

# Analisis (No 8/9)

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## No 8

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### Hasil Analisis

Round Robin

```

Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          81

Document Path:        /
Document Length:      182 bytes

Concurrency Level:    75
Time taken for tests:  0.251 seconds
Complete requests:    1000
Failed requests:       0
Non-2xx responses:    1000
Total transferred:    343000 bytes
HTML transferred:     182000 bytes
Requests per second:  3991.31 [#/sec] (mean)
Time per request:     18.791 [ms] (mean)
Time per request:     0.251 [ms] (mean, across all concurrent requests)
Transfer rate:        1336.93 [Kbytes/sec] received

Connection Times (ms)
      min    mean[+/-sd] median    max
Connect:    0      0   1.1      0      6
Processing:  0     18   6.5     20     32
Waiting:    0     18   6.5     20     32
Total:      0     18   6.2     20     32

Percentage of the requests served within a certain time (ms)
 50%    20
 66%    22
 75%    23
 80%    23
 90%    23
 95%    29
 98%    32
 99%    32
100%    32 (longest request)
root@Colossal:~# nano script8.sh

```

## Weighted Round Robin

```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          82

Document Path:        /
Document Length:      182 bytes

Concurrency Level:     75
Time taken for tests:  0.241 seconds
Complete requests:     1000
Failed requests:        0
Non-2xx responses:     1000
Total transferred:     343000 bytes
HTML transferred:      182000 bytes
Requests per second:   4145.66 [#/sec] (mean)
Time per request:      18.091 [ms] (mean)
Time per request:      0.241 [ms] (mean, across all concurrent requests)
Transfer rate:         1388.63 [Kbytes/sec] received

Connection Times (ms)
      min  mean[+/-sd] median   max
Connect:    0     0   0.9      0     4
Processing:  0    17   6.8     21    29
Waiting:    0    17   6.8     21    29
Total:      0    18   6.6     21    29

Percentage of the requests served within a certain time (ms)
 50%    21
 66%    22
 75%    23
 80%    23
 90%    23
 95%    27
 98%    29
 99%    29
100%    29 (longest request)
root@Colossal:~#
```

IP Hash

```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          83


Document Path:        /
Document Length:       182 bytes


Concurrency Level:     75
Time taken for tests:   0.271 seconds
Complete requests:     1000
Failed requests:        0
Non-2xx responses:     1000
Total transferred:     343000 bytes
HTML transferred:      182000 bytes
Requests per second:   3691.32 [#/sec] (mean)
Time per request:       20.318 [ms] (mean)
Time per request:       0.271 [ms] (mean, across all concurrent requests)
Transfer rate:          1236.45 [Kbytes/sec] received


Connection Times (ms)
              min    mean[+/-sd] median    max
Connect:        0      0   1.0      0      6
Processing:      0     20   4.6     21     24
Waiting:         0     20   4.6     21     24
Total:           0     20   4.3     21     25


Percentage of the requests served within a certain time (ms)
 50%    21
 66%    22
 75%    22
 80%    22
 90%    23
 95%    24
 98%    24
 99%    24
100%    25 (longest request)
root@Colossal:~#
```

Least Connection

```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          84

Document Path:        /
Document Length:      182 bytes

Concurrency Level:    75
Time taken for tests:  0.251 seconds
Complete requests:    1000
Failed requests:      0
Non-2xx responses:    1000
Total transferred:    343000 bytes
HTML transferred:     182000 bytes
Requests per second:  3979.83 [#/sec] (mean)
Time per request:     18.845 [ms] (mean)
Time per request:     0.251 [ms] (mean, across all concurrent requests)
Transfer rate:        1333.09 [Kbytes/sec] received

Connection Times (ms)
      min  mean[+/-sd] median   max
Connect:    0      0   0.8      0     7
Processing:  0     18   5.9     21    25
Waiting:    0     18   5.9     21    25
Total:      0     18   5.6     21    25

Percentage of the requests served within a certain time (ms)
 50%    21
 66%    22
 75%    22
 80%    23
 90%    23
 95%    24
 98%    25
 99%    25
100%    25 (longest request)
root@Colossal:~#
```

