

## Spice Map Analysis - IT03

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No. 8

### Round Robin

```
Server Software:      nginx/1.14.2
Server Hostname:      harkonen.it03.com
Server Port:          80

Document Path:        /
Document Length:      195 bytes

Concurrency Level:     50
Time taken for tests:  0.547 seconds
Complete requests:     500
Failed requests:       0
Non-2xx responses:     500
Total transferred:     199500 bytes
HTML transferred:      97500 bytes
Requests per second:   914.41 [#/sec] (mean)
Time per request:      54.680 [ms] (mean)
Time per request:      1.094 [ms] (mean, across all concurrent requests)
Transfer rate:         356.30 [Kbytes/sec] received
```

#### Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	1	25 9.4	27	43
Processing:	1	28 6.3	27	48
Waiting:	0	28 6.3	27	48
Total:	2	54 10.1	53	77

#### Percentage of the requests served within a certain time (ms)

50%	53
66%	61
75%	63
80%	63
90%	64
95%	66
98%	70
99%	70
100%	77 (longest request)

```
CPU[|||||] 1.4% Tasks: 5, 0 thr; 1 running
Mem[|||||] 608M/1.92G Load average: 0.54 0.70 1.18
Swp[|||||] 29.9M/2.00G Uptime: 00:41:40
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4000	3216	2760	S	0.0	0.2	0:00.10	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpd -s /gns3/etc/udhcpd/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
675	root	20	0	5060	3500	2736	R	0.0	0.2	0:00.00	htop

## Generic Hash

```
Server Software:      nginx/1.14.2
Server Hostname:      harkonen.it03.com
Server Port:          80

Document Path:        /
Document Length:      195 bytes

Concurrency Level:     50
Time taken for tests:  0.677 seconds
Complete requests:     500
Failed requests:       0
Non-2xx responses:     500
Total transferred:     199500 bytes
HTML transferred:      97500 bytes
Requests per second:   738.24 [#/sec] (mean)
Time per request:      67.728 [ms] (mean)
Time per request:      1.355 [ms] (mean, across all concurrent requests)
Transfer rate:         287.66 [Kbytes/sec] received
```

### Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	32 13.6	33	65
Processing:	2	34 12.0	33	63
Waiting:	1	34 12.0	32	63
Total:	2	66 18.3	70	95

### Percentage of the requests served within a certain time (ms)

50%	70
66%	76
75%	79
80%	81
90%	85
95%	88
98%	92
99%	94
100%	95 (longest request)

```
CPU[ 0.0%] Tasks: 5, 0 thr; 1 running
Mem[ 608M/1.92G] Load average: 0.49 0.63 1.10
Swp[ 29.9M/2.00G] Uptime: 00:43:35
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4000	3216	2760	S	0.0	0.2	0:00.10	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpc -s /gns3/etc/udhcpc/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
677	root	20	0	5060	3416	2652	R	0.0	0.2	0:00.00	htop

## IP Hash

```
Server Software:      nginx/1.14.2
Server Hostname:      harkonen.it03.com
Server Port:          80

Document Path:        /
Document Length:      195 bytes

Concurrency Level:    50
Time taken for tests:  0.548 seconds
Complete requests:    500
Failed requests:       0
Non-2xx responses:    500
Total transferred:    199500 bytes
HTML transferred:     97500 bytes
Requests per second:  911.66 [#/sec] (mean)
Time per request:     54.845 [ms] (mean)
Time per request:     1.097 [ms] (mean, across all concurrent requests)
Transfer rate:        355.23 [Kbytes/sec] received
```

### Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	25 8.1	26	45
Processing:	1	29 7.3	28	46
Waiting:	0	29 7.3	28	46
Total:	2	53 10.8	56	70

### Percentage of the requests served within a certain time (ms)

50%	56
66%	59
75%	62
80%	63
90%	64
95%	66
98%	67
99%	68
100%	70 (longest request)

```
CPU[|||||] 2.9% Tasks: 5, 0 thr; 1 running
Mem[|||||] 607M/1.92G Load average: 0.02 0.26 0.79
Swp[|||||] 29.9M/2.00G Uptime: 00:48:56
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4080	3220	2760	S	0.0	0.2	0:00.11	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpc -s /gns3/etc/udhcpc/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
100	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
706	root	20	0	5060	3520	2760	R	0.0	0.2	0:00.00	htop

## Least Connection

```
Server Software:      nginx/1.14.2
Server Hostname:      harkonen.it03.com
Server Port:          80

Document Path:        /
Document Length:      195 bytes

Concurrency Level:     50
Time taken for tests:  0.715 seconds
Complete requests:     500
Failed requests:       0
Non-2xx responses:     500
Total transferred:    199500 bytes
HTML transferred:     97500 bytes
Requests per second:   699.54 [#/sec] (mean)
Time per request:      71.475 [ms] (mean)
Time per request:      1.430 [ms] (mean, across all concurrent requests)
Transfer rate:         272.58 [Kbytes/sec] received
```

