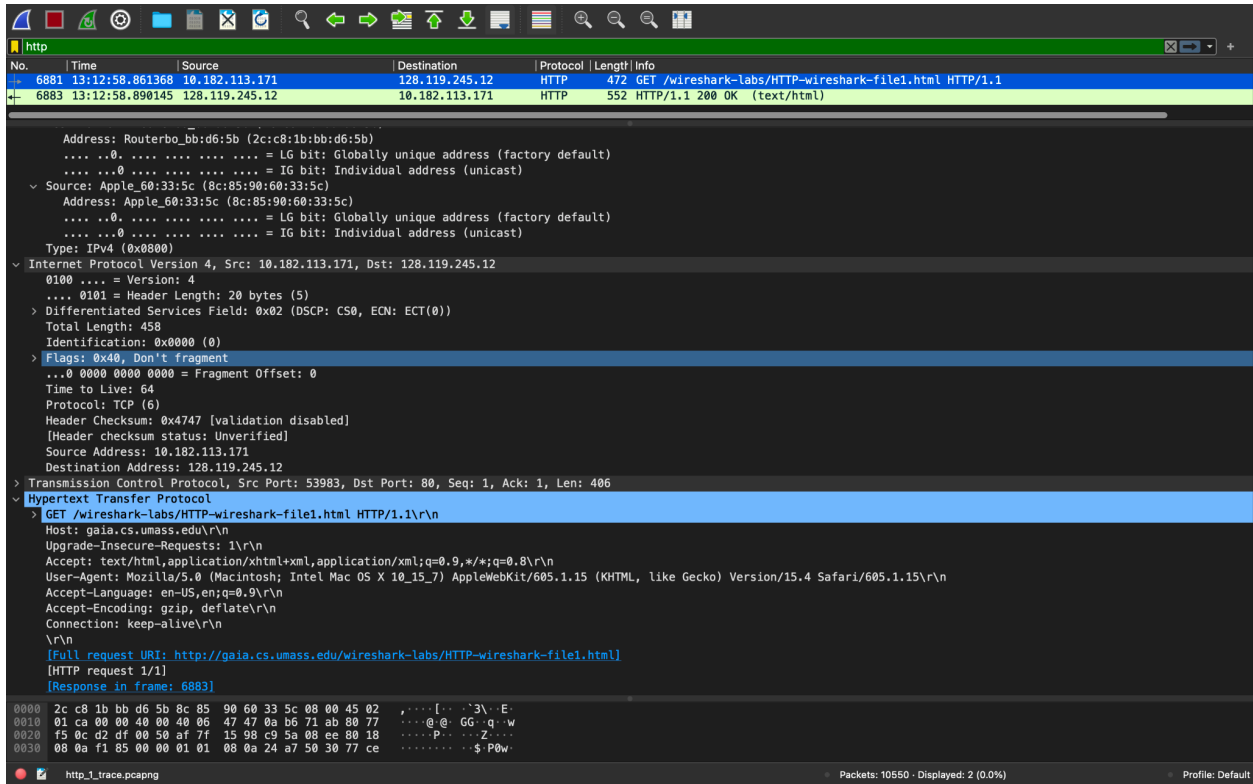


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1). Browser is running HTTP version 1.1.

