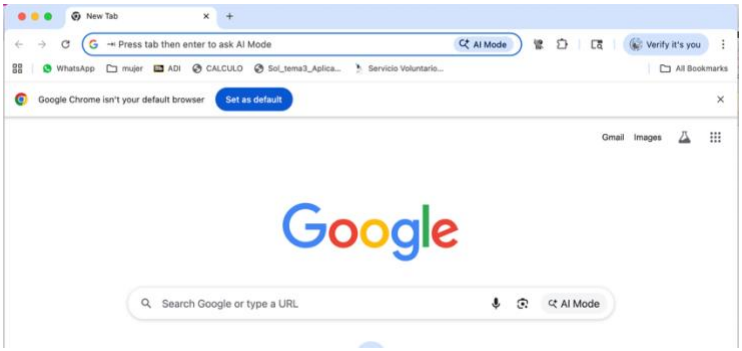
Catalina Cisneros

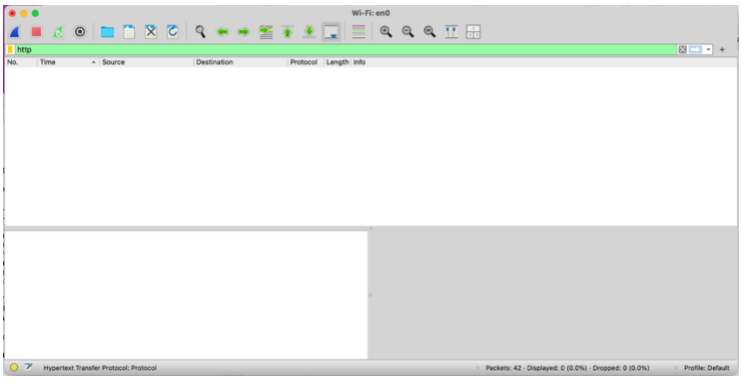
Lab: Wireshark Lab: HTTP

1. The Basic HTTP GET/response interaction

Start up your web browser.

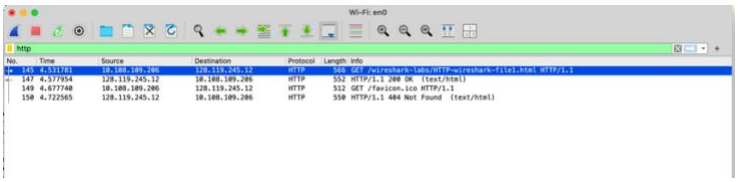


Start Wireshark and wait 2 minutes



Enter on my browser: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html

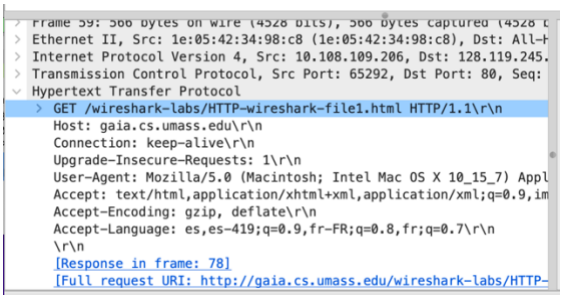
Stop packet capture

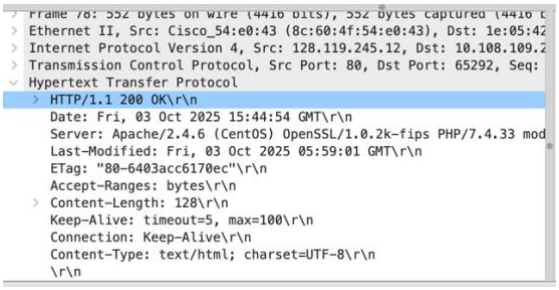


Questions

1. Is your browser running HTTP version 1.0, 1.1, or 2? What version of HTTP is the server running?

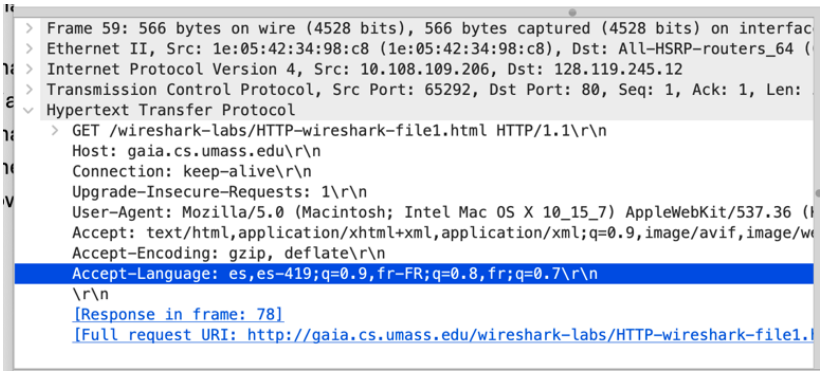
   → Both browser and server are running HTTP/1.1





