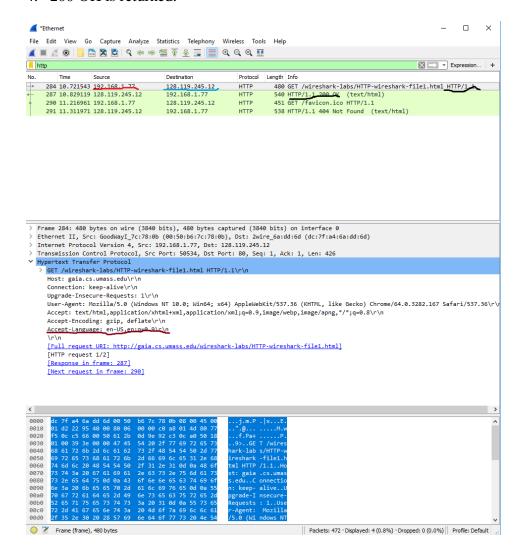
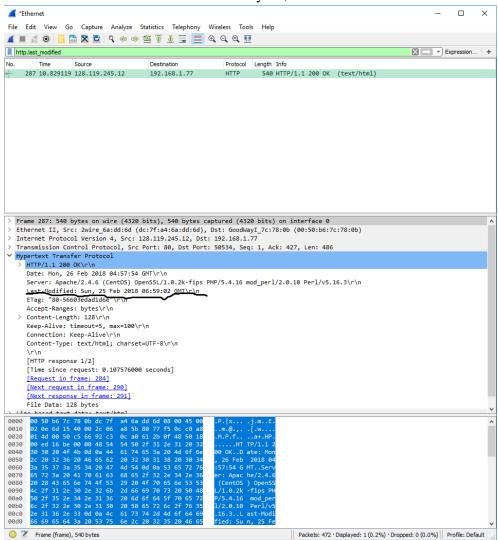
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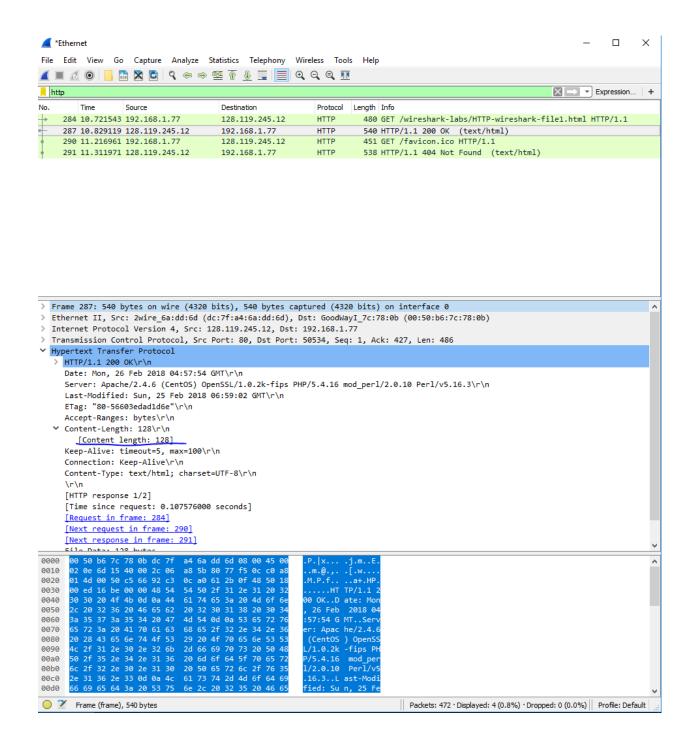
- 1. My browser appears to be using HTTP 1.1 and the server is also running HTTP 1.1
- 2. The Accept-Language point says that my browser accepts US English.
- 3. My IPv4 address is 192.168.1.77. IP of the server is 128.119.245.12
- 4. 200 OK is returned.



