CIS 549 – Paul DeSanctis Gordon Finn

Problem 3

See the data fields below from the tcptrace file

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| session | download time(sec) | Downloaded file size (bytes) | Throughput (bps) | Packet loss rate | Average RTT |
| 1 |  |  |  |  |  |
| 2 | 0.159 | 101262 | 284721 | 0 | 31.3 |
| 3 | 0.309 | 102650 | 203597 | 0 | 66 |
| 4 | 0.095 | 102719 | 352188 | 0 | 31.3 |
| 5 | 0.243 | 102719 | 226107 | 0 | 69.5 |
| 6 | 0.326 | 512250 | 775976 | 0 | 31.5 |
| 7 | 0.781 | 512250 | 523143 | 0 | 69.8 |
| 8 | 0.32 | 512319 | 858947 | 0 | 31.7 |
| 9 | 0.715 | 512319 | 570387 | 0 | 66.3 |
| 10 | 0.857 | 1048826 | 947010 | 0.02384292 | 31.6 |
| 11 | 1.273 | 1048826 | 708023 | 0 | 65.6 |
| 12 | 0.751 | 1048897 | 1021733 | 0 | 31.7 |
| 13 | 1.502 | 1048897 | 619059 | 0 | 70.3 |
| 14 | 1.645 | 2097402 | 1084874 | 0.00343879 | 31.5 |
| 15 | 2.552 | 2097402 | 760198 | 0 | 70.8 |
| 16 | 1.805 | 2097473 | 961890 | 0.00657414 | 31.8 |
| 17 | 2.714 | 2097473 | 719557 | 0 | 69.9 |
| 18 | 0.158 | 102650 | 290513 | 0 | 31.2 |
| 19 | 0.32 | 102650 | 198813 | 0 | 67.9 |
| 20 | 0.095 | 102719 | 365974 | 0 | 31.7 |
| 21 | 0.243 | 102719 | 231158 | 0 | 70.3 |
| 22 | 0.413 | 512250 | 695908 | 0 | 31.6 |
| 23 | 0.779 | 512250 | 522997 | 0 | 70.5 |
| 24 | 0.342 | 512319 | 821991 | 0 | 31.7 |
| 25 | 0.778 | 512319 | 528240 | 0 | 70.2 |
| 26 | 0.796 | 1048826 | 948415 | 0.01385042 | 31.9 |
| 27 | 1.266 | 1048826 | 720123 | 0 | 64.4 |
| 28 | 0.683 | 1048897 | 1092198 | 0 | 31.8 |
| 29 | 1.43 | 1048897 | 645093 | 0 | 65.5 |
| 30 | 1.387 | 2097402 | 1205639 | 0 | 31.8 |
| 31 | 2.343 | 2097402 | 827632 | 0 | 64.4 |
| 32 | 1.624 | 2097473 | 1135085 | 0.00956284 | 31.5 |
| 33 | 2.689 | 2097473 | 723494 | 0 | 68.3 |

Problem 4

See graph from first session (server 10.168.207.108:80 to client 192.11.68.196:38341)

A screenshot of a computer

Description automatically generated

Compare with graph from first session (server 10.168.207.109:80 to client 192.11.68.196:38341)

A screenshot of a computer

Description automatically generated

The first graph shows an interruption in the session, which is likely caused by the 9 transmitted packets containing 12492 bytes.

The total data file size is the same for both sessions (2097473 bytes), but throughput was higher in the first session (961890 bytes) even though there were retransmissions. The second session throughput was only 719557 and the average round trip time of 69.9ms was more than double that of the first session (31.8ms).

There was also greater missed data (202648 bytes) in the first session than the second session (4164 bytes), probably having to do with the retransmissions.