2. What languages (if any) does your browser indicate that it can accept to the server?

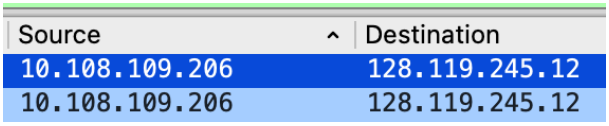
   → Browser can accept Spanish (es, es-419), French (fr-FR, fr)



3. What is the IP address of your computer? What is the IP address of the gaia.cs.umass.edu server?

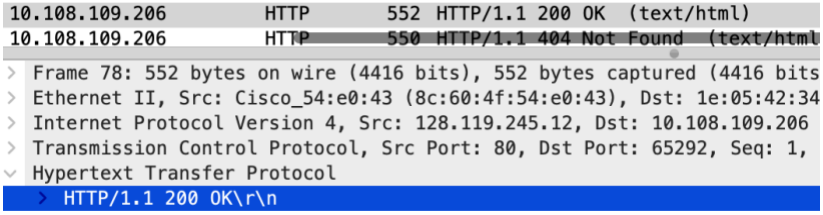
   → Source IP (my computer): 10.108.109.206

   → Destination IP: 128.119.245.12

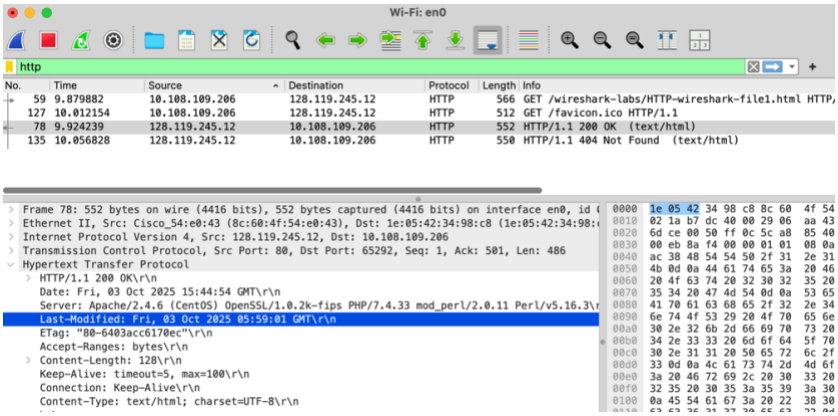


4. What is the status code returned from the server to your browser?

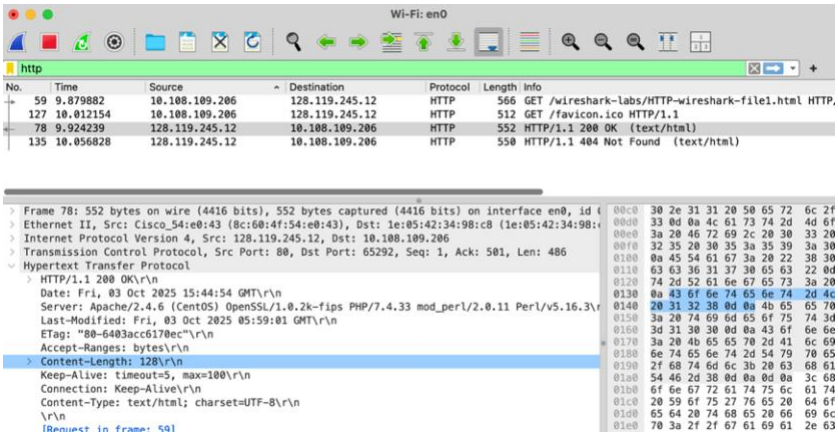
   →The server returned 200 OK.



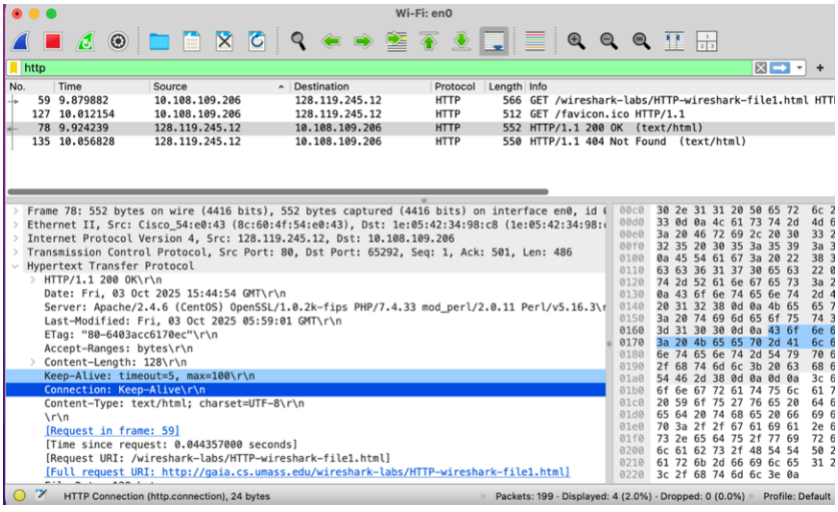
5. When was the HTML file that you are retrieving last modified at the server?
   → the HTML file was last modified on Fri, 03 Oct 2025 05:59:01 GMT = 01:59:01 EST



