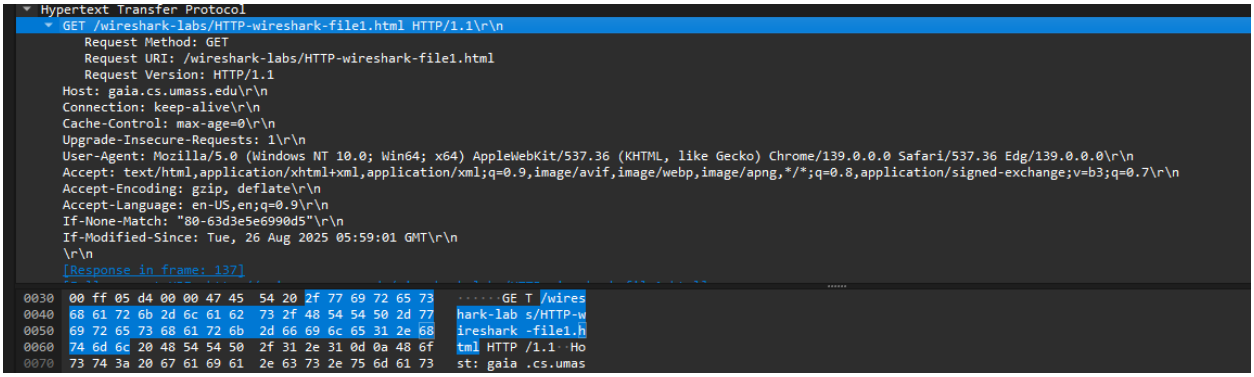
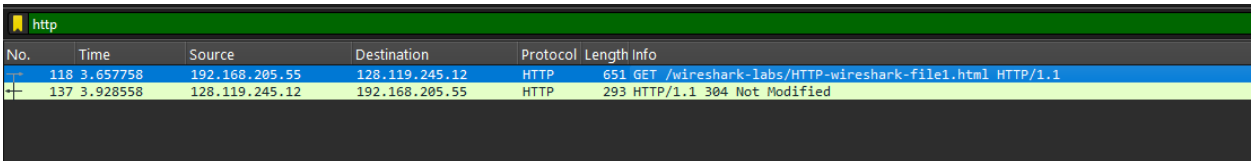
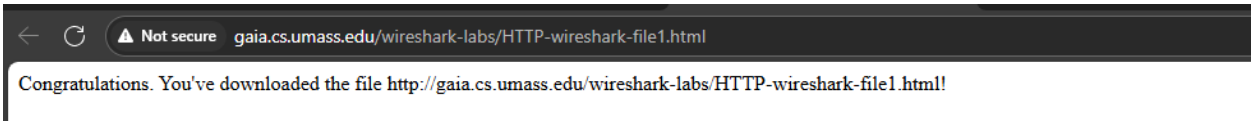
AM.SC.U4CSE23042

Jithin Jyothi

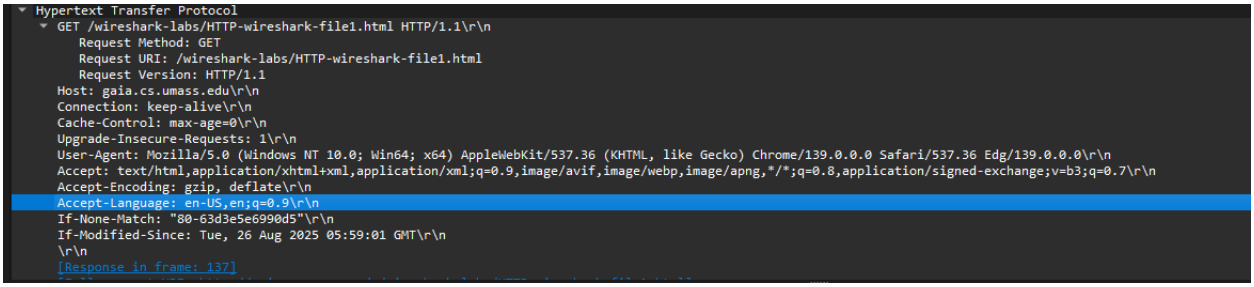
1.







