Bradley Grose
Assignment 4
CSCE 416

** Used Traces Provided due to errors running on Windows 11 (Emailed about it) **

Part 1

No.   Time   Source   Destination   Protocol Length Info
  1036 1.507967   IntelCor_07:8a:d7   Tp-LinkT_80:5f:36   0x0800   579   IPv4

Frame 1036: 579 bytes on wire (4632 bits), 579 bytes captured (4632 bits) on interface
\Device\NPF_{9055B7F9-CAC0-430D-88B0-90333F70D926}, id 0
Ethernet II, Src: IntelCor_07:8a:d7 (28:7f:cf:07:8a:d7[1]), Dst: Tp-LinkT_80:5f:36 (84:d8:1b:80:5f:36[2])
   Destination: Tp-LinkT_80:5f:36 (84:d8:1b:80:5f:36)
   Source: IntelCor_07:8a:d7 (28:7f:cf:07:8a:d7)
   Type: IPv4 (0x0800)
Data (565 bytes)

0000 45 00 02 35 b1 85 40 00 80 06 00 00 0a 05 01 e0   E..5..@.........
0010 80 77 f5 0c f9 f1 00 50 6c 42 da 38 71 33 f2 10   .w.....PlB.8q3..
0020 50 18 02 01 83 90 00 00[4] 47 45 54 20 2f 77 69 72   P.......GET /wir
0030 65 73 68 61 72 6b 2d 6c 61 62 73 2f 48 54 54 50   eshark-labs/HTTP
0040 2d 65 74 68 65 72 65 61 6c 2d 6c 61 62 2d 66 69   -ethereal-lab-fi
0050 6c 65 33 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e   le3.html HTTP/1.
0060 31 0d 0a 48 6f 73 74 3a 20 67 61 69 61 2e 63 73   1..Host: gaia.cs
0070 2e 75 6d 61 73 73 2e 65 64 75 0d 0a 43 6f 6e 6e   .umass.edu..Conn
0080 65 63 74 69 6f 6e 3a 20 6b 65 65 70 2d 61 6c 69   ection: keep-ali
0090 76 65 0d 0a 55 70 67 72 61 64 65 2d 49 6e 73 65   ve..Upgrade-Inse
00a0 63 75 72 65 2d 52 65 71 75 65 73 74 73 3a 20 31   cure-Requests: 1
00b0 0d 0a 55 73 65 72 2d 41 67 65 6e 74 3a 20 4d 6f   ..User-Agent: Mo
00c0 7a 69 6c 6c 61 2f 35 2e 30 20 28 57 69 6e 64 6f   zilla/5.0 (Windo
00d0 77 73 20 4e 54 20 31 30 2e 30 3b 20 57 69 6e 36   ws NT 10.0; Win6
00e0 34 3b 20 78 36 34 29 20 41 70 70 6c 65 57 65 62   4; x64) AppleWeb
00f0 4b 69 74 2f 35 33 37 2e 33 36 20 28 4b 48 54 4d   Kit/537.36 (KHTM
0100 4c 2c 20 6c 69 6b 65 20 47 65 63 6b 6f 29 20 43   L, like Gecko) C
0110 68 72 6f 6d 65 2f 39 35 2e 30 2e 34 36 33 38 2e   hrome/95.0.4638.
0120 36 39 20 53 61 66 61 72 69 2f 35 33 37 2e 33 36   69 Safari/537.36
0130 20 45 64 67 2f 39 35 2e 30 2e 31 30 32 30 2e 35   Edg/95.0.1020.5
0140 33 0d 0a 41 63 63 65 70 74 3a 20 74 65 78 74 2f   3..Accept: text/
0150 68 74 6d 6c 2c 61 70 70 6c 69 63 61 74 69 6f 6e   html,application
0160 2f 78 68 74 6d 6c 2b 78 6d 6c 2c 61 70 70 6c 69   /xhtml+xml,appli
0170 63 61 74 69 6f 6e 2f 78 6d 6c 3b 71 3d 30 2e 39   cation/xml;q=0.9
0180 2c 69 6d 61 67 65 2f 77 65 62 70 2c 69 6d 61 67   ,image/webp,imag
0190 65 2f 61 70 6e 67 2c 2a 2f 2a 3b 71 3d 30 2e 38   e/apng,*/*;q=0.8

```
01a0  2c 61 70 70 6c 69 63 61 74 69 6f 6e 2f 73 69 67   ,application/sig
01b0  6e 65 64 2d 65 78 63 68 61 6e 67 65 3b 76 3d 62   ned-exchange;v=b
01c0  33 3b 71 3d 30 2e 39 0d 0a 41 63 63 65 70 74 2d   3;q=0.9..Accept-
01d0  45 6e 63 6f 64 69 6e 67 3a 20 67 7a 69 70 2c 20   Encoding: gzip,
01e0  64 65 66 6c 61 74 65 0d 0a 41 63 63 65 70 74 2d   deflate..Accept-
01f0  4c 61 6e 67 75 61 67 65 3a 20 65 6e 2d 55 53 2c   Language: en-US,
0200  65 6e 3b 71 3d 30 2e 39 0d 0a 43 6f 6f 6b 69 65   en;q=0.9..Cookie
0210  3a 20 5f 67 61 3d 47 41 31 2e 32 2e 32 30 34 39   : _ga=GA1.2.2049
0220  30 31 35 36 38 37 2e 31 35 37 37 39 39 38 32 39   015687.157799829
0230  36 0d 0a 0d 0a                                    6....
```
   Data: 45000235b1854000800600000a0501e08077f50cf9f100506c42da387133f21050180201…
   [Length: 565]

