642-885 Q&As

Deploying Cisco Service Provider Advanced Routing

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QUESTION 1

When a BGP route reflector receives an IBGP update from a non-client IBGP peer, the route reflector will then forward the IBGP updates to which other router(s)?

A. To the other clients only

B. To the EBGP peers only

C. To the EBGP peers and other clients only

D. To the EBGP peers and other clients and non-clients

Correct Answer: C

QUESTION 2

Which option shows the equivalent multicast MAC address mapping of multicast address 239.210.101.190?

A. 01:00:5e:52:65:be

B. 01:00:5d:52:65:be

C. 01:00:5f:52:65:be

D. 01:00:5c:52:65:be

Correct Answer: A

QUESTION 3

In which three cases is a dual-stack IPv6/IPv4 router required? (Choose three.)

A. tunnel endpoint routers in the case of IPv6 over GRE

B. transit routers in case of an IPv6 over GRE implementation

C. 6to4 implementation border routers

D. 6to4 implementation border and neighboring routers

E. PE routers in case of an IPv6 over IPv4 tunnel over MPLS implementation

F. PE and P routers in case of an IPv6 over IPv4 tunnel over MPLS implementation

Correct Answer: ACE

QUESTION 4

When enabling interdomain multicast routing, which two statements are correct? (Choose two.)

A. Multiprotocol BGP is used instead of PIM SM to build the intradomain and interdomain multicast distribution trees

B. Use MSDP to enable the RPs from different domains to exchange information about active multicast sources

C. MSDP SA packets are sent between the multiprotocol BGP peers

D. Noncongruent unicast and multicast topologies can be supported using multiprotocol BGP

Correct Answer: BD

http://prakashkalsaria.wordpress.com/2010/08/11/mbgp-msdp/

MSDP In the PIM-SM model, multicast sources and receivers must register with their local RP. Actually, the router closest to the sources or receivers registers

with the RP, but the key point to note is that the RP knows about all the sources and receivers for any particular group. RPs in other domains have no way of

knowing about sources located in other domains. MSDP is an elegant way to solve this problem.

MSDP is a mechanism that allows RPs to share information about active sources. RPs know about the receivers in their local domain. When RPs in remote

domains hear about the active sources, they can pass on that information to their local receivers and multicast data can then be forwarded between the domains.

A useful feature of MSDP is that it allows each domain to maintain an independent RP that does not rely on other domains, but it does enable RPs to forward

traffic between domains. PIM-SM is used to forward the traffic between the multicast domains.

The RP in each domain establishes an MSDP peering session using a TCP connection with the RPs in other domains or with border routers leading to the other

domains. When the RP learns about a new multicast source within its own domain (through the normal PIM register mechanism), the RP encapsulates the first

data packet in a Source-Active (SA) message and sends the SA to all MSDP peers. The SA is forwarded by each receiving peer using a modified RPF check, until

the SA reaches every MSDP router in the interconnected networks-- theoretically the entire multicast internet. If the receiving MSDP peer is an RP, and the RP

has a (*, G) entry for the group in the SA (there is an interested receiver), the RP creates (S, G) state for the source and joins to the shortest path tree for the

source. The encapsulated data is decapsulated and forwarded down the shared tree of that RP. When the packet is received by the last hop router of the receiver,

the last hop router also may join the shortest path tree to the source. The MSDP speaker periodically sends SAs that include all sources within the own domain of

the RP

http://www.cisco.com/en/US/docs/ios_xr_sw/iosxr_r3.2/routing/configuration/guide/rc32bgp.ht ml

Multiprotocol BGP

Multiprotocol BGP is an enhanced BGP that carries routing information for multiple network layer protocols and IP multicast routes. BGP carries two sets of routes,

one set for unicast routing and one set for multicast routing.

The routes associated with multicast routing are used by the Protocol Independent Multicast (PIM) feature to build data distribution trees.

Multiprotocol BGP is useful when you want a link dedicated to multicast traffic, perhaps to limit which resources are used for which traffic. Multiprotocol BGP allows

you to have a unicast routing topology different from a multicast routing topology providing more control over your network and resources.

In BGP, the only way to perform interdomain multicast routing was to use the BGP infrastructure that was in place for unicast routing. Perhaps you want all

multicast traffic exchanged at one network access point (NAP).