Server is running HTTP version 1.1

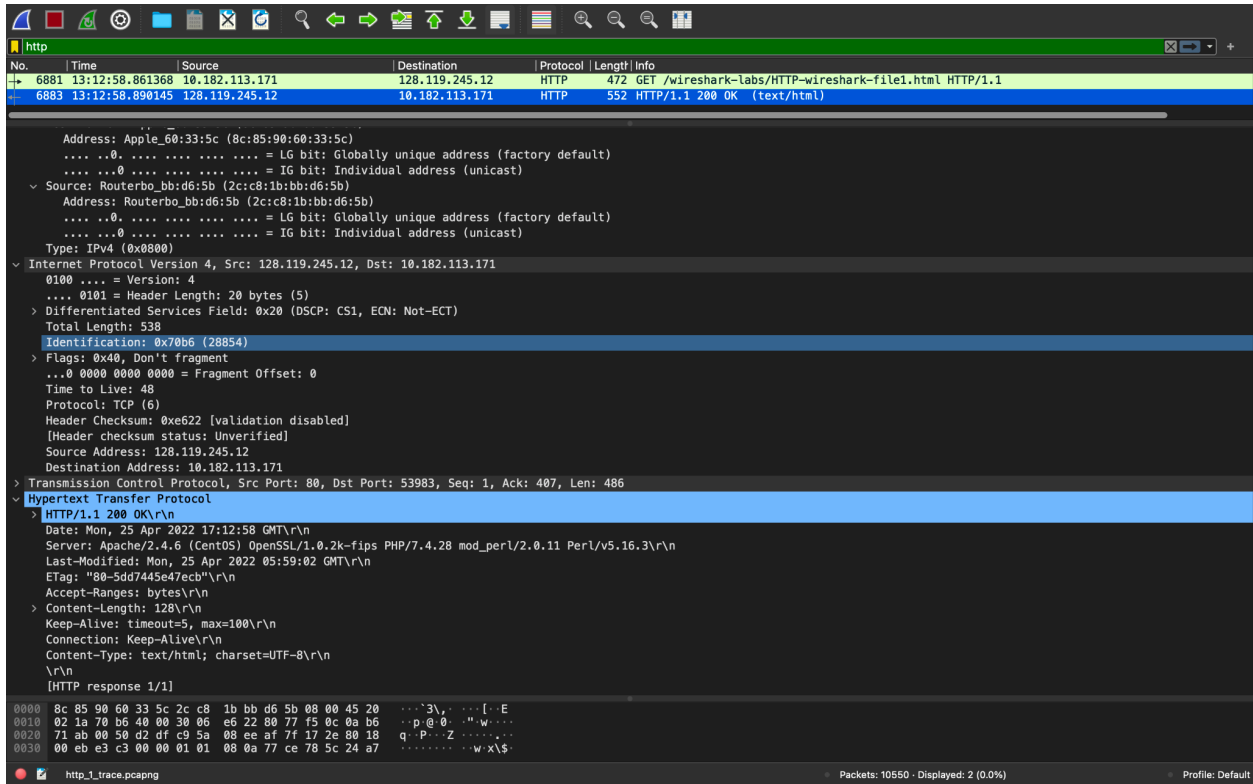
2). en-US, en

3). IP address of computer: 10.182.113.171

IP address of gaia.cs.umass.edu server: 128.119.245.12

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4). 200

