# ECE-568 Project 4

# Report

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Testing infrastructure:

We used Testing/Client.java to perform our tests. We used appropriate parameters to generate random requests in predefined values. To measure scalability, we used a function parameterized over no of threads to test different workloads.

We used command taskset 0x1/0x3/0xf to change utilization of different cores and test over it.

Note: To reproduce the results over different cores. One needs to use Makefile directly instead of docker.

Output:

**Testing conditions:**

**Client**

1) No of threads (Client) : 256
2) Number of requests / thread : 20
3) Effective total requests: 5120

**Server**

1) No. of threads (ThreadPool in server) : 32

**Testing result:**

## 4 cores

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 23.436404 s

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
8
Elapsed time: 27.188595 s

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
8
Elapsed time: 27.188595 s

Process finished with exit code 0
```

## 2 cores

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 38.938471689 s

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 38.619138305 s

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 39.003001811 s

Process finished with exit code 0
```

## 1 core

/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagent
Elapsed time: 53.350981141 s

Process finished with exit code 0


/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 60.651902585 s

Process finished with exit code 0

/Library/Java/JavaVirtualMachines/openjdk-14.0.1.jdk/Contents/Home/bin/java -javaagen
Elapsed time: 52.300620608 s

Process finished with exit code 0

## Resulting graph

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 Core | 2 Cores | 4 Cores | | | | | | | | | |
| 2 | | 53.35098114 | 38.93847169 | 23.43604 | | | | | | | | | |
| 3 | | 60.65190259 | 38.61913831 | 27.188595 | | | | | | | | | |
| 4 | | 52.30062061 | 39.00300181 | 27.188595 | | | | | | | | | |
| 5 | | 1 Core | 2 Cores | 4 Cores | | | | | | | | | |
| 6 | Mean | 55.43450144 | 38.85353727 | 25.93774333 | | | | | | | | | |
| 7 | Standard deviation | 4.54882076 | 0.205543644 | 2.166538639 | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |



Scalibility over no of cores

SECONDS

|  | 1 Core | 2 Cores | 4 Cores |
|---|---|---|---|
| Series1 | 55.43450144 | 38.85353727 | 25.93774333 |