COMP 4981 ASSIGNMENT3
TEST AND VERFICATION

Linux chat program

Sam Lee
A01029480

Test Cases

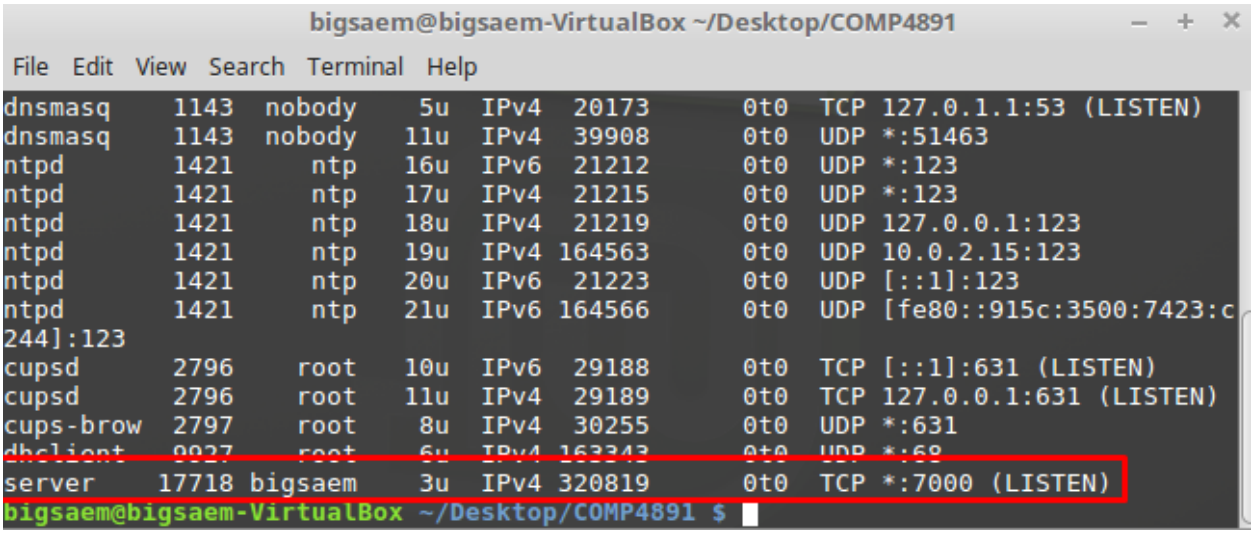
Test 1 - Listen socket created

Definition: Listen socket is created and bound to the port

Test method: Use ‘sudo lsof -i -P -n’ command on terminal to check what port is open

Success Criteria: The result from the command displays 7000 as TCP listen port

Test result: Success



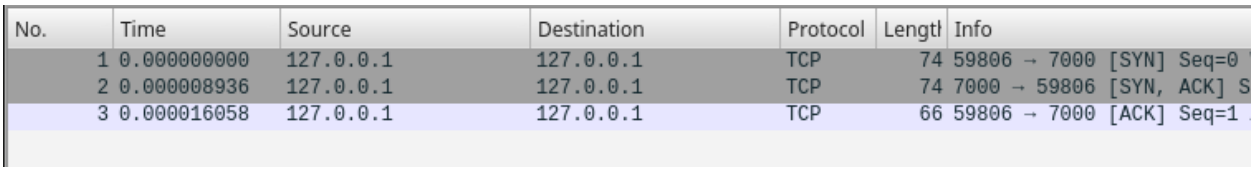
Test 2 - TCP connection established

Definition: TCP server successfully conducted 3way handshake

Test method: Use Wireshark to capture the handshake

Success Criteria: There are three packets captured for SYN, SYN-ACK and ACK

Test result: Success



Test 3 – Data received and sent to other clients

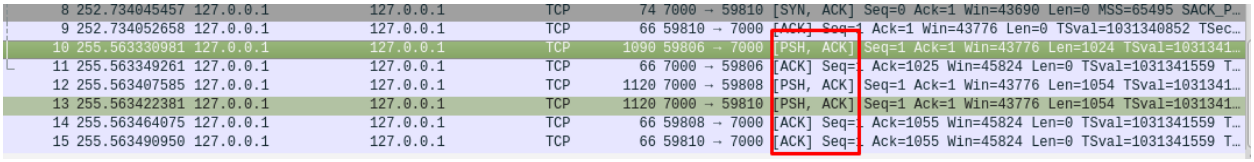
Definition: TCP server successfully receives data and delivers it to other clients