```
Connection Times (ms)
              min  mean[+/-sd] median  max
Connect:      0   33  14.3    31   68
Processing:    2   37  12.2    36   68
Waiting:       1   37  12.2    36   68
Total:         3   70  19.2    72  111
```

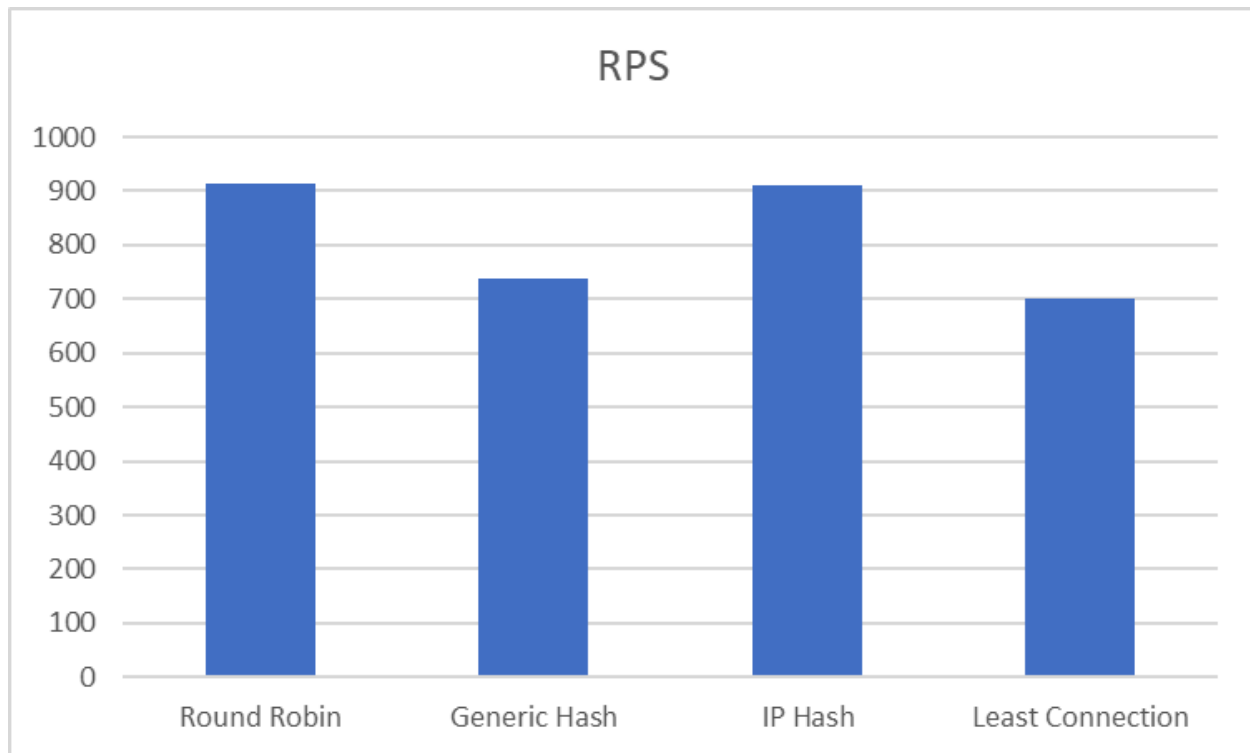
Percentage of the requests served within a certain time (ms)

```
50%    72
66%    76
75%    80
80%    86
90%    97
95%    99
98%   105
99%   106
100%   111 (longest request)
```

```
CPU[|||||] 0.7% Tasks: 5, 0 thr; 1 running
Mem[|||||] 608M/1.92G Load average: 0.52 0.55 1.02
Swp[|||||] 29.9M/2.00G Uptime: 00:45:01
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4096	3216	2760	S	0.0	0.2	0:00.10	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpd -s /gns3/etc/udhcpd/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
686	root	20	0	5060	3588	2744	R	0.0	0.2	0:00.00	htop

Grafik RPS



RPS (request per second) atau jumlah request yang dapat dihandle dalam setiap detik, berarti semakin tinggi nilai RPS maka cenderung lebih baik. Berdasarkan data hasil testing didapatkan nilai RPS tertinggi pada Round Robin yaitu 914 rps.

