

Network+ Guide to Networks, Seventh Edition

Chapter 2, Solutions

Review Questions

1. Which part of a MAC address is unique to each manufacturer?

- A. The network identifier
- B. The OUI
- C. The device identifier
- D. The physical address

Answer: B. The OUI

2. What decimal number corresponds to the binary number 11111111?

- A. 255
- B. 256
- C. 127
- D. 11111111

Answer: A. 255

3. What type of device does a computer turn to first when attempting to make contact with a host on another network?

- A. Default gateway
- B. DNS server

- C. Root server
- D. DHCP server

Answer: A. Default gateway

4. Which statement actually describes SMTP?
- A. SMTP is a connectionless protocol that uses UDP
 - B. SMTP is a connection-based protocol that uses UDP
 - C. SMTP is a connectionless protocol that uses TCP
 - D. SMTP is a connection-based protocol that uses TCP

Answer: D. SMTP is a connection-based protocol that uses TCP

5. When your computer first joins an IPv6 network, what is the prefix of the IP address the computer first configures for itself?
- A. FE80::/10
 - B. FF00::/8
 - C. 2001::/64
 - D. 2001::/3

Answer: A. FE80::/10

6. You have just brought online a new secondary DNS server and notice your monitoring software reports a significant increase in network traffic. Which two hosts on your network are likely to be causing the increased traffic and why?

- A. The caching and primary DNS servers, because the caching server is requesting zone transfers from the primary server
- B. The secondary and primary DNS servers, because the secondary server is requesting zone transfers from the primary server
- C. The root and primary DNS servers, because the primary server is requesting zone transfers from the root server.
- D. The Web server and primary DNS server, because the Web server is requesting zone transfers from the primary DNS server.

Answer: B. The secondary and primary DNS servers, because the secondary server is requesting zone transfers from the primary server.

7. Suppose you send data to the 11111111 11111111 11111111 11111111 IP address on an IPv4 network. To which device(s) are you transmitting?
- A. All devices on the Internet
 - B. All devices on your local network
 - C. The one device with this given IP address
 - D. Because no device can have this given IP address, no devices receive the transmission

Answer: B. All devices on your local network

8. If you are connected to a network that uses DHCP, and you need to terminate your Windows workstation's DHCP lease, which command would you use?
- A. `ipconfig /release`
 - B. `ipconfig /renew`

C. `ifconfig /release`

D. `ifconfig /new`

Answer: A. `ipconfig /release`

9. What computers are the highest authorities in the Domain Name System hierarchy?

A. Authoritative name servers

B. Root servers

C. Top-level domain servers

D. Primary DNS server

Answer: B. Root servers

10. What version of SMB can be used across Windows, UNIX, and other operating systems?

A. SIP (Session Initiation Protocol)

B. RDP (Remote Desktop Protocol)

C. CIFS (Common Internet File System)

D. MGCP (Media Gateway Control Protocol)

Answer: C. CIFS (Common Internet File System)

11. Suppose you want to change the default port for RDP as a security precaution. What port does RDP use by default, and from what range of numbers should you select a private port number?

Answer: 3389; 49152 through 65535

12. Which type of DNS record identifies a mail server?

Answer: MX

13. How many bits does an IPv6 address contain?

Answer: 128

14. On what port is an IPv6 client listening for DHCP messages?

Answer: 546

15. The second 64 bits of an autoconfigured IPv6 address may either be random or generated from the computer's MAC address, which contains 48 bits. What standard defines the conversion of the MAC address to the IPv6 64-bit device ID?

Answer: EUI-64

16. You issue a transmission from your workstation to the following socket on your LAN: 10.1.1.145:110. Assuming your network uses standard port designations, what Application layer protocol are you using?

Answer: POP3

17. What protocol does a network gateway use to keep track of which internal client is talking to which external Web server?

Answer: PAT (Port Address Translation)

18. You are the network manager for a computer training center that allows clients to bring their own laptops to class for learning and taking notes. Clients need access to the Internet, so you have configured your network's DHCP server to issue IP addresses automatically. What DHCP option should you modify to make sure you are not wasting addresses that were used by clients who have left for the day?

Answer: The lease duration for client computers

19. What is the range of IP addresses that might be assigned by APIPA?

Answer: Range 169.254.0.1 through 169.254.255.254

20. While troubleshooting a network connection problem for a coworker, you discover the computer is querying a nonexistent DNS server. What command-line utility can you use to assign the correct DNS server IP address?

Answer: nslookup (in interactive mode)

21. FTP sometimes uses a random port for data transfer, but an FTP server always, unless programmed otherwise, listens to the same port for session requests from clients. What port is the FTP server listening on?

Answer: 21

22. While troubleshooting a network connection problem for a coworker, you discover that the computer has a static IP address and is giving a duplicate IP address error. What command-line utility can you use to find out what other device may already be using that IP address?

Answer: ping or nslookup

23. What is the IPv4 loopback address? What is the IPv6 loopback address?

Answer: 127.0.0.1

Answer: ::1/128

24. You have just set up a new wireless network in your house, and you want to determine whether your Linux laptop has connected to it and obtained a valid IP address. What command will give you the information you need?

Answer: `ifconfig -a`

25. You have decided to use SNAT and PAT on your small office network. At minimum, how many IP addresses must you obtain from your ISP for all five clients in your office to be able to access servers on the Internet?

Answer: 1

26. If you know that your colleague's TCP/IP host name is JSMITH, and you need to find out his IP address, what command should you type at your shell prompt or command prompt?

Answer: `nslookup jsmith` or `ping jsmith`

27. When determining whether a local network has any NetBIOS traffic, do you use the nslookup utility in interactive mode or a packet analyzer such as Wireshark?

Answer: A packet analyzer such as Wireshark

28. List three signaling protocols discussed in the chapter that are used for communicating multimedia data.

Answer: SIP, H.323, and MGCP

29. What version of the ping command do you use in Windows with IPv6 addresses? What version do you use on a Linux system?

Answer: `ping -6`

Answer: `ping6`

30. When running a scan on your computer, you find that a session has been established with a host at the address 208.85.40.44:80. Which protocol is in use for this session? What command-line utility might you use to find out who the host is?

Answer: Port 80 indicates this is an HTTP session.

Answer: nslookup can identify the domain name of the host at that IP address.