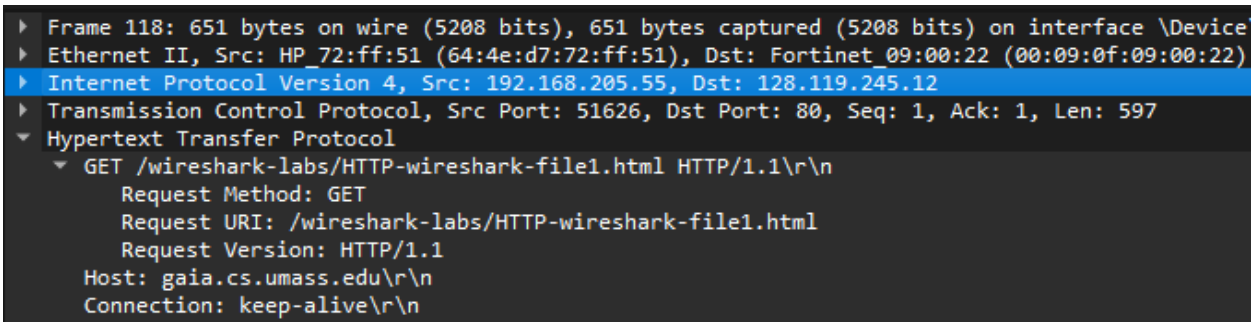
2.



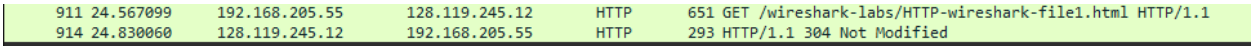
3.

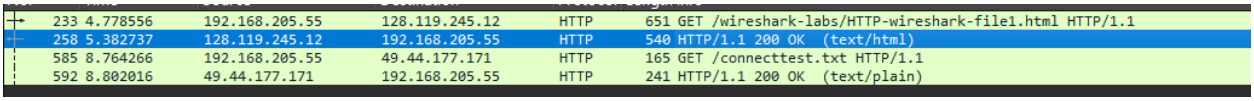
IP Address of my computer : 192.168.205.55

IP Address of gaia.cs.umass.edu : 128.119.245.12



4.

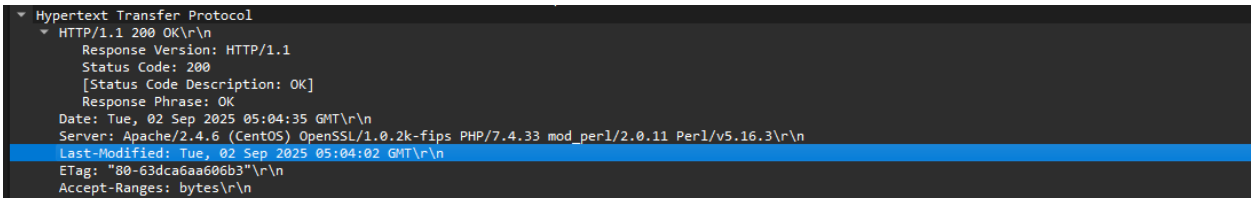




304 Not Modified - is the status code that I received.

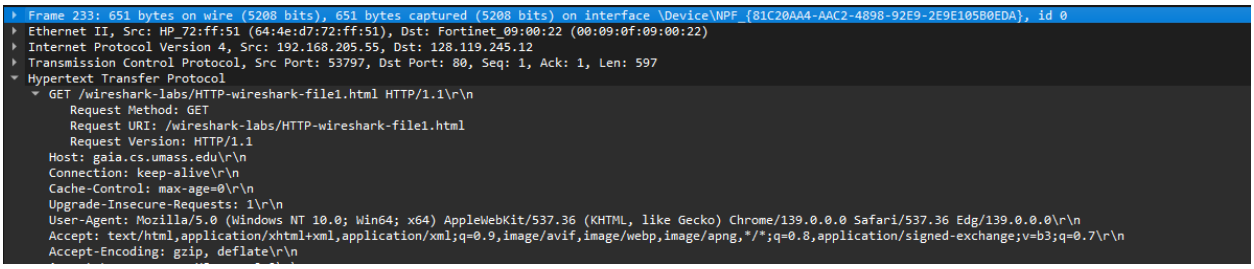
200 OK – was used to get the last-modified.

5.



6.

