Benchmark Report from csc326-group10

Tests include:

● Usage of CPU with increasing requests
● Usage of CPU with max requests
● Max number of connections (1 request/ connection) handled by server (with minimized request/connections)
● Max number requests from 1 connection
● Max number requests with max number of connections

Test methodology:

1. Install Apache Benchmark on 1 stance on AWS (testing instance)
2. Launch Server on second Instance (official instance) and run FrontEnd code
3. use command to run on test instance: ab -n 100 -c 100 http://172.31.7.105/ . Where the IP is the private IP of server instance.
4. Change request and concurrency parameter and aggregate result

(Instance configuration: t1.micro)

Table1: With fixed (1000) requests number

Connections(Concurrency level)	Requests	Requests handled
1	10000	10000
50	1000	983
100	1000	978
200	1000	958

Table2: With 1 request/connection, find max number of connections

Connections(Concurrency level)	Requests (1/connection)	Requests handled
100	100	100
250	250	250
300	300	286
400	400	375

Table3: Max number requests and concurrency before request loss

Connections(Concurrency level)	Requests	Requests handled
100	200	200
200	300	270
200	230	230
250	250	250
280	300	300
300	300	277

Conclusion:

From Table1, table2, and table3, we conclude that

1. the max number requests and concurrency for t1.micro should be somewhere between 280-300 connections and around 300 requests.
2. The max number of connections (1 request/connection) is around 250 before connection loss
3. From table1, it seems that there is no limit for max requests from only 1 connection (we reached 10000 requests), however as concurrency level goes up, there is significant drop
4. Also by using dstat tool with command: “dstat --top-cpu-adv --top-latency –top-mem”, we have found that as request and connection number increasing, CPU usage is increasing too. With 400 requests and 300 connections the CPU usage range is from 32% to 41%.
5. The highest latency we found for 400 requests and 300 connections is 583(ms)

Test sample result with 100 requests from 100 concurrencies:

Benchmarking 172.31.7.105 (be patient).....done

Server Software: WSGIServer/0.1
Server Hostname: 172.31.7.105
Server Port: 80

Document Path: /
Document Length: 516 bytes

Concurrency Level: 100
Time taken for tests: 0.825 seconds
Complete requests: 100
Failed requests: 0
Total transferred: 67000 bytes
HTML transferred: 51600 bytes
Requests per second: 121.16 [#/sec] (mean)
Time per request: 825.383 [ms] (mean)
Time per request: 8.254 [ms] (mean, across all concurrent requests)
Transfer rate: 79.27 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	1	2 1.5	1	5
Processing:	2	77 185.9	6	820
Waiting:	2	76 185.9	5	820
Total:	6	78 186.9	7	824

Percentage of the requests served within a certain time (ms)
50% 7
66% 7

75% 7
80% 11
90% 414
95% 419
98% 824
99% 824
100% 824 (longest request)