

D05

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Test PHP Worker

1. Round-Robin

```
ihuan@DESKTOP-KOVSP35: ~$ curl -x http://127.0.0.1:80 -s -o /dev/null http://granz.channel.d05.com/
Benchmarking granz.channel.d05.com (be patient)
Completed 100 requests
Completed 200 requests
Completed 300 requests
Completed 400 requests
Completed 500 requests
Completed 600 requests
Completed 700 requests
Completed 800 requests
Completed 900 requests
Completed 1000 requests
Finished 1000 requests

Server Software:      nginx/1.14.2
Server Hostname:      granz.channel.d05.com
Server Port:          80

Document Path:        /
Document Length:       625 bytes

Concurrency Level:     100
Time taken for tests:   1.073 seconds
Complete requests:     1000
Failed requests:        333
  (Connect: 0, Receive: 0, Length: 333, Exceptions: 0)
Total transferred:     761667 bytes
HTML transferred:      624667 bytes
Requests per second:   931.99 [#/sec] (mean)
Time per request:      107.297 [ms] (mean)
Time per request:      1.073 [ms] (mean, across all concurrent requests)
Transfer rate:         693.23 [Kbytes/sec] received

Connection Times (ms)
  min   mean[+/-sd] median   max
Connect:  0   19   7.0   21   36
Processing: 4   85  115.2   68  1068
Waiting:  2   84  115.2   68  1067
Total:    4  104  113.0   89  1070

Percentage of the requests served within a certain time (ms)
 50%    89
 66%    92
 75%    93
 80%    93
 90%    98
 95%   127
 98%   286
 99%   1066
100%  1070 (longest request)
root@Stark:~#
```

2. Weighted Round-Robin

```
ihuan@DESKTOP-KOVSP35: ~$ curl -x http://127.0.0.1:80 -s -o /dev/null http://granz.channel.d05.com/
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking granz.channel.d05.com (be patient)
Completed 100 requests
Completed 200 requests
Completed 300 requests
Completed 400 requests
Completed 500 requests
Completed 600 requests
Completed 700 requests
Completed 800 requests
Completed 900 requests
Completed 1000 requests
Finished 1000 requests

Server Software:      nginx/1.14.2
Server Hostname:      granz.channel.d05.com
Server Port:          80

Document Path:        /
Document Length:       625 bytes

Concurrency Level:     100
Time taken for tests:   1.144 seconds
Complete requests:     1000
Failed requests:        400
  (Connect: 0, Receive: 0, Length: 400, Exceptions: 0)
Total transferred:     761600 bytes
HTML transferred:      624600 bytes
Requests per second:   873.88 [#/sec] (mean)
Time per request:      114.432 [ms] (mean)
Time per request:      1.144 [ms] (mean, across all concurrent requests)
Transfer rate:         649.95 [Kbytes/sec] received

Connection Times (ms)
  min   mean[+/-sd] median   max
Connect:  0   23   6.2   22   47
Processing: 30   78  58.3   70  1041
Waiting:  1   78  58.3   70  1041
Total:    31  100  58.3   91  1063

Percentage of the requests served within a certain time (ms)
 50%    91
 66%    97
 75%   100
 80%   106
 90%   122
 95%   138
 98%   152
 99%   188
100%  1063 (longest request)
root@Stark:~#
```

3. Least-Connection

```
thuan@DESKTOP-KOVSP35: ~  
Benchmarking granz.channel.d05.com (be patient)  
Completed 100 requests  
Completed 200 requests  
Completed 300 requests  
Completed 400 requests  
Completed 500 requests  
Completed 600 requests  
Completed 700 requests  
Completed 800 requests  
Completed 900 requests  
Completed 1000 requests  
Finished 1000 requests  
  
Server Software:      nginx/1.14.2  
Server Hostname:      granz.channel.d05.com  
Server Port:          80  
  
Document Path:        /  
Document Length:      625 bytes  
  
Concurrency Level:    100  
Time taken for tests:  1.451 seconds  
Complete requests:    1000  
Failed requests:      342  
    (Connect: 0, Receive: 0, Length: 342, Exceptions: 0)  
Total transferred:    761658 bytes  
HTML transferred:     624658 bytes  
Requests per second:  689.30 [#/sec] (mean)  
Time per request:     145.074 [ms] (mean)  
Time per request:     1.451 [ms] (mean, across all concurrent requests)  
Transfer rate:        512.71 [Kbytes/sec] received  
  
Connection Times (ms)  
      min  mean[+/-sd] median  max  
Connect:    1    21 10.6     20   118  
Processing: 17    80 79.5     65  1019  
Waiting:    0    79 78.9     65  1019  
Total:      18   101 79.8     87  1038  
  
Percentage of the requests served within a certain time (ms)  
 50%    87  
 66%    89  
 75%    91  
 80%    92  
 90%   150  
 95%   193  
 98%   313  
 99%   325  
100%  1038 (longest request)  
root@Stark:/#
```

