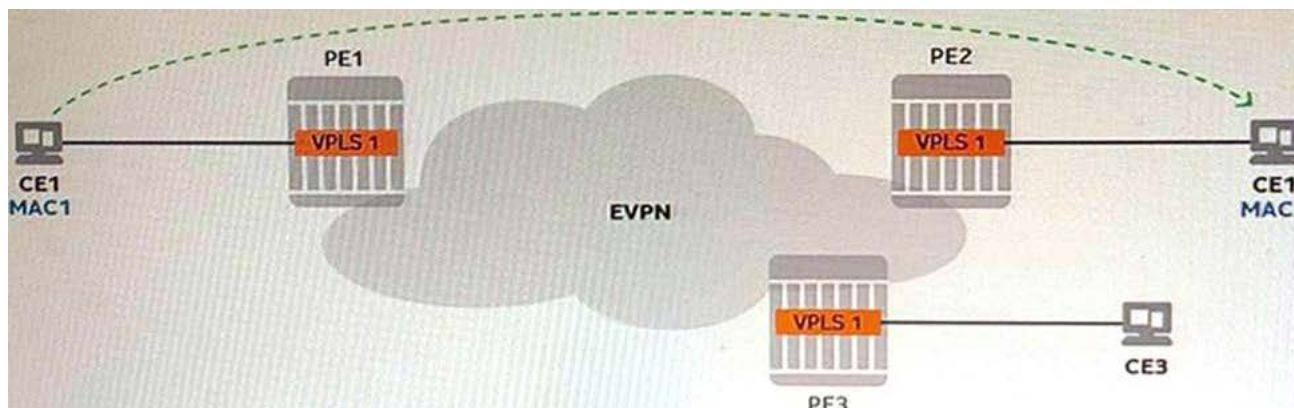
Explanation:

PE3 does not add an ESI label to packets forwarded to PE1 because PE1 is connected to the same Ethernet segment. PE3 adds an ESI label only to packets forwarded to PEs that are not connected to the same Ethernet segment, such as PE21.

Reference: Ethernet Virtual Private Networks (EVPNs)

**Question: 70**

In the exhibit,



MAC1 moves from PE1 to PE2.



Which of the following actions related to this MAC address mobility is performed?

- A. CE1 generates an update message to PE1 withdrawing its MA
- B. PE1 generates an update message to remote PES identifying the new location of CE
- C. PE2 advertises a MAC/IP route for MAC1 with a sequence number higher than that received from PE
- D. PE3 waits to receive a data packet from CE1 to update its FDB entry for MAC

**Answer: B**

Explanation:

PE2 advertises a MAC/IP route for MAC1 with a sequence number higher than that received from PE1. This indicates that MAC1 has moved from PE1 to PE2 and triggers a MAC withdrawal message from PE1 to remote PES. CE1 does not generate an update message to PE1 withdrawing its MAC, nor does PE1 generate an update message to remote PES identifying the new location of CE11.

Reference: Ethernet Virtual Private Networks (EVPNs)

### Question: 71

What are EVPN inclusive multicast Ethernet tag (IMET) routes used for?

- A. To advertise the MAC or MAC/IP addresses of locally-learned hosts
- B. To advertise the redundancy mode of a local Ethernet segment
- C. To discover all PES participating in the same VPIS service
- D. To discover all PES attached to the same Ethernet segment

**Answer: C**

Explanation:

EVPN inclusive multicast Ethernet tag (IMET) routes are used to discover all PES participating in the same VPIS service. These routes are also used to build the flooding list for BUM traffic.

### Question: 72

Based on the exhibit below, which of the following statements is FALSE?

```
PE1# /show router bgp routes evpn incl-mcast originator-ip 10.10.10.2 detail
```

```
BGP Router ID:10.10.10.1      AS:65100      Local AS:65100
```

```
-- Snip --
```

#### BGP EVPN Inclusive-Mcast Routes

##### Original Attributes

```
Network      : n/a
Nexthop      : 10.10.10.2
From         : 10.10.10.2
Res. Nexthop : 10.1.2.2
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:65100:10 bgp-tunnel-encap:MPLS
Cluster      : No Cluster Members
Originator Id : None
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : No As-Path
EVPN type    : INCL-MCAST
Tag          : 0
Originator IP : 10.10.10.2
Route Dist.  : 10.10.10.2:10
Route Tag    : 0
Neighbor-AS  : n/a
Orig Validation: N/A
Add Paths Send : Default
Last Modified : 00h11m41s
```

##### PMST Tunnel Attributes :

```
Tunnel-type : Ingress Replication
Flags       : Type: RNVE(0) BM: 0 U: 0 Leaf: not required
MPLS Label  : LABEL 524284
Tunnel-Endpoint: 10.10.10.2
```

When forwarding BUM traffic, the local PE must replicate the traffic and send it as unicast to the advertising neighbor.

- A. The MPLS label 524284 presented indicates the service label value that the neighbor 10.10.10.2 uses to forward BUM traffic to PE
- B. When forwarding BUM traffic, the local PE uses an MPLS transport tunnel towards the advertising neighbor.
- C. The IMET route is imported by a local VPLS configured with a route-target value of 65100:10.

**Answer: A**

Explanation:

When forwarding BUM traffic, the local PE does not replicate the traffic and send it as unicast to the advertising neighbor. Instead, the local PE uses an MPLS transport tunnel towards the advertising neighbor and sends the traffic with an MPLS label that indicates the service.

**Question: 73**

Based on the exhibit below, which of the following statements is TRUE?

```

PE1# /show router bgp routes evpn mac mac-address 00:00:00:02:10:02 hunt
=====
BGP Router ID:10.10.10.1      AS:65100      Local AS:65100
=====
Legend ...
=====
BGP EVPN MAC Routes
=====
RIB In Entries
=====
Network      : n/a
Nexthop      : 10.10.10.2
From         : 10.10.10.2
Res. Nexthop : 10.1.2.2
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:65100:10 bgp-tunnel-encap:MPLS
Cluster      : No Cluster Members
Originator Id : None
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : No As-Path
EVPN type    : MAC
ESI          : ESI-0
Tag          : 0
IP Address   : n/a
Route Dist.  : 10.10.10.2:10
Mac Address   : 00:00:00:02:10:02
MPLS Label1  : LABEL 524284
Route Tag    : 0
Neighbor-AS   : n/a
Orig Validation: N/A
Add Paths Send : Default
Last Modified : 00h12m09s

Interface Name : toPE2
Aggregator     : None
MED            : 0
IGP Cost       : 2
Peer Router Id : 10.10.10.2
MPLS Label2    : n/a

```

- A. PE2 advertises this BGP update for a locally-configured VPWS service.
- B. PE1 uses this BGP update to build the flooding list of the associated service.
- C. PE1 uses MPLS label 524284 when sending traffic destined to
- D. Neighbor 10.10.10.2 is connected to a multi-homed C

**Answer: B**

Explanation:

PE1 uses this BGP update to build the flooding list of the associated service. The update contains an IMET route that indicates that neighbor 10.10.10.2 is participating in a VPLS service with a network identifier of 10.



# SAMPLE QUESTIONS

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