Assignment2

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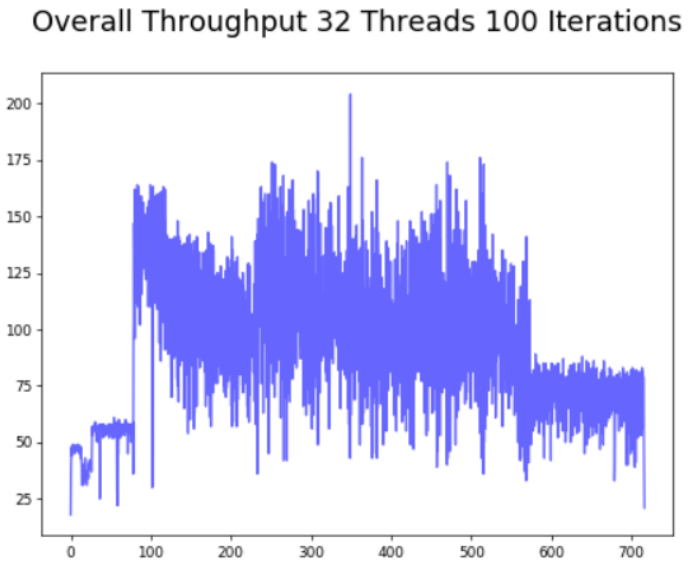
https://github.com/Zhenyuan-Xi/BSDS/tree/master/Assignment2

STEP 2 & 3

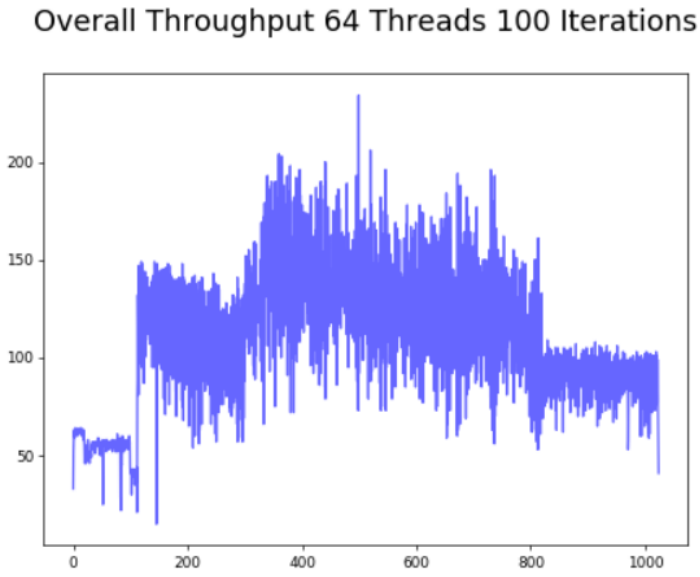
32 Threads

```
Total Run Time: 721 seconds
Total Requests Sent: 88500
Total Successful Requests: 88500
Mean Latency: 207 ms
95 Percentile Latency: 630 ms
99 Percentile Latency: 686 ms
Phase: Warm Up
Phase Start Time: 1540901473658 ms
Phase End Time: 1540901571572 ms
Phase Run Time: 98 seconds
Phase Requests Sent: 900
Phase Throughput: 89 ms
Phase: Loading
Phase Start Time: 1540901512309 ms
Phase End Time: 1540901697328 ms
Phase Run Time: 187 seconds
Phase Requests Sent: 4800
Phase Throughput: 158 ms
Phase: Peak
Phase Start Time: 1540901663419 ms
Phase End Time: 1540901850210 ms
Phase Run Time: 267 seconds
Phase Requests Sent: 9600
Phase Throughput: 311 ms
Phase: Cool Down
Phase Start Time: 1540901863240 ms
Phase End Time: 1540902038492 ms
Phase Run Time: 169 seconds
Phase Requests Sent: 2400
Phase Throughput: 113 ms
```



