LAB-09

TCP BULK TRANSFER:

This is capture of the data stream during an FTP download. The client is 192.168.254.15 and the FTP server is 209.51.188.20.

Qanda:

1. What is the initial sequence number of the server?

Ans. Initial Sequence Number of the server is 2810119236.

2. Find the frame that has the first packet of data being transferred.

   a. What is the sequence number on that frame?

   b. What should the next sequence number be? Why?

   c. Confirm your answer above by finding the second packet of data. What frame number is it on? What is the sequence number now?

Ans. The first packet of data being transferred to frame number 4.

   a. The sequence number on that frame is 4011492043.
   b. The next sequence number is 4011493491 as last sequence number + 1448 which means 4011492043 + 1448 = 4011493491.
   c. Second packet is on Data frame 5 and the sequence is 4011493491.

3. In the beginning of the connection, how often is TCP acknowledging packets?

Ans. After the first 3 Acknowledgements, when the data transfer starts the acknowledgement is sent after 10 packets (the range lies between 6 - 12 packets for the acknowledgement). For the first time its 10 packets.

4. Are there any segments that needed to be retransmitted?

    a. If so, which segment(s) (give byte range)?

    b. If so, which frame contains the retransmission?

    c. If so, is it selected repeat or go-back-n? Explain.

Ans.

a. Sequence Number – 806537
b. Frame 739
c. It is go-back-n since it is going back and sending all the packets after the failed packet.

RTO

Complete the following table. Use the classic method for calculating the sRTT, assume alpha is 0.8.

Segment no.	Frame no.	Seq no.	Sent at	Ack'd at	RTT	sRTT
1	1	2810119236	0.0000	0.074353	0.074353	0.074353
2	13	4011505075	0.158044000	0.158184000	0.00014000	0.0595944
3	22	4011515211	0.232331000	0.232447000	0.00011600	0.04776832
4	36	4011532587	0.233377700	0.233402000	0.00018100	0.038359456
5	41	4011535483	0.305581	0.305590000	0.07744400	0.0926427648