Generic Hash



```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          85

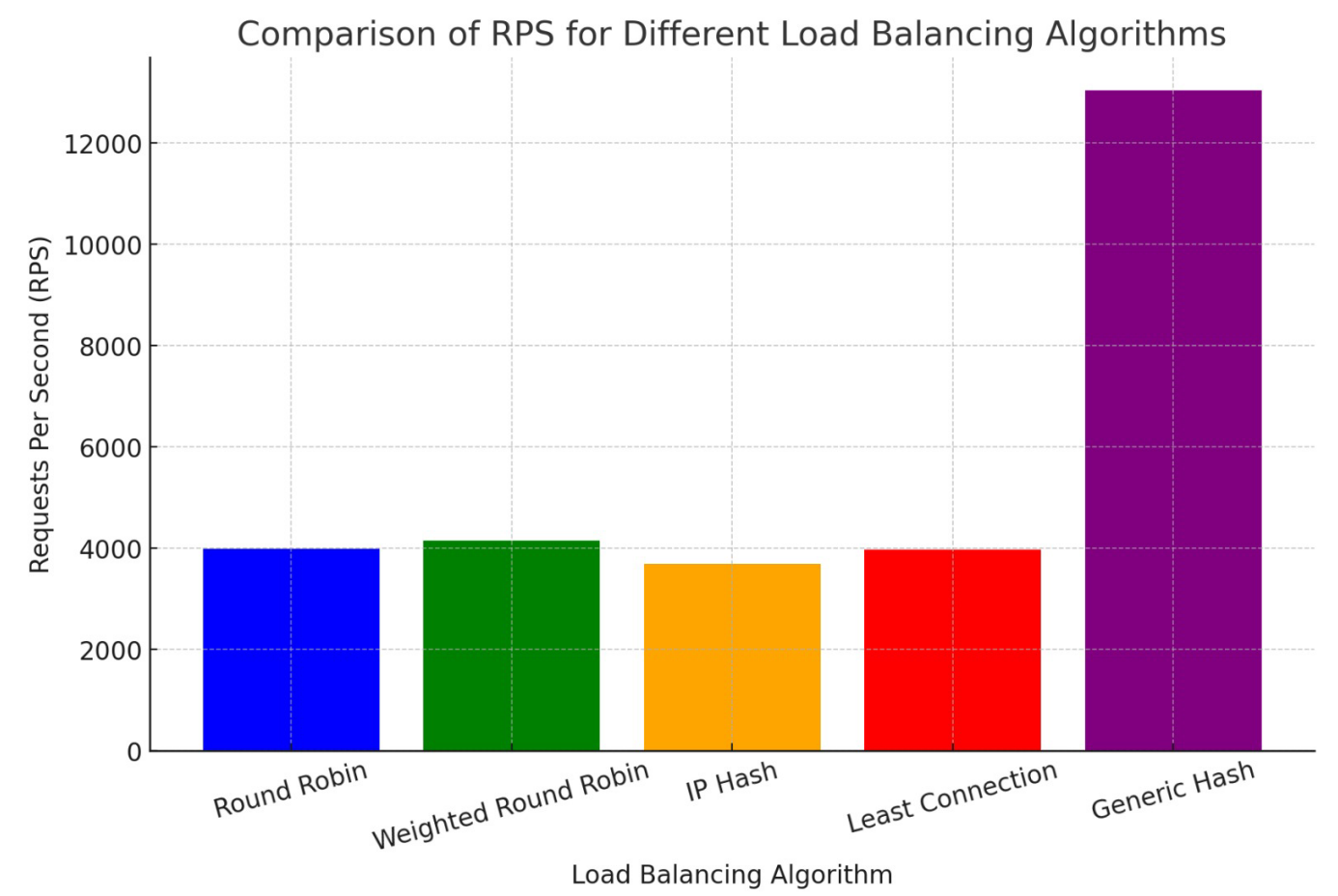
Document Path:        /
Document Length:      182 bytes

Concurrency Level:    75
Time taken for tests:  0.077 seconds
Complete requests:    1000
Failed requests:      0
Non-2xx responses:    1000
Total transferred:    343000 bytes
HTML transferred:     182000 bytes
Requests per second:  13039.51 [#/sec] (mean)
Time per request:     5.752 [ms] (mean)
Time per request:     0.077 [ms] (mean, across all concurrent requests)
Transfer rate:        4367.73 [Kbytes/sec] received

Connection Times (ms)
              min    mean[+/-sd] median    max
Connect:      0      1    1.3      0      4
Processing:    1      4    1.9      5      9
Waiting:      0      4    2.0      3      8
Total:        2      6    1.2      6      9

Percentage of the requests served within a certain time (ms)
 50%      6
 66%      6
 75%      6
 80%      6
 90%      7
 95%      7
 98%      8
 99%      9
100%     9 (longest request)
root@Colossal:~#
```

