

Chapter 10: Quiz – OSPFv3 (Answers) CCNPv8 ENCOR

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25. Which statement describes a difference or similarity between OSPFv2 and OSPFv3?

- OSPFv2 requires the DR/BDR election to occur on multiaccess networks only, whereas OSPv3 requires DR/BDR elections for all network types.
- Both OSPFv2 and OSPFv3 use the router configuration `network` command to advertise networks.
- **Both OSPFv2 and OSPFv3 use multicast destination addresses for link-state packets.**
- OSPFv2 uses a 32 bit router ID and OSPFv3 uses a 128 bit router ID.

Explanation: OSPFv2 uses the router configuration network command to advertise networks. OSPFv3 uses the ipv6 ospf process-id area area-id interface configuration command. Both OSPFv2 and OSPFv3 use a 32 bit router ID. Both OSPFv2 and OSPFv3 require the DR/BDR election to occur on multiaccess networks. Neither protocol requires a DR/BDR election for point-to-point networks.

26. Refer to the exhibit. What address will R2 use as the destination address for sending OSPFv3 link-state request packets to R1?

```
R1# show ipv6 int brief
GigabitEthernet0/0    [up/up]
    FE80::1
    2001:DB8:0:1::1
Serial0/0/0           [down/down]
    FE80::1
    2001:DB8:CAFE:1::1
Loopback0             [up/up]
    FE80::D68C:B5FF:FECE:A0C0
    2001:DB8::1

<output omitted>

R2# show ospfv3 neighbor

      OSPFv3 1 address-family ipv6 (router-id 2.2.2.2)

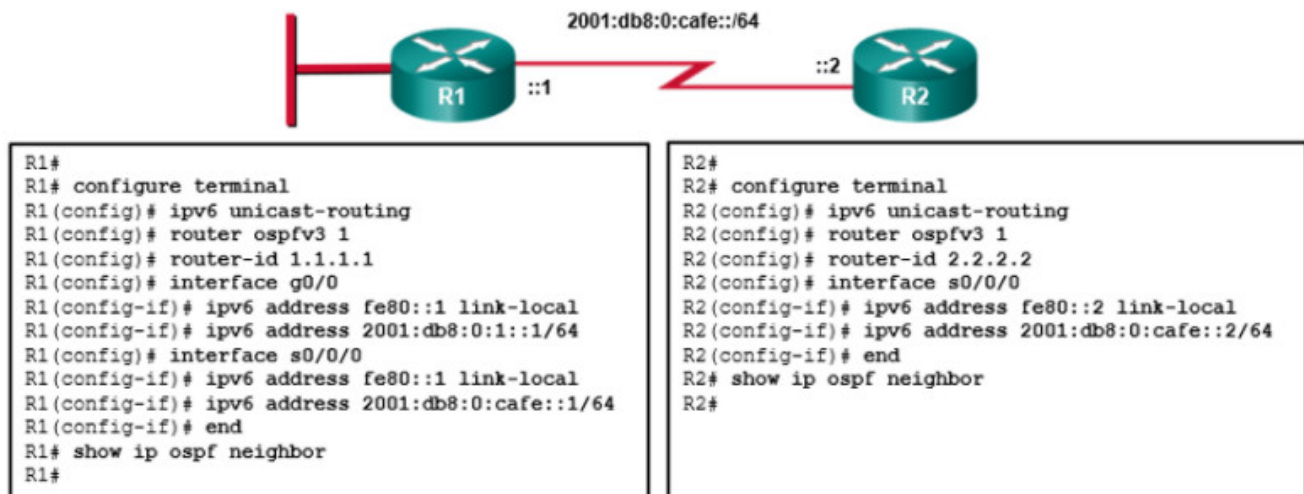
Neighbor ID    Pri   State           Dead Time   Interface ID  Interface
1.1.1.1        0    FULL/-         00:00:36    6            Serial0/0/0
```

- **fe80::1**
- 2001:db8:cafe:1::1

- 2001:db8::1
- ff02::5

Explanation: Link-state request packets are sent to the link-local address of the connected neighbor, which in this case is fe80::1.

27. Refer to the exhibit. Routers R1 and R2 are configured as shown. However, the `show ipv6 ospf neighbor` command reveals that there are no OSPFv3 neighbors established. What error in the configuration is preventing neighbor relationship from forming between the two routers?



- **OSPFv3 is not enabled on the interfaces.**
- The IPv6 routing process is not enabled.
- There is a link-local address conflict between the serial and gigabit interfaces on R1.
- The IPv6 address family is not initialized on either router.

