Computer Networks A3

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1 Introduction

1. we initiated a socket connection with the vayu server and handled exceptions until it connects.

2. We send the sendsize request and noted down the round trip time for this request and initialised to rtt variable.

3. Defined an offset function which extracts offset number form the data that the vayu server sends.

4. We made the socket timeout equal to initial round trip time found from the send size request.

5. Now we initialised a offset and a hash table.

6. Initially our offset is zero and each time we request chunks of 1448 bytes from the server and increased the offset iteratively by handling the exceptions using try-except method in the socket set time of rtt.

7. Initialise another hash table which stores round trip time of corresponding offset

8. Now in every iteration we request the server to send burst size and as it sends we recieve them all and we note the corresponding offset send request time in a hash table.

9. Now as we receive the requests in burst size, we calculated the round trip time of the corresponding offset request using that hash table and stored in an array.

10. We store the data received of offsets from server in a hash table and if not received, we asked the server later reliably.

11. Now we set the new round trip time(rtt) as rtt = 0.8*rtt + 0.2*minimum-rtt. where minimum-rtt is the minimum round trip time in the array and also we update the socket time out to round trip time.

12. We increase or decrease the burst size at every iteration using AIMD approach.

13. The loop will terminate when all offset requests are sent.

14. Now we have the hash table from which we know what offsets we have and we can ask the server remaining offsets later reliably like we did earlier in week1.

15. We noticed a fact that as the server is UDP if we ask the result it may give an older packet which still hasen‘t received till the client(we) instead result. so we keep on requesting until we get the result.

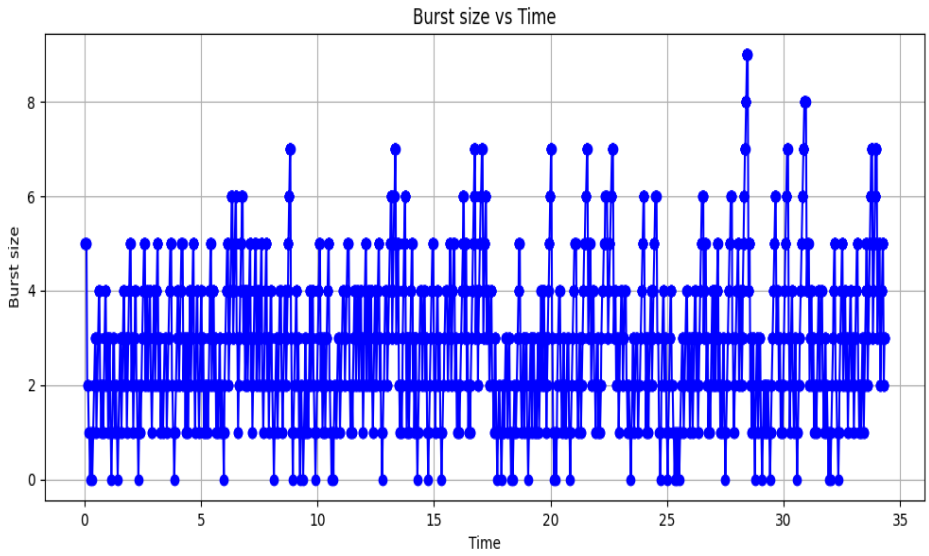

Figure 1: Burst Size vs time

From the above graph, We have observed the maximum burst size frequency is in between 2 to 4.