5. By doing a http.last_modified search in the filter, I get the response that says that the last time the file was edited was on February 25, 2018 at 6:59

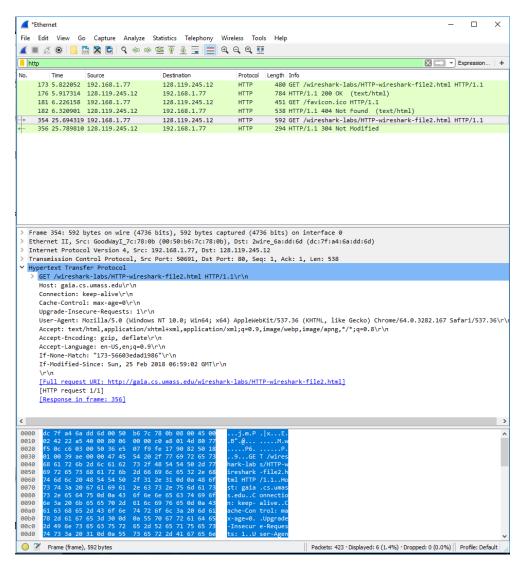


6. Content-length = 128 bits

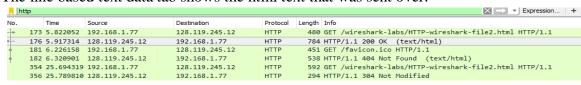


7. No, the raw data appears to match up with what is shown in the packet-listing window.

8. There appears to be no "if-modified-since" message



9. The line based text data tab shows the html text that was sent over.



```
> Content-Length: 371\r\n
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
    \r\n
    [HTTP response 1/2]
    [Time since request: 0.095262000 seconds]
    [Request in frame: 173]
    [Next request in frame: 181]
    [Next request in frame: 182]
    file Data: 371 bytes

> Line-based text data: text/html
    \n
    <html>\n
    \r\n
    Congratulations again! Now you've downloaded the file lab2-2.html. <br/>
    rhis file's last modification date will not change. \r\n
    This file's last modification date will not change. \r\n
    will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE
    /n
    </html>\n
    </hr>
```