4. IP Hash

```
thuan@DESKTOP-KOVSP35: ~  
Licensed to The Apache Software Foundation, http://www.apache.org/  
Benchmarking granz.channel.d05.com (be patient)  
Completed 100 requests  
Completed 200 requests  
Completed 300 requests  
Completed 400 requests  
Completed 500 requests  
Completed 600 requests  
Completed 700 requests  
Completed 800 requests  
Completed 900 requests  
Completed 1000 requests  
Finished 1000 requests  
  
Server Software:      nginx/1.14.2  
Server Hostname:      granz.channel.d05.com  
Server Port:          80  
  
Document Path:        /  
Document Length:      624 bytes  
  
Concurrency Level:    100  
Time taken for tests:  1.094 seconds  
Complete requests:    1000  
Failed requests:      0  
Total transferred:    761000 bytes  
HTML transferred:     624000 bytes  
Requests per second:  914.33 [#/sec] (mean)  
Time per request:     109.370 [ms] (mean)  
Time per request:     1.094 [ms] (mean, across all concurrent requests)  
Transfer rate:        679.50 [Kbytes/sec] received  
  
Connection Times (ms)  
      min  mean[+/-sd] median  max  
Connect:    3    14  6.1     14    31  
Processing:  4    76 147.6     49  1021  
Waiting:    1    76 147.6     49  1021  
Total:       7    90 148.7     68  1052  
  
Percentage of the requests served within a certain time (ms)  
 50%    68  
 66%    71  
 75%    72  
 80%    73  
 90%    79  
 95%   254  
 98%   1033  
 99%   1043  
100%  1052 (longest request)  
root@Stark:/#
```