## Grafik & Analisis



Generic Hash unggul dalam jumlah permintaan per detik, tetapi pemilihan algoritma terbaik tergantung pada kebutuhan spesifik aplikasi, seperti distribusi beban yang merata, kapasitas server, atau persyaratan konsistensi klien.

## Analisis - No 9

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### Hasil Analisis

1 Worker

```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          85


Document Path:        /
Document Length:      182 bytes


Concurrency Level:     75
Time taken for tests:  0.095 seconds
Complete requests:     1000
Failed requests:       0
Non-2xx responses:     1000
Total transferred:     343000 bytes
HTML transferred:     182000 bytes
Requests per second:   10486.03 [#/sec] (mean)
Time per request:      7.152 [ms] (mean)
Time per request:      0.095 [ms] (mean, across all concurrent requests)
Transfer rate:         3512.41 [Kbytes/sec] received


Connection Times (ms)
              min  mean[+/-sd] median   max
Connect:        0    2   1.6      1     7
Processing:     2    5   2.4      5    12
Waiting:        0    4   2.4      4    11
Total:          3    7   2.4      7    12


Percentage of the requests served within a certain time (ms)
 50%    7
 66%    7
 75%    9
 80%    9
 90%   11
 95%   12
 98%   12
 99%   12
100%   12 (longest request)
```

2 Worker



```
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Licensed to The Apache Software Foundation, http://www.apache.org/  
  
Benchmarking 10.74.3.3 (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/1.10.3  
Server Hostname:      10.74.3.3  
Server Port:          85  
  
Document Path:        /  
Document Length:      182 bytes  
  
Concurrency Level:    75  
Time taken for tests:  0.085 seconds  
Complete requests:    1000  
Failed requests:      0  
Non-2xx responses:    1000  
Total transferred:    343000 bytes  
HTML transferred:    182000 bytes  
Requests per second:  11788.42 [#/sec] (mean)  
Time per request:     6.362 [ms] (mean)  
Time per request:     0.085 [ms] (mean, across all concurrent requests)  
Transfer rate:        3948.66 [Kbytes/sec] received  
  
Connection Times (ms)  
      min   mean[+/-sd] median   max  
Connect:    0     1    1.0      0     4  
Processing:  0     6    3.5      5    17  
Waiting:    0     5    3.3      5    16  
Total:      0     6    3.9      6    20  
  
Percentage of the requests served within a certain time (ms)  
 50%    6  
 66%    6  
 75%    6  
 80%    7  
 90%    7  
 95%   18  
 98%   20  
 99%   20  
100%   20 (longest request)  
root@Colossal:~#
```