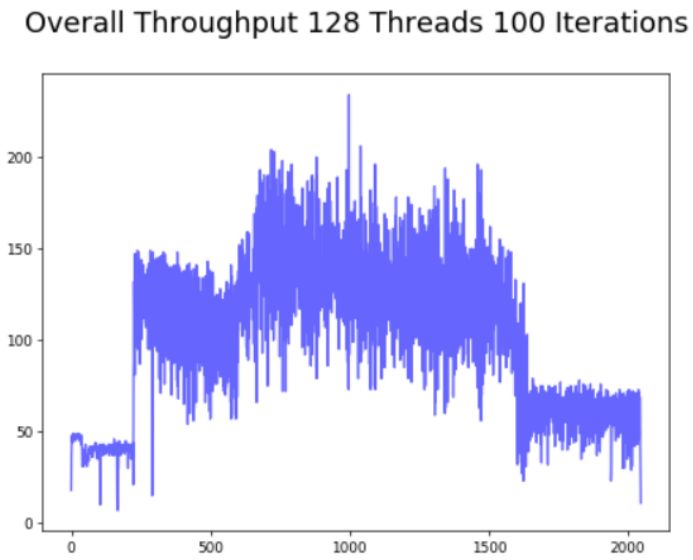
64 Threads

```
Total Run Time: 1057 seconds
Total Requests Sent: 177000
Total Successful Requests: 138920
Mean Latency: 283 ms
95 Percentile Latency: 837 ms
99 Percentile Latency: 912 ms
Phase: Warm Up
Phase Start Time: 1540901473658 ms
Phase End Time: 1540901597842 ms
Phase Run Time: 115 seconds
Phase Requests Sent: 1800
Phase Throughput: 108 ms
Phase: Loading
Phase Start Time: 1540901512309 ms
Phase End Time: 1540901739429 ms
Phase Run Time: 221 seconds
Phase Requests Sent: 9600
Phase Throughput: 184 ms
Phase: Peak
Phase Start Time: 1540901663419 ms
Phase End Time: 1540902187421 ms
Phase Run Time: 514 seconds
Phase Requests Sent: 19200
Phase Throughput: 342 ms
Phase: Cool Down
Phase Start Time: 1540901863240 ms
Phase End Time: 1540902079182 ms
Phase Run Time: 207 seconds
Phase Requests Sent: 4800
Phase Throughput: 177 ms
```



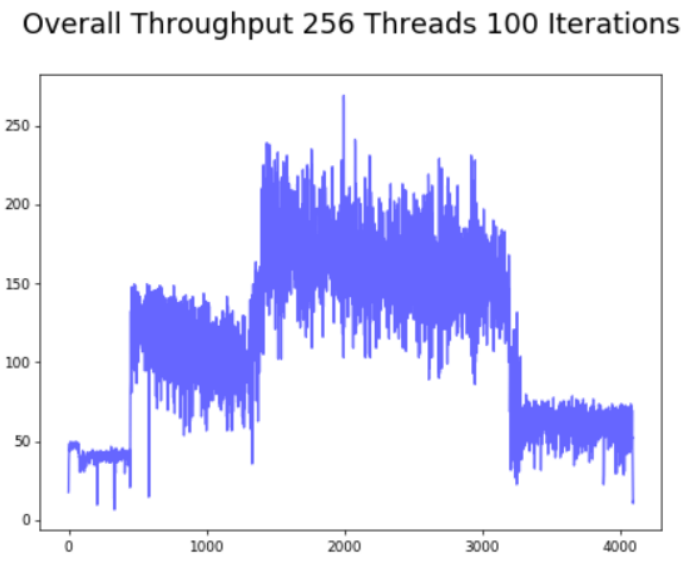
128 Threads

```
Total Run Time: 2039 seconds
Total Requests Sent: 354000
Total Successful Requests: 319819
Mean Latency: 295 ms
95 Percentile Latency: 933 ms
99 Percentile Latency: 982 ms
Phase: Warm Up
Phase Start Time: 1540901473658 ms
Phase End Time: 1540901689321 ms
Phase Run Time: 221 seconds
Phase Requests Sent: 3600
Phase Throughput: 120 ms
Phase: Loading
Phase Start Time: 1540901512309 ms
Phase End Time: 1540901910423 ms
Phase Run Time: 407 seconds
Phase Requests Sent: 19200
Phase Throughput: 226 ms
Phase: Peak
Phase Start Time: 1540901663419 ms
Phase End Time: 1540902689123 ms
Phase Run Time: 1029 seconds
Phase Requests Sent: 38400
Phase Throughput: 397 ms
Phase: Cool Down
Phase Start Time: 1540901863240 ms
Phase End Time: 1540902247829 ms
Phase Run Time: 382 seconds
Phase Requests Sent: 9600
Phase Throughput: 212 ms
```