1. **28:7f:cf:07:8a:d7**
2. **84:d8:1b:80:5f:36 No it is not the ethernet address of umass. It is the IP address of the Tp-Link router, which is the link to my subnet**
3. **0x0800, this corresponds to the IP Protocol**
4. **40 bytes**

Ok Response

No.   Time   Source   Destination   Protocol Length Info
  109 1.820078   Tp-LinkT_80:5f:36   IntelCor_07:8a:d7   0x0800[7] 1514   IPv4

Frame 109: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface
\Device\NPF_{9055B7F9-CAC0-430D-88B0-90333F70D926}, id 0
Ethernet II, Src: Tp-LinkT_80:5f:36 (84:d8:1b:80:5f:36[5]), Dst: IntelCor_07:8a:d7 (28:7f:cf:07:8a:d7[6])
Data (1500 bytes)

```
0000  45 00 05 dc 45 6c 40 00 2b 06 83 3b 80 77 f5 0c   E...El@.+..;.w..
0010  0a 05 01 ec 00 50 cc 11 1c c6 16 40 8c df 92 e4   .....P.....@....
0020  50 10 00 ed c5 ec 00 00 48 54 54 50 2f 31 2e 31   P.......HTTP/1.1
0030  20 32 30 30 20[8] 4f 4b 0d 0a 44 61 74 65 3a 20 4d    200 OK..Date: M
0040  6f 6e 2c 20 32 32 20 4e 6f 76 20 32 30 32 31 20   on, 22 Nov 2021
0050  30 30 3a 33 30 3a 32 39 20 47 4d 54 0d 0a 53 65   00:30:29 GMT..Se
0060  72 76 65 72 3a 20 41 70 61 63 68 65 2f 32 2e 34   rver: Apache/2.4
0070  2e 36 20 28 43 65 6e 74 4f 53 29 20 4f 70 65 6e   .6 (CentOS) Open
0080  53 53 4c 2f 31 2e 30 2e 32 6b 2d 66 69 70 73 20   SSL/1.0.2k-fips
0090  50 48 50 2f 37 2e 34 2e 32 35 20 6d 6f 64 5f 70   PHP/7.4.25 mod_p
00a0  65 72 6c 2f 32 2e 30 2e 31 31 20 50 65 72 6c 2f   erl/2.0.11 Perl/
00b0  76 35 2e 31 36 2e 33 0d 0a 4c 61 73 74 2d 4d 6f   v5.16.3..Last-Mo
00c0  64 69 66 69 65 64 3a 20 53 75 6e 2c 20 32 31 20   dified: Sun, 21
00d0  4e 6f 76 20 32 30 32 31 20 30 36 3a 35 39 3a 30   Nov 2021 06:59:0
00e0  32 20 47 4d 54 0d 0a 45 54 61 67 3a 20 22 31 31   2 GMT..ETag: "11
```

