200-101 Q&As

Interconnecting Cisco Networking Devices Part 2 (ICND2)

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QUESTION 1

What is the purpose of Inverse ARP?

A. to map a known IP address to a MAC address

B. to map a known DLCI to a MAC address

C. to map a known MAC address to an IP address

D. to map a known DLCI to an IP address

E. to map a known IP address to a SPID

F. to map a known SPID to a MAC address

Correct Answer: D

http://www.ciscopress.com/articles/article.asp?p=170741andseqNum=4

Frame-Relay (a Layer 2 protocol) uses Inverse-Arp to map a know Layer 2 Address (DLCI) to a unknow Layer 3 Address. Dynamic Mapping Dynamic address mapping relies on the Frame Relay Inverse Address Resolution Protocol (Inverse ARP), defined by RFC 1293, to resolve a next hop network protocol address to a local DLCI value. The Frame Relay router sends out Inverse ARP requests on its Frame Relay PVC to discover the protocol address of the remote device connected to the Frame Relay network. The responses to the Inverse ARP requests are used to populate an address-to-DLCI mapping table on the Frame Relay router or access server. The router builds and maintains this address-to-DLCI mapping table, which contains all resolved Inverse ARP requests, including both dynamic and static mapping entries. When data needs to be transmitted to a remote destination address, the router performs a lookup on its routing table to determine whether a route to that destination address exists and the next hop address or directly connected interface to use in order to reach that destination. Subsequently, the router consults its address-to-DLCI mapping table for the local DLCI that corresponds to the next hop address. Finally, the router places the frames targeted to the remote destination on its identified outgoing local DLCI. On Cisco routers, dynamic Inverse ARP is enabled by default for all network layer protocols enabled on the physical interface. Packets are not sent out for network layer protocols that are not enabled on the physical interface. For example, no dynamic Inverse ARP resolution is performed for IPX if ipx routing is not enabled globally and there is no active IPX address assigned to the interface. Because dynamic Inverse ARP is enabled by default, no additional Cisco IOS command is required to enable it on an interface. Example 4-16 shows the output of the show frame-relay map privileged EXEC mode command. The addressto-DLCI mapping table displays useful information. The output of the command shows that the next hop address 172.16.1.2 is dynamically mapped to the local DLCI 102, broadcast is enabled on the interface, and the interface\\'s status is currently active.

NOTE After enabling Frame Relay on the interface, the Cisco router does not perform Inverse ARP until IP routing is enabled on the router. By default, IP routing is enabled on a Cisco router. If IP routing has been turned off, enable IP routing with

the ip routing command in the global configuration mode. After IP routing is enabled, the router performs Inverse ARP and begins populating the address-to-DLCI mapping table with resolved entries.

QUESTION 2

What command is used to verify the DLCI destination address in a Frame Relay static configuration?