5. Generic Hash

```
lhan@DESKTOP-KDVSP3:~$ root@Stark:/# ab -n 1000 -c 100 http://granz.channel.d05.com/
This is ApacheBench, Version 2.3 ($Revision: 1843412 $)
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking granz.channel.d05.com (be patient)
Completed 100 requests
Completed 200 requests
Completed 300 requests
Completed 400 requests
Completed 500 requests
Completed 600 requests
Completed 700 requests
Completed 800 requests
Completed 900 requests
Completed 1000 requests
Finished 1000 requests

Server Software:      nginx/1.14.2
Server Hostname:      granz.channel.d05.com
Server Port:          80
Document Path:        /
Document Length:      624 bytes

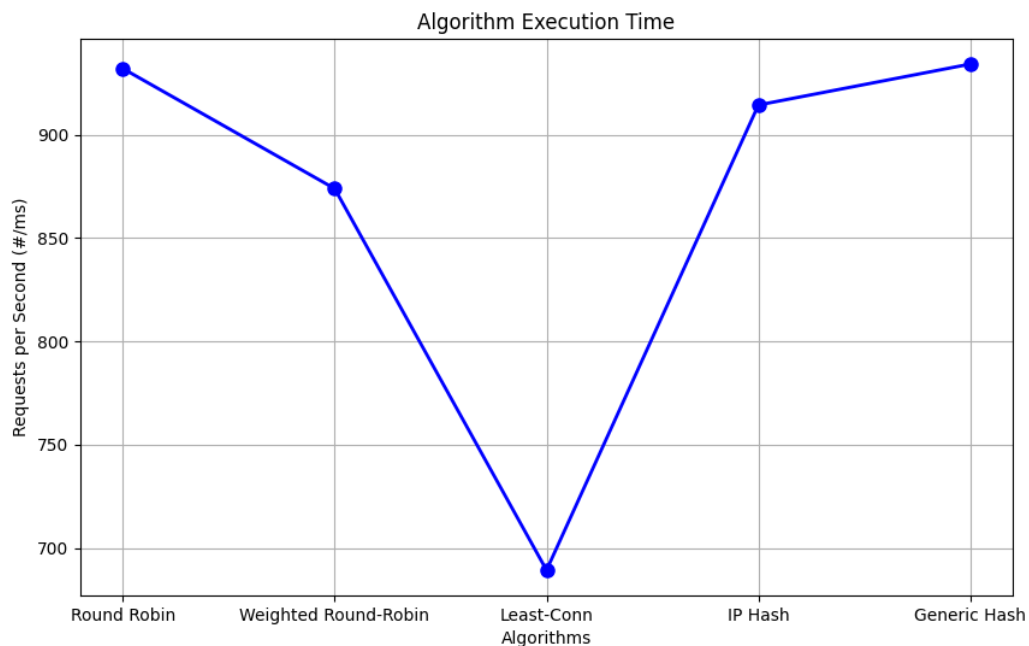
Concurrency Level:    100
Time taken for tests:  1.071 seconds
Complete requests:    1000
Failed requests:       0
Total transferred:    761000 bytes
HTML transferred:     624000 bytes
Requests per second:  934.13 [#/sec] (mean)
Time per request:     107.052 [ms] (mean)
Time per request:     1.071 [ms] (mean, across all concurrent requests)
Transfer rate:        694.21 [Kbytes/sec] received

Connection Times (ms)
  min   mean[+/-sd] median   max
Connect:  0   14   5.6      14    29
Processing:  4   69 102.7     51  1050
Waiting:    2   68 100.8     51  1049
Total:      5   83 102.2     66  1067

Percentage of the requests served within a certain time (ms)
 50%    66
 66%    71
 75%    75
 80%    76
 90%    79
 95%   288
 98%   313
 99%   356
100%  1067 (longest request)

root@Stark:/#
```

Grafik



Analisis :

Dari grafik Request per second tersebut didapatkan hasil bahwa algoritma Generic Hash merupakan algoritma yang paling baik dikarenakan dia memiliki request per second yang paling tinggi dimana artinya dia bisa memproses request paling banyak dalam waktu 1 second daripada algoritma lainnya. Cara kerja generic hash sendiri menggunakan fungsi hash untuk memetakan kunci atau data input ke dalam sejumlah partisi atau bucket. Partisi ini mewakili server-server dalam sistem, dan tujuan dari algoritma ini adalah untuk mendistribusikan data secara merata di antara server-server tersebut.

Test Laravel

1. POST api/auth/register

Response :

[illegible]

Apache Benchmark :

```

root@DESKTOP-KOY3PS: ~
99% 10284
100% 10284 (longest request)
root@Stark:/# nano register.json
root@Stark:/# ab -n 100 -c 10 -p register.json -T "application/json" -H "Content-Type:application/json" http://10.24.4.1:8001/api/auth/register/
This is ApacheBench, Version 2.3.5<Revision: 1043412>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done


Server Software:        nginx/1.14.2
Server Hostname:        10.24.4.1
Server Port:            8001

Document Path:          /api/auth/register/
Document Length:        460 bytes

Concurrency Level:      10
Time taken for tests:    111.893 seconds
Complete requests:      100
Failed requests:         99
  (Connect: 0, Receive: 0, Length: 99, Exceptions: 0)
Non-2xx responses:      99
Total transferred:       34903 bytes
Total body sent:         24000
HTML transferred:       5787 bytes
Requests per second:    0.89 [#/sec] (mean)
Time per request:        11189.255 [ms] (mean)
Time per request:        1118.925 [ms] (mean, across all concurrent requests)
Transfer rate:           0.30 [Kbytes/sec] received
                        0.21 kb/s sent
                        0.51 kb/s total


Connection Times (ms)
              min  mean[+/-sd] median  max
Connect:        0    0   0.4      0      3
Processing:    10065 10151  46.3  10154 10400
Waiting:        10065 10150  46.3  10153 10400
Total:          10065 10151  46.4  10154 10402


Percentage of the requests served within a certain time (ms)
 50% 10154
 66% 10165
 75% 10173
 80% 10182
 90% 10201
 95% 10217
 98% 10235
 99% 10402
100% 10402 (longest request)
root@Stark:/#