00f0 39 34 2d 35 64 31 34 37 30 62 31 36 37 30 37 66   94-5d1470b16707f
0100 22 0d 0a 41 63 63 65 70 74 2d 52 61 6e 67 65 73   "..Accept-Ranges
0110 3a 20 62 79 74 65 73 0d 0a 43 6f 6e 74 65 6e 74   : bytes..Content
0120 2d 4c 65 6e 67 74 68 3a 20 34 35 30 30 0d 0a 4b   -Length: 4500..K
0130 65 65 70 2d 41 6c 69 76 65 3a 20 74 69 6d 65 6f   eep-Alive: timeo
0140 75 74 3d 35 2c 20 6d 61 78 3d 31 30 30 0d 0a 43   ut=5, max=100..C
0150 6f 6e 6e 65 63 74 69 6f 6e 3a 20 4b 65 65 70 2d   onnection: Keep-
0160 41 6c 69 76 65 0d 0a 43 6f 6e 74 65 6e 74 2d 54   Alive..Content-T
0170 79 70 65 3a 20 74 65 78 74 2f 68 74 6d 6c 3b 20   ype: text/html;
0180 63 68 61 72 73 65 74 3d 55 54 46 2d 38 0d 0a 0d   charset=UTF-8...
0190 0a 3c 68 74 6d 6c 3e 3c 68 65 61 64 3e 20 0a 3c   .<html><head> .<
01a0 74 69 74 6c 65 3e 48 69 73 74 6f 72 69 63 61 6c   title>Historical
01b0 20 44 6f 63 75 6d 65 6e 74 73 3a 54 48 45 20 42   Documents:THE B
01c0 49 4c 4c 20 4f 46 20 52 49 47 48 54 53 3c 2f 74   ILL OF RIGHTS</t
01d0 69 74 6c 65 3e 3c 2f 68 65 61 64 3e 0a 0a 0a 3c   itle></head>...<
01e0 62 6f 64 79 20 62 67 63 6f 6c 6f 72 3d 22 23 66   body bgcolor="#f
01f0 66 66 66 66 66 22 20 6c 69 6e 6b 3d 22 23 33 33   fffff" link="#33
0200 30 30 30 30 22 20 76 6c 69 6e 6b 3d 22 23 36 36   0000" vlink="#66
0210 36 36 33 33 22 3e 0a 3c 70 3e 3c 62 72 3e 0a 3c   6633">.<p>
.<
0220 2f 70 3e 0a 3c 70 3e 3c 2f 70 3e 3c 63 65 6e 74   /p>.<p></p><cent
0230 65 72 3e 3c 62 3e 54 48 45 20 42 49 4c 4c 20 4f   er>THE BILL O
0240 46 20 52 49 47 48 54 53 3c 2f 62 3e 3c 62 72 3e   F RIGHTS
0250 0a 20 20 3c 65 6d 3e 41 6d 65 6e 64 6d 65 6e 74   . Amendment
0260 73 20 31 2d 31 30 20 6f 66 20 74 68 65 20 43 6f   s 1-10 of the Co
0270 6e 73 74 69 74 75 74 69 6f 6e 3c 2f 65 6d 3e 0a   nstitution.
0280 3c 2f 63 65 6e 74 65 72 3e 0a 0a 3c 70 3e 54 68   </center>..<p>Th
0290 65 20 43 6f 6e 76 65 6e 74 69 6f 6e 73 20 6f 66   e Conventions of
02a0 20 61 20 6e 75 6d 62 65 72 20 6f 66 20 74 68 65   a number of the
02b0 20 53 74 61 74 65 73 20 68 61 76 69 6e 67 2c 20   States having,
02c0 61 74 20 74 68 65 20 74 69 6d 65 20 6f 66 20 61   at the time of a
02d0 64 6f 70 74 69 6e 67 0a 74 68 65 20 43 6f 6e 73   dopting.the Cons
02e0 74 69 74 75 74 69 6f 6e 2c 20 65 78 70 72 65 73   titution, expres
02f0 73 65 64 20 61 20 64 65 73 69 72 65 2c 20 69 6e   sed a desire, in
0300 20 6f 72 64 65 72 20 74 6f 20 70 72 65 76 65 6e   order to preven
0310 74 20 6d 69 73 63 6f 6e 73 74 72 75 63 74 69 6f   t misconstructio
0320 6e 0a 6f 72 20 61 62 75 73 65 20 6f 66 20 69 74   n.or abuse of it
0330 73 20 70 6f 77 65 72 73 2c 20 74 68 61 74 20 66   s powers, that f
0340 75 72 74 68 65 72 20 64 65 63 6c 61 72 61 74 6f   urther declarato
0350 72 79 20 61 6e 64 20 72 65 73 74 72 69 63 74 69   ry and restricti
0360 76 65 20 63 6c 61 75 73 65 73 0a 73 68 6f 75 6c   ve clauses.shoul
0370 64 20 62 65 20 61 64 64 65 64 2c 20 61 6e 64 20   d be added, and
0380 61 73 20 65 78 74 65 6e 64 69 6e 67 20 74 68 65   as extending the
0390 20 67 72 6f 75 6e 64 20 6f 66 20 70 75 62 6c 69   ground of publi
03a0 63 20 63 6f 6e 66 69 64 65 6e 63 65 20 69 6e 20   c confidence in
03b0 74 68 65 0a 47 6f 76 65 72 6e 6d 65 6e 74 20 77   the.Government w
03c0 69 6c 6c 20 62 65 73 74 20 69 6e 73 75 72 65 20   ill best insure
03d0 74 68 65 20 62 65 6e 65 66 69 63 65 6e 74 20 65   the beneficent e
03e0 6e 64 73 20 6f 66 20 69 74 73 20 69 6e 73 74 69   nds of its insti