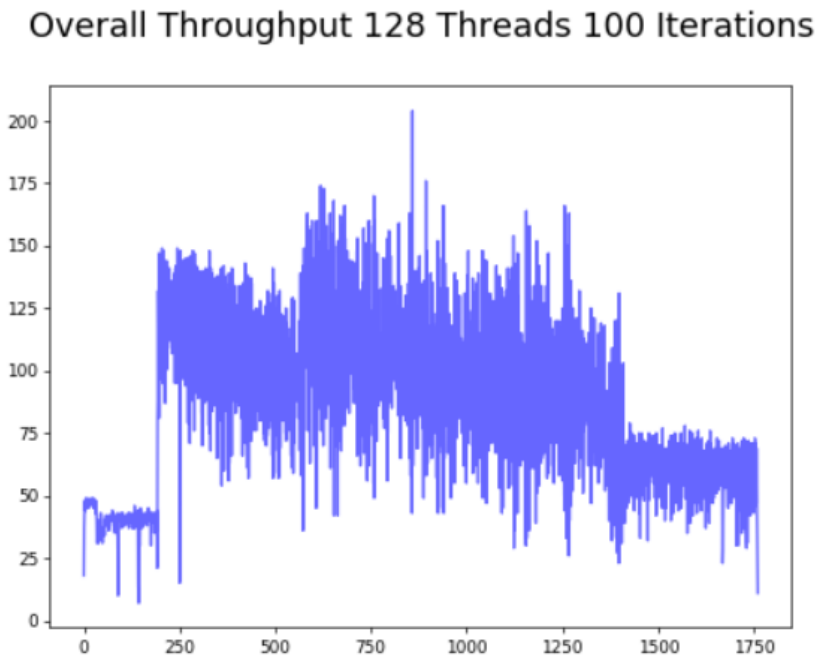
256 Threads

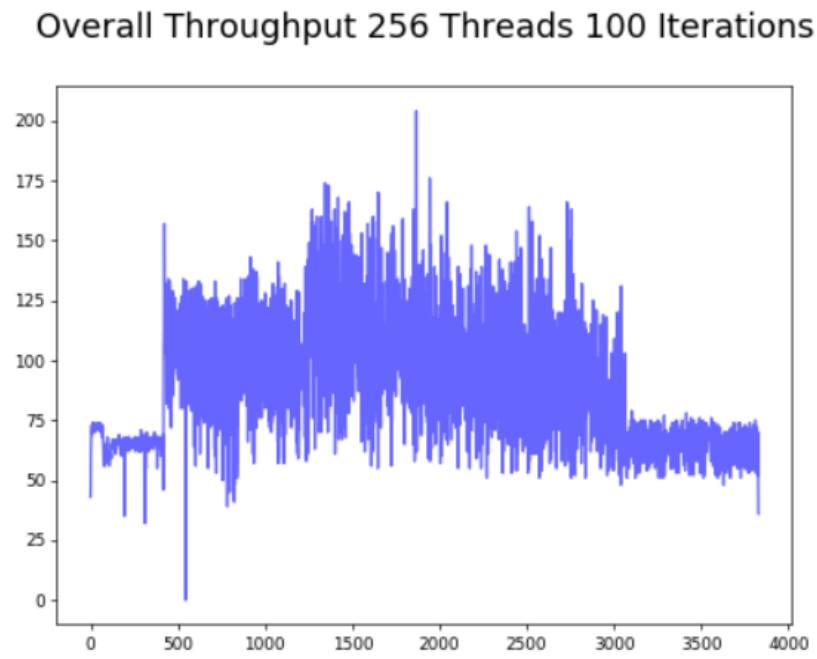
```
Total Run Time: 4103 seconds
Total Requests Sent: 708000
Total Successful Requests: 603219
Mean Latency: 492 ms
95 Percentile Latency: 1822 ms
99 Percentile Latency: 1932 ms
Phase: Warm Up
Phase Start Time: 1540901473658 ms
Phase End Time: 1540901952031 ms
Phase Run Time: 482 seconds
Phase Requests Sent: 7200
Phase Throughput: 284 ms
Phase: Loading
Phase Start Time: 1540901512309 ms
Phase End Time: 1540902314234 ms
Phase Run Time: 821 seconds
Phase Requests Sent: 38400
Phase Throughput: 401 ms
Phase: Peak
Phase Start Time: 1540901663419 ms
Phase End Time: 1540920842931 ms
Phase Run Time: 1956 seconds
Phase Requests Sent: 76800
Phase Throughput: 613 ms
Phase: Cool Down
Phase Start Time: 1540901863240 ms
Phase End Time: 1540902704723 ms
Phase Run Time: 844 seconds
Phase Requests Sent: 19200
Phase Throughput: 378 ms
```



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.





Even though scaling improves the speed, but the boundary between each phase especially the loading phase, peak phase and cool-down phase becomes less obvious.