6. How many bytes of content are being returned to your browser?
   → 128 bytes of content were returned.

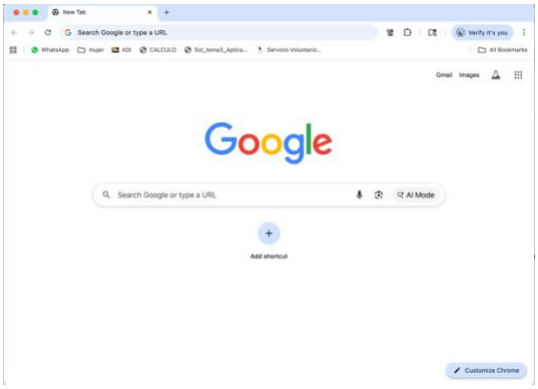


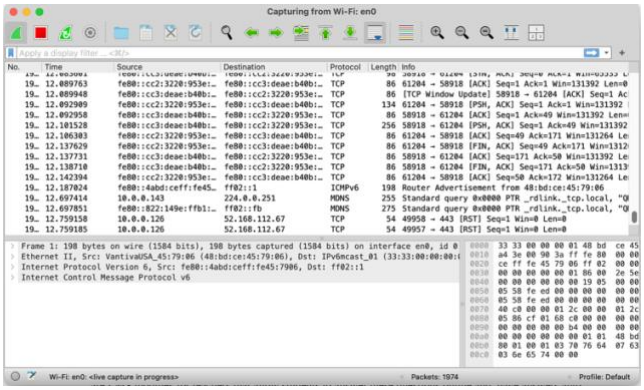
7. By inspecting the raw data in the packet content window, do you see any headers within the data that are not displayed in the packet-listing window? If so, name one.
   →Example not shown in main list but visible in raw data is Connection: Keep-Alive



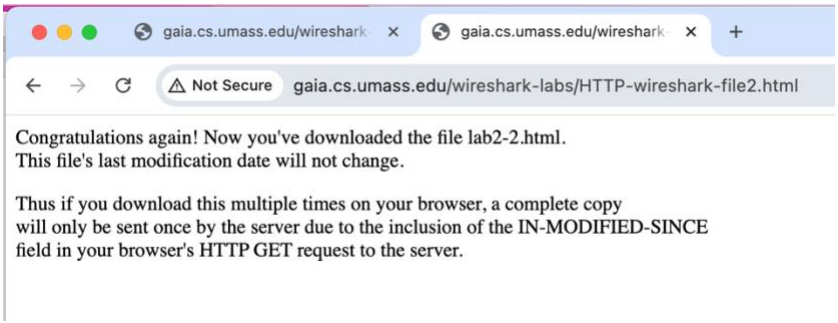
2. The HTTP CONDITIONAL GET/response interaction

Start up my web browser and Wireshark

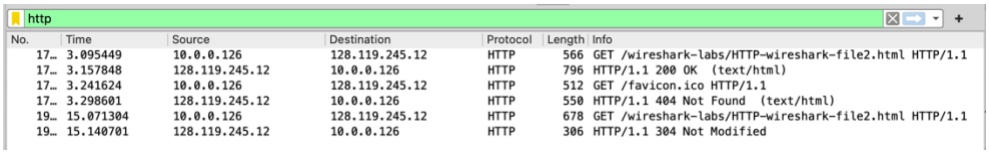




Enter the given URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html twice in the browser

