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CS 176A: Homework 5 Wireshark

Part 1: Wireshark

1. **What is the 48-bit Ethernet address of the client computer?**

00:d0:59:a9:3d:68

2. **What is the 48-bit destination address in the Ethernet frame? Is this the Ethernet address of gaia.cs.umass.edu?**

00:06:25:da:af:73

No this address is the address of the hop that we are going to on the way to the final destination, not necessarily gaia.cs.umass.edu itself.

3. **What is the value of the Ethernet source address? What device has this as its Ethernet address?**

00:06:25:da:af:73

The device is the Linksys router's interface that we are connected to.

4. **What is the destination address in the Ethernet frame? Is this the Ethernet address of the client computer?**

00:d0:59:a9:3d:68

Yes. This is the client's MAC address

5. **Write down one entry of your computer's ARP cache. What is the meaning of each column value?**

```
[dna@csilvm-02 ~]$ /usr/sbin/arp
Address                  HWtype  HWaddress           Flags Mask            Iface
_gateway                 ether   00:01:00:01:30:03   C                     enp6s18
```

(Address) _gateway: IP Address, gateway means router
(HWtype) ether: Ethernet connection
(HWaddress) 00:01:00:01:30:03: MAC address of the machine in CSIL
(Flags) C: Indicates that the ARP request has been answered
(Mask): No mask listed
(Iface) enp6s18: Network interface is enp6s18

6. **What are the hexadecimal values for the source and destination addresses in the first Ethernet frame containing the ARP request message?**

Source: 00:d0:59:a9:3d:68
Destination: ff:ff:ff:ff:ff:ff

7. **Note that the first and second ARP packets in the trace correspond to an ARP request sent by the computer running Wireshark, and the ARP reply sent to the computer running Wireshark by the computer with the ARP-requested Ethernet address. But there is yet another computer on this network, as indicated by packet 6**

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– another ARP request. Why do you think there is no ARP reply (sent in response to the ARP request in packet 6) in the packet trace?

I think that we see no ARP reply because the ARP request is searching for “Who has 192.168.1.117” and that is not us. Once the machine corresponding to that IP address receives the broadcast, it will respond with its MAC address but only directly to the broadcasting device, not everybody. For that reason, our machine never receives the message and we do not see anything in the Wireshark packet trace.