```

2. POST /api/auth/login

Response: _____

```
root@Revolt:/# nano login.json
root@Revolt:/# curl -X POST -H "Content-Type:application/json" -d @register.json http://10.24.4.1:8001/api/auth/login
{"token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpc2MiOiJkbm9udW8wMTQwNCxkOjgweDcVXBplZS10dGwvc2maW1lC3p7AQIDJSIPDAwMVA0DYsImVhcCl6HTcwPDEyMDQ4NWlmZWJmIjoxeNzAwMTE2ODg2LzQqdGkiOiI1YndJamdtctH2ZMLdVejpIiwiaWF0IjoiMTIsbnBydiIiOiJrYm91Y2psNDIsmjAwaW8wMTQwNCxkOjgweDcVXBplZS10dGwvc2maW1lZSI6fQ.nIVSY_ab7DD0K_N0jpc9HctHgpc8QCvks7j6zTabE"}root@Revolt:/#
```

Apache Benchmark :

```

root@revolt:~# ab -n 100 -c 10 -T 'application/json' -p register.json -g login_result.data http://10.24.4.1:8001/api/auth/login
This is ApacheBench, Version 2.3 <$Revision: 1843412 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done


Server Software:      nginx/1.14.2
Server Hostname:      10.24.4.1
Server Port:          8001

Document Path:        /api/auth/login
Document Length:      335 bytes

Concurrency Level:    10
Time taken for tests:  213.684 seconds
Complete requests:    100
Failed requests:       0
Total transferred:    61800 bytes
Total body sent:      20900
HTML transferred:     33500 bytes
Requests per second:  0.47 [#/sec] (mean)
Time per request:     21360.388 [ms] (mean)
Time per request:     2136.039 [ms] (mean, across all concurrent requests)
Transfer rate:         0.28 [Kbytes/sec] received
                      0.10 kb/s sent
                      0.38 kb/s total


Connection Times (ms)
      min      mean[+/-sd] median   max
Connect:        0       2   5.2      0       33
Processing:    10162 19707 2294.5  20195  22138
Waiting:       10157 19707 2294.7  20194  22138
Total:         10163 19788 2294.3  20195  22143


Percentage of the requests served within a certain time (ms)
 50%  20195
 65%  20281
 75%  20297
 80%  20307
 90%  20428
 95%  20534
 98%  21339
 99%  22143
100%  22143 (longest request)
root@revolt:~#

```

3. GET /api/me

Response:

```
ihand@DESKTOP-K0VSP3S:~$ curl -X GET -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.4.1:8001/api/me
{"id":2,"username":"username","created_at":"2023-11-16T06:32:21.000000Z","updated_at":"2023-11-16T06:32:21.000000Z"}root@Revolt:/#
```

Apache Benchmark:

```
ihand@DESKTOP-K0VSP3S:~$ root@Revolt:/# ab -n 100 -c 10 -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.4.1:8001/api/me
This is ApacheBench, Version 2.3 <$Revision: 1843412 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done


Server Software:      nginx/1.14.2
Server Hostname:      10.24.4.1
Server Port:          8001
Document Path:        /api/me
Document Length:       115 bytes

Concurrency Level:    10
Time taken for tests:  219.902 seconds
Complete requests:     100
Failed requests:        0
Total transferred:     39900 bytes
HTML transferred:      11600 bytes
Requests per second:   0.47 [#/sec] (mean)
Time per request:      21890.165 [ms] (mean)
Time per request:      2189.017 [ms] (mean, across all concurrent requests)
Transfer rate:          0.18 [Kbytes/sec] received

Connection Times (ms)
  min   mean[+/-sd] median   max
Connect:    0      1   1.9      0    15
Processing: 10847 19497 2339.7 20860 21347
Waiting:    10846 19497 2339.7 20860 21347
Total:      10851 19498 2339.5 20860 21347

Percentage of the requests served within a certain time (ms)
 50%  20860
 65%  20873
 75%  20882
 80%  20888
 90%  20104
 95%  20116
 98%  20320
 99%  21347
100%  21347 (longest request)
root@Revolt:/#
```