03f0 74 75 74 69 6f 6e 3b 20 3c 2f 70 3e 3c 70 3e 20   tution; </p><p>
0400 20 52 65 73 6f 6c 76 65 64 2c 20 62 79 20 74 68   Resolved, by th
0410 65 20 53 65 6e 61 74 65 20 61 6e 64 20 48 6f 75   e Senate and Hou
0420 73 65 20 6f 66 20 52 65 70 72 65 73 65 6e 74 61   se of Representa
0430 74 69 76 65 73 20 6f 66 20 74 68 65 20 55 6e 69   tives of the Uni
0440 74 65 64 0a 53 74 61 74 65 73 20 6f 66 20 41 6d   ted.States of Am
0450 65 72 69 63 61 2c 20 69 6e 20 43 6f 6e 67 72 65   erica, in Congre
0460 73 73 20 61 73 73 65 6d 62 6c 65 64 2c 20 74 77   ss assembled, tw
0470 6f 2d 74 68 69 72 64 73 20 6f 66 20 62 6f 74 68   o-thirds of both
0480 20 48 6f 75 73 65 73 20 63 6f 6e 63 75 72 72 69   Houses concurri
0490 6e 67 2c 0a 74 68 61 74 20 74 68 65 20 66 6f 6c   ng,.that the fol
04a0 6c 6f 77 69 6e 67 20 61 72 74 69 63 6c 65 73 20   lowing articles
04b0 62 65 20 70 72 6f 70 6f 73 65 64 20 74 6f 20 74   be proposed to t
04c0 68 65 20 4c 65 67 69 73 6c 61 74 75 72 65 73 20   he Legislatures
04d0 6f 66 20 74 68 65 20 73 65 76 65 72 61 6c 0a 53   of the several.S
04e0 74 61 74 65 73 2c 20 61 73 20 61 6d 65 6e 64 6d   tates, as amendm
04f0 65 6e 74 73 20 74 6f 20 74 68 65 20 43 6f 6e 73   ents to the Cons
0500 74 69 74 75 74 69 6f 6e 20 6f 66 20 74 68 65 20   titution of the
0510 55 6e 69 74 65 64 20 53 74 61 74 65 73 3b 20 61   United States; a
0520 6c 6c 20 6f 72 20 61 6e 79 0a 6f 66 20 77 68 69   ll or any.of whi
0530 63 68 20 61 72 74 69 63 6c 65 73 2c 20 77 68 65   ch articles, whe
0540 6e 20 72 61 74 69 66 69 65 64 20 62 79 20 74 68   n ratified by th
0550 72 65 65 2d 66 6f 75 72 74 68 73 20 6f 66 20 74   ree-fourths of t
0560 68 65 20 73 61 69 64 20 4c 65 67 69 73 6c 61 74   he said Legislat
0570 75 72 65 73 2c 0a 74 6f 20 62 65 20 76 61 6c 69   ures,.to be vali
0580 64 20 74 6f 20 61 6c 6c 20 69 6e 74 65 6e 74 73   d to all intents
0590 20 61 6e 64 20 70 75 72 70 6f 73 65 73 20 61 73   and purposes as
05a0 20 70 61 72 74 20 6f 66 20 74 68 65 20 73 61 69   part of the sai
05b0 64 20 43 6f 6e 73 74 69 74 75 74 69 6f 6e 2c 0a   d Constitution,.
05c0 6e 61 6d 65 6c 79 3a 20 20 20 20 3c 2f 70 3e 3c   namely: </p><
05d0 70 3e 3c 61 20 6e 61 6d 65 3d 22 31   p><a name="1
Data: 450005dc456c40002b06833b8077f50c0a0501ec0050cc111cc616408cdf92e4501000ed…
[Length: 1500]

