# Assignment2

Zhenyuan Xi

STEP 2 & 3

32 Threads

```
Total Run Time: 149 seconds
Total Requests Sent: 88500
Total Successful Requests: 88500
Mean Latency: 29 ms
95 Percentile Latency: 47 ms
99 Percentile Latency: 125 ms
Phase: Warm Up
Phase Run Time: 30 seconds
Phase Requests Sent: 900
Phase Throughput: 20 /ms
Phase: Loading
Phase Run Time: 35 seconds
Phase Requests Sent: 4800
Phase Throughput: 23 /ms
Phase: Peak
Phase Run Time: 53 seconds
Phase Requests Sent: 9600
Phase Throughput: 35 /ms
Phase: Cool Down
Phase Run Time: 29 seconds
Phase Requests Sent: 2400
Phase Throughput: 19 /ms
```
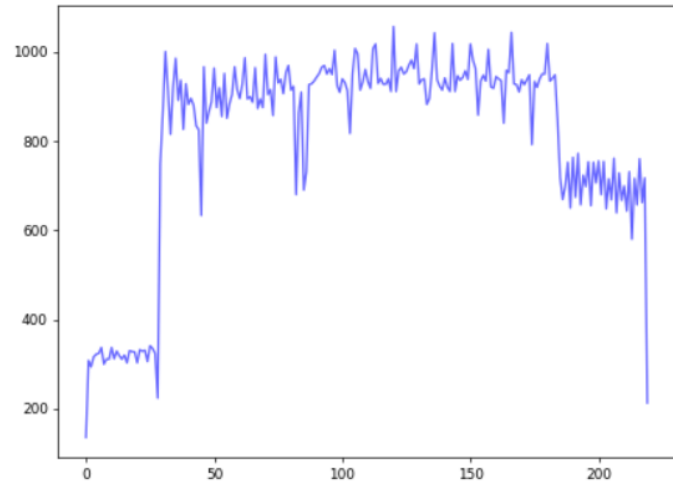

Overall Throughput 32 Threads 100 Iterations
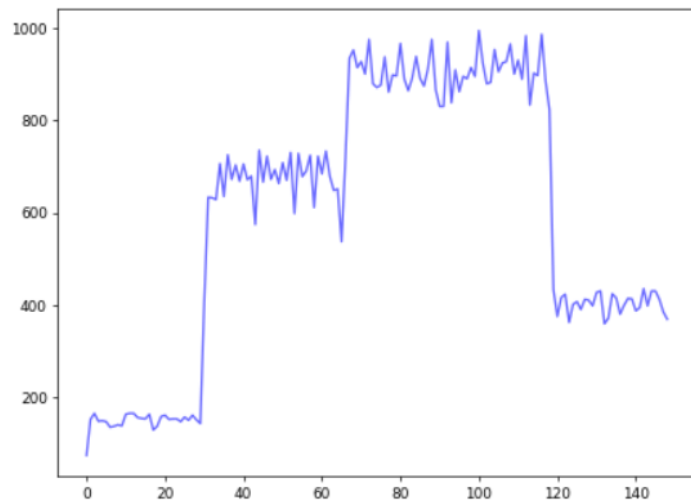
64 Threads

```
Total Run Time: 219 seconds
Total Requests Sent: 177000
Total Successful Requests: 177000
Mean Latency: 50 ms
95 Percentile Latency: 113 ms
99 Percentile Latency: 181 ms
Phase: Warm Up
Phase Run Time: 28 seconds
Phase Requests Sent: 1800
Phase Throughput: 19 /ms
Phase: Loading
Phase Run Time: 54 seconds
Phase Requests Sent: 9600
Phase Throughput: 35 /ms
Phase: Peak
Phase Run Time: 102 seconds
Phase Requests Sent: 19200
Phase Throughput: 67 /ms
Phase: Cool Down
Phase Run Time: 34 seconds
Phase Requests Sent: 4800
Phase Throughput: 22 /ms
```
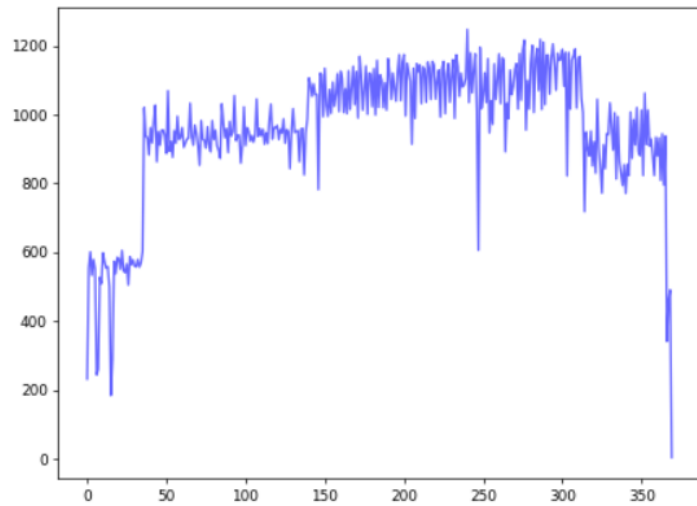