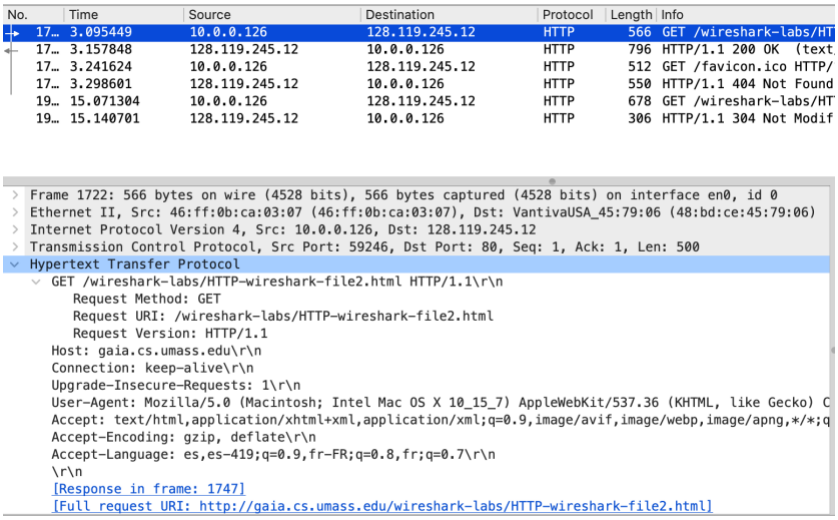


Stop packet capture and filter by http

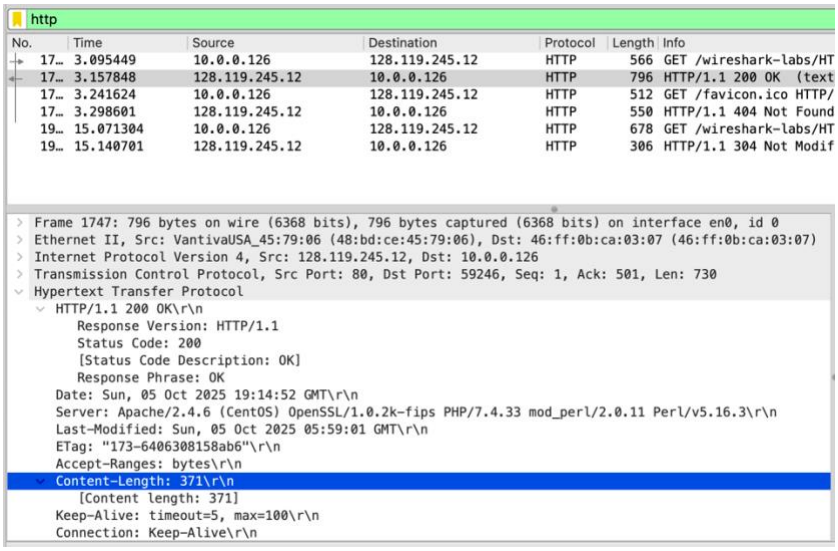


Questions

8. Inspect the contents of the first HTTP GET request from your browser to the server. Do you see an “IF-MODIFIED-SINCE” line in the HTTP GET?
   → No, the first GET did not include an “If-Modified-Since” line.

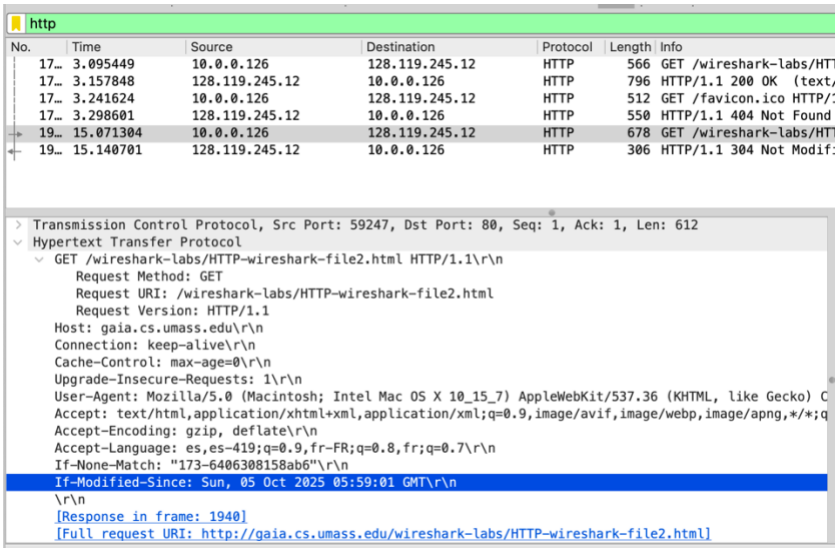


9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?
   → Yes, the server returned the file. The “200 OK” status and the presence of a Content-Length field confirm it.

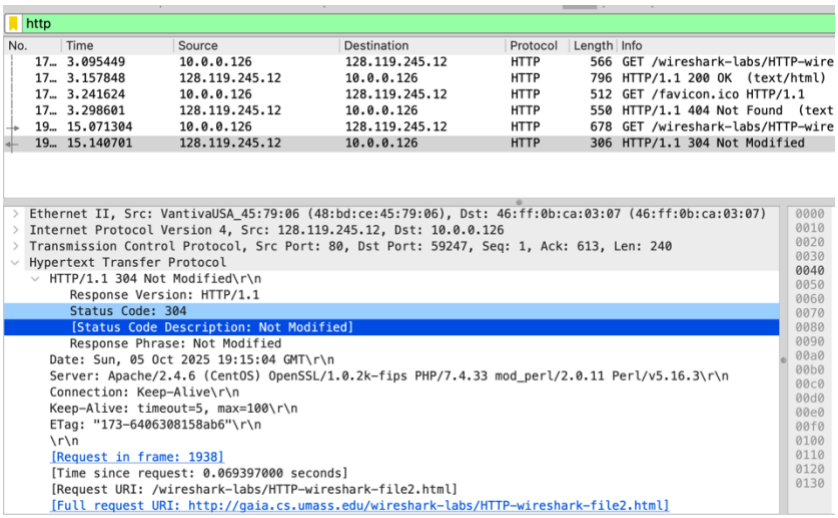


10. Now inspect the contents of the second HTTP GET request from your browser to the server. Do you see an “IF-MODIFIED-SINCE:” line in the HTTP GET6? If so, what information follows the “IF-MODIFIED-SINCE:” header?