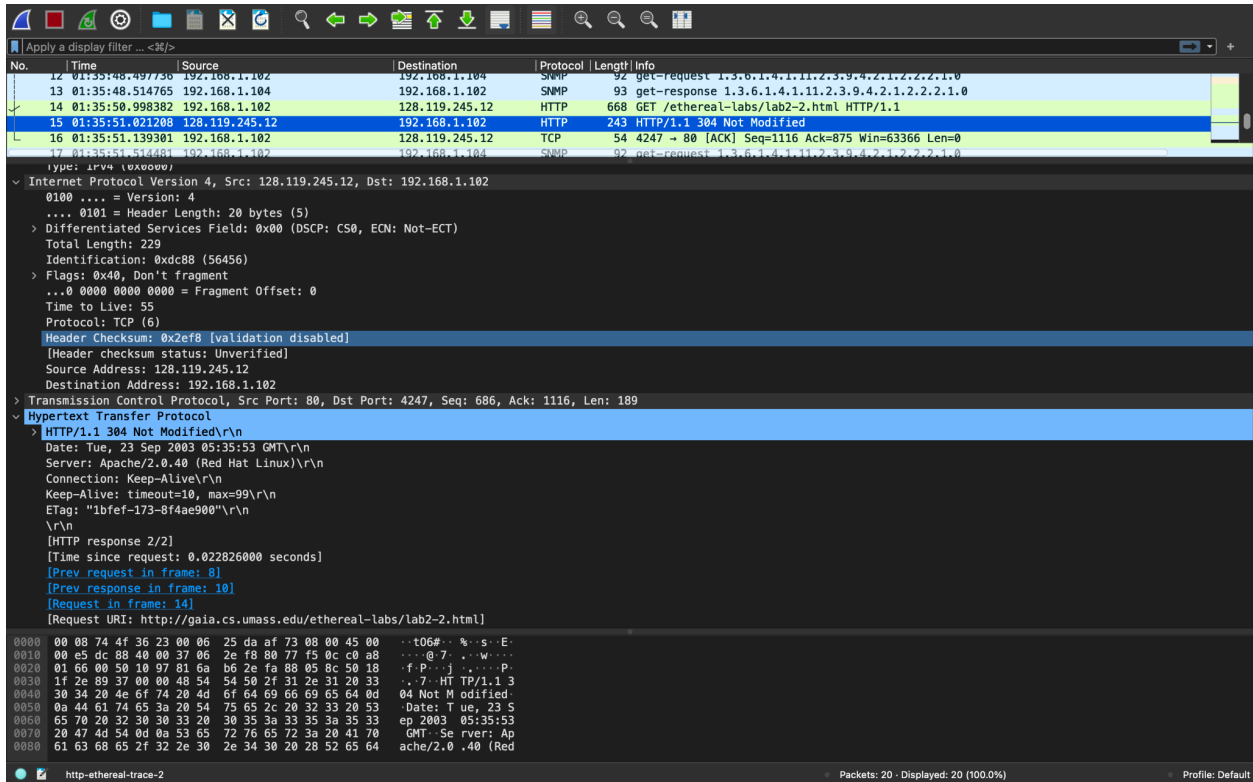
5). Mon, 25 Apr 2022 05:59:02 GMT

6). 128 bytes

7). No

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8). No

9). Yes. The contents of file is specified in Line-based text data

10). Yes.