651 Bytes



7.

```
Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Cache-Control: max-age=0\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/139.0.0.0 Safari/537.36 Edg/139.0.0.0\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-US,en;q=0.9\r\n
    If-None-Match: "80-63db7117b380a"\r\n
    If-Modified-Since: Mon, 01 Sep 2025 05:59:01 GMT\r\n
    \r\n
    [Response in frame: 258]
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
```

8.

```
  233 4.778556    192.168.205.55    128.119.245.12    HTTP    651 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
  258 5.382737    128.119.245.12    192.168.205.55    HTTP    540 HTTP/1.1 200 OK  (text/html)
  585 8.764266    192.168.205.55    49.44.177.171     HTTP    165 GET /connecttest.txt HTTP/1.1
  592 8.802016    49.44.177.171     192.168.205.55    HTTP    241 HTTP/1.1 200 OK  (text/plain)
```

```
> Frame 258: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{81C20AA4-AAC2-4898-92E9-2E9E105B0EDA}, id 0
> Ethernet II, Src: Fortinet_09:00:22 (00:09:0f:09:00:22), Dst: HP_72:ff:51 (64:4e:d7:72:ff:51)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.205.55
> Transmission Control Protocol, Src Port: 80, Dst Port: 53797, Seq: 1, Ack: 598, Len: 486
> Hypertext Transfer Protocol
v Line-based text data: text/html (4 lines)
    <html>\n
    Congratulations.  You've downloaded the file \n
    http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html!\n
    </html>\n
```

Yes, the server returned the contents of the file, which can be seen in text/html

9.

```
v Hypertext Transfer Protocol
  > GET /connecttest.txt HTTP/1.1\r\n
    Connection: Close\r\n
    User-Agent: Microsoft NCSI\r\n
    Host: www.msftconnecttest.com\r\n
    \r\n
    [Response in frame: 592]
    [Full request URI: http://www.msftconnecttest.com/connecttest.txt]
```

There is no If-Modified-Since visible here. The file was not modified.

10.

The HTTP status code seen here is 200 OK . The server returned text/plain and it contains

Microsoft Connect Test

233	4.778556	192.168.205.55	128.119.245.12	HTTP	651	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
258	5.382737	128.119.245.12	192.168.205.55	HTTP	540	HTTP/1.1 200 OK (text/html)
585	8.764266	192.168.205.55	49.44.177.171	HTTP	165	GET /connecttest.txt HTTP/1.1
592	8.802016	49.44.177.171	192.168.205.55	HTTP	241	HTTP/1.1 200 OK (text/plain)

```
> Frame 592: 241 bytes on wire (1928 bits), 241 bytes captured (1928 bits) on interface \Device\NPF_{81C20AA4-AAC2-4898-92E9-2E9E105B0EDA}, id 0
> Ethernet II, Src: Fortinet_09:00:22 (00:09:0f:09:00:22), Dst: HP_72:ff:51 (64:4e:d7:72:ff:51)
> Internet Protocol Version 4, Src: 49.44.177.171, Dst: 192.168.205.55
> Transmission Control Protocol, Src Port: 80, Dst Port: 53806, Seq: 1, Ack: 112, Len: 187
> Hypertext Transfer Protocol
v Line-based text data: text/plain (1 lines)
    Microsoft Connect Test
```

11.

DNS are transmitted over UDP (User Datagram Protocol)

```
> Frame 224: 77 bytes on wire (616 bits), 77 bytes captured (616 bits) on interface \Device\NPF_{81C20AA
> Ethernet II, Src: HP_72:ff:51 (64:4e:d7:72:ff:51), Dst: Fortinet_09:00:22 (00:09:0f:09:00:22)
> Internet Protocol Version 4, Src: 192.168.205.55, Dst: 192.168.0.251
> User Datagram Protocol, Src Port: 60297, Dst Port: 53
> Domain Name System (query)
```

DNS Query

223	4.772169	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x1a35 A gaia.cs.umass.edu
224	4.772518	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x3625 HTTPS gaia.cs.umass.edu

DNS Response

225	4.772831	192.168.0.251	192.168.205.55	DNS	93 Standard query response 0x1a35 A gaia.cs.umass.edu A 128.119.245.12
226	4.773027	192.168.0.251	192.168.205.55	DNS	130 Standard query response 0x3625 HTTPS gaia.cs.umass.edu SOA unix1.cs.umass.edu

12.

