

## Assignment 2, Report (part C)

How did I test my code: I tested with multiple settings, with short text "test" for both Topic and data to start, 10 posts with 1 concurrent attempt from inside the same nodejs server. I then increased the number of posts and concurrent attempts to 100, I decreased the number of concurrent requests to 1, and finally ran a test with 504 characters as the data.

How long does it take to process a single post? For low instances of concurrency I had mean latencies of 7.7-12.3 ms. For high concurrency I saw the mean increase to 268.6 ms.

Does the size of the data submitted to the server impact the performance? The data size didn't seem to make much difference in test times, the lowest mean latency of 7.7ms was observed with 508 (test and test with a 500 random character string appended) characters passed, 8.1 and 12.3 ms were observed with 8 characters (test and test).

How does the number of requests impact the performance of the server? Higher numbers of requests reduced the mean latency, with 10 requests the observed latency was 12.3ms, for 100 tests the mean dropped to 8.1 and 7.7ms.

How does the level of concurrency impact the performance of the server? The higher the concurrency the higher the latency observed was. For 100 requests a concurrency of 1 had observed mean latencies of 8.1 and 7.7 ms, with 100 requests and a concurrency of 100 I observed a mean latency of 268.6ms.

Below are the results of the tests performed:

```
root@d8cd08d1e357:/Server# npx loadtest -n 10 -c 1 -m POST -T 'application/x-www-form-urlencoded'
--data '{"Topic": "test", "Data": "test"}' http://localhost:8080/posting
```

```
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Requests: 0 (0%), requests
per second: 0, mean latency: 0 ms
```

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[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO
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[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Target URL:
http://localhost:8080/posting
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```
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Max requests:      10
```

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[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Concurrency level:  1
```

```
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Agent:           none
```

[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Completed requests: 10  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Total errors: 0  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Total time:  
0.125171376 s  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Requests per second: 80  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Mean latency: 12.3 ms  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Percentage of the requests  
served within a certain time  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO 50% 9 ms  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO 90% 33 ms  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO 95% 33 ms  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO 99% 33 ms  
[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO 100% 33 ms (longest  
request)

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root@d8cd08d1e357:/Server# npx loadtest -n 100 -c 100 -m POST -T 'application/x-www-form-urlencoded' --data '{"Topic": "test", "Data": "test"}' http://localhost:8080/posting

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Requests: 0 (0%), requests  
per second: 0, mean latency: 0 ms  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Target URL:  
http://localhost:8080/posting  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Max requests: 100  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Concurrency level: 100  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Agent: none  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Completed requests: 100  
[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Total errors: 0

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Total time:  
0.340569381 s

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Requests per second: 294

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Mean latency: 268.6 ms

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO Percentage of the requests  
served within a certain time

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO 50% 270 ms

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO 90% 293 ms

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO 95% 294 ms

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO 99% 302 ms

[Tue Mar 07 2023 01:47:03 GMT+0000 (Coordinated Universal Time)] INFO 100% 302 ms (longest  
request)

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root@d8cd08d1e357:/Server# npx loadtest -n 100 -c 1 -m POST -T 'application/x-www-form-urlencoded'  
--data '{"Topic": "test", "Data": "test"}' http://localhost:8080/posting

[Tue Mar 07 2023 01:47:32 GMT+0000 (Coordinated Universal Time)] INFO Requests: 0 (0%), requests  
per second: 0, mean latency: 0 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Target URL:  
http://localhost:8080/posting

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Max requests: 100

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Concurrency level: 1

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Agent: none

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Completed requests: 100

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Total errors: 0

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Total time:  
0.821154721 s

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Requests per second: 122

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Mean latency: 8.1 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO Percentage of the requests served within a certain time

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO 50% 7 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO 90% 9 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO 95% 10 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO 99% 28 ms

[Tue Mar 07 2023 01:47:33 GMT+0000 (Coordinated Universal Time)] INFO 100% 28 ms (longest request)

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```
root@d8cd08d1e357:/Server# npx loadtest -n 100 -c 1 -m POST -T 'application/x-www-form-urlencoded'
--data '{"Topic": "test", "Data":
"test6mB5c4JG6X7nyYHBaTmrnTSX96rzkGZqrL7nREkeSQtrNcgOXilrPhk94gvrVbVEjU88evyHUg3VVEs235G
GJcEL1Lh8W69E20Y6w8vgV17ANehNcW2P8xW3Dbe32by5Eqm3xasIORIPkp3PEVYmh9IFoTBK6puGhSEh
kQQUktga444n2gJSICBONumObIKY3qRyt98YM4UuMjSIDnr8ror313TarDCOAEJOFamLevTsRW6cwuGrH8
EoRzIGUMQCVy8ZSM5CmhXqp7Fib3ZRDEG2AJ4WwnlUGzPikn1KuH0l9GfPuYBRekoX8hlviGauR753eBitD
8urTjhvDGSJsTP4AELrpT1YZVGff9GCQV0jtr9xraAizH7YHd5YtYwcHVHx2H9oBWxnbly2eqMzVYxZqzmQ6
2EsfCleyoQaPtIhydCpNzxfPFVwb4X7EWLsQxdSxCyps2O0WeygeOFFwFINlliT3CmjtnDQ57VeoVNDCO2R38
B3"}' http://localhost:8080/posting
```

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Requests: 0 (0%), requests per second: 0, mean latency: 0 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Target URL:  
http://localhost:8080/posting

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Max requests: 100

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Concurrency level: 1

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Agent: none

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Completed requests: 100

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Total errors: 0

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Total time:  
0.778066783 s

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Requests per second: 129

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Mean latency: 7.7 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO Percentage of the requests served within a certain time

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO 50% 7 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO 90% 8 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO 95% 11 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO 99% 24 ms

[Tue Mar 07 2023 01:48:43 GMT+0000 (Coordinated Universal Time)] INFO 100% 24 ms (longest request)