**Computer Networks**

**Lab 2a**

**Wireshark Lab:**

**HTTP v8.0**

**Student Name: Phạm Ngọc Sang**

**Student No: 1813810**

1. **The Basic HTTP GET/response interaction.**
   * 1. **Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?**

Answer:

My browser is running HTTP version 1.1

The server is running HTTP version 1.1

* + 1. **What languages (if any) does your browser indicate that it can accept to the server?**

Answer: en-US,en;q=0.9

* + 1. **What is the IP address of your computer? Of the gaia.cs.umass.edu server?**

Answer:

IP address of my computer: 10.28.128.62

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

* + 1. **What is the status code returned from the server to your browser?**

Answer: 200

* + 1. **When was the HTML file that you are retrieving last modified at the server?**

Answer:

Last-Modified: Mon, 22 Mar T2021 05:59:01 GMT\r\n

* + 1. **How many bytes of content are being returned to your browser?**

Answer: 128 bytes

* + 1. **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.**

Answer: Don’t see

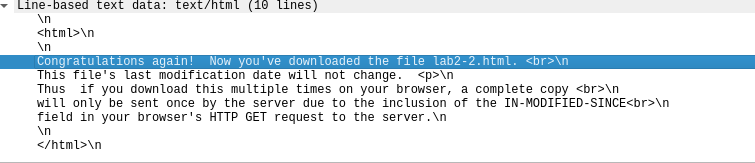
1. **The HTTP CONDITIONAL GET/response interaction.**

**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?**

Answer: Don’t see

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

Answer: Yes



**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 GET? If so, what information follows the “IF-MODIFIED-SINCE:” header?**

Answer: Yes

If-Modified-Since: Mon, 22 Mar 2021 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.**

Answer:

* Status code: 304
* Phrase returned: Not Modified
* Server did not return the contents of the file explicitly. Because the contents of the file have been saved in the cache of the browser and not modified.

1. **Retrieving Long Documents**

**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?**

Answer: 1 HTTP GET request message and the packet number 321 in the trace contains the GET message for the Bill or Rights.

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

Answer: 338

**14. What is the status code and phrase in the response?**

Answer: 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?**

Answer: 3

1. **HTML Documents with Embedded Objects**

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

Answer: 3 HTTP GET request

Packet 85: 128.119.245.12

Packet 97: 128.119.245.12

Packet 121: 178.79.137.164

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

Answer: Parallel

Because the HTTP GET requests for two images were sent using packet 97 and 121, and the response packets were 112 and 131 which means the request for the second image was made before the first image was received.

1. **HTTP Authentication**

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

Answer: 401 Unauthorized

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

Answer:

The new field “Authorization” is added in the HTTP GET message