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

[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 Target URL: http://localhost:8080/posting

[Tue Mar 07 2023 01:39:52 GMT+0000 (Coordinated Universal Time)] INFO Max requests: 10

[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": ""}' 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)