

CN LAB ON ADDRESS RESOLUTION PROTOCOL

1. What is the 48-bit Ethernet address of your 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? (Hint: the answer is no). What device has this as its Ethernet address?

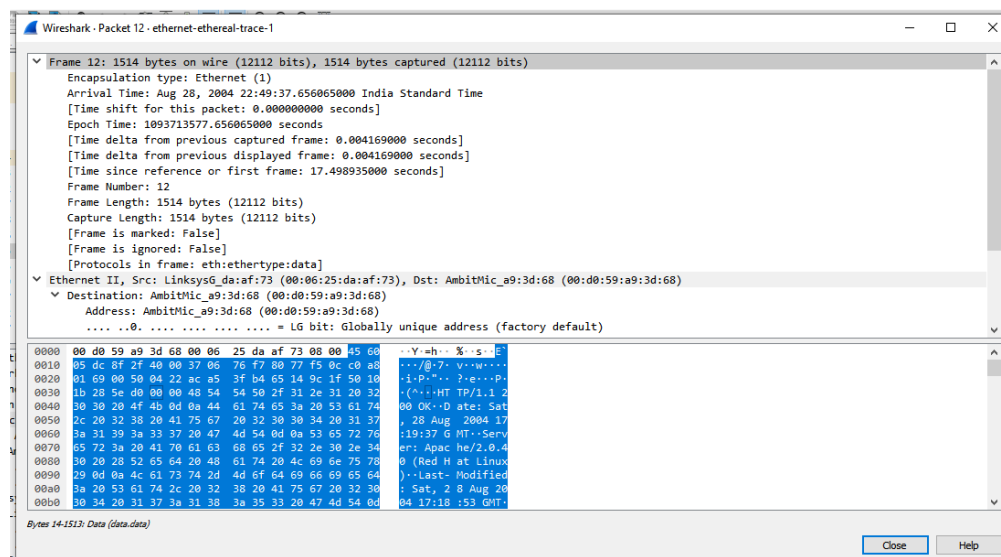
(00:06:25:da:af:73) is not the Ethernet address of my destination. It is the address of my Linksys router, which is the link used to get off the subnet.

3. Give the hexadecimal value for the two-byte Frame type field. What upper layer protocol does this correspond to?

The hex value for the Frame type field is 0x0800.

4. How many bytes from the very start of the Ethernet frame does the ASCII "G" in "GET" appear in the Ethernet frame?

54 bytes



5. What is the value of the Ethernet source address? Is this the address of your computer, or of gaia.cs.umass.edu (Hint: the answer is no). What device has this as its Ethernet address?

(00:06:25:da:af:73)

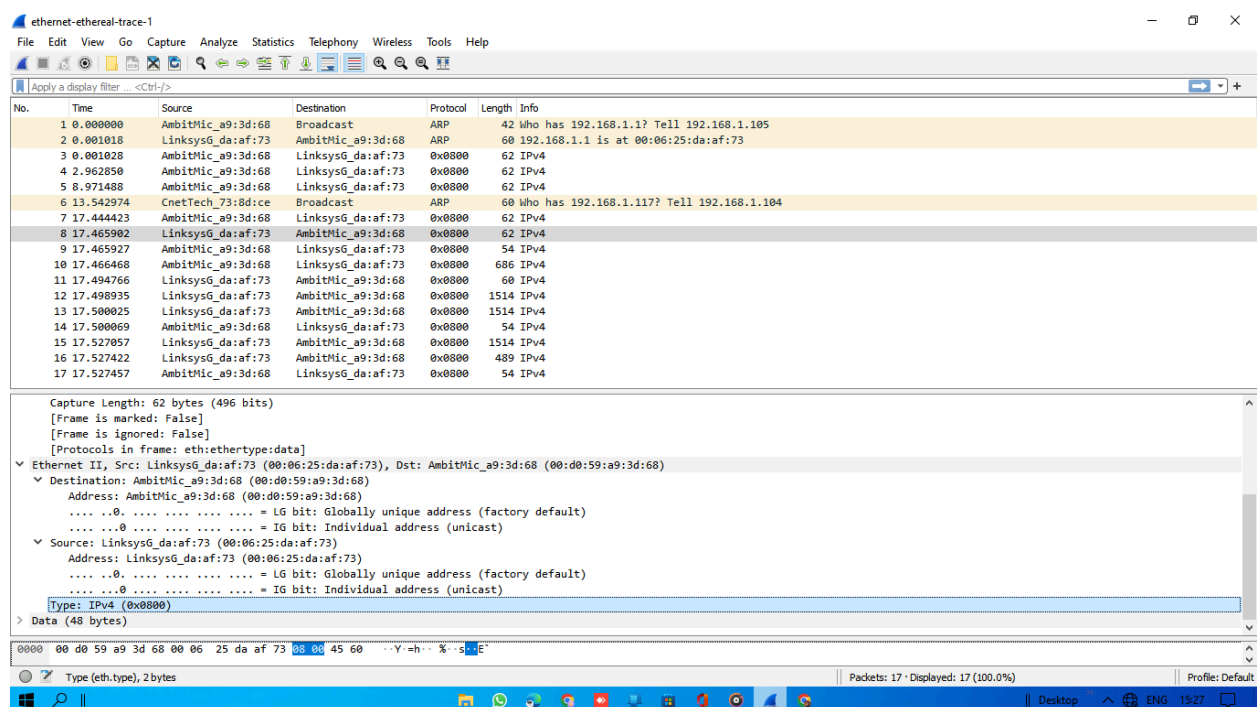
it's not any of these address(source,destination) it is the address of my link sys router

