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Lab 4

NOTE: I WORKED ON THIS LAB WITH A PEER DUE TO SOME TECHNICAL ISSUES I WAS FACING ON MY OWN MACHINE.

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PART 1

1) DHCP messages are sent over UDP

2) The port numbers are the same.

3) The link layer address of my host is 60:33:4b:04:15:c6

4) The message type for a discover message is a 1, but it is a 3 for a request

5) The values are 0x2ab01e09 and 0x257e55a3, respectively. The transaction id identifies if a message is related to one specific transaction.

6)
Discover IP address = 255.255.255.255 source = 0.0.0.0
Offer IP address = 10.33.129.143 source = 192.168.1.1
Request IP address = 255.255.255.255 source = 0.0.0.0
ACK IP address = 10.33.129.143 source = 192.168.1.1

7) The IP address of my DHCP server is 159.91.78.143

8) It is offering 159.91.78.143. Option 53 contains the message type and the offer is 2.

9) Subnet mask line will tell the client which subnet mask to be used. The router will identify the default internet gateway.

10) The same things occurs for me.

11) The lease time is the amount of time that a client is allowed to use an IP address to a client. The lease time is 1 day in my experiment.

12) DHCP release tells the server that the client no longer wants to have the IP address that was offered. No acknowledgement is issued regarding the request. If the client's message is lost then the DHCP server keeps that address until the lease time expires.

13) ARP packets were sent and received. This was done so that the MAC address and IP address can be mapped together.

PART 2

1) The ethernet address of my computer is 60:33:4b:04:15:c6

2) The desintation address is 00:00:5e:00:01:0b, which is the link used to get off the subnet.

3) It appears 52 bytes from the Ethernet frame.

4) The hex value is 0x0d0a0d0a.

5) The source address is A4:83:e7:48:0a:09, which the router's address and the link used to get onto my subnet.

6) The address is 00:00:5e:00:01:0b, which is the address of my computer.

7) The ASCII â€œOâ€ appears 52 bytes from the start of the ethernet frame.

8) The hex value that appeared was 0x0d0a0d0a.

9)
The Internet Addr column contains the IP address
The Physical Addr column contains the MAC address
The Type indicates the protocol type

10) The source hex value address is 00:d0:59:a9:3d:68. The destination hex value address is ff:ff:ff:ff:ff:ff which is the broadcast address.

11) The opcode field begins 20 bytes from the beginning of the ethernet frame. The value is 0x0001. The request contains the ip address of the sender. The "question" appears in the target mac address field. It is all zeros to question the machine's ip address that is being queried.

12) It begins 20 bytes from the frame. The value is 0x0002. The answer is in the sender mac address field, because this contains the ethernet address for the sender with the ip address.

13) Source hex value is 00:06:25:da:af:73 and destination hex value is 00:d0:59:a9:3d:68

14) There is no reply because the reply is sent back directly to the sender's ethernet address. Since I am not using the same machine as the machine that was used for this trace file, I will not receive a reply.