

Assignment 2 : Understanding the Protocols of Application Layer

Part 1

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- a.)
- | | |
|-----------|--|
| port 8100 | HTTP 1.0 |
| port 8110 | HTTP 1.1 without persistent connection |
| port 8111 | HTTP 1.1 with persistent connection |

Justifications :

1. It can be easily seen from the protocol detail section in Wireshark which displays

^aHTTP/1.1 200 OK^o in case of port 8111

^aHTTP/1.1 200 OK^o in case of port 8110

^aHTTP/1.0 200 OK^o in case of port 8100

2. It is observed that in case of 8110, the number of SYN packets is much more than the number of SYN packets in case of 8111. It indicates that the 8111 is persistent connection port and 8110 is non-persistent port. Persistent port should require lesser number of SYN packets as compared to non-persistent port.

3. Download time of page in case of port 8111 is 0.203826495 which is less than the download time of page in port 8110 which is 0.221270428 . I supports that fact that 8111 is persistent connection port while 8110 is non-persistent connection port. Non-persistent connection should take more time as it creates connections much more frequently.

b.) Number of GET request in each of the case is 17.

c.) Following were the time elapsed (in seconds) between the GET requests and their corresponding responses in the different ports.

Port 8100

0.001568185

0.001062051

0.001983568

0.002785209

0.000975798

0.004477773

0.004660024

0.009038032
0.009129265
0.011592108
0.006519803
0.010921052
0.003763366
0.003497056
0.005321283
0.034560025
0.048511351

Port 8110

0.001463809
0.000959851
0.001565909
0.002675879
0.003652706
0.004776818
0.004522192
0.008833068
0.009333824
0.007300131
0.005327506
0.009523763
0.005123334
0.003120615
0.004508757
0.050287065

Port 8111

0.001498919
0.001092415
0.001706289
0.002895252
0.002282652
0.007181973
0.007203071
0.006451233
0.009729701

0.007171264
0.010425285
0.014474145
0.027922494
0.002329177
0.002814265
0.007503530
0.043781138

d.) Following were the page download time(in seconds) for different ports.

time(seconds)	Port
0.234643047	8100
0.221270428	8110
0.203826495	8111

e.) User agent field displays ^aUser-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:58.0) Gecko/20100101 Firefox/58.0^o
we can infer that
browser is Mozilla Firefox v5.0
OS is Ubuntu x86_64