Least Connection 1000 Request 10 RPS

3 Worker

Finished 1000 requests

Server Software: nginx/1.14.2  
Server Hostname: harkonen.it03.com  
Server Port: 80

Document Path: /  
Document Length: 195 bytes

Concurrency Level: 10  
Time taken for tests: 1.183 seconds  
Complete requests: 1000  
Failed requests: 0  
Non-2xx responses: 1000  
Total transferred: 399000 bytes  
HTML transferred: 195000 bytes  
Requests per second: 845.12 [#/sec] (mean)  
Time per request: 11.833 [ms] (mean)  
Time per request: 1.183 [ms] (mean, across all concurrent requests)  
Transfer rate: 329.30 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	6 1.8	5	16
Processing:	1	6 2.1	6	17
Waiting:	1	6 2.1	6	17
Total:	2	12 2.4	11	23

Percentage of the requests served within a certain time (ms)

50%	11
66%	12
75%	13
80%	13
90%	15
95%	16
98%	19
99%	20
100%	23 (longest request)

```
CPU[ | 1.5%] Tasks: 5, 0 thr; 1 running
Mem[ | 608M/1.92G] Load average: 0.25 0.36 0.63
Swp[ | 29.6M/2.00G] Uptime: 00:57:20
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4000	3220	2760	S	0.0	0.2	0:00.12	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpc -s /gns3/etc/udhcpc/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
742	root	20	0	5060	3496	2740	R	0.0	0.2	0:00.00	htop

## 2 Worker

Finished 1000 requests

Server Software: nginx/1.14.2  
Server Hostname: harkonen.it03.com  
Server Port: 80

Document Path: /  
Document Length: 195 bytes

Concurrency Level: 10  
Time taken for tests: 1.388 seconds  
Complete requests: 1000  
Failed requests: 0  
Non-2xx responses: 1000  
Total transferred: 399000 bytes  
HTML transferred: 195000 bytes  
Requests per second: 720.47 [#/sec] (mean)  
Time per request: 13.880 [ms] (mean)  
Time per request: 1.388 [ms] (mean, across all concurrent requests)  
Transfer rate: 280.73 [Kbytes/sec] received

### Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	1	7 2.8	6	20
Processing:	1	7 2.5	7	19
Waiting:	1	7 2.4	7	19
Total:	2	14 4.0	13	29

### Percentage of the requests served within a certain time (ms)

50%	13
66%	14
75%	16
80%	16
90%	19
95%	23
98%	26
99%	27
100%	29 (longest request)

```
CPU[ 0.0%] Tasks: 5, 0 thr; 1 running
Mem[ 608M/1.92G] Load average: 0.32 0.38 0.67
Swp[ 29.9M/2.00G] Uptime: 00:55:33
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4000	3220	2760	S	0.0	0.2	0:00.12	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpc -s /gns3/etc/udhcpc/default.script -t 3 -T 2 -A 1 -b -R -p /va
90	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
731	root	20	0	5060	3504	2740	R	0.0	0.2	0:00.00	htop

## 1 Worker

Finished 1000 requests

Server Software: nginx/1.14.2  
Server Hostname: harkonen.it03.com  
Server Port: 80

Document Path: /  
Document Length: 195 bytes

Concurrency Level: 10  
Time taken for tests: 1.156 seconds  
Complete requests: 1000  
Failed requests: 0  
Non-2xx responses: 1000  
Total transferred: 399000 bytes  
HTML transferred: 195000 bytes  
Requests per second: 864.91 [#/sec] (mean)  
Time per request: 11.562 [ms] (mean)  
Time per request: 1.156 [ms] (mean, across all concurrent requests)  
Transfer rate: 337.01 [Kbytes/sec] received

### Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	1	5 2.0	5	16
Processing:	1	6 1.8	6	16
Waiting:	0	6 1.8	6	16
Total:	2	11 2.4	11	25