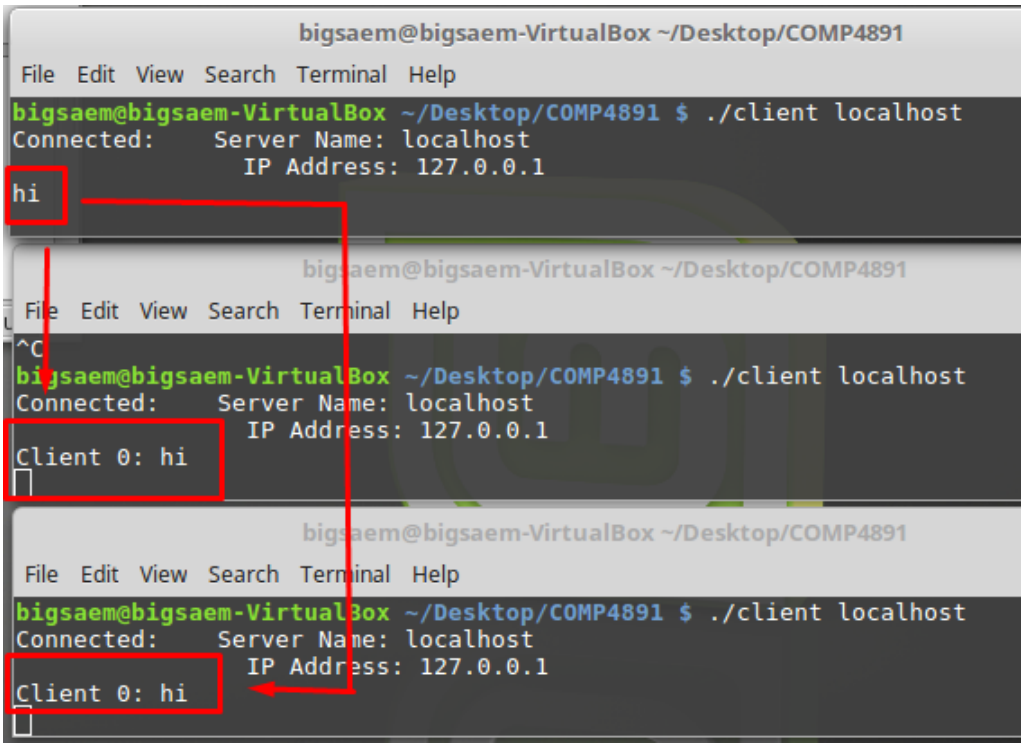
Test method:

1. Prepare one server and three clients
2. Connect each client to the server
3. Send a message from a client
4. Check Wireshark to check packet transmissions