→ Yes, the second GET includes “If-Modified-Since: Sun, 05 Oct 2025 05:59:01 GMT\r\n”

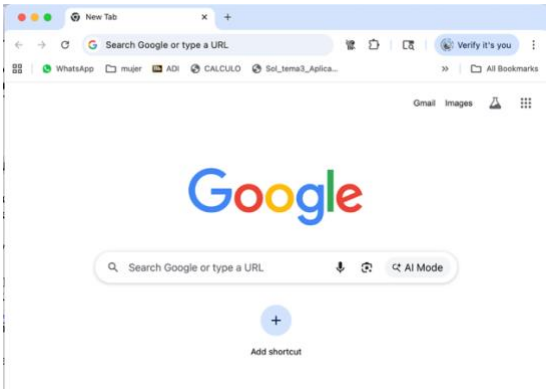


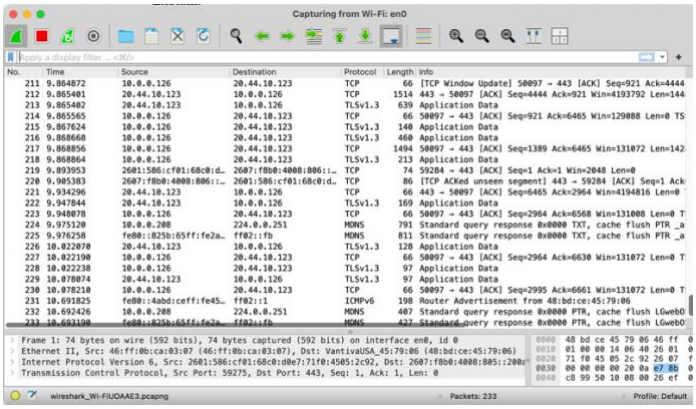
11. What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.
→ The server replied 304 Not Modified, meaning it did not resend the file and the browser used the cached version.



3. Retrieving Long Documents

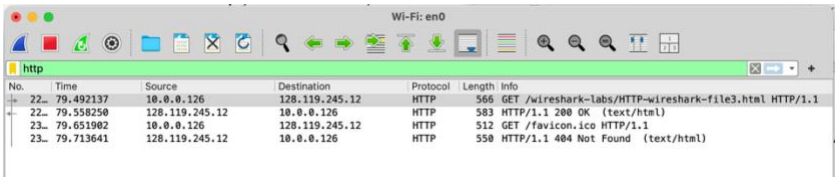
Restart my web browser (cache + history cleared) and Wireshark





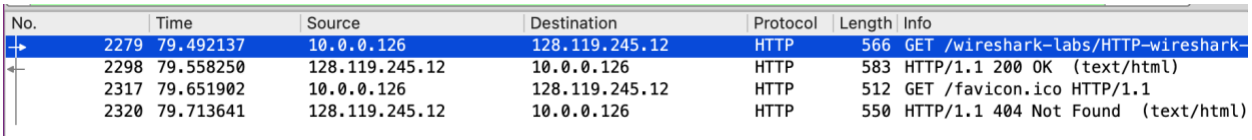
Enter the URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html

Stop Wireshark and filter by http



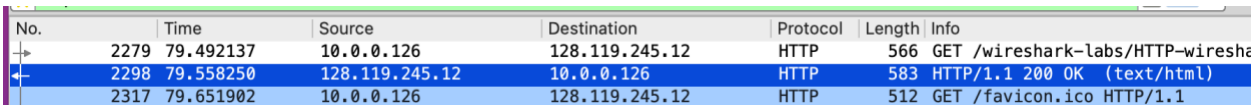
Questions:

12. How many HTTP GET request messages did your browser send? Which packet number in the trace contains the GET message for the Bill or Rights?
    → My browser sent 2 GET requests (one for file3.html and one for favicon.ico). The GET for the Bill of Rights is in packet 2279



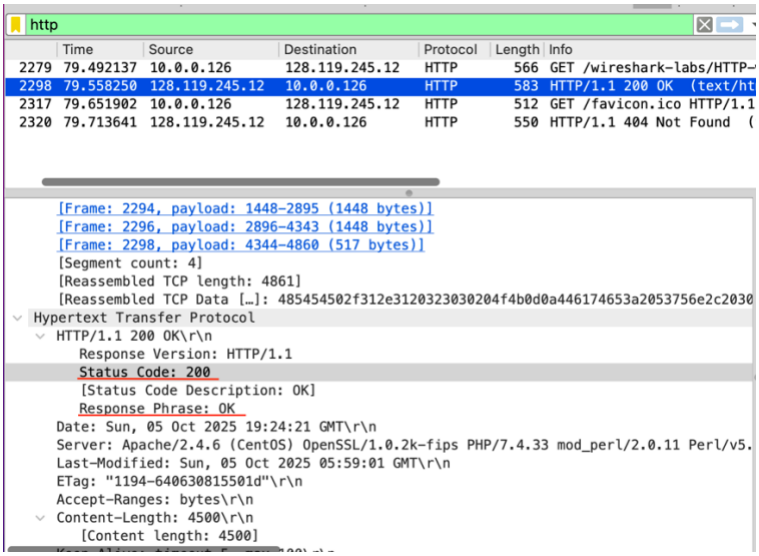
No.	Time	Source	Destination	Protocol	Length	Info
2279	79.492137	10.0.0.126	128.119.245.12	HTTP	566	GET /wireshark-labs/HTTP-wireshark-
2298	79.558250	128.119.245.12	10.0.0.126	HTTP	583	HTTP/1.1 200 OK (text/html)
2317	79.651902	10.0.0.126	128.119.245.12	HTTP	512	GET /favicon.ico HTTP/1.1
2320	79.713641	128.119.245.12	10.0.0.126	HTTP	550	HTTP/1.1 404 Not Found (text/html)

13. Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?
    →The response with the status code appears in packet 2298



No.	Time	Source	Destination	Protocol	Length	Info
2279	79.492137	10.0.0.126	128.119.245.12	HTTP	566	GET /wireshark-labs/HTTP-wiresha
2298	79.558250	128.119.245.12	10.0.0.126	HTTP	583	HTTP/1.1 200 OK (text/html)
2317	79.651902	10.0.0.126	128.119.245.12	HTTP	512	GET /favicon.ico HTTP/1.1

14. What is the status code and phrase in the response?
    →HTTP/1.1 200 OK.

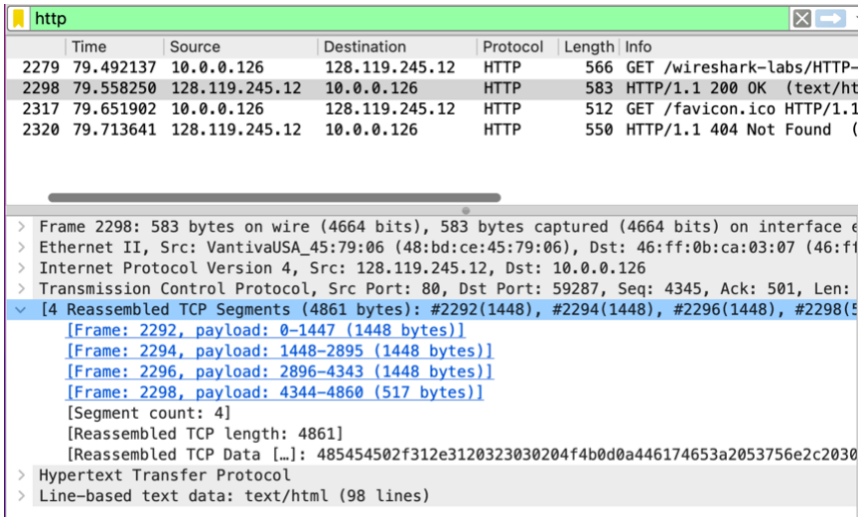


15. How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?
    → The HTTP response needed 4 data-containing TCP segments:

    14 Reassembled TCP Segments (4861 bytes):
    [Frame: 2292, payload: 0-1447 (1448 bytes)]
    [Frame: 2294, payload: 1448-2895 (1448 bytes)]
    [Frame: 2296, payload: 2896-4343 (1448 bytes)]
    [Frame: 2298, payload: 4344-4860 (517 bytes)]

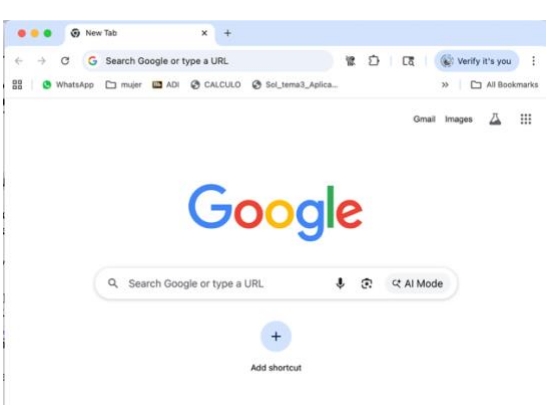
[Segment count: 4]