Overall Throughput 64 Threads 100 Iterations

128 Threads

```
Total Run Time: 369 seconds
Total Requests Sent: 354000
Total Successful Requests: 354000
Mean Latency: 87 ms
95 Percentile Latency: 203 ms
99 Percentile Latency: 277 ms
Phase: Warm Up
Phase Run Time: 35 seconds
Phase Requests Sent: 3600
Phase Throughput: 23 /ms
Phase: Loading
Phase Run Time: 102 seconds
Phase Requests Sent: 19200
Phase Throughput: 67 /ms
Phase: Peak
Phase Run Time: 177 seconds
Phase Requests Sent: 38400
Phase Throughput: 116 /ms
Phase: Cool Down
Phase Run Time: 54 seconds
Phase Requests Sent: 9600
Phase Throughput: 36 /ms
```


Overall Throughput 128 Threads 100 Iterations

256 Threads

```
Total Run Time: 662 seconds
Total Requests Sent: 709500
Total Successful Requests: 709500
Mean Latency: 158 ms
95 Percentile Latency: 328 ms
99 Percentile Latency: 531 ms
Phase: Warm Up
Phase Run Time: 48 seconds
Phase Requests Sent: 7500
Phase Throughput: 31 /ms
Phase: Loading
Phase Run Time: 174 seconds
Phase Requests Sent: 38400
Phase Throughput: 114 /ms
Phase: Peak
Phase Run Time: 351 seconds
Phase Requests Sent: 76800
Phase Throughput: 217 /ms
Phase: Cool Down
Phase Run Time: 96 seconds
Phase Requests Sent: 19200
Phase Throughput: 63 /ms
```


Overall Throughput 256 Threads 100 Iterations
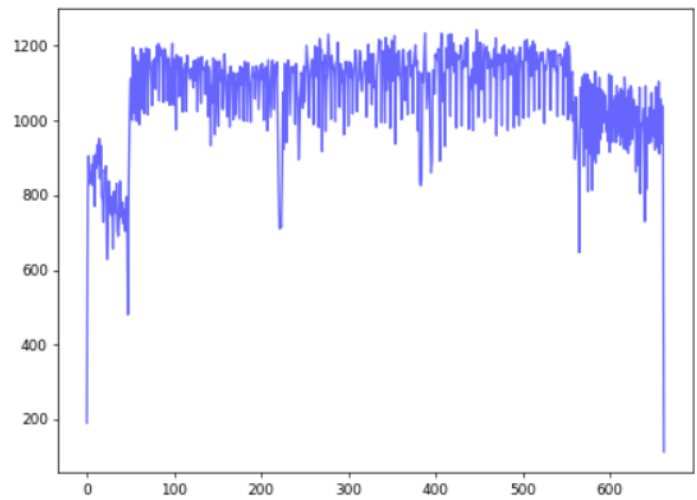
STEP4

using Load Balancing could speed up a little for a large number of client threads since it separates the client threads into several instances to process which help trigger the scaling rules.

Scaling improves the performance a lot, where it reduces about half of the time, but the curve is still the same as before.

128 Threads

```
Total Run Time: 207 seconds
Total Requests Sent: 212400
Total Successful Requests: 212400
Mean Latency: 82 ms
95 Percentile Latency: 188 ms
99 Percentile Latency: 248 ms
Phase: Warm Up
Phase Run Time: 18 seconds
Phase Requests Sent: 3600
Phase Throughput: 20 /ms
Phase: Loading
Phase Run Time: 57 seconds
Phase Requests Sent: 19200
Phase Throughput: 63 /ms
Phase: Peak
Phase Run Time: 102 seconds
Phase Requests Sent: 38400
Phase Throughput: 111 /ms
Phase: Cool Down
Phase Run Time: 30 seconds
Phase Requests Sent: 9600
Phase Throughput: 32 /ms
```


Overall Throughput 128 Threads 100 Iterations
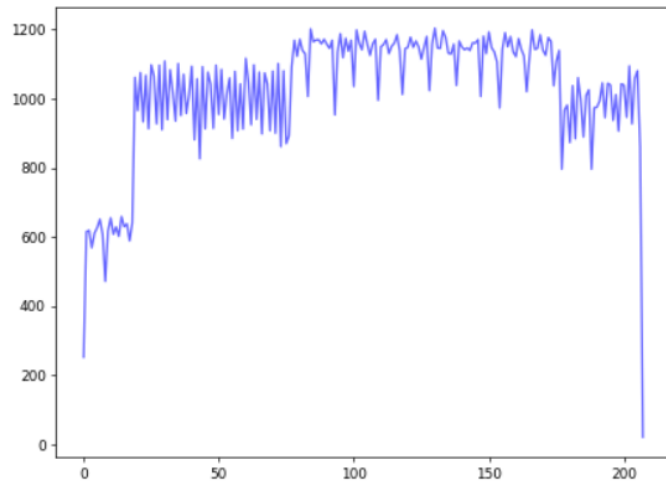
256 Threads

```
Total Run Time: 393 seconds
Total Requests Sent: 425700
Total Successful Requests: 425700
Mean Latency: 154 ms
95 Percentile Latency: 315 ms
99 Percentile Latency: 512 ms
Phase: Warm Up
Phase Run Time: 25 seconds
Phase Requests Sent: 7500
Phase Throughput: 28 /ms
Phase: Loading
Phase Run Time: 110 seconds
Phase Requests Sent: 38400
Phase Throughput: 113 /ms
Phase: Peak
Phase Run Time: 209 seconds
Phase Requests Sent: 76800
Phase Throughput: 209 /ms
Phase: Cool Down
Phase Run Time: 63 seconds
Phase Requests Sent: 19200
Phase Throughput: 69 /ms
```


Overall Throughput 256 Threads 100 Iterations