

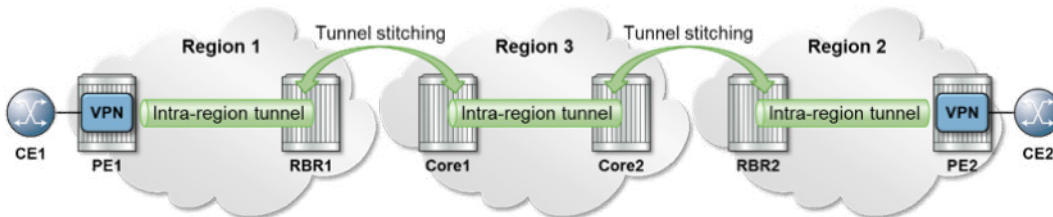
Practice Exam Questions for: Nokia Border Gateway Protocol Fundamentals for Services (exam number: 4A0-114)

The following questions will test your knowledge and prepare you for the Nokia Border Gateway Protocol Fundamentals for Services Exam. Compare your responses with the Answer Key at the end of the document.

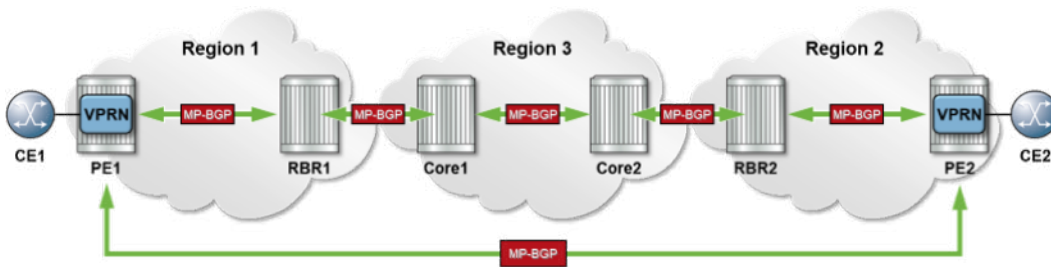
1. How do you tell a router with which peers to establish BGP sessions?
 - a. By identifying the interfaces on which BGP Hello messages will be transmitted to discover peers.
 - b. By specifying the IP address and the autonomous system number of each peer.
 - c. By configuring the authentication parameters that the peers must match.
 - d. By listing the subnets in which the peers must be located.
2. What BGP message type is used between routers to exchange capability parameters, such as supported address families, during session establishment?
 - a. Open
 - b. Keep-alive
 - c. Update
 - d. Notification
3. A router is in the process of establishing a BGP session with a peer. A TCP session has already been established and the local router has sent an Open message to its peer. When the local router receives an Open message back from the peer, what state will the BGP session transition into?
 - a. Active
 - b. Open Confirm
 - c. Connect
 - d. Established

4. What is happening when a BGP session is stuck in the “Active” state?
 - a. The router is listening for an inbound TCP connection attempt from the remote peer but it is not able to respond properly.
 - b. The router is attempting to establish an outbound TCP connection with the remote peer but is not receiving the expected response.
 - c. An Open message has been transmitted to the remote peer but the expected response message has not been received from the peer.
 - d. A Keep-Alive message has been transmitted to the remote peer but the expected response message has not been received from the peer.
5. What is the split-horizon rule, to which BGP peers must adhere?
 - a. A route received from an iBGP peer cannot be advertised to other iBGP peers.
 - b. A route received from an iBGP peer cannot be advertised to eBGP peers.
 - c. A route received from an eBGP peer cannot be advertised to iBGP peers.
 - d. A route received from an eBGP peer cannot be advertised to other eBGP peers.
6. Which of the following steps is NOT mandatory when configuring a router to establish a BGP session with a peer?
 - a. Configure the local autonomous system.
 - b. Identify the peer with an IP address that must be reachable.
 - c. Create a BGP group and associate the peer with the group.
 - d. Identify the autonomous system where the peer is located.
 - e. Specify at least one address family that both routers must support.
 - f. Configure and apply import and export route policies.
7. The Update messages carry the routes being exchanged by BGP peers. What does “route” mean in this context?
 - a. It is a list of hops that the packets need to go through to reach the destination.
 - b. It contains network-wide topology information that allows a BGP router to calculate the shortest path to each known subnet.
 - c. It consists of the network layer reachability information (NLRI) and a set of associated path attributes.
 - d. It includes a list of peers that the router has discovered using Hello packets.
8. What is a well-known mandatory path attribute?
 - a. One that must be processed by a route policy whenever it is present in a route update.
 - b. One that must be recognized by all BGP implementations.
 - c. One that must be included in every route update message.
 - d. One that must be propagated to other BGP peers within the local autonomous system and beyond.
9. Which of the following is a default behavior in a Nokia 7750 SR when configuring BGP using MD-CLI?
 - a. In the import direction, the router will accept every route received from its iBGP and eBGP peers, unless it is invalid.
 - b. In the import direction, the router will remove all attributes from the received routes after processing them.
 - c. In the export direction, the router will advertise all routes in its routing table regardless of the routing protocol through which they were learned.
 - d. In the export direction, the router will forward all the best and used eBGP routes to all its iBGP peers.
10. Which of the following is NOT a characteristic of the BGP Community path attribute?
 - a. It is a tag assigned to a prefix to indicate that it shares a common property with other prefixes.
 - b. It is a well-known discretionary path attribute.
 - c. Its value does not directly affect the route selection criteria, but it can help set the values of other route attributes that do.
 - d. It will have an effect on how the router processes the route only if there are import or export policies applied to BGP.

