CS744 Design and Engineering of Computing Systems
Assignment 04

Nov 06,2022

Server Code:

First compile and run the server code:
To compile the server:

g++ simple_server.cpp -o server

to run the server:
./server 5002

here 5002 is port number

now open chrome browser and got to this address you can see an basic HTML Page (Optional)
http://localhost:5002/

Load Generation Code:

Now to run load_gen.c (For single experiment)
compile: gcc load_gen.c -o load
(run using: ./load_gen localhost <server port> <number of concurrent users> <think time (in s)> <test duration (in s)>) (Optional)

To generate a load for multiple experiments I wrote a bash script which will run load_gen for multiple times for different sets of inputs.
The result of all experiments will be stored in dataresult.csv

---

Graph Plotting:

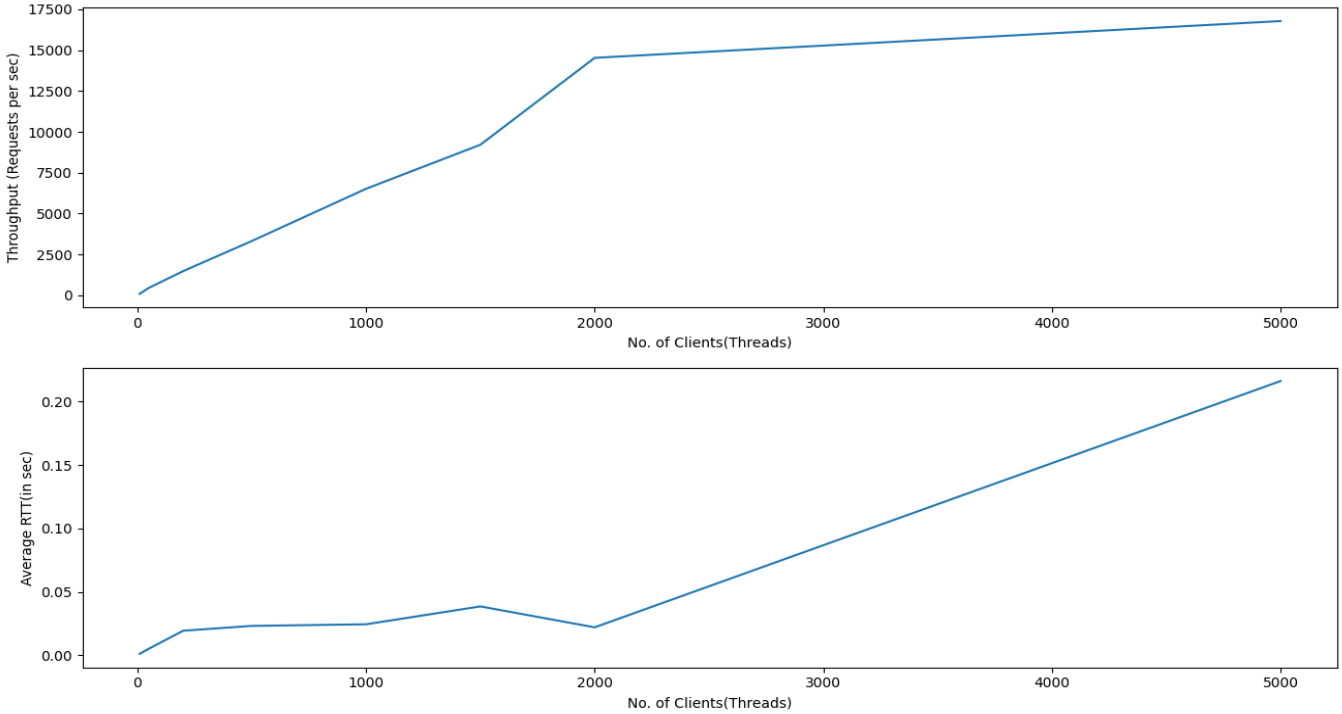
To plot the graph I wrote a python code in print_graph.py file.
Once you have generated result for experiments, run this file with following command to generate a graph

python3 print_graph.py

a graph will be printed.

Graph Printed:

1. **Graph1 Throughput vs No. of Clients**
2. **Graph2 Average RTT vs No. of Clients**

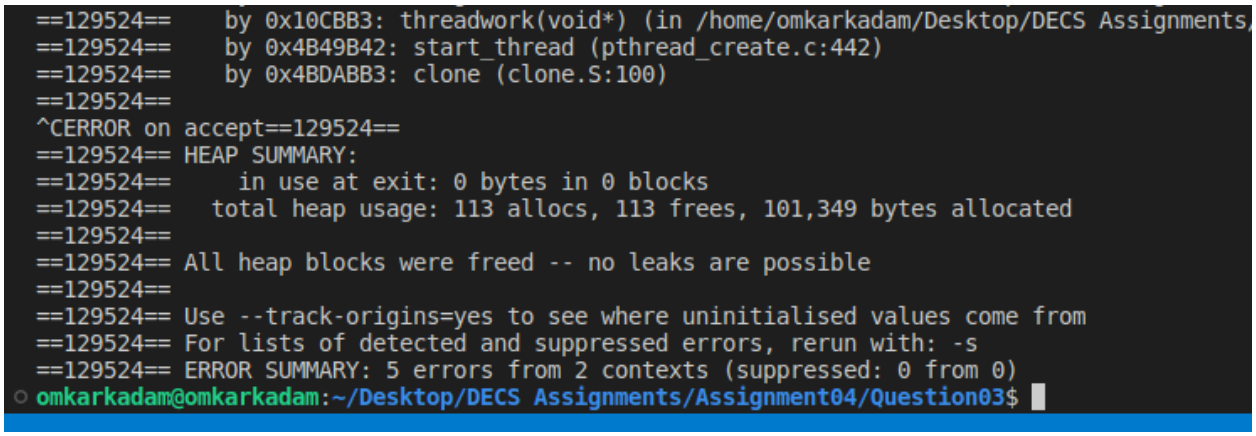


Dataresult.csv Content:

TOSCV,NOC,TH,ARTT
FINAL_OUTPUT,10,98,0.001180
FINAL_OUTPUT,50,460,0.005182
FINAL_OUTPUT,200,1485,0.019379
FINAL_OUTPUT,500,3324,0.023178
FINAL_OUTPUT,1000,6519,0.024454
FINAL_OUTPUT,1500,9211,0.038522
FINAL_OUTPUT,2000,14525,0.022052
FINAL_OUTPUT,5000,16773,0.216130
FINAL_OUTPUT,10,88,0.012245
FINAL_OUTPUT,50,402,0.023525
FINAL_OUTPUT,1000,5109,0.083671
FINAL_OUTPUT,2000,11183,0.076060
FINAL_OUTPUT,5000,13798,0.255298

Here NOC is No. of Clients, TH Throughput, ARTT Average RTT

Valgrind Memory Checks Report:



Run following command in terminal to check the memory leaks problems

valgrind --leak-check=full ./server 8000

and this should output following with all memory leaks equals to zero for example::

All heap blocks were freed -- no leaks are possible
Possibly lost=0
Definitely lost=0
etc.

Performed By: Omkar Kadam
22m2112 MS by Research
CSE IIT Bombay