6. What is the destination address in the Ethernet frame? Is this the Ethernet address of your computer?

(00:d0:59:a9:3d:68) yes its my ethernet address of my computer

7. Give the hexadecimal value for the two-byte Frame type field. What upper layer protocol does this correspond to?

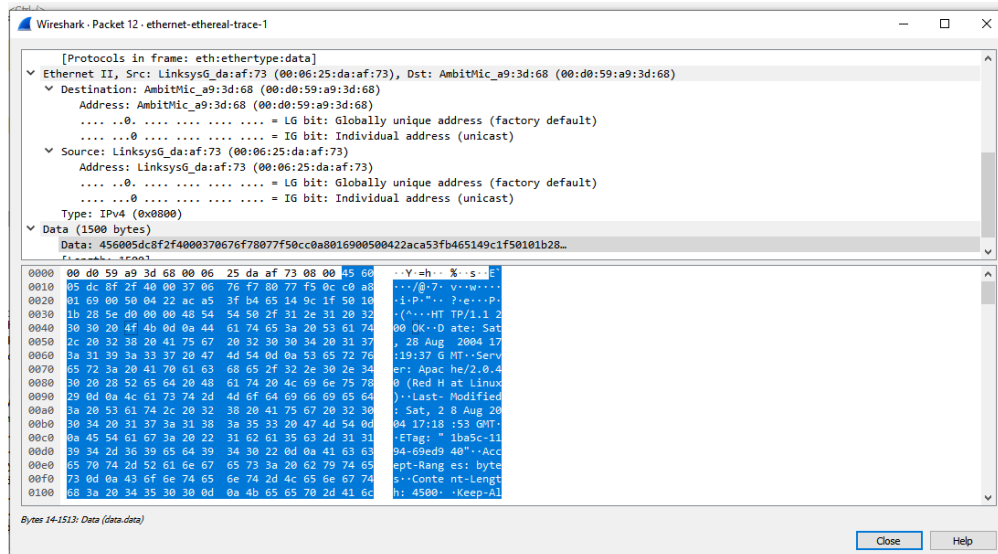
0X0800



8. How many bytes from the very start of the Ethernet frame does the ASCII “O” in “OK” (i.e., the HTTP response code) appear in the Ethernet frame?

Ethernet frame does the ASCII “O” in “OK” (i.e., the HTTP response code) appear in the Ethernet frame is 54

(14 bytes ethernet header ,20 bytes IP header,20 bytes TCP header)=54bytes for ASCII “O” in OK



9. Write down the contents of your computer's ARP cache. What is the meaning of each column value?

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Microsoft Windows [Version 10.0.19044.1566]
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C:\Users\Madhu Babu>arp

Displays and modifies the IP-to-Physical address translation tables used by
address resolution protocol (ARP).