11. Which of the following statements about route policy actions is FALSE?
 - a. On import, accepting a prefix means to install it in the router's routing table.
 - b. On import, rejecting a prefix means to ignore it completely.
 - c. On export, accepting a prefix means to share it with a BGP peer.
 - d. On export, rejecting a prefix means not to share it with a BGP peer.
12. What types of addresses was BGP originally designed to exchange?
 - a. IPv4 only
 - b. IPv4 and IPv6
 - c. IPv4 and VPN-IPv4
 - d. IPv4 and Ethernet MAC
13. Which of the following statements about a traditional (non-EVPN) VPRN service is FALSE?
 - a. A VPRN service is equivalent to an additional routing instance inside the physical service router.
 - b. BGP helps routers that host a distributed VPRN to exchange routing information and populate the VPRN route table.
 - c. The Route Distinguisher (RD) serves to make customer prefixes unique, and the Route Target (RT) serves to indicate the VPRN to which prefixes are relevant.
 - d. Unlike that of a standard router, a VPRN's route table includes VPN-IPv4 or VPN-IPv6 prefixes.
14. Which of the following statements about the data plane of a traditional (non-EVPN) VPRN service is FALSE?
 - a. Encapsulated data packets carry the labels associated with the VPRN prefixes to identify the service to which they belong.
 - b. Encapsulated data packets carry VPN-IPv4 or VPN-IPv6 addresses to identify the intended receivers.
 - c. Encapsulated data packets do not carry Route Distinguisher (RD) values.
 - d. Encapsulated data packets do not carry Route Target (RT) values.
15. How do MP-BGP labeled IP prefixes help create end-to-end tunnels in a multi-region environment?
 - a. They create IP-over-IP tunnels, instead of the traditional IP-over-MPLS tunnels.
 - b. They help stitch together partial MPLS tunnels that exist within each region.
 - c. They allow the operators of the multiple regions to trust each other because of BGP's strong authentication methods.
 - d. They create tunnels that use a combination of interior and exterior IP forwarding.
 - e. They allow each operator to independently decide if MPLS or IP forwarding will be used inside its own region.
16. MP-BGP is used to signal labeled IP prefixes and to help create end-to-end MPLS tunnels between routers PE1 and PE2, as shown in the diagram. What part of the data packet forwarding process is achieved by the labels signaled by MP-BGP?
 - a. CE-to-PE
 - b. Intra-region
 - c. Inter-region
 - d. End-to-end



17. Which of the following statements about the way MP-BGP supports traditional (non-EVPN) VPRN services is FALSE?
- It helps PE routers that host a distributed VPRN to signal the transport tunnels that will carry the customer data packets from end to end.
 - It helps PE routers that host a distributed VPRN to exchange routing information and populate the VPRN route table.
 - It helps PE routers that host a distributed VPRN to exchange service labels that will be carried by the encapsulated data packets to identify the service to which they belong.
 - It helps PE routers that host multiple VPRN services to separate the routing information that is relevant to each VPRN by attaching different route-target values to the route updates.
18. A traditional (non-EVPN) VPRN service needs to be created between routers PE1 and PE2, as shown in the diagram. The network administrator decides to use the most scalable approach, consisting of signaling end-to-end transport tunnels first. What address families need to be enabled for the different MP-BGP sessions?



