

Assignment - 1:

Socket Programming

1. (15 Points) Create your own UDP echo client and server application to measure round trip time between client and server (similar to “ping” command)

The client should create a UDP socket and send echo packets to server at a given interval, number of echo messages, and given packet size (use command line arguments). On reception of the packet, server should send the packet back to the client. The client on reception of the packet should calculate and display the round trip time. To calculate the round trip time, you can either have the timestamp in the packet or use some unique identifier in the packet. You should also calculate and print the loss percentage at the end.

2. (15 Points) Create an iperf like application using the above developed echo client and server program. Reduce the interval between two consecutive UDP echo packets generated by client and increase the number of echo packets sent from client for a given packet size. Calculate the throughput and average delay observed every one second. Plot the observed throughput and average delay vs time (1 second interval).
3. (5 Points) Report.
4. (5 Points) Viva during evaluation.

[Check Web sources for more information](#)

[Submission Guidelines: Provide the following in a single zip file named as](#)



<your roll no>_<assignment1>.zip

1. A report detailing your implementation detail and the results.
2. Screenshots of packet capture using wireshark during your experiments.
3. Screenshots showing the working of your code.
4. All source codes and help file to run your code.

Note: Plagiarism check will be done on your submitted code. The evaluation will be done offline by the TAs on a designated time slot in the lab.