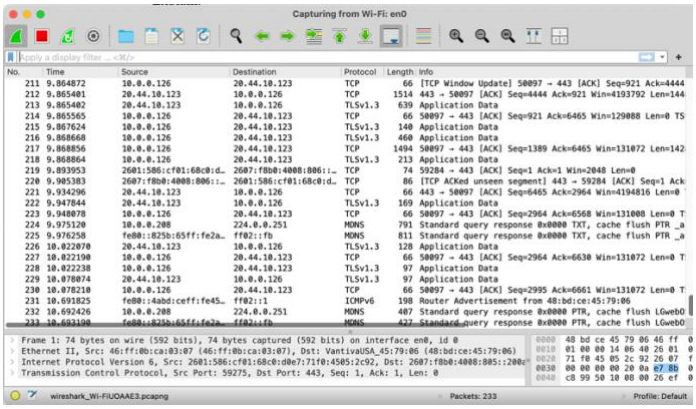
Reassembled TCP length: 48611



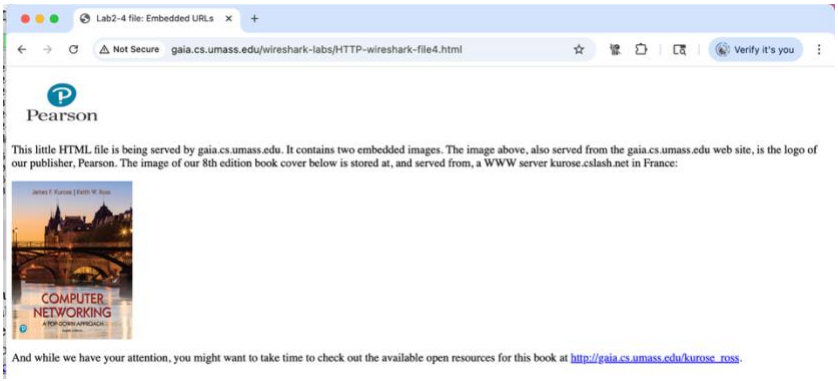
4. HTML Documents with Embedded Objects

Restart my web browser (cache + history cleared) and Wireshark

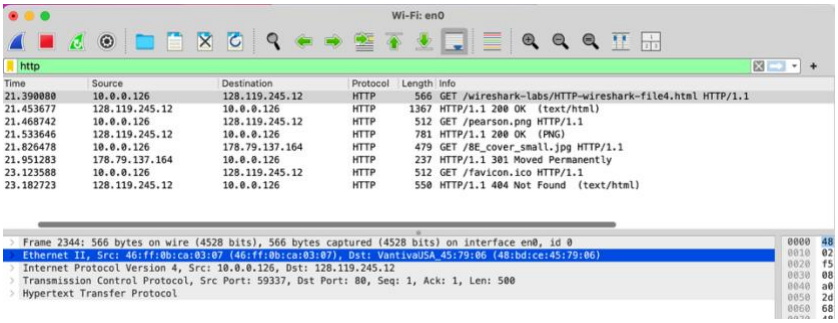




Enter the URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html



Stop Wireshark and filter by http

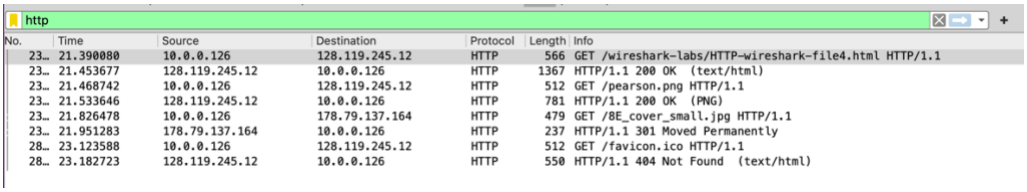


Questions

16. How many HTTP GET request messages did your browser send? To which Internet addresses were these GET requests sent?

    → My browser sent 4 HTTP GET requests.

    - /wireshark-labs/HTTP-wireshark-file4.html → 128.119.245.12
    - /pearson.png → 128.119.245.12
    - /8E_cover_small.jpg → 178.79.137.164
    - /favicon.ico → 128.119.245.12



17. Can you tell whether your browser downloaded the two images serially, or whether they were downloaded from the two web sites in parallel? Explain.

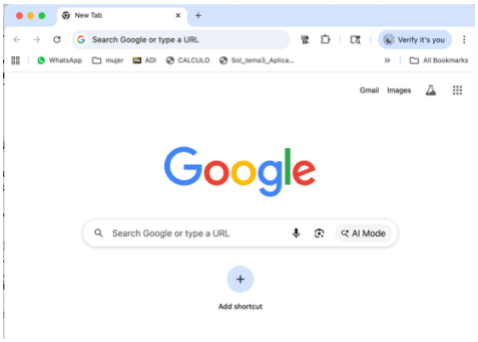
    → The two images were downloaded in parallel.

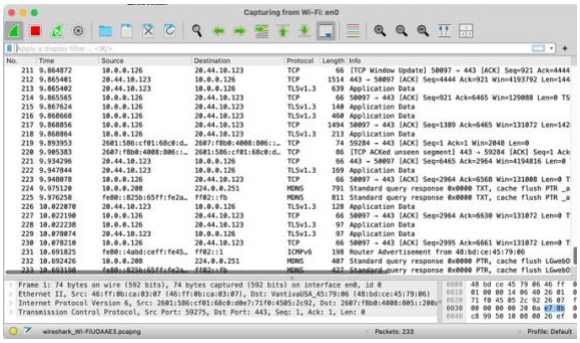
    → The GET for pearson.png was sent to 128.119.245.12 at 21.468 s, and the GET for 8E_cover_small.jpg was sent to 178.79.137.164 at 21.826 s. Only about 0.36 seconds of different. Because the browser initiated both requests to different servers nearly simultaneously, it retrieved the two images in parallel rather than serially.