- Label-IPv4 in all cases.
 - Label-IPv4 between the PE routers and VPN-IPv4 in all other cases.
 - VPN-IPv4 between the PE routers and Label-IPv4 in all other cases.
 - VPN-IPv4 between the PE routers, IPv4 for the intra-region sessions, and Label-IPv4 for the inter-region sessions.
19. What is the only type of BGP speaker that is allowed to break the split-horizon rule for iBGP sessions?
- BGP client
 - BGP server
 - Route reflector
 - Autonomous system boundary router
20. Assuming the proper export policies are in place, what does a route reflector do when it receives a route update from one of its clients?
- It propagates the route update to its eBGP peers.
 - It propagates the route update to its non-client iBGP and eBGP peers.
 - It reflects the route update to its clients and propagates it to its eBGP peers.
 - It reflects the route update to its clients and propagates it to its non-client iBGP and eBGP peers.
21. Two path attributes are used in a route reflection environment to avoid route advertisement loops. Which of the following statements about those attributes is FALSE?
- Route reflectors inspect the CLUSTER_LIST attribute and if the local cluster-ID is included in the list, the route update is ignored.
 - Route reflector clients inspect the CLUSTER_LIST attribute and if the local cluster-ID is included in the list, the route update is ignored.
 - Route reflectors compare their own router-ID to the ORIGINATOR_ID attribute and if there is a match, the route update is ignored.
 - Route reflector clients compare their own router-ID to the ORIGINATOR_ID attribute and if there is a match, the route update is ignored.

22. Which of the following statements about route reflectors is FALSE?
- a. If there are multiple route reflectors within the same autonomous system, they must establish a full mesh of iBGP sessions among themselves.
 - b. Each route reflector must establish an iBGP session with every non-client BGP speaker in the autonomous system.
 - c. A router can be the client of multiple route reflectors, thus belonging to multiple clusters at the same time.
 - d. All routers that are clients of the same route reflector must establish a full mesh of iBGP sessions among themselves.
23. If you wanted to migrate from a full-mesh of iBGP sessions among all the BGP speakers inside an autonomous system to a configuration in which there is a route reflector (RR), which of the following is NOT a mandatory step to achieve your goal?
- a. On the RR, configure a cluster-ID value and associate it with each of its iBGP peers (clients).
 - b. On each client, configure the RR as an iBGP peer.
 - c. On each client, configure the proper cluster-ID value and associate it with the RR peer.
 - d. On each client, remove the iBGP peering sessions with other clients.
24. Which of the following is the purpose of enabling labeled IP prefix address family?
- a. To exchange label information between BGP and RSVP.
 - b. To tag IP packets with MPLS labels.
 - c. To advertise labels used for transport-tunnel stitching.
 - d. To advertise service labels for VPRN services.
25. Which of the following is the benefit of using labeled IP prefixes to signal end-to-end inter-region transport tunnel for multi-region VPN services?
- a. To increase the forwarding efficiency between the regions.
 - b. To provide control-plane resiliency across regions.
 - c. To improve the scalability of VPN control-plane signaling.
 - d. To maximize the reachability of the PE routers.



Answer Key

- | | |
|-------|-------|
| 1. B | 14. B |
| 2. A | 15. B |
| 3. B | 16. C |
| 4. A | 17. A |
| 5. A | 18. C |
| 6. F | 19. C |
| 7. C | 20. D |
| 8. C | 21. B |
| 9. D | 22. D |
| 10. B | 23. C |
| 11. A | 24. C |
| 12. A | 25. C |
| 13. D | |

About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

Nokia operates a policy of ongoing development and has made all reasonable efforts to ensure that the content of this document is adequate and free of material errors and omissions. Nokia assumes no responsibility for any inaccuracies in this document and reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

© 2023 Nokia

Nokia OYJ
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Document code: (April) CID210533