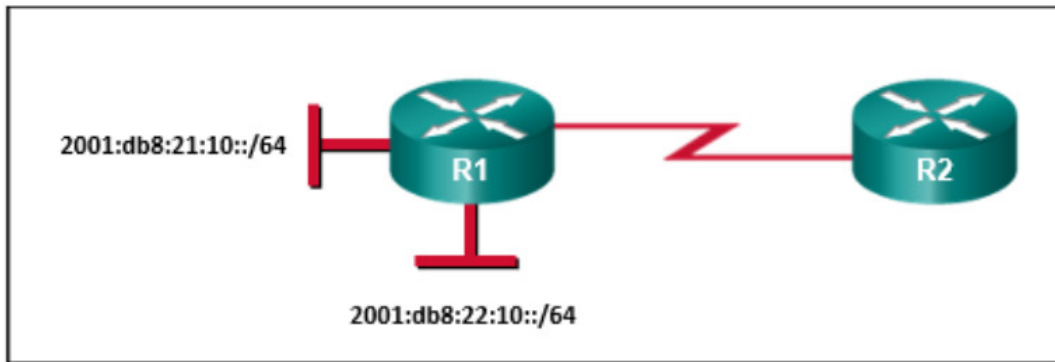
Explanation: The routers are unable to form an OSPFv3 adjacency because OSPFv3 has not been enabled on the interfaces with the `ospfv3 1 ipv6 area 0` command.

28. How are OSPFv3 interarea routes identified in the routing table?

- OI
- IA
- O
- EX

Explanation: OSPFv3 uses the code OI to identify interarea routes in the routing table.

29. Refer to the exhibit. Which configuration on R1 would advertise a summary route of the two LANs to R2?



- area 0 range 2001:db8:10::/44
- area 0 range 2001:db8:11::/48
- **area 0 range 2001:db8:20::/44**
- area 0 range 2001:db8:21::/48

Explanation: The network prefix 2001:db8:20::/44 will summarize the 2001:db8:21:10::/64 and 2001:db8:22:10::/64 networks.

30. When configuring OSPFv3 summarization, on which router should summarization be configured?

- **ABR**
- ASBR
- DR or BDR
- any OSPFv3 router in the domain

Explanation: OSPFv3 route summarization must occur on an ABR.

31. Which LSA type is generated by all OSPFv3 routers to describe the state and cost of interfaces in an area?

- **type 1**
- type 2
- type 3
- type 4

Explanation: LSA type 1 router LSAs are sent by all OSPFv3 routers to describe the state and cost of interfaces in an area.

32. What is the instance ID range reserved for the IPv4 unicast address family in OSPFv3?

- 33-63
- **65-95**
- 97-127

- 128-191

Explanation: The reserved IPv4 unicast instance ID range for OSPFv3 is 65-95.

33. What must be done as a prerequisite to starting the OSPFv3 process on a Cisco router?

- **initialize the IPv6 routing process**
- define the router ID
- initialize the IPv6 address family
- assign IPv6 addresses to interfaces

Explanation: Before the OSPFv3 process can start in the Cisco IOS, the IPv6 routing process must be started with the `ipv6 unicast-routing` command.

34. Which two OSPFv3 LSA types are used to advertise IPv6 unicast address prefixes and prevent the need for SPF calculations every time an address prefix is added or changed on a router interface? (Choose two.)

- LSA type 4 – inter-area router
- LSA type 5 – AS-external
- LSA type 7 – NSSA
- **LSA type 8 – link-local LSA**
- **LSA type 9 – intra-area prefix LSA**

Explanation: Two new LSA types are added to OSPFv3, type 8, link-local LSA, and type 9, intra-area prefix LSA. These two LSAs advertise unicast prefixes and prevent the need for OSPF calculations when interface addresses are added or changed.

35. What IPv6 address does an OSPFv3 router use as the source address for OSPFv3 packets exchanged with OSPFv3 neighbors?

- **the interface link-local address**
- the interface unique global address
- the all IPv6 routers multicast
- the all OSPFv3 routers multicast address

Explanation: All OSPFv3 packets are sent using the link-local address of the sending interface as the source IPv6 address.

36. Under which configuration mode are OSPFv3 summarization commands issued?

- **address-family configuration mode**
- user configuration mode

- interface configuration mode
- global configuration mode

Explanation: The summarization commands in OSPFv3 reside under the address-family configuration mode.

37. What is a similarity between OSPFv2 and OSPFv3?

- **Both protocols use the same five packet types.**
- Both protocols use the same LSA types.
- Both protocols have built in support for authentication.
- Both protocols carry prefix information in the OSPF packet header.

Explanation: Both OSPFv2 and OSPFv3 use the same five packet types for OSPF communication: hello, database description, link state request, link state update, and link state acknowledgment.