Lab 2 - RONGGUANG OU

Sunday, March 17, 2019   12:26 PM

1. My browser and the server both running HTTP version 1.1
2. My browser accepts the language en-us and zh-Hans that is English and Chinese.
3. My computer ip address is 192.168.0.20. gaia.cs.umass.edu server's ip address is 128.119.245.12
4. The status code returned to browser from server is 200 OK.
5. The file was last modified at Sun, 17 Mar 2019 05:59:02 GMT.
6. Server returned 128 bytes to my browser.
7. All header can be found in the raw data. Below circled in red is the header found in the return raw data of a GET request as an example.

```
0000   38 d5 47 b6 0a 1f 40 5d   82 3a 92 f2 08 00 45 20    8·G···@]  ·:····E·
0010   02 0e 03 b7 40 00 29 06   15 d3 80 77 f5 0c c0 a8    ····@·)·  ···w··P·
0020   00 14 00 50 da 92 c9 d7   4c b2 0b dd c6 8c 50 18    ···P···   L······P·
0030   00 ed 13 49 00 00 48 54   54 50 2f 31 2e 31 20 32    ···I··HT  TP/1.1 2
0040   30 30 20 4f 4b 0d 0a 44   61 74 65 3a 20 53 75 6e    00 OK··D  ate: Sun
0050   2c 20 31 37 20 4d 61 72   20 32 30 31 39 20 31 39    , 17 Mar  2019 19
0060   3a 32 31 3a 34 38 20 47   4d 54 0d 0a 53 65 72 76    :21:48 G  MT··Serv
0070   65 72 3a 20 41 70 61 63   68 65 2f 32 2e 34 2e 36    er: Apac  he/2.4.6
0080   20 28 43 65 6e 74 4f 53   29 20 4f 70 65 6e 53 53     (CentOS  ) OpenSS
0090   4c 2f 31 2e 30 2e 32 6b   2d 66 69 70 73 20 50 48    L/1.0.2k  -fips PH
00a0   50 2f 35 2e 34 2e 31 36   20 6d 6f 64 5f 70 65 72    P/5.4.16   mod_per
00b0   6c 2f 32 2e 30 2e 31 30   20 50 65 72 6c 2f 76 35    l/2.0.10   Perl/v5
00c0   2e 31 36 2e 33 0d 0a 4c   61 73 74 2d 4d 6f 64 69    .16.3··L  ast-Modi
00d0   66 69 65 64 3a 20 53 75   6e 2c 20 31 37 20 4d 61    fied: Su  n, 17 Ma
00e0   72 20 32 30 31 39 20 30   35 3a 35 39 3a 30 32 20    r 2019 0  5:59:02
00f0   47 4d 54 0d 0a 45 54 61   67 3a 20 22 38 30 2d 35    GMT··ETa  g: "80-5
0100   38 34 34 33 66 38 30 31   31 37 63 38 22 0d 0a 41    8443f801  17c8"··A
0110   63 63 65 70 74 2d 52 61   6e 67 65 73 3a 20 62 79    ccept-Ra  nges: by
0120   74 65 73 0d 0a 43 6f 6e   74 65 6e 74 2d 4c 65 6e    tes··Con  tent-Len
0130   67 74 68 3a 20 31 32 38   0d 0a 4b 65 65 70 2d 41    gth: 128  ··Keep-A
0140   6c 69 76 65 3a 20 74 69   6d 65 6f 75 74 3d 35 2c    live: ti  meout=5,
0150   20 6d 61 78 3d 31 30 30   0d 0a 43 6f 6e 6e 65 63     max=100  ··Connec
0160   74 69 6f 6e 3a 20 4b 65   65 70 2d 41 6c 69 76 65    tion: Ke  ep-Alive
0170   0d 0a 43 6f 6e 74 65 6e   74 2d 54 79 70 65 3a 20    ··Conten  t-Type:
0180   74 65 78 74 2f 68 74 6d   6c 3b 20 63 68 61 72 73    text/htm  l; chars
0190   65 74 3d 55 54 46 2d 38   0d 0a 0d 0a 3c 68 74 6d    et=UTF-8  ····<htm
01a0   6c 3e 0a 43 6f 6e 67 72   61 74 75 6c 61 74 69 6f    l>·Congr  atulatio
01b0   6e 73 2e 20 20 59 6f 75   27 76 65 20 64 6f 77 6e    ns.  You  've down
01c0   6c 6f 61 64 65 64 20 74   68 65 20 66 69 6c 65 20    loaded t  he file
01d0   0a 68 74 74 70 3a 2f 2f   67 61 69 61 2e 63 73 2e    ·http://  gaia.cs.
01e0   75 6d 61 73 73 2e 65 64   75 2f 77 69 72 65 73 68    umass.ed  u/wiresh
01f0   61 72 6b 2d 6c 61 62 73   2f 48 54 54 50 2d 77 69    ark-labs  /HTTP-wi
0200   72 65 73 68 61 72 6b 2d   66 69 6c 65 31 2e 68 74    reshark-  file1.ht
0210   6d 6c 21 0a 3c 2f 68 74   6d 6c 3e 0a                ml!·</ht  ml>·
```

8. There is no "IF-MODIFIED-SINCE" in the first HTTP GET
9. I can tell server did return data to me because I find the contents at Line-based text data tab.

```
✓ Line-based text data: text/html (10 lines)
    \n
    <html>\n
    \n
    Congratulations again!  Now you've downloaded the file lab2-2.html. <br>\n
    This file's last modification date will not change.  <p>\n
    Thus  if you download this multiple times on your browser, a complete copy <br>\n
    will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\n
    field in your browser's HTTP GET request to the server.\n
    \n
    </html>\n
```

10. For my second GET request, If-Modified-Since is Sun, 17 Mar 2019 19:21:48 GMT.

11. Return header of second GET request is status code 304, so that means the contents are not modified at server so the server didn't return the content of the file. The file content is actually coming from local cache.

12. My browser send one request and the packet number is 715.

13. Response packet number is 736.

14. The response status code is 200 and phrase associated with the response is OK.

15. For this particular GET request, 4 TCP segments is needed to carry the single HTTP response.

```
✓ [4 Reassembled TCP Segments (4861 bytes): #730(1460), #732(1460), #734(1460), #736(481)]
    [Frame: 730, payload: 0-1459 (1460 bytes)]
```

16. Browser sent 3 HTTP GET request to 128.119.245.12. Each request are : wireshark-labs/HTTP-wireshark-file4.html , wireshark-labs/HTTP-wireshark-file4/pearson.png , wireshark-labs/HTTP-wireshark-file4/kurose/cover_5th_ed.jpg

17. I got two respond message, so serially.

18. Server responded with status code 401. The phrase was Authorization Required.

19. The new HTTP GET is : Authorization: Basic (d2lyZXNoYXJrLXN0dWRlbnRzOm5ldHdvcms=\r\n).