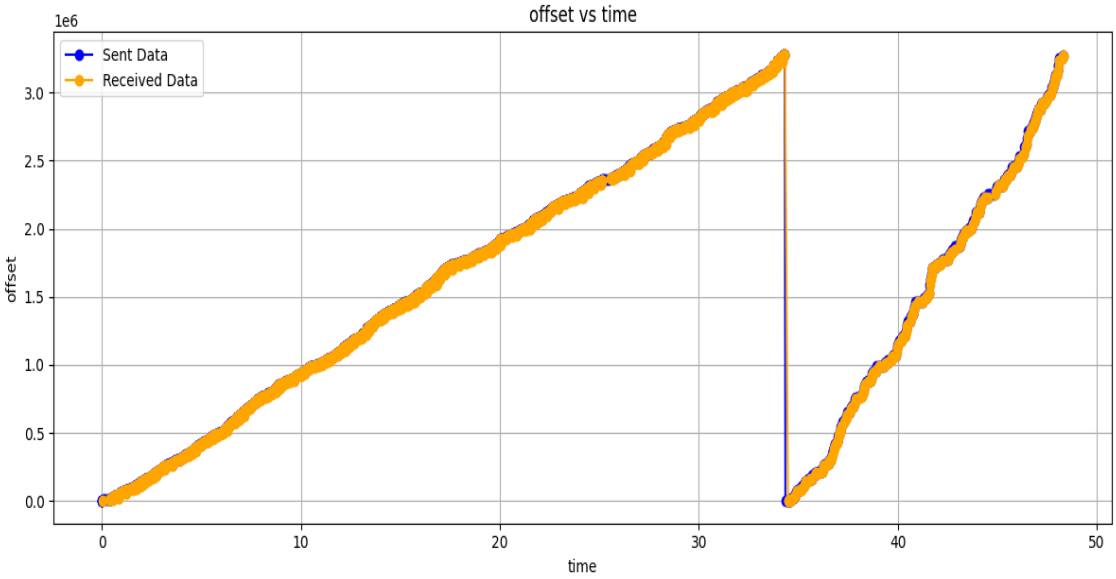

Figure 2: Offset vs time

From the above graph, we have observed that as the time increases, the offset also gradually increases simultaneously as of both sent and received data respectively.
Two parts in the graph represent:
1. The first part is asking the vayu server in the UDP manner.
2. The second part represents asking the vayu server reliably.

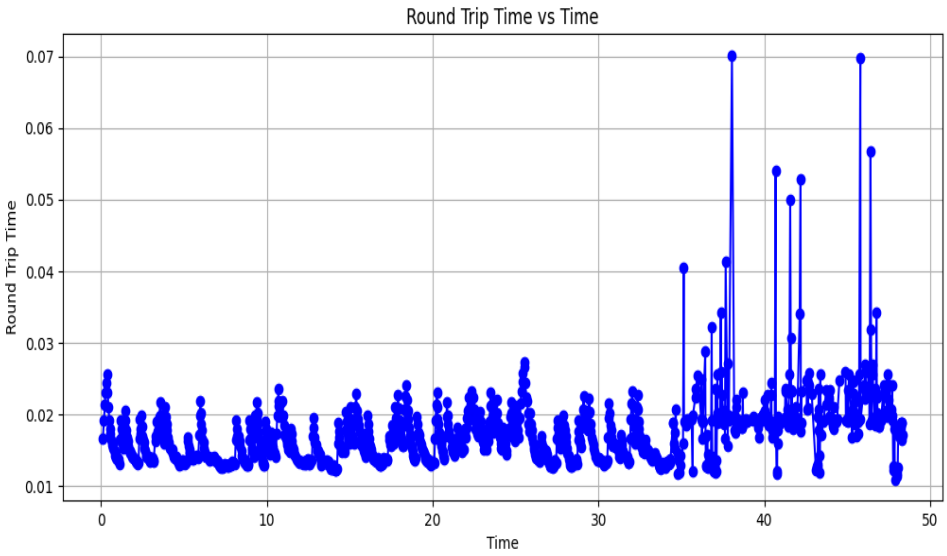

Figure 3: Round Trip Time vs Time

The above graph shows the round trip time (RTT) vs Time gragh and the as time increases we observe that the round trip time is oscillating between 0.01 and 0.07 seconds.