ARP -s inet_addr eth_addr [if_addr]
ARP -d inet_addr [if_addr]
ARP -a [inet_addr] [-N if_addr] [-v]

-a          Displays current ARP entries by interrogating the current
            protocol data. If inet_addr is specified, the IP and Physical
            addresses for only the specified computer are displayed. If
            more than one network interface uses ARP, entries for each ARP
            table are displayed.
-g          Same as -a.
-v          Displays current ARP entries in verbose mode. All invalid
            entries and entries on the loop-back interface will be shown.
inet_addr  Specifies an internet address.
-N if_addr Displays the ARP entries for the network interface specified
            by if_addr.
-d          Deletes the host specified by inet_addr. inet_addr may be
            wildcarded with * to delete all hosts.
-s          Adds the host and associates the Internet address inet_addr
            with the Physical address eth_addr. The Physical address is
            given as 6 hexadecimal bytes separated by hyphens. The entry
            is permanent.
eth_addr   Specifies a physical address.
if_addr    If present, this specifies the Internet address of the
            interface whose address translation table should be modified.
            If not present, the first applicable interface will be used.

Example:
> arp -s 157.55.85.212 00-aa-00-62-c6-09 .... Adds a static entry.
> arp -a          .... Displays the arp table.

C:\Users\Madhu Babu>
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Command Prompt
C:\Users\Madhu Babu>arp -a

Interface: 192.168.56.1 --- 0xc
Internet Address      Physical Address      Type
192.168.56.255        ff-ff-ff-ff-ff-ff    static
224.0.0.2             01-00-5e-00-00-02    static
224.0.0.9             01-00-5e-00-00-09    static
224.0.0.22            01-00-5e-00-00-16    static
224.0.0.251           01-00-5e-00-00-fb    static
224.0.0.252           01-00-5e-00-00-fc    static
239.255.255.250       01-00-5e-7f-ff-fa    static

Interface: 192.168.137.1 --- 0xf
Internet Address      Physical Address      Type
192.168.137.255       ff-ff-ff-ff-ff-ff    static
224.0.0.2             01-00-5e-00-00-02    static
224.0.0.9             01-00-5e-00-00-09    static
224.0.0.22            01-00-5e-00-00-16    static
224.0.0.251           01-00-5e-00-00-fb    static
224.0.0.252           01-00-5e-00-00-fc    static
239.255.255.250       01-00-5e-7f-ff-fa    static
255.255.255.255       ff-ff-ff-ff-ff-ff    static

Interface: 192.168.10.22 --- 0x15
Internet Address      Physical Address      Type
192.168.0.1           c4-71-54-0c-43-38    dynamic
192.168.8.91          54-bf-64-67-da-9a    dynamic
192.168.9.92          b8-85-84-bc-88-8f    dynamic
192.168.9.97          b8-85-84-bc-8e-3f    dynamic
192.168.10.1          00-09-0f-bf-3e-59    dynamic
192.168.10.29         30-9c-23-59-9d-b3    dynamic
192.168.10.103        30-9c-23-59-9e-49    dynamic
192.168.10.167        d0-37-45-3b-a9-bd    dynamic
192.168.11.112        0c-80-63-53-f9-c4    dynamic
192.168.11.255        ff-ff-ff-ff-ff-ff    static
224.0.0.2             01-00-5e-00-00-02    static
224.0.0.9             01-00-5e-00-00-09    static
224.0.0.22            01-00-5e-00-00-16    static
224.0.0.251           01-00-5e-00-00-fb    static
224.0.0.252           01-00-5e-00-00-fc    static
239.255.255.250       01-00-5e-7f-ff-fa    static
255.255.255.255       ff-ff-ff-ff-ff-ff    static

C:\Users\Madhu Babu>
```

My first column is internet address
Second column is physical address
Third column is type whether it is static or dynamic

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

hexadecimal value is (00:d0:59:a9:3d:68) & (ff:ff:ff:ff:ff:ff)

11. Give the hexadecimal value for the two-byte Ethernet Frame type field. What upper layer protocol does this correspond to?