

CISCO NETWORKING ACADEMY MODUL 8 – 10

8.1.7

1. Which OSI layer sends segments to be encapsulated in an IPv4 or IPv6 packet?
Transport layer
2. Which layer is responsible for taking an IP packet and preparing it for transmission over the communications medium?
Data link layer
3. What is the term for splitting up an IP packet when forwarding it from one medium to another medium with a smaller MTU?
fragmentation
4. Which delivery method does not guarantee that the packet will be delivered fully without errors?
Best effort

8.2.4

1. What are the two most commonly referenced fields in an IPv4 packet header that indicate where the packet is coming from and where it is going? (Choose two.)
Destination IP address
Source IP address
2. Which statement is correct about IPv4 packet header fields?
The source and destination IPv4 addresses remain the same while travelling from source to destination
3. Which field is used to detect corruption in the IPv4 header?
Header Checksum
4. Which field includes common values such as ICMP (1), TCP (6), and UDP (17)?
Protocol

8.3.6

1. Which three options are major issues associated with IPv4? (Choose three.)
IP address depletion
Increased network complexity and internet routing table expansion
Lack of end-to-end connectivity
2. Which two options are improvements provided by IPv6 as compared to IPv4? (Choose two.)
Increased the IP address space
Users a simpler header to provide improved packet handling
3. Which is true of the IPv6 header?
It consists of 40 octets
It contains 8 header fields
4. Which is true of the IPv6 packet header?
The hop limit field replaces the IPv4 time to live field

8.4.5

1. Which statement about host forwarding decisions is true?
Local hosts can reach each other without the need of a router
2. Which default gateway statement is true?
The default gateway address is the IP address of the router on the local network
3. Which two commands could be entered on a Windows host to view its IPv4 and IPv6 routing table? (Choose two.)
Netstat -r
Route print

8.5.7

1. What is the command used on a Cisco IOS router to view the routing table?
Show ip route
2. What does a code of "O" indicate next to a route in the routing table?
A route learned dynamically from OSPF
3. This type of route is also known as a gateway of last resort.
Default route
4. Which is a characteristic of static routes?
They are manually configured
5. True or False? A router can be configured with a combination of both static routes and a dynamic routing protocol.
True

8.6.2

1. Which command can be used on a Windows host to display the routing table?
Netstat -r
2. What information is added during encapsulation at OSI Layer 3?
Source and destination IP address
3. How does the network layer use the MTU value?
The MTU is passed to the network layer by the data link layer
4. Which characteristic describes an IPv6 enhancement over IPv4?
The IPv6 header is simpler than the ipv4 header is, which improves packet handling
5. Which statement accurately describes a characteristic of IPv4?
IPv4 has a 32-bit address space
6. When a router receives a packet, what information must be examined in order for the packet to be forwarded to a remote destination?
Destination Ip address
7. A computer has to send a packet to a destination host in the same LAN. How will the packet be sent?
The packet will be sent directly to the destination host
8. Which IPv4 address can a host use to ping the loopback interface?
127.0.0.1
9. When a connectionless protocol is in use at a lower layer of the OSI model, how is missing data detected and retransmitted if necessary?
Upper-layer connection-oriented protocols keep track of the data received and can request retransmission from the upper-level protocols on the sending host
10. What was the reason for the creation and implementation of IPv6?
To relive IPv4 address depletion
11. Which information is used by routers to forward a data packet toward its destination?
Destination IP address
12. Which field in an IPv4 packet header will typically stay the same during its transmission?
Destination Ip address
13. Which field in an IPv6 packet is used by the router to determine if a packet has expired and should be dropped?
Hop limit

9.1.4

1. What destination MAC address would be included in a frame sent from a source device to a destination device on the same local network?
The MAC address of the destination device

2. What destination MAC address would be included in a frame sent from a source device to a destination device on a remote local network?