The average rtt is around 0.017 seconds

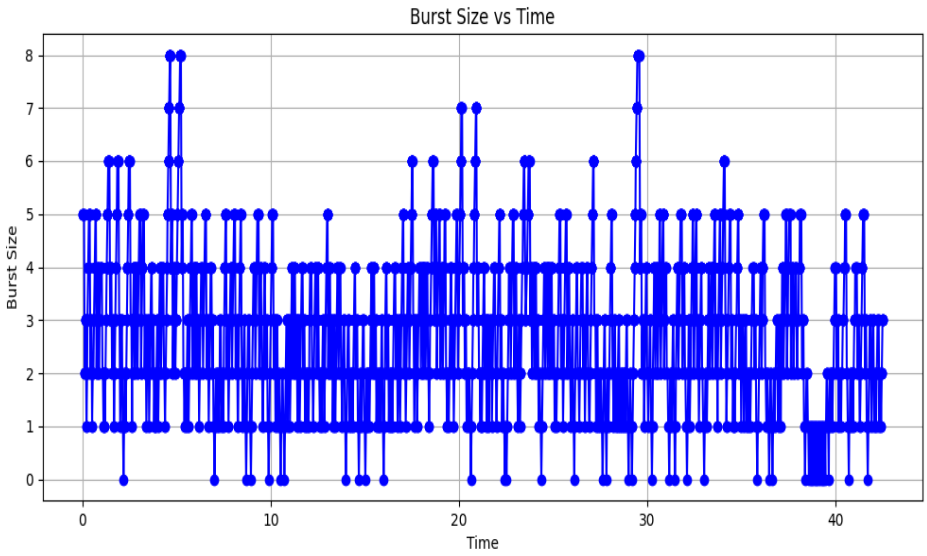

Figure 4: Burst Size vs time (week-2)

From the above graph, We have observed the maximum burst size frequency is in between 2 to 4.

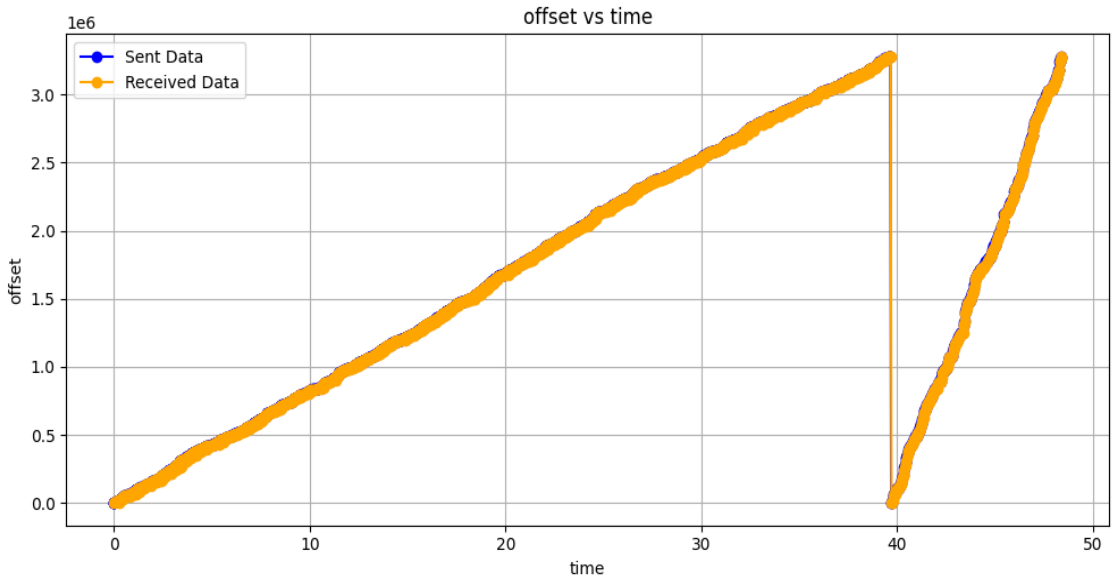

Figure 5: Offset vs time (week-2)

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