1. What is the IPv4 address of your computer? What is the class of that address?

10.4.214.252 class B

2. What is the subnet mask for the network that you are connected to? List it in both dotted decimal and “slash” notation. Is this the default mask for your IP address? If not, how many additional subnet bits have been added? What is the subnet number, i.e., the network number for the entire IPv4 subnet? (Don’t include the host bits.)

255.255.255.0, /24

Default subnet mask for class b is 255.255.0.0 so this has additional 255 bit. The subnet number is 10.4.214.0

3. Do you have a default gateway/router? If so, what is its IP address? In macOS, the IP address of your default router can be found in the ipconfig getpacket en? output labeled “router (ip\_mult)”. In Linux, the IP address of your default gateway can be found by typing the route command and reading the row labeled “default”.

10.4.214.1

4. Is DHCP (not DHCPv6) enabled? If so, what is the DHCP server’s IP address? The DHCP server process will often be running on the default router/gateway. Is that the case on your network? What is the length of your DHCP lease?

Yes, DHCP server ip address is 10.4.214.1 and this is my default router. The DHCP lease length is about 4 days

5. What was the MAC address of the interface on your computer used for the Wireshark capture? (Give the 6-byte hex value.)

D4:57:63:bf:fa:35

6. What is the two-byte hexadecimal Ethernet Type code for ARP?

08 06

7. Is this message transmitted as a MAC layer unicast or broadcast? How can you tell?

Broadcast as the first 6 hexadecimal is all f’s

8. Is the ARP message carried within an IP packet? Can it be forwarded by a router?

No as the ARP message is not carried within an ip packet

9. What is this ARP message’s type/Opcode (request or reply)?

Request(1)

10. Explain the function of this ARP message.

Requests a device with a specific ip address for its mac address

11. What is the Opcode of this ARP message (request or reply)?

2 reply

12. Is this message transmitted as a MAC layer unicast, multicast or broadcast?

unicast

13. What is the MAC address of the computer that sent this message? (This computer will be the target of the first ARP message.)

d4:57:63:bf:fa:35

14. What Transport protocol is used to transmit DHCP messages?

UDP within IP

15. Is the DHCP Discover message transmitted as an IP-level unicast, multicast, or broadcast message? How do you know?

Broadcast

16. What is the Message type?

Ipv4

17. What is the DHCP Message type? (Look for “Option 53” further down.)

1 for Discover

