Computer Network

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Second Lab

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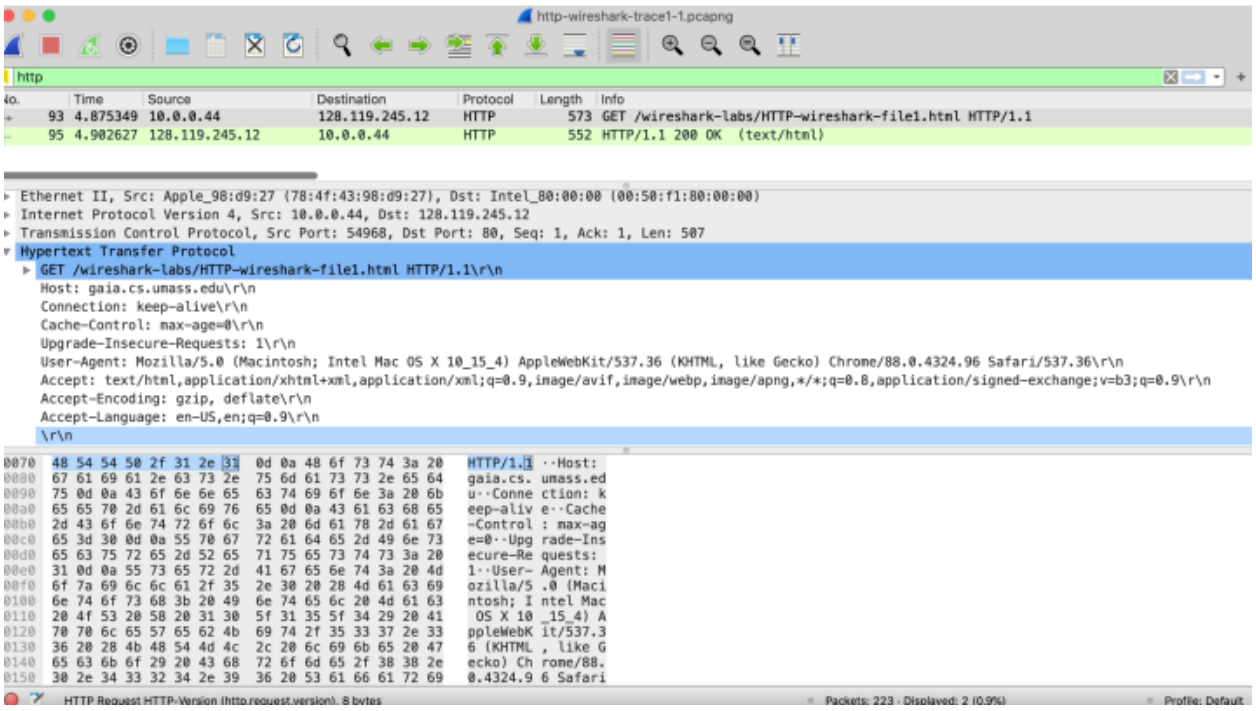
1. The Basic HTTP GET/response interaction



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

It showed version 1.1 because that's what I am using. However, any request we make in a browser specifies the protocol level. The web server determines whether anything else needs to be done with the request and then performs the up/down level versioning. HTTP 1.1 is widely used, and most servers support it. However, if the version requested by the client is not supported by the server, an error message will be displayed.

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

The language of 1) **En – en** ,2) **en=US** or 3) **en**, American or regular English are the accepted languages.

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

- By typing (**ipconfig on cmd Windows**)

```
IPv4 Address. . . . . . . . . . . : 192.168.242.1
```

- ip address of gaia.cs.umass.edu is : **128.119.245.12 , By typing Nslookup (website)**

```
Non-authoritative answer:
Name:    gaia.cs.umass.edu
Address:  128.119.245.12
```

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

```
C:\Users\nomsa>curl --head www.google.com
HTTP/1.1 200 OK
```

5. When was the HTML file that you are retrieving last modified at the server?

```
C:\Users\nomsa>curl --head www.google.com
HTTP/1.1 200 OK
Content-Type: text/html; charset=ISO-8859-1
P3P: CP="This is not a P3P policy! See g.co/p3phelp for more info."
Date: Tue, 25 Oct 2022 15:27:55 GMT
```

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

- Content length: 371\r\n

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.

- No, I did not notice any headers.

2. The HTTP CONDITIONAL GET/response interaction

Answer the following questions7
:

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?

- There was no “IF-MODIFIED-SINCE” line in the message.

9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

- The server did return the contents. There is a section found in Wireshark called “Line-Based Text Data”, it shows what was sent from the server to the browser which is what the website showed when I called it on the browser.

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 HTTP message had the “IF-MODIFIED-SINCE” in it. The date and time that was last accessed on the webpage.

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 did not return the file's contents since the browser merely grabbed them from its cache. If the file had been modified since the last time it was read, it would have returned the contents; instead, it just instructed my browser to retrieve the old file from its cached memory.

3. Retrieving Long Documents

Answer the following questions7
:
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?

- There was **1** message request.
- The number is **8**

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

- Packet 10.

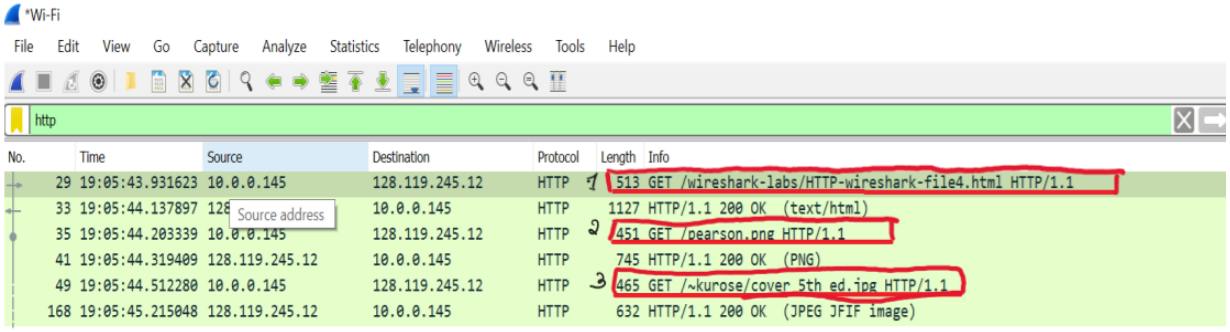
14. What is the status code and phrase in the response?
- 200 (OK)

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

- Three packets found (10, 11, 13)

4. HTML Documents with Embedded Objects

Answer the following questions8
:
16. How many HTTP GET request messages did your browser send? To which Internet addresses were these GET requests sent?



- There are 3 HTTP GET request messages sent by the Browser:
- 1) 128.119.245.12

- 2) 128.119.245.12
- 3) 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.

- We can see if our files were downloaded serially or in parallel from two websites by looking at the TCP ports and number of HTTP requests.

- Two images were transmitted over two TCP connections in this case, implying that they were downloaded serially.