Destination : 192.168.0.251 and Source : 192.168.205.55

90	2.822873	192.168.205.55	192.168.0.251	DNS	81 Standard query 0x9d86 HTTPS teams.cloud.microsoft
91	2.823524	192.168.0.251	192.168.205.55	DNS	215 Standard query response 0x9d86 HTTPS teams.cloud.microsoft CNAME teams-cloud-microsoft.s-0005.dual-s-msedge.net CNAME s-0005.dual-s-msedge.net SOA ns1.dual-s-msedge.net
92	2.823524	192.168.0.251	192.168.205.55	DNS	187 Standard query response 0x0892 A teams.cloud.microsoft CNAME teams-cloud-microsoft.s-0005.dual-s-msedge.net CNAME s-0005.dual-s-msedge.net A 52.123.129.14 A 52.123.128.14
94	2.823516	192.168.0.251	192.168.205.55	DNS	113 Standard query response 0x965b A o4508134025000960.ingest.us.sentry.io A 34.120.195.249
223	4.772169	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x1a35 A gaia.cs.umass.edu
224	4.772518	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x3625 HTTPS gaia.cs.umass.edu
225	4.772831	192.168.0.251	192.168.205.55	DNS	93 Standard query response 0x1a35 A gaia.cs.umass.edu A 128.119.245.12
226	4.773027	192.168.0.251	192.168.205.55	DNS	130 Standard query response 0x3625 HTTPS gaia.cs.umass.edu SOA unix1.cs.umass.edu
230	4.777049	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x3e78 A gaia.cs.umass.edu
231	4.777592	192.168.0.251	192.168.205.55	DNS	93 Standard query response 0x3e78 A gaia.cs.umass.edu A 128.119.245.12
237	4.793296	192.168.205.55	192.168.0.251	DNS	96 Standard query 0x640d A functional.events.data.microsoft.com

13.

223	4.772169	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x1a35 A gaia.cs.umass.edu

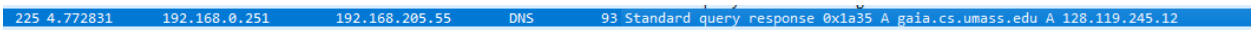
The DNS query message is sent from 192.168.205.55 to 192.168.0.251