If those routers were not multicast capable, or there were differing policies for which you wanted multicast traffic to flow, multicast routing could not be supported

without multiprotocol BGP. Note It is possible to configure BGP peers that exchange both unicast and multicast network layer reachability information (NLRI), but

you cannot connect multiprotocol BGP clouds with a BGP cloud. That is, you cannot redistribute multiprotocol BGP routes into BGP.

Figure 1 illustrates simple unicast and multicast topologies that are incongruent, and therefore are not possible without multiprotocol BGP.

Autonomous systems 100, 200, and 300 are each connected to two NAPs that are FDDI rings. One is used for unicast peering (and therefore the exchange of unicast traffic). The Multicast Friendly Interconnect (MFI) ring is used for multicast peering (and therefore the exchange of multicast traffic). Each router is unicast and multicast capable.

Figure 1 Incongruent Unicast and Multicast Routes

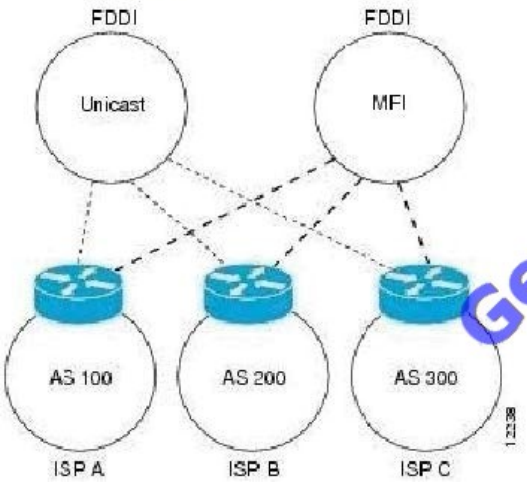


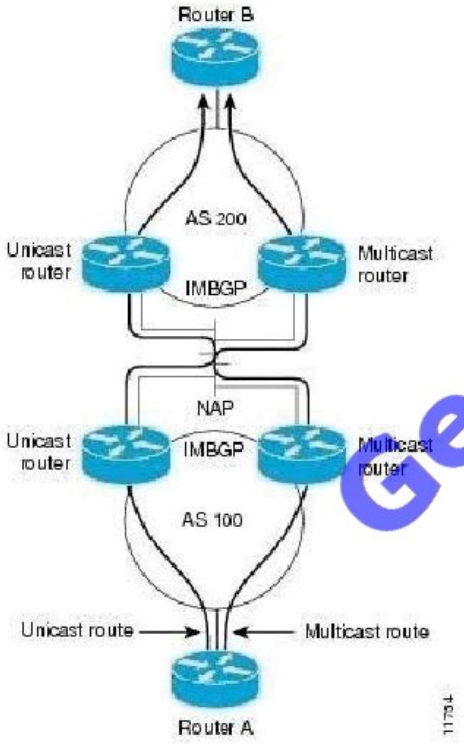
Figure 2 is a topology of unicast-only routers and multicast-only routers. The two routers on the left are unicast-only routers (that is, they do not support or are not configured to perform multicast routing). The two routers on the right are multicast-only routers. Routers A and B support both unicast and multicast routing. The unicast-only and multicast-only routers are connected to a single NAP.

In Figure 2, only unicast traffic can travel from Router A to the unicast routers to Router B and back. Multicast traffic could not flow on that path, so another routing table is required. Multicast traffic uses the path from Router A to the multicast routers to Router B and back.

Figure 2 illustrates a multiprotocol BGP environment with a separate unicast route and multicast route from Router A to Router B. Multiprotocol BGP allows these routes to be incongruent. Both of the autonomous systems must be configured for internal multiprotocol BGP (IMBGP) in the figure.

A multicast routing protocol, such as PIM, uses the multicast BGP database to perform Reverse Path Forwarding (RPF) lookups for multicast-capable sources. Thus, packets can be sent and accepted on the multicast topology but not on the unicast topology.

Figure 2 Multicast BGP Environment



QUESTION 5

Which multicast routing protocol supports dense mode, sparse mode and bidirectional mode?

A. DVMRP

B. MOSPF

C. PIM

D. MP-BGP E. MSDP

Correct Answer: C