Success Criteria: 3 data transmissions and 3 ACK observed on each port

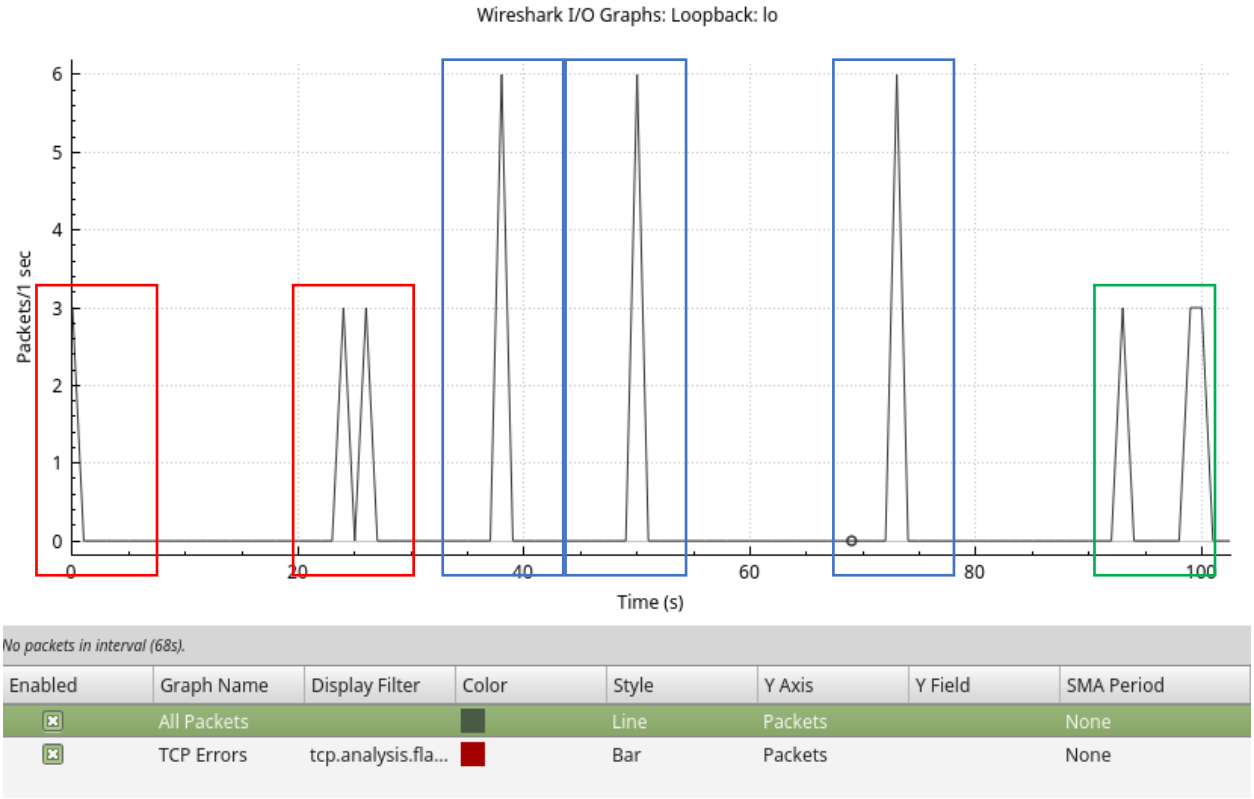
Test result: Success





Observation & Verfication

I.O Graphs



The read box indicates three-way handshakes (3packets per connection)

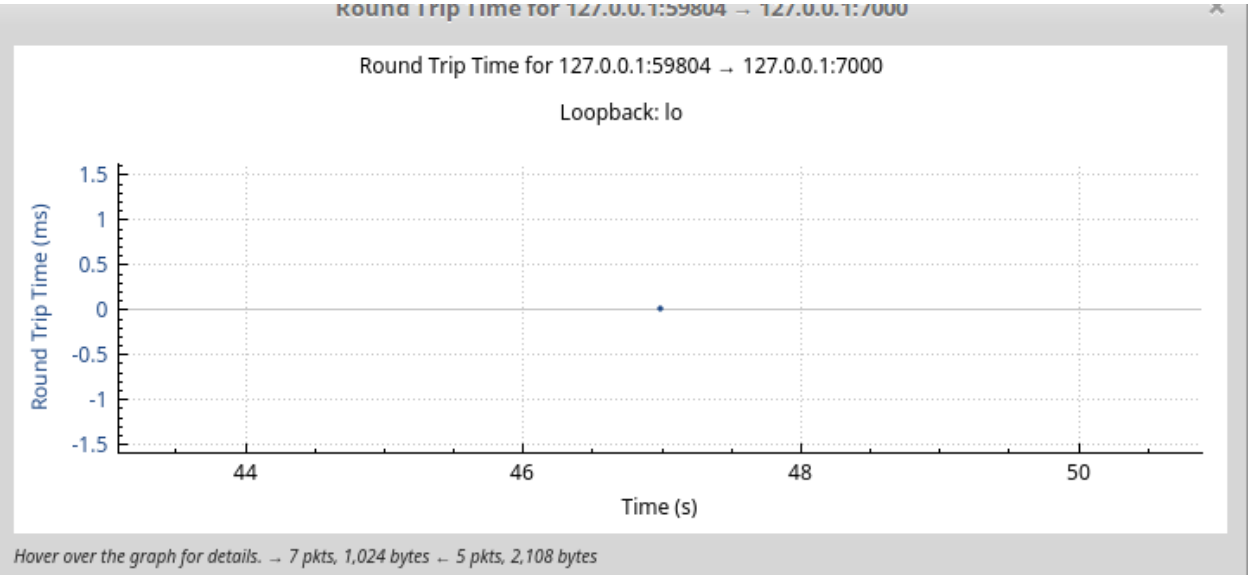
The blue box indicates data transmission (6 packets per message)

The green box indicates connection terminates (3packets per disconnection)

Throughput Graphs

By comparing this graph with the I/O graphs, it is observed that the red boxes are when data was being transmitted. Since the last message was longer than other messages, the third box on the right side shows the longer segment length and larger throughput.

Rount Trip Time Graphs



Since the amount of data was small and it was conducted on localhost, the round trip was almost 0ms.