If-Modified-Since: Tue, 23 Sep 2003 05:35:00 GMT

The Last modification time from previous GET request

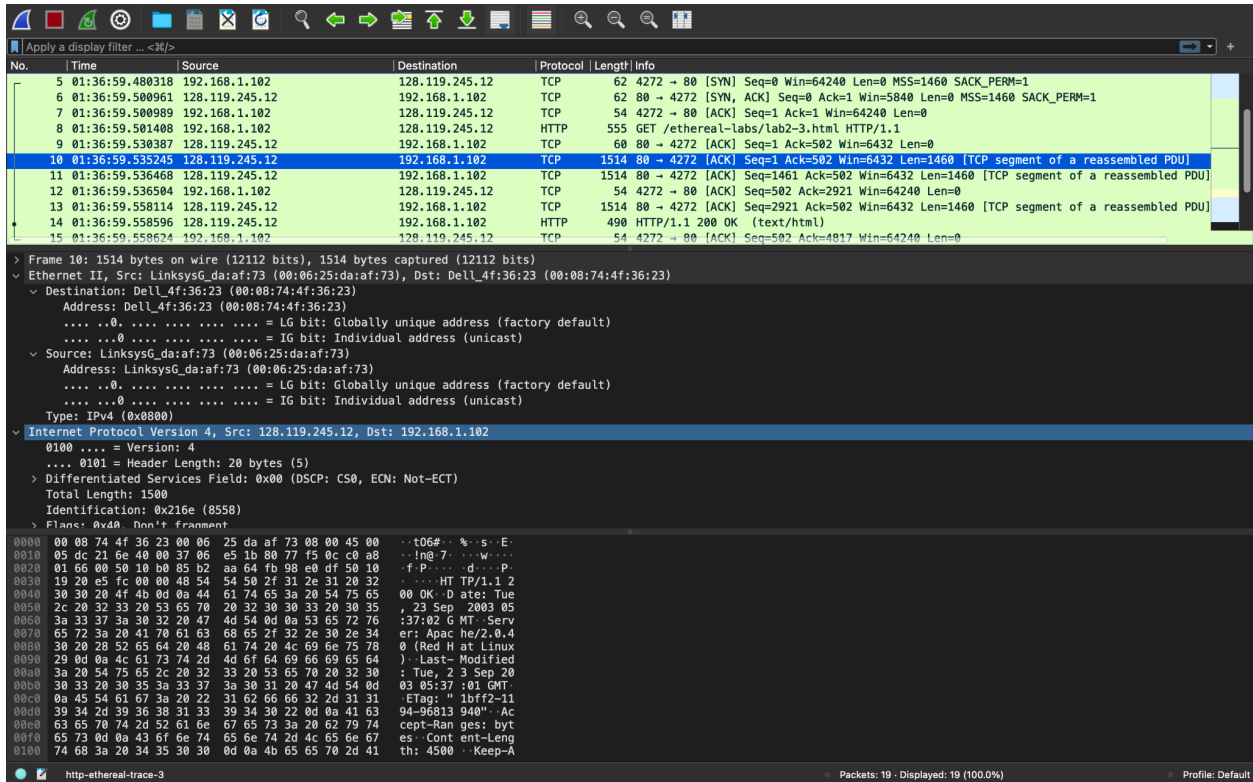
11). Status Code: 304

Response Phrase: Not Modified

The server did not serve a response file, and the browser loaded it from the cache.

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12). 1

Packet number: 8

13). Packet number: 14

14). Status Code: 200
Response Phrase: OK

15). 3 packets.
Packet number 10, 11 and 13

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No.	Time	Source	Destination	Protocol	Length	Info
8	01:38:41.687117	192.168.1.102	192.168.1.102	TCP	60	80 → 4307 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460 SACK_PERM=1
9	01:38:41.687146	192.168.1.102	128.119.245.12	TCP	54	4307 → 80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
10	01:38:41.687542	192.168.1.102	128.119.245.12	HTTP	555	GET /ethereal-labs/lab2-4.html HTTP/1.1
11	01:38:41.709247	128.119.245.12	192.168.1.102	TCP	60	80 → 4307 [ACK] Seq=1 Ack=502 Win=6432 Len=0
12	01:38:41.711426	128.119.245.12	192.168.1.102	HTTP	1057	HTTP/1.1 200 OK (text/html)
13	01:38:41.734948	192.168.1.102	165.193.123.218	TCP	62	4308 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1
14	01:38:41.736408	192.168.1.102	134.241.6.82	TCP	62	4309 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1
15	01:38:41.755699	165.193.123.218	192.168.1.102	TCP	62	80 → 4308 [SYN, ACK] Seq=0 Ack=1 Win=64860 Len=0 SACK_PERM=1 MSS=1380
16	01:38:41.755728	192.168.1.102	165.193.123.218	TCP	54	4308 → 80 [ACK] Seq=1 Ack=1 Win=64860 Len=0
17	01:38:41.756098	192.168.1.102	165.193.123.218	HTTP	625	GET /catalog/images/pearson-logo-footer.gif HTTP/1.1
18	01:38:41.759099	134.241.6.82	192.168.1.102	TCP	60	80 → 4309 [SYN, ACK] Seq=0 Ack=1 Win=49152 Len=0 MSS=1460

> Frame 10: 555 bytes on wire (4440 bits), 555 bytes captured (4440 bits)

> Ethernet II, Src: Dell_4f:36:23 (00:08:74:4f:36:23), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)

- Destination: 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)
- Source: Dell_4f:36:23 (00:08:74:4f:36:23)
Address: Dell_4f:36:23 (00:08:74:4f:36:23)
.....0. = LG bit: Globally unique address (factory default)
.....0. = IG bit: Individual address (unicast)

Type: IPv4 (0x0800)

> Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.119.245.12

0100 = Version: 4
... 0101 = Header Length: 20 bytes (5)
> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 541
Identification: 0x02b1 (689)
> Flags: 0x40, Don't fragment