### 3 Worker

```
Benchmarking 10.74.3.3 (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/1.10.3
Server Hostname:      10.74.3.3
Server Port:          85

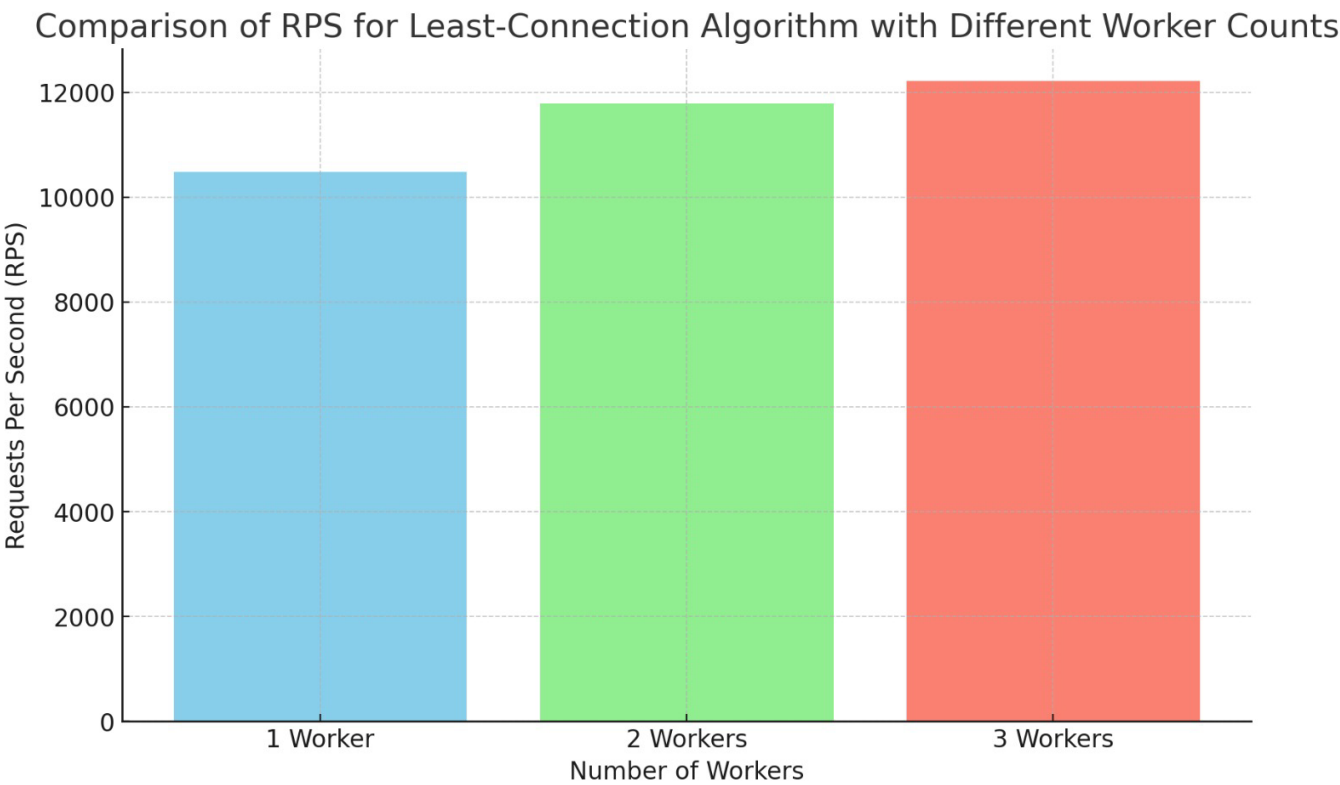
Document Path:        /
Document Length:      182 bytes

Concurrency Level:     75
Time taken for tests:  0.082 seconds
Complete requests:     1000
Failed requests:        0
Non-2xx responses:     1000
Total transferred:     343000 bytes
HTML transferred:      182000 bytes
Requests per second:   12216.72 [#/sec] (mean)
Time per request:      6.139 [ms] (mean)
Time per request:      0.082 [ms] (mean, across all concurrent requests)
Transfer rate:          4092.13 [Kbytes/sec] received

Connection Times (ms)
              min    mean[+/-sd] median    max
Connect:        0      1   1.1      0      4
Processing:      0      5   3.1      5     15
Waiting:         0      5   2.9      5     14
Total:          0      6   3.5      5     18

Percentage of the requests served within a certain time (ms)
 50%      5
 66%      6
 75%      6
 80%      6
 90%      8
 95%     16
 98%     18
 99%     18
100%     18 (longest request)
root@Colossal:~#
```

## Grafik & Analisis



Peningkatan jumlah worker pada algoritma Least-Connection meningkatkan kapasitas penanganan permintaan dan efisiensi, meskipun keuntungan marginal berkurang setelah dua worker.