A. show frame-relay pvc

B. show frame-relay lmi

C. show frame-relay map

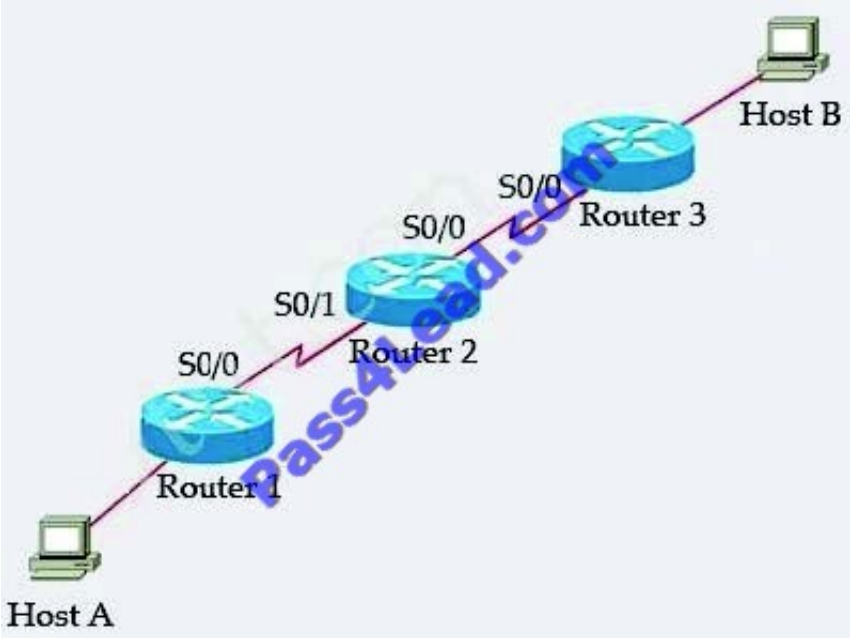
D. show frame relay end-to-end

Correct Answer: C

Cisco Frame Relay Configurations http://www.ciscopress.com/articles/article.asp?p=170741andseqNum=9 show frame-relay map The show frame-relay map privileged EXEC mode command shows the contents of the next hop protocol address to DLCI mapping table on the router. The table contains both dynamic mapped and static mapped entries. The below example shows a sample output of the show frame-relay map command. Router#show frame-relay map Serial1/2 (up): ip 172.16.1.4 dlci 401(0x191,0x6410), dynamic, broadcast,, status defined, active Serial1/2 (up): ip 172.16.1.5 dlci 501(0x1F5,0x7C50), dynamic, broadcast,, status defined, active Serial1/2 (up): ip 172.16.1.2 dlci 301 (0x12D,0x48D0), dynamic, broadcast,, status defined, active

QUESTION 3

Refer to the exhibit.



Host A pings interface S0/0 on router 3, what is the TTL value for that ping?

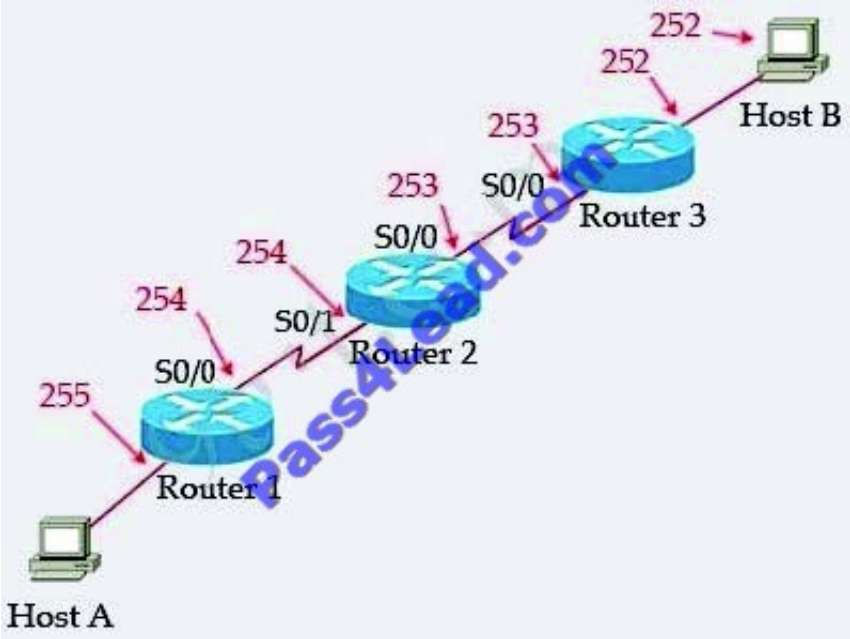
A. 253

B. 252 C. 255

D. 254

Correct Answer: A

From the CCNA ICND2 Exam book: "Routers decrement the TTL by 1 every time they forward a packet; if a router decrements the TTL to 0, it throws away the packet. This prevents packets from rotating forever." I want to make it clear that before the router forwards a packet, the TTL is still remain the same. For example in the topology above, pings to S0/1 and S0/0 of Router 2 have the same TTL.



The picture below shows TTL values for each interface of each router and for Host B. Notice that Host A initializes ICMP packet with a TTL of 255:

QUESTION 4

The network administrator has been asked to give reasons for moving from IPv4 to IPv6. What are two valid reasons for adopting IPv6 over IPv4? (Choose two.)