Time	Source	Destination	Protocol	Length	Info
21.390080	10.0.0.126	128.119.245.12	HTTP	566	GET /wireshark-labs/HTTP-wireshark-file4
21.453677	128.119.245.12	10.0.0.126	HTTP	1367	HTTP/1.1 200 OK (text/html)
21.468742	10.0.0.126	128.119.245.12	HTTP	512	GET /pearson.png HTTP/1.1
21.533646	128.119.245.12	10.0.0.126	HTTP	781	HTTP/1.1 200 OK (PNG)
21.826478	10.0.0.126	178.79.137.164	HTTP	479	GET /8E_cover_small.jpg HTTP/1.1
21.951283	178.79.137.164	10.0.0.126	HTTP	237	HTTP/1.1 301 Moved Permanently
23.123588	10.0.0.126	128.119.245.12	HTTP	512	GET /favicon.ico HTTP/1.1
23.182723	128.119.245.12	10.0.0.126	HTTP	550	HTTP/1.1 404 Not Found (text/html)

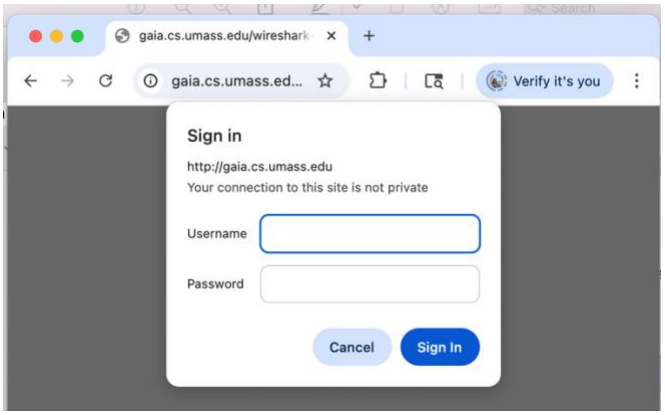
5 HTTP Authentication

Restart my web browser (cache + history cleared) and Wireshark



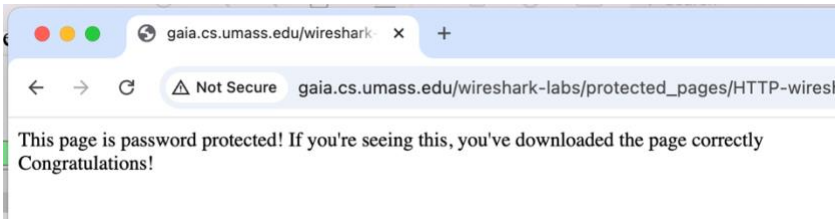


Enter the URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html

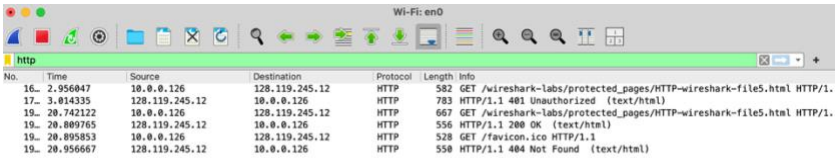


Enter username and password

- Username: wireshark-students
- Password: network



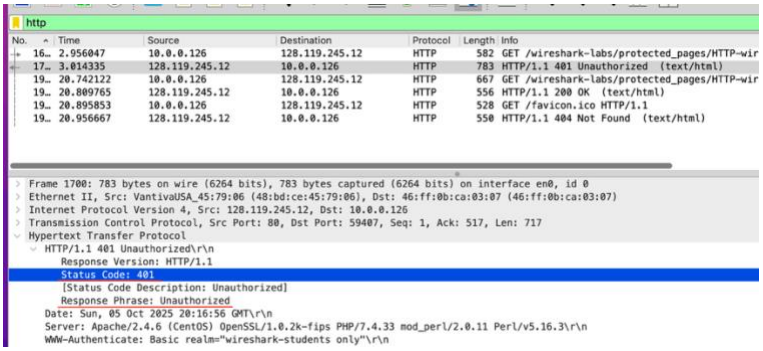
Stop Wireshark and filter by http



Questions

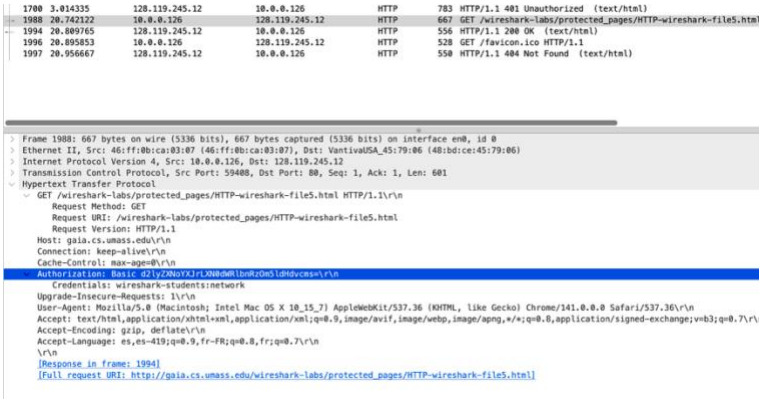
18. What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?

    → The server replied with HTTP/1.1 401 Unauthorized, meaning the page is protected and my browser didn't have the authorization needed to access it.



19. When your browser's sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?

    → When my browser sent the second GET request, it added an Authorization field that included my login credentials encoded in Base64.



→ Decoding the credentials