Lyndon Renaud
104 566 776
Computer Networks Lab 1: HTTP
03-60-367

Lab 1: HTTP

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?**
   Wireshark line: GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
   My browser is running HTTP version 1.1.

2. **What languages (if any) does your browser indicate that it can accept to the server?**
   Wireshark line: Accept-Language: en-US,en;q=0.5\r\n
   My browser accepts the english language.

3. **What is the IP address of your computer? Of the gaia.cs.umass.edu server?**
   Wireshark line: Internet Protocol Version 4, Src: 128.119.245.12, Dst: 64.231.160.209.
   The IP address of my computer is 64.231.160.209. The IP address of gaia.cs.umass.edu is 128.119.245.12.

4. **What is the status code returned from the server to your browser?**
   Wireshark line: HTTP/1.1 200 OK\r\n
   The status code returned from the server is status code 200.

5. **When was the HTML file that you are retrieving last modified at the server?**
   Wireshark line: Last-Modified: Mon, 01 Oct 2018 05:59:01 GMT\r\n
   The HTML file I am requesting was last modified on Mon, 01 Oct 2018 at 05:59:01 GMT.

6. **How many bytes of content are being returned to your browser?**
   Wireshark line: File Data: 128 bytes
   128 bytes of content are being returned to my browser.

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.**
   All readable data from the raw packet data are displayed in the packet content window. Data that is not present is “gE)@1!wgP$_Q}sjE2ma)”.

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?**
   Wireshark line: [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
   No, there is no IF-MODIFIED-SINCE line in the first HTTP GET request.

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 explicitly return the contents of the file. In the "Line-Based Text Data" section, it shows the data that the server returned to my browser. This data is the same as the text displayed on the file2 webpage.

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?**
    Yes there is an IF-MODIFIED-SINCE header. The time I last accessed the file follows the header.

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 HTTP status code and phrase returned from the server is "304: Not Modified". The server did not explicitly return the contents of the file. Since the file has not been modified, the browser can load the file from the browser cache instead of receiving it from the server.

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 of Rights?**
    My browser sent 1 HTTP GET request message. Packet #8 in the trace contains the GET message for the Bill of Rights.

13. **Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?**
    The packet number in the trace that contains the status code 200 and phrase OK associated with the response to the HTTP GET request is packet #16.

14. **What is the status code and phrase in the response?**
    The status code is 200 and phrase is OK.

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

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?**
    My browser sent a total of 3 HTTP GET requests. The IP addresses the GET requests were sent to are: 128.119.245.12, 165.193.140.14, 128.119.240.90

17. **Can you tell whether your browser downloaded the two images serially, or whether they were downloaded from the two websites in parallel? Explain.**
    My browser downloaded the two images serially. This is because when my browser sends the GET request for pearson.png, the server responds with a status code and the image data. This all happens before my browser sends the GET request for the textbook image. In short, my browser requests and receives the first image before it requests the second image. If it were parallel, my browser could have requested both images before the server responds at all.

18. **What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?**
    The server's response to the initial HTTP GET message is code 401 with phrase Unauthorized.

19. **When your browser sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?**
    An "Authorization" field is included in the HTTP GET message. This field includes the login information.