0000 00 06 25 da af 73 00 08 74 4f 36 23 08 00 45 00 ...s...t06#..E.
0010 02 1d 02 b1 40 00 00 06 00 00 c0 a8 01 66 80 77 ...@.....f.w
0020 f5 0c 10 d3 00 50 fd 1d 3c a2 8c 57 c6 b8 50 18P...<..W..P..
0030 fa f0 39 a2 00 00 47 45 54 20 2f 65 74 68 65 72 ...9...GE T /ether
0040 65 61 6c 2d 6c 61 62 73 2f 6c 61 62 3d 2d 34 2e eal-labs /lab2-4.
0050 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a 48 html HTTP/1.1. H
0060 6f 73 74 3a 20 67 61 69 61 2e 63 73 2e 75 6d 61 ost: gai a.cs.uma
0070 73 73 2e 65 64 75 0d 0a 55 73 65 72 2d 41 67 65 ss.edu.. User-Age
0080 6e 74 3a 20 4d 6f 7a 69 6c 6c 61 2f 35 2e 30 20 nt: Mozi lla/5.0
0090 28 57 69 6e 64 6f 77 73 3b 20 55 3b 20 57 69 6e (Windows ; U; Win
00a0 64 6f 77 73 20 4e 54 20 35 2e 31 3b 20 65 6e 2d dows NT 5.1; en-
00b0 55 53 3b 20 72 76 3a 31 2e 30 2e 32 29 20 47 65 US; rv:1.0.2) Ge
00c0 63 6b 6f 2f 32 30 30 32 31 31 32 30 20 4e 65 74 cko/2002 1120 Net
00d0 73 63 61 70 65 2f 37 2e 30 31 0d 0a 41 63 63 65 scape/7.01. Acce
00e0 70 74 3a 20 74 65 78 74 2f 78 6d 6c 2c 61 70 70 pt: text /xml,app
00f0 6c 69 63 61 74 69 6f 6e 2f 78 6d 6c 2c 61 70 70 lication /xml,app
0100 6c 69 63 61 74 69 6f 6e 2f 78 68 74 6d 6c 2b 78 lication /html+x

No.	Time	Source	Destination	Protocol	Length	Info
10	01:38:41.687542	192.168.1.102	128.119.245.12	HTTP	555	GET /ethereal-labs/lab2-4.html HTTP/1.1
12	01:38:41.711426	128.119.245.12	192.168.1.102	HTTP	1057	HTTP/1.1 200 OK (text/html)
17	01:38:41.756098	192.168.1.102	165.193.123.218	HTTP	625	GET /catalog/images/pearson-logo-footer.gif HTTP/1.1
20	01:38:41.759416	192.168.1.102	134.241.6.82	HTTP	609	GET ~/kurose/cover.jpg HTTP/1.1
25	01:38:41.783667	165.193.123.218	192.168.1.102	HTTP	912	HTTP/1.1 200 OK (GIF89a)
54	01:38:42.040490	134.241.6.82	192.168.1.102	HTTP	1096	HTTP/1.0 200 Document follows (JPEG JFIF image)

> Frame 10: 555 bytes on wire (4440 bits), 555 bytes captured (4440 bits)

> Ethernet II, Src: Dell_4f:36:23 (00:08:74:4f:36:23), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)

- Destination: 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)
- Source: Dell_4f:36:23 (00:08:74:4f:36:23)
Address: Dell_4f:36:23 (00:08:74:4f:36:23)
.....0. = LG bit: Globally unique address (factory default)
.....0. = IG bit: Individual address (unicast)

Type: IPv4 (0x0800)

0000 00 06 25 da af 73 00 08 74 4f 36 23 08 00 45 00 ...s...t06#..E.
0010 02 1d 02 b1 40 00 00 06 00 00 c0 a8 01 66 80 77 ...@.....f.w
0020 f5 0c 10 d3 00 50 fd 1d 3c a2 8c 57 c6 b8 50 18P...<..W..P..
0030 fa f0 39 a2 00 00 47 45 54 20 2f 65 74 68 65 72 ...9...GE T /ether
0040 65 61 6c 2d 6c 61 62 73 2f 6c 61 62 3d 2d 34 2e eal-labs /lab2-4.
0050 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a 48 html HTTP/1.1. H
0060 6f 73 74 3a 20 67 61 69 61 2e 63 73 2e 75 6d 61 ost: gai a.cs.uma
0070 73 73 2e 65 64 75 0d 0a 55 73 65 72 2d 41 67 65 ss.edu.. User-Age
0080 6e 74 3a 20 4d 6f 7a 69 6c 6c 61 2f 35 2e 30 20 nt: Mozi lla/5.0
0090 28 57 69 6e 64 6f 77 73 3b 20 55 3b 20 57 69 6e (Windows ; U; Win
00a0 64 6f 77 73 20 4e 54 20 35 2e 31 3b 20 65 6e 2d dows NT 5.1; en-
00b0 55 53 3b 20 72 76 3a 31 2e 30 2e 32 29 20 47 65 US; rv:1.0.2) Ge
00c0 63 6b 6f 2f 32 30 30 32 31 31 32 30 20 4e 65 74 cko/2002 1120 Net
00d0 73 63 61 70 65 2f 37 2e 30 31 0d 0a 41 63 63 65 scape/7.01. Acce
00e0 70 74 3a 20 74 65 78 74 2f 78 6d 6c 2c 61 70 70 pt: text /xml,app
00f0 6c 69 63 61 74 69 6f 6e 2f 78 6d 6c 2c 61 70 70 lication /xml,app
0100 6c 69 63 61 74 69 6f 6e 2f 78 68 74 6d 6c 2b 78 lication /html+x

16). 3 GET requests.