Implementasi PHP-FPM

Script 1 :

```
ihsan@DESKTOP-K0VSP3S: ~
680 nano 3.2 /etc/php/8.0/fpm/pool.d/www.conf

[www]
user = www-data
group = www-data

listen = /run/php/php8.0-fpm.sock

listen.owner = www-data
listen.group = www-data
pm = dynamic

pm.max_children = 20
; The number of child processes created on startup.
; Note: Used only when pm is set to 'dynamic'
; Default Value: (min_spare_servers + max_spare_servers) / 2
pm.start_servers = 12

pm.min_spare_servers = 10
pm.max_spare_servers = 15

Get Help  Write Out  Where Is  Cut Text  Justify  Cur Pos  Undo  Mark Text  To Bracket  Previous  Back  Left Prev Word
Exit      Read File  Replace  Uncut Text  To Spell  Go To Line  Redo  Copy Text  Where Was  Next      Forward  Right Next Word
```

Hasil script 1:

```
ihsan@DESKTOP-K0VSP3S: ~
root@Revolt:/# ab -n 100 -c 10 -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.4.1:8001/api/me
This is ApacheBench, Version 2.3 <Revision: 1843412 >
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done

Server Software:      nginx/1.14.2
Server Hostname:      10.24.4.1
Server Port:          8001

Document Path:        /api/me
Document Length:      116 bytes

Concurrency Level:    10
Time taken for tests:  110.947 seconds
Complete requests:    100
Failed requests:       0
Total transferred:    30800 bytes
HTML transferred:     11600 bytes
Requests per second:  0.90 [#/sec] (mean)
Time per request:     11894.735 [ms] (mean)
Time per request:     11091.474 [ms] (mean, across all concurrent requests)
Transfer rate:        0.35 [Kbytes/sec] received

Connection Times (ms)
  min  mean[+/-sd] median  max
Connect:        0    3  7.1      0    32
Processing:    10018 10073  82.0   10043 10446
Waiting:       10013 10073  82.1   10042 10446
Total:         10018 10076  85.1   10043 10457

Percentage of the requests served within a certain time (ms)
 50%  10043
 66%  10057
 75%  10090
 80%  10100
 90%  10214
 95%  10259
 98%  10409
 99%  10457
100%  10457 (longest request)
root@Revolt:/#
```

Script 2:

```
ihsan@DESKTOP-KDVSP3S: ~
680 nano 3.2 /etc/php/8.0/fpm/pool.d/www.conf Modified

[www]

user = www-data
group = www-data

listen = /run/php/php8.0-fpm.sock

listen.owner = www-data
listen.group = www-data
pm = dynamic

pm.max_children = 30
; The number of child processes created on startup.
; Note: Used only when pm is set to 'dynamic'
; Default Value: (min_spare_servers + max_spare_servers) / 2
pm.start_servers = 17

pm.min_spare_servers = 15
pm.max_spare_servers = 20

-

Get Help  Write Out  Where Is  Cut Text  Justify  Cur Pos  Undo  Mark Text  To Bracket  Previous  Back  Left Prev Word
Exit      Read File  Replace  Uncut Text  To Spell  Go To Line  Redo  Copy Text  Where Was  Next      Forward  Right Next Word
```

Hasil script 2:

```
ihsan@DESKTOP-KDVSP3S: ~
root@revolte:~# ab -n 100 -c 10 -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.4.1:8001/api/me
This is ApacheBench, Version 2.3 <Revision: 1843412> >
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done

Server Software:      nginx/1.14.2
Server Hostname:      10.24.4.1
Server Port:          8001

Document Path:        /api/me
Document Length:       116 bytes

Concurrency Level:    10
Time taken for tests:  110.824 seconds
Complete requests:    100
Failed requests:       0
Total transferred:    30800 bytes
HTML transferred:     11600 bytes
Requests per second:  0.90 [#/sec] (mean)
Time per request:     1182.366 [ms] (mean)
Time per request:     1180.222 [ms] (mean, across all concurrent requests)
Transfer rate:        0.35 [Kbytes/sec] received

Connection Times (ms)
  min  mean[+/-sd] median  max
Connect:  0    0  1.4      0    13
Processing: 10018 10066  71.8  10030  10309
Waiting:  10014 10006  71.9  10030  10309
Total:     10018 10067  71.9  10031  10310

Percentage of the requests served within a certain time (ms)
 50% 10031
 66% 10053
 75% 10071
 80% 10113
 90% 10200
 95% 10249
 98% 10278
 99% 10310
100% 10310 (longest request)
root@revolte:~#
```

