Lab 12 Report
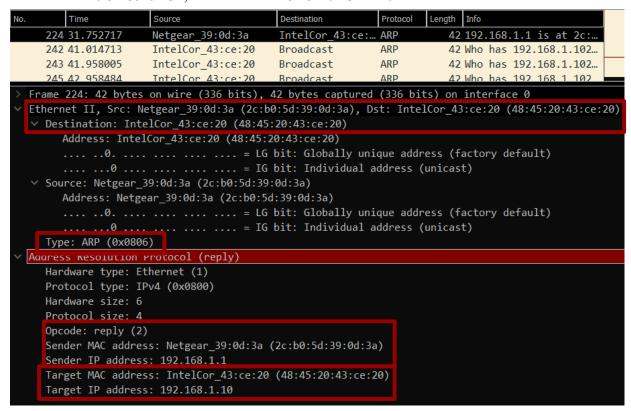
1. my ethernet address : 48:45:20:43:ce:20

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.

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	31.751138	IntelCor_43:ce:20	Broadcast	ARP	42	Who has 192.168.1.1…
224	31.752717	Netgear_39:0d:3a	IntelCor_43:ce:	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
      ....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:…	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 querried

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