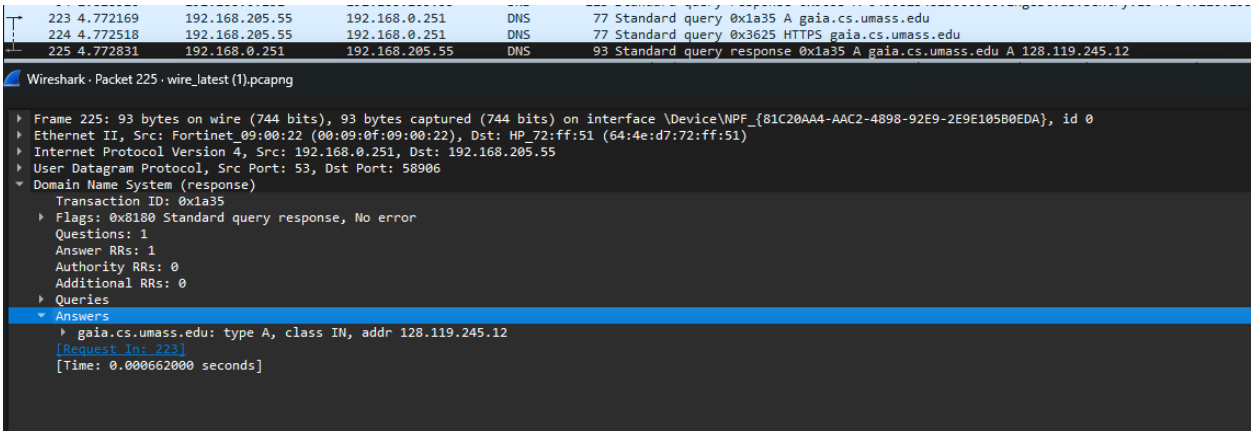
```
Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . : am.amrita.edu
   Description . . . . . . . . . . . : Intel(R) Ethernet Connection (17) I219-LM
   Physical Address. . . . . . . . . : 64-4E-D7-72-FF-51
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::bef:e579:e81d:d969%10(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.205.55(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.252.0
   Lease Obtained. . . . . . . . . . : 08 September 2025 14:15:16
   Lease Expires . . . . . . . . . . : 10 September 2025 08:47:01
   Default Gateway . . . . . . . . . : 192.168.207.254
   DHCP Server . . . . . . . . . . . : 192.168.0.251
   DHCPv6 IAID . . . . . . . . . . . : 107237079
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-2E-29-CA-EC-64-4E-D7-72-FF-51
   DNS Servers . . . . . . . . . . . : 192.168.0.251
                                       192.168.0.250
   Primary WINS Server . . . . . . . : 192.168.0.250
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

DNS Servers : 192.168.0.251 and 192.168.0.250

Yes they are the same.

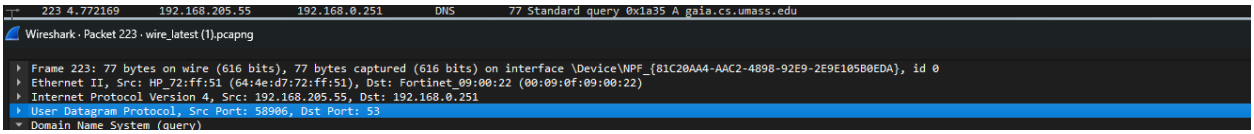
14.



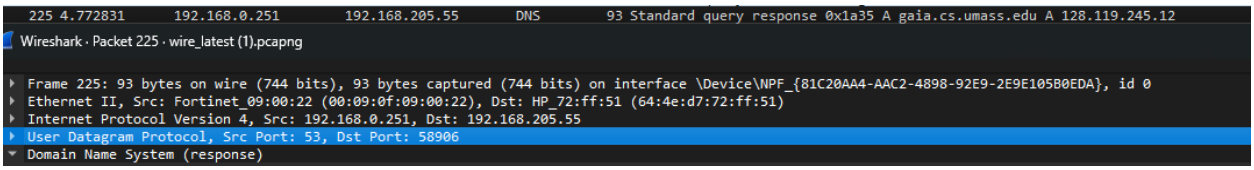


1 answer is provided. The answer contains the type, class, address. The type is A.

15.



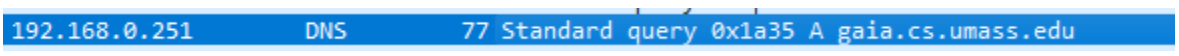
The destination port is 53.



Source port is: 53

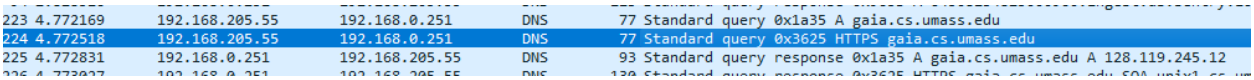
16.

DNS query msg is sent to 192.168.0.251



Yes, this is the ip of one of the dns servers.

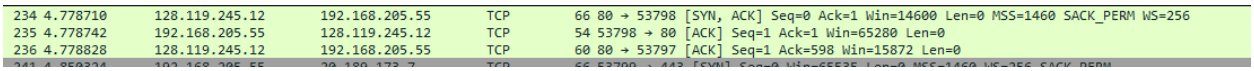
17.



223	4.772169	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x1a35 A gaia.cs.umass.edu
224	4.772518	192.168.205.55	192.168.0.251	DNS	77 Standard query 0x3625 HTTPS gaia.cs.umass.edu
225	4.772831	192.168.0.251	192.168.205.55	DNS	93 Standard query response 0x1a35 A gaia.cs.umass.edu A 128.119.245.12

Before getting the response of 0x1a35, the query of 0x3625 (highlighted) was sent.

18.



234	4.778710	128.119.245.12	192.168.205.55	TCP	66 80 → 53798 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1460 SACK_PERM WS=256
235	4.778742	192.168.205.55	128.119.245.12	TCP	54 53798 → 80 [ACK] Seq=1 Ack=1 Win=65280 Len=0
236	4.778828	128.119.245.12	192.168.205.55	TCP	60 80 → 53797 [ACK] Seq=1 Ack=598 Win=15872 Len=0