5. **84:d8:1b:80:5f:36 No it is not the ethernet address of umass. It is the IP address of the Tp-Link router, which is the link to my subnet**
6. **28:7f:cf:07:8a:d7 Yes this is address to my computer**
7. **0x0800, This is the IP Protocol**
8. **53 bytes**

Part 2

```
No.    Time         Source           Destination        Protocol Length Info
    1 0.000000     AmbitMic_a9:3d:68    Broadcast        ARP     42    Who has 192.168.1.1? Tell
192.168.1.105
```

Frame 1: 42 bytes on wire (336 bits), 42 bytes captured (336 bits)
Ethernet II, Src: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68[9]), Dst: Broadcast (ff:ff:ff:ff:ff:ff[9])
  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: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
    Address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
    .... ..0. .... = LG bit: Globally unique address (factory default)
    ....0 .... = IG bit: Individual address (unicast)
  Type: ARP (0x0806)[10]
Address Resolution Protocol (request)
  Hardware type: Ethernet (1)
  Protocol type: IPv4 (0x0800)
  Hardware size: 6
  Protocol size: 4
  Opcode: request (1)
  Sender MAC address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
  Sender IP address: 192.168.1.105
  Target MAC address: 00:00:00_00:00:00 (00:00:00:00:00:00[11])
  Target IP address: 192.168.1.1[11]

9) The hex for the source is 00:d0:59:a9:3d:68 and the hex for the destination is ff:ff:ff:ff:ff:ff
10) The hex value is 0x0806 and that corresponds to ARP
11) The target MAC is 00:00:00:00:00:00 to query 192.168.1.1

ARP Reply:

```
No.    Time         Source           Destination        Protocol Length Info
    2 0.001018     LinksysG_da:af:73    AmbitMic_a9:3d:68    ARP     60    192.168.1.1 is at
00:06:25:da:af:73
```

```
No.    Time         Source           Destination        Protocol Length Info
    2 0.001018     LinksysG_da:af:73    AmbitMic_a9:3d:68    ARP     60    192.168.1.1 is at
00:06:25:da:af:73
```

Frame 2: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73[12]), Dst: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
  Destination: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
    Address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
    .... ..0. .... = LG bit: Globally unique address (factory default)

....0 .... = IG bit: Individual address (unicast)
  Source: LinksysG_da:af:73 (00:06:25:da:af:73)
    Address: LinksysG_da:af:73 (00:06:25:da:af:73)
    .... ..0. .... = LG bit: Globally unique address (factory default)
    ....0 .... = IG bit: Individual address (unicast)
  Type: ARP (0x0806)
  Padding: 000000000000000000000000000000000000
Address Resolution Protocol (reply)
  Hardware type: Ethernet (1)
  Protocol type: IPv4 (0x0800)
  Hardware size: 6
  Protocol size: 4
  Opcode: reply (2)
  Sender MAC address: LinksysG_da:af:73 (00:06:25:da:af:73[12/13])
  Sender IP address: 192.168.1.1
  Target MAC address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68[13])
  Target IP address: 192.168.1.105

0000 00 d0 59 a9 3d 68 00 06 25 da af 73 08 06 00 01   ..Y.=h..%..s....
0010 08 00 06 04 00 02 00 06 25 da af 73 c0 a8 01 01   ....%..s....
0020 00 d0 59 a9 3d 68 c0 a8 01 69 00 00 00 00 00 00   ..Y.=h...i......
0030 00 00 00 00 00 00 00 00 00 00 00 00   ....

12) The answer for the request appears in the sender mac address from 192.168.1.1 of 00:06:25:da:af:73
13) The hex value of the source address is 00:06:25:da:af:73 while the destination is 00:d0:59:a9:3d:68