

Lab 12 Report

1. my ethernet address : 48:45:20:43:ce:20

No.	Time	Source	Destination	Protocol	Length	Info
7	3.933012	192.168.1.10	128.119.245.12	TCP	54	6430 → 80 [ACK] S...
8	3.933170	192.168.1.10	128.119.245.12	HTTP	482	GET /wireshark-1a...
9	4.019666	128.119.245.12	192.168.1.10	TCP	54	80 → 6430 [ACK] S...
10	4.022779	128.119.245.12	192.168.1.10	TCP	1514	80 → 6430 [ACK] S...
11	4.024787	128.119.245.12	192.168.1.10	TCP	1514	80 → 6430 [ACK] S...

> Frame 8: 482 bytes on wire (3856 bits), 482 bytes captured (3856 bits) on interface 0

> Ethernet II, Src: IntelCor_43:ce:20 (48:45:20:43:ce:20), Dst: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a)

> Destination: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a)

> Source: IntelCor_43:ce:20 (48:45:20:43:ce:20)

> Type: IPv4 (0x0800)

> Internet Protocol Version 4, Src: 192.168.1.10, Dst: 128.119.245.12

> Transmission Control Protocol, Src Port: 6430, Dst Port: 80, Seq: 1, Ack: 1, Len: 428

> Hypertext Transfer Protocol

2. This is the address of the Netgear router I'm using to complete this assignment, not gaia.cs.umass.edu. (2c:v0:5d:39:0d:3a)

3. The hexadecimal value of the frame field (Type : IPv4) is 0x0800.

4. The Internet Address column holds the IP address. The Physical Address column holds the MAC address, and the type indicates what kind of protocol.

```
C:\Users\Tony>c:\windows\system32\arp -a

Interface: 192.168.1.10 --- 0xd
 Internet Address      Physical Address      Type
 192.168.1.1           2c-b0-5d-39-0d-3a    dynamic
 192.168.1.255         ff-ff-ff-ff-ff-ff    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
```

5.source : 48:45:20:43:ce:20; destination : ff:ff:ff:ff:ff:ff

No.	Time	Source	Destination	Protocol	Length	Info
221	29.958442	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...
222	30.957791	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...
223	31.752717	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...
224	31.752717	Netgear_39:0d:3a	IntelCor_43:ce:20	ARP	42	192.168.1.1 is at 2c...

> Frame 223: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface 0

▼ Ethernet II, Src: IntelCor_43:ce:20 (48:45:20:43:ce:20), Dst: Broadcast (ff:ff:ff:ff:ff:ff)

▼ Destination: Broadcast (ff:ff:ff:ff:ff:ff)

Address: Broadcast (ff:ff:ff:ff:ff:ff)

.... ..1. = LG bit: Locally administered address (this is NOT the factory default)

.... ..1. = IG bit: Group address (multicast/broadcast)

▼ Source: IntelCor_43:ce:20 (48:45:20:43:ce:20)

Address: IntelCor_43:ce:20 (48:45:20:43:ce:20)

.... ..0. = LG bit: Globally unique address (factory default)

.... ..0. = IG bit: Individual address (unicast)

Type: ARP (0x0806)

▼ Address resolution protocol (request)

Hardware type: Ethernet (1)

Protocol type: IPv4 (0x0800)

Hardware size: 6

Protocol size: 4

Opcode: request (1)

Sender MAC address: IntelCor_43:ce:20 (48:45:20:43:ce:20)

Sender IP address: 192.168.1.10

Target MAC address: 00:00:00_00:00:00 (00:00:00:00:00:00)

Target IP address: 192.168.1.1

6. Source : 2c:b0:5d:39:0d:3a; Destination : 48:45:20:43:ce:20

No.	Time	Source	Destination	Protocol	Length	Info
224	31.752717	Netgear_39:0d:3a	IntelCor_43:ce:20	ARP	42	192.168.1.1 is at 2c...
242	41.014713	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...
243	41.958005	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...
245	42.958484	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.102...

> Frame 224: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface 0

▼ Ethernet II, Src: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a), Dst: IntelCor_43:ce:20 (48:45:20:43:ce:20)

▼ Destination: IntelCor_43:ce:20 (48:45:20:43:ce:20)

Address: IntelCor_43:ce:20 (48:45:20:43:ce:20)

.... ..0. = LG bit: Globally unique address (factory default)

.... ..0. = IG bit: Individual address (unicast)

▼ Source: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a)

Address: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a)

.... ..0. = LG bit: Globally unique address (factory default)

.... ..0. = IG bit: Individual address (unicast)

Type: ARP (0x0806)

▼ Address resolution protocol (reply)

Hardware type: Ethernet (1)

Protocol type: IPv4 (0x0800)

Hardware size: 6

Protocol size: 4

Opcode: reply (2)

Sender MAC address: Netgear_39:0d:3a (2c:b0:5d:39:0d:3a)

Sender IP address: 192.168.1.1

Target MAC address: IntelCor_43:ce:20 (48:45:20:43:ce:20)

Target IP address: 192.168.1.10

7. ARP (0x0806)

a) The question appears in Target MAC address, setting it to 00:00:00:00:00:00 and asking whose IP address is being queried

8. a) 0x0002, for reply (presented as just 2)

b) Sender MAC address, 2c:b0:5d:39:0d:3a for IP address 192.168.1.1