10. Yes. If-Modified-Since: Sun, 25 Feb 2018 06:59:02 GMT

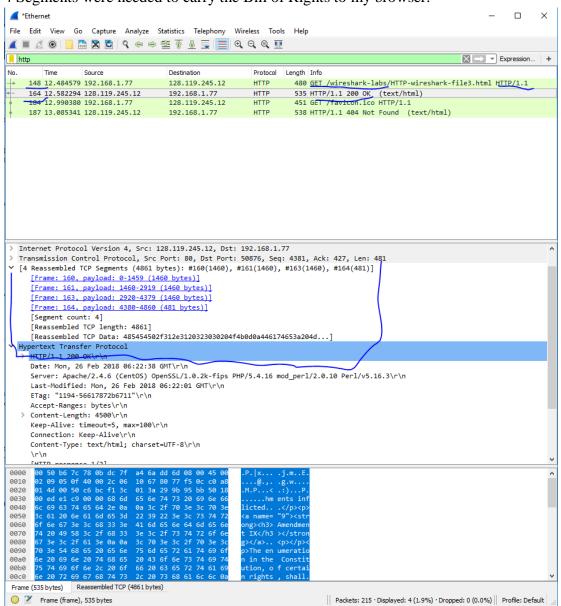
173 5.822052	192.168.1.77	128.119.245.12	HTTP	480 GET /wireshark-labs/HTTP-wireshark-f
176 5.917314	128.119.245.12	192.168.1.77	HTTP	784 HTTP/1.1 200 OK (text/html)
181 6.226158	192.168.1.77	128.119.245.12	HTTP	451 GET /favicon.ico HTTP/1.1
182 6.320901	128.119.245.12	192.168.1.77	HTTP	538 HTTP/1.1 404 Not Found (text/html)
354 25.694319	192.168.1.77	128.119.245.12	HTTP	592 GET /wireshark-labs/HTTP-wireshark-f
356 25.789810	128.119.245.12	192.168.1.77	HTTP	294 HTTP/1.1 304 Not Modified

```
> Frame 354: 592 bytes on wire (4736 bits), 592 bytes captured (4736 bits) on interface 0
      Ethernet II, Src: GoodWayI_7c:78:0b (00:50:b6:7c:78:0b), Dst: 2wire_6a:dd:6d (dc:7f:a4:6a:dd:6d)
> Internet Protocol Version 4, Src: 192.168.1.77, Dst: 128.119.245.12
      Transmission Control Protocol, Src Port: 50691, Dst Port: 80, Seq: 1, Ack: 1, Len: 538

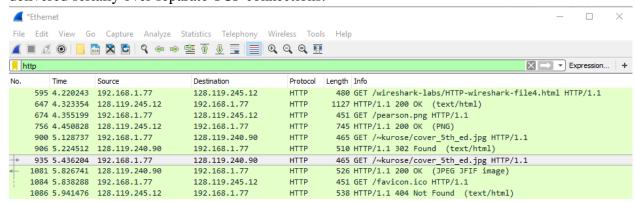
→ Hypertext Transfer Protocol

        > GET /wireshark-labs/HTTP-wireshark-file2.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/64.0.:
               Accept: \ text/html, application/xhtml+xml, application/xml; q=0.9, image/webp, image/apng, */*; q=0.8 \\ \ r\ n=0.8 \\ \ r\ n=0.9, image/webp, image/apng, */*; q=0.8 \\ \ r\ n=0.8 \\ \ r\ n=0.9, image/webp, image/apng, */*; q=0.8 \\ \ r\ n=0.8 \\ \ r\ n=0.9, image/webp, image/apng, */*; q=0.8 \\ \ r\ n=0.8 
               Accept-Encoding: gzip, deflate\r\n
               If-Modified-Since: Sun, 25 Feb 2018 06:59:02 GMT\r\n
               [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
               [HTTP request 1/1]
               [Response in frame: 356]
```

- 11. As seen in the previous screenshot, the message is a http 1.1 304 Not Modified message. This is much shorter than the full response from the previous response.
- 12. My browser sent one GET message. Packet Number 148.
- 13. Packet number 164 contains the status code and the phrase 200 OK.
- 14. Status code and phrase of the response is 200 OK.
- 15. 4 Segments were needed to carry the Bill of Rights to my browser.



- 16. 4, not counting the favicon.io get message. The GET messages were sent to 128.119.245.12, and 128.119.240.90.
- 17. Based on the time stamps, it looks like the images were downloaded serially. Also the source port is incrementing from 50929, 50930 and 50932 which means the images were delivered serially over separate TCP connections.



```
> Frame 935: 465 bytes on wire (3720 bits), 465 bytes captured (3720 bits) on interface 0
> Ethernet II, Src: GoodWayI_7c:78:0b (00:50:b6:7c:78:0b), Dst: 2wire_6a:dd:6d (dc:7f:a4:6a:dd:6d)
> Internet Protocol Version 4, Src: 192.168.1.77, Dst: 128.119.240.90
> Transmission Control Protocol, Src Port: 50932, Dst Port: 80, Seq: 1, Ack: 1, Len: 411

    Hypertext Transfer Protocol

   > GET /~kurose/cover_5th_ed.jpg HTTP/1.1\r\n
     Host: caite.cs.umass.edu\r\n
     Connection: keep-alive\r\n
     User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/64.0.3282.167 Safari/537.36\r\
     Accept: image/webp,image/apng,image/*,*/*;q=0.8\r\n
     Referer: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html\r\n
     Accept-Encoding: gzip, deflate\r\n
     Accept-Language: en-US,en;q=0.9\r\n
     \r\n
     [Full request URI: http://caite.cs.umass.edu/~kurose/cover_5th_ed.jpg]
     [HTTP request 1/1]
     [Response in frame: 1081]
```

18. The initial response is HTTP/ 1.1 401 Unauthorized

19. An authorization field appears.