All 3 GET requests(one request for HTML file and two requests for images) were sent to different servers.

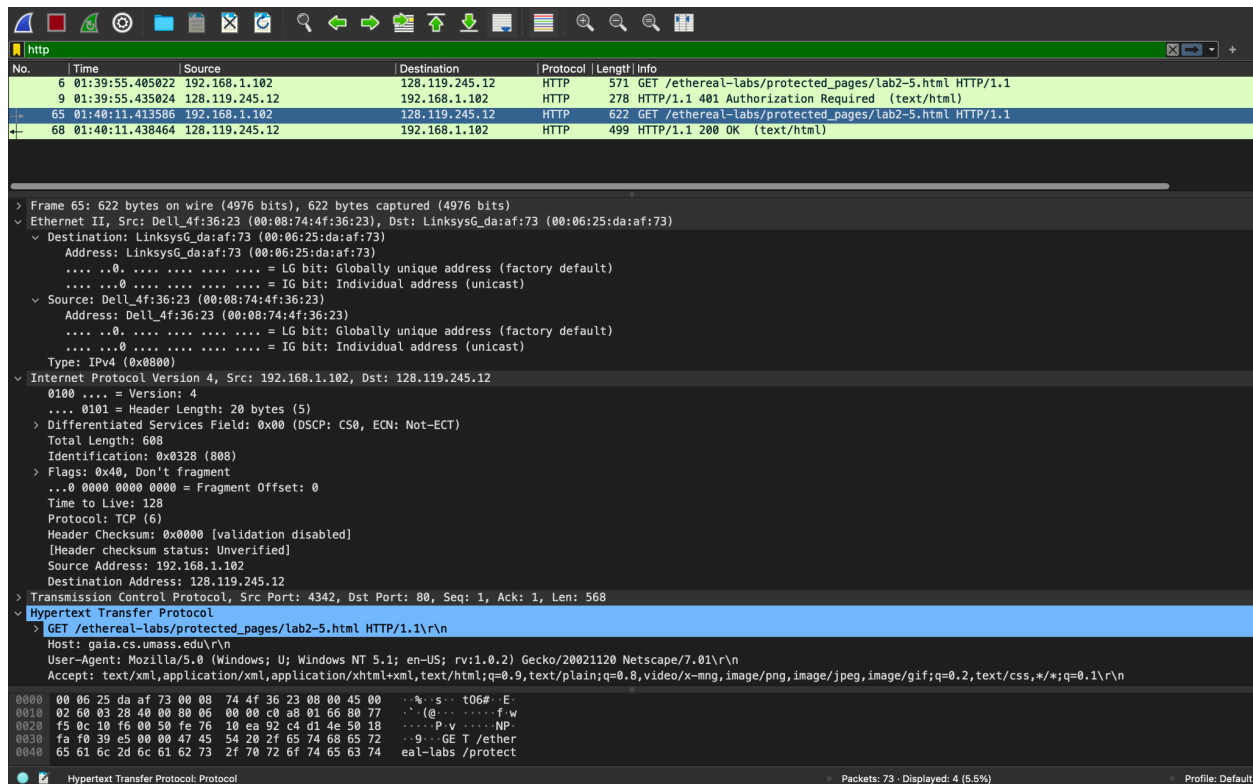
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17). The browser downloaded the two images parallel, as we see in the trace the GET request for the second image was made before we received the response for the first image's GET request.

The sequence of request sent:

1. First image GET request packet 17
2. Second image GET request packet 20
3. First image response packet 25
4. Second image response packet 54



18). Status Code: 401

Response phrase: Authorization Required

19). It includes the Authorization: Basic field with value:
ZXR0eXN0dWRlbnRzOm5ldHdvcmtz