Eddie C. Fox

February 5, 2017

<div align="center">CS 373 Introduction to Networking</div>

<div align="center">Lab 2</div>

Part 1: The Basic HTTP GET/response interaction

1. Both my computer and the server are running HTTP 1.1
2. My browser indicates that it will accept US English from the server.
3. IP Address of computer: 192.168.1.10 IP Address of server: 128.119.245.12
4. 200 OK
5. Last modified very recently today. Unfortunately, I didn't check the time of capture, but it is probably very close.
6. Either 128, as defined by Content-Length in the OK protocol, 540, as shown by the OK length field, or 486, as shown by the TCP len. I think Content-Length is the most accurate, so I'm going with 128.
7. No, everything seems covered.

Part 2: The HTTP CONDITIONAL GET/response interaction

8. I do not see a "IF MODIFIED-SINCE" line.
9. Yes, the server explicitly returned the contents of the file. It can be seen in the contents of the ok message at the bottom.
10. Yes "If-Modified-Since" can be found. The condition can be seen after \r\n, and shows a full request URI of: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html
11. Status: 304 Not Modified. File was not explicitly returned because it could not be detected in the contents of the file.

Part 3: Retrieving Long Documents

12. One GET message.
13. Packet number 26 for the response, with packet number 20 being the packet corresponding to the get message request.
14. 200 OK
15. 4 data containing TCP segments were needed.

Part 4: HTML Documents with Embedded Objects

16. 4 get requests total. One for the website in general, one for the pearson logo, and two for the book cover. The book cover needed one get request to confirm being found and another to actually download it.

17. The evidence suggests it was downloaded by two websites serially. We can tell they are from two websites because one picture has get messages addressed to and responses from IP 128.119.245.12, the gaia host, while the textbook cover image has get and ok messages directed to and from IP 128.119.240.90, caite.cs.umass.edu. We can also tell it was a serial download based on the times. Sorting times in ascending order, there is a clear progression. Get and ok messages for the website in general 2.19 seconds – 2.33. Then get and ok messages for the pearson logo 2.34 – 2.49. Only after the ok message for the pearson logo is received do we see a get message for the textbook cover at 2.52, which the server confirms is found at 2.67. Finally, the computer sends a get request to download at 2.81 and finishes downloading the file at 3.67.

Part 5: HTTP Authentication

18. 401 Unauthorized
19. Several new fields like last modified and Etag, which we haven't seen yet. I assume it stands for encryption tag.