Script 3:


```
ihsan@DESKTOP-K0VSP3S: ~
680 nano 3.2 /etc/php/8.0/fpm/pool.d/www.conf Modified

[www]

user = www-data
group = www-data

listen = /run/php/php8.0-fpm.sock

listen.owner = www-data
listen.group = www-data
pm = dynamic

pm_max_children = 40

; The number of child processes created on startup.
; Note: Used only when pm is set to 'dynamic'
; Default Value: (min_spare_servers + max_spare_servers) / 2
pm_start_servers = 22

pm_min_spare_servers = 20
pm_max_spare_servers = 25

File Name to Write: /etc/php/8.0/fpm/pool.d/www.conf
Get Help
Cancel
DOS Format
Mac Format
Append
Prepend
Backup File
To Files
```

Hasil script 3:

```
ihsan@DESKTOP-K0VSP3S: ~
root@Revolt:/# ab -n 100 -c 10 -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.4.1:8001/api/me
This is ApacheBench, Version 2.3 <Revision: 1843412 >
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.4.1 (be patient).....done

Server Software:      nginx/1.14.2
Server Hostname:      10.24.4.1
Server Port:          8001

Document Path:        /api/me
Document Length:      116 bytes

Concurrency Level:    10
Time taken for tests:  111.316 seconds
Complete requests:    100
Failed requests:       0
Total transferred:    30800 bytes
HTML transferred:     11600 bytes
Requests per second:  0.90 [#/sec] (mean)
Time per request:     1131.616 [ms] (mean)
Time per request:     1132.162 [ms] (mean, across all concurrent requests)
Transfer rate:        0.35 [Kbytes/sec] received

Connection Times (ms)
  min  mean[+/-sd] median max
Connect:  0    0  0.3      0    2
Processing: 10019 10110 72.0 10111 10283
Waiting:  10019 10110 72.1 10111 10282
Total:    10019 10111 72.1 10111 10283

Percentage of the requests served within a certain time (ms)
 50% 10111
 66% 10149
 75% 10154
 80% 10173
 90% 10223
 95% 10254
 98% 10274
 99% 10283
100% 10283 (longest request)
root@Revolt:/# _
```

Testing Least Conn

Hasil :

```
root@Stark:/# ab -n 100 -c 10 -H "Content-Type:application/json" -H "Authorization:Bearer $token" http://10.24.2.2/api/me
This is ApacheBench, Version 2.3 <Revision: 1843412>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 10.24.2.2 (be patient)....done


Server Software:      nginx/1.14.2
Server Hostname:      10.24.2.2
Server Port:          80

Document Path:        /api/me
Document Length:      112 bytes

Concurrency Level:    10
Time taken for tests:  114.339 seconds
Complete requests:    100
Failed requests:       0
Total transferred:    39494 bytes
HTML transferred:     11200 bytes
Requests per second:  0.87 [#/sec] (mean)
Time per request:     11433.886 [ms] (mean)
Time per request:     1143.389 [ms] (mean, across all concurrent requests)
Transfer rate:        0.34 [Kbytes/sec] received


Connection Times (ms)
      min  mean[+/-sd] median  max
Connect:    0    2   3.0      1    13
Processing: 18063 10343 258.5 10207 10949
Waiting:    18063 10342 258.7 10206 10949
Total:      18064 10345 259.0 10211 10952


Percentage of the requests served within a certain time (ms)
 50% 10211
 65% 10491
 75% 10537
 80% 10588
 90% 10754
 95% 10830
 98% 10940
 99% 10952
100% 10952 (longest request)
root@Stark:/#
```