A. no broadcast

B. change of source address in the IPv6 header

C. change of destination address in the IPv6 header

D. Telnet access does not require a password

E. autoconfig

F. NAT

Correct Answer: AE

Six Benefits Of IPv6 http://www.networkcomputing.com/ipv6/six-benefits-of-ipv6/230500009

With IPv6, everything from appliances to automobiles can be interconnected. But an increased number of IT addresses isn\\'t the only advantage of IPv6 over IPv4. In honor of World IPv6 Day, here are six more good reasons to make sure your hardware, software, and services support IPv6. More Efficient Routing IPv6 reduces the size of routing tables and makes routing more efficient and hierarchical. IPv6 allows ISPs to aggregate the prefixes of their customers\\' networks into a single prefix and announce this one prefix to the IPv6 Internet. In addition, in IPv6 networks, fragmentation is handled by the source device, rather than the router, using a protocol for discovery of the path\\'s maximum transmission unit (MTU).

More Efficient Packet Processing IPv6\\'s simplified packet header makes packet processing more efficient. Compared with IPv4, IPv6 contains no IP-level checksum, so the checksum does not need to be recalculated at every router hop.

Getting rid of the IPlevel checksum was possible because most link-layer technologies already contain checksum and error-control capabilities. In addition, most transport layers, which handle end-to-end connectivity, have a checksum that enables error detection. Directed Data Flows IPv6 supports multicast rather than broadcast. Multicast allows bandwidth-intensive packet flows (like multimedia streams) to be sent to multiple destinations simultaneously, saving network bandwidth. Disinterested hosts no longer must process broadcast packets. In addition, the IPv6 header has a new field, named Flow Label, that can identify packets belonging to the same flow. Simplified Network Configuration Address auto-configuration (address assignment) is built in to IPv6. A router will send the prefix of the local link in its router advertisements. A host can generate its own IP address by appending its link-layer (MAC) address, converted into Extended Universal Identifier (EUI) 64-bit format, to the 64 bits of the local link prefix.

Support For New Services By eliminating Network Address Translation (NAT), true end-to-end connectivity at the IP layer is restored, enabling new and valuable services. Peer-to-peer networks are easier to create and maintain, and services such as VoIP and Quality of Service (QoS) become more robust. Security IPSec, which provides confidentiality, authentication and data integrity, is baked into in IPv6. Because of their potential to carry malware, IPv4 ICMP packets are often blocked by corporate firewalls, but ICMPv6, the implementation of the Internet Control Message Protocol for IPv6, may be permitted because IPSec can be applied to the ICMPv6 packets.

QUESTION 5

Refer to the exhibit.

```
router#show ip eigrp topology 10.0.0.5 255.255.255.255
IP-EIGRP topology entry for 10.0.0.5/32  State is Passive, Query
origin flag is 1, 1 Successor(s), FD is 41152000
```

Given the output from the show ip eigrp topology command, which router is the feasible successor?

A.
```
10.1.0.3 (Serial0), from 10.1.0.3, Send flag is 0x0
      Composite metric is (46866176/46354176), Route is Internal
      Vector metric:
        Minimum bandwidth is 56 Kbit
        Total delay is 45000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 2
```

B.
```
10.0.0.2 (Serial0.1), from 10.0.0.2, Send flag is 0x0
      Composite metric is (53973248/128256), Route is Internal
      Vector metric:
        Minimum bandwidth is 48 Kbit
        Total delay is 25000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 1
```

C.
```
10.1.0.1 (Serial0), from 10.1.0.1, Send flag is 0x0
      Composite metric is (46152000/41640000), Route is Internal
      Vector metric:
        Minimum bandwidth is 64 Kbit
        Total delay is 45000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 2
```

D.
```
10.1.1.1 (Serial0.1), from 10.1.1.1, Send flag is 0x0
      Composite metric is (46763776/46251776), Route is External
      Vector metric:
        Minimum bandwidth is 56 Kbit
        Total delay is 41000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 2
```

A. B. C. D.

Correct Answer: B

http://networklessons.com/eigrp/eigrp-neighbor-and-topology-table-explained/

To be the feasible successor, the Advertised Distance (AD) of that route must be less than the Feasible Distance (FD) of the successor. From the output of the "show ip eigrp topology 10.0.0.5 255.255.255.255 we learn that the FD of the successor is 41152000. Now we will mention about the answers, in the "Composite metric is (.../...)" statement the first parameter is the FD while the second parameter is the AD of that route. So we need to find out which route has the second parameter (AD) less than 41152000 -> only answer B satisfies this requirement with an AD of 128256.