The MAC address of the local router interface

3. What two protocols are used to determine the MAC address of a known destination device IP address (IPv4 and IPv6)?

ARP

ND

9.2.10

1. What two functions are provided by ARP? (Choose two.)

Maintains a table of IPv4 to MAC address mappings

Resolves IPv4 addresses to MAC address

2. Where is the ARP table stored on a device?

RAM

3. Which statement is true about ARP?

ARP entries are cached temporarily

4. Which command could be used on a Cisco router to view its ARP table?

show ip arp

5. What is an attack using ARP?

ARP poisoning

9.3.5

1. Which two ICMPv6 messages are used in SLAAC?

Router advertisement

Router solicitation

2. Which two ICMPv6 messages are used in to determine the MAC address of a known IPv6 address?

Neighbor advertisement

Neighbor solicitation

3. To what type of address are ICMPv6 neighbor solicitation messages sent?

Multicast

9.4.2

1. Which router component holds the routing table, ARP cache, and running configuration file?

RAM

2. What type of information is contained in an ARP table?

IPv4 address to MAC address mappings

3. A PC is configured to obtain an IPv4 address automatically from network 192.168.1.0/24. The network administrator issues the `arp -a` command and notices an entry of 192.168.1.255 ff-ff-ff-ff-ff-ff. Which statement describes this entry?

This is a static entry

4. A cybersecurity analyst believes an attacker is spoofing the MAC address of the default gateway to perform a man-in-the-middle attack. Which command should the analyst use to view the MAC address a host is using to reach the default gateway?

arp -a

5. What will a Layer 2 switch do when the destination MAC address of a received frame is not in the MAC table?

It forwards the frame out of all ports except for the port at which the frame was received

6. Which two ICMPv6 messages are used during the Ethernet MAC address resolution process? (Choose two.)

Neighbor advertisement

Router solicitation

7. How does the ARP process use an IPv4 address?
To determine the MAC address of a device on the same network
8. What is one function of the ARP protocol?
Resolving an IPv4 address to MAC address
9. Which action is taken by a Layer 2 switch when it receives a Layer 2 broadcast frame?
It sends the frame to all ports except the port on which it received the frame
10. What addresses are mapped by ARP?
IPv4 address to a destination MAC address
11. When an IPv4 packet is sent to a host on a remote network, what information is provided by ARP?
The MAC address of the router interface closest to the sending host
12. The ARP table in a switch maps which two types of address together?
Layer 3 address to a layer 2 address
13. What is the purpose of ARP in an IPv4 network?
To obtain a specific MAC address when an IP address is known
14. Which destination address is used in an ARP request frame?
FFFF.FFFF.FFFF

10.4.6

1. A router boots and enters setup mode. What is the reason for this?
The configuration file is missing from NVRAM
2. Which command is used to encrypt all passwords in a router configuration file?
Router_A (config) # service password-encryption
3. Company policy requires using the most secure method to safeguard access to the privileged exec and configuration mode on the routers. The privileged exec password is trustknow1. Which of the following router commands achieves the goal of providing the highest level of security?
Enable secret trustknow1
4. What will be the response from the router after the command, "router(config)# hostname portsmouth" is entered?
Portsmouth(config)#
5. An administrator is configuring a new router to permit out-of-band management access. Which set of commands will allow the required login using a password of cisco?
**Router(config)# line console 0
Router(config-line)# password cisco
Router(config-line)# login**
6. Which command can be used on a Cisco router to display all interfaces, the IPv4 address assigned, and the current status?
Show ip interface brief
7. Which CLI mode allows users to access all device commands, such as those used for configuration, management, and troubleshooting?
Privileged EXEC mode
8. What is the purpose of the startup configuration file on a Cisco router?
To contain the commands that are used to initially configure a router on startup
9. Which characteristic describes the default gateway of a host computer?
The logical address of the router interface on the same network as the host computer
10. What is the purpose of the **banner motd** command?
It provides a way to make announcements to those who log in to a router

11. A technician is configuring a router to allow for all forms of management access. As part of each different type of access, the technician is trying to type the command **login**. Which configuration mode should be entered to do this task?
Any line configuration mode
12. What is stored in the NVRAM of a Cisco router?
The startup configuration
13. Which statement regarding the **service password-encryption** command is true?
As soon as the service password-encryption command is entered, all currently set passwords formerly displayed in plain text are encrypted