### Percentage of the requests served within a certain time (ms)

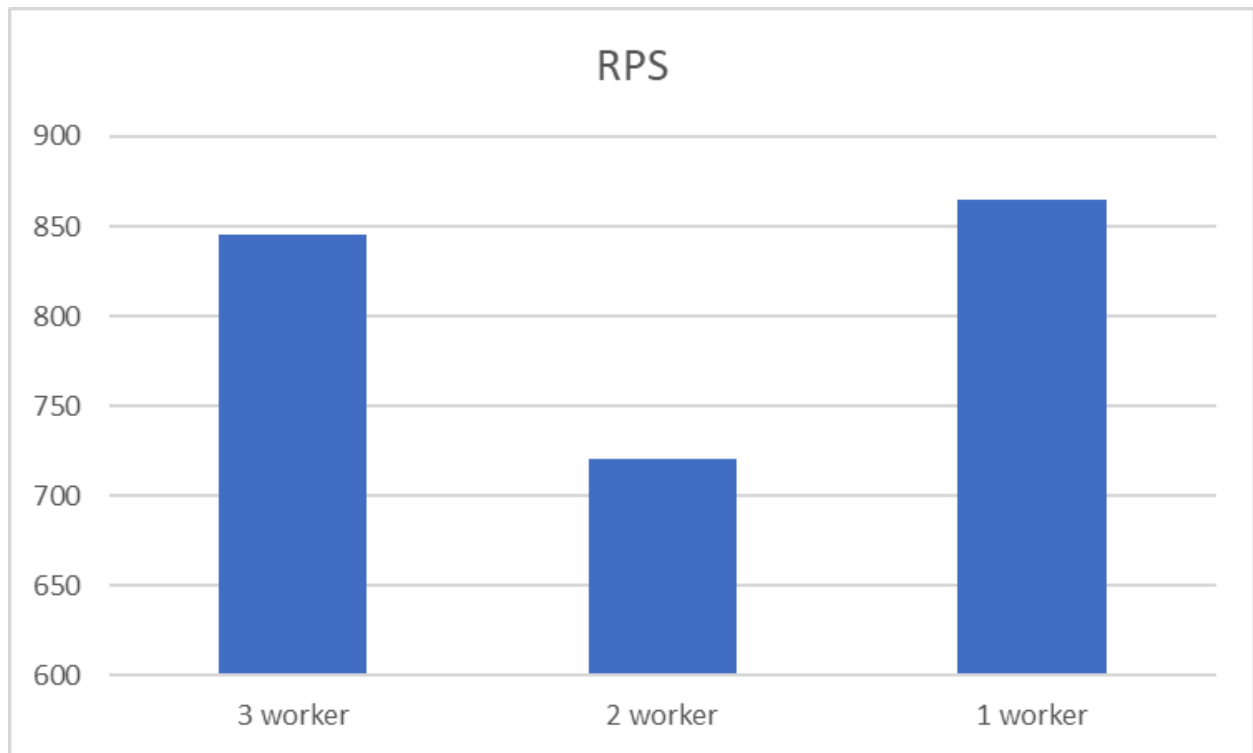
50%	11
66%	12
75%	12
80%	13
90%	14
95%	16
98%	17
99%	19
100%	25 (longest request)

```
CPU[ 0.0%] Tasks: 5, 0 thr; 1 running
Mem[ 607M/1.92G] Load average: 0.26 0.38 0.68
Swp[ 29.9M/2.00G] Uptime: 00:54:49
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1	root	20	0	4000	3220	2760	S	0.0	0.2	0:00.11	bash
84	root	20	0	2456	84	80	S	0.0	0.0	0:00.00	/tmp/gns3/bin/udhcpc -s /gns3/etc/udhcpc/default.script -t 3 -T 2 -A 1 -b -R -p /va
99	root	20	0	2456	0	0	S	0.0	0.0	0:00.01	/gns3/bin/busybox sh -c while true; do TERM=vt100 /gns3/bin/busybox sh; done
109	root	20	0	2456	0	0	S	0.0	0.0	0:00.00	/gns3/bin/busybox sh
728	root	20	0	5060	3500	2740	R	0.0	0.2	0:00.00	htop



Grafik 3 worker



Berdasarkan data hasil testing didapat RPS tertinggi pada penggunaan 1 worker.

## Hasil Testing Endpoint

### Register

```
Server Software:      nginx/1.14.2
Server Hostname:      10.65.2.2
Server Port:          8001

Document Path:        /api/auth/register
Document Length:      467 bytes

Concurrency Level:     10
Time taken for tests:  2.102 seconds
Complete requests:     100
Failed requests:       99
  (Connect: 0, Receive: 0, Length: 99, Exceptions: 0)
Non-2xx responses:    99
Total transferred:    286458 bytes
Total body sent:      21300
HTML transferred:     255222 bytes
Requests per second:  47.58 [#/sec] (mean)
Time per request:     210.157 [ms] (mean)
Time per request:     21.016 [ms] (mean, across all concurrent requests)
Transfer rate:        133.11 [Kbytes/sec] received
                      9.90 kb/s sent
                      143.01 kb/s total

Connection Times (ms)
      min    mean[+/-sd] median    max
Connect:    0      1   1.3      0     12
Processing: 49    184  45.8    196    268
Waiting:    49    180  48.9    194    268
Total:      52    185  45.7    196    269

Percentage of the requests served within a certain time (ms)
 50%    196
 66%    213
 75%    220
 80%    227
 90%    239
 95%    243
 98%    267
 99%    269
100%    269 (longest request)
```

## Login

```
Server Software:      nginx/1.14.2
Server Hostname:      10.65.2.2
Server Port:          8001

Document Path:        /api/auth/login
Document Length:      6619 bytes

Concurrency Level:     10
Time taken for tests:  1.841 seconds
Complete requests:     100
Failed requests:       0
Non-2xx responses:     100
Total transferred:     696500 bytes
Total body sent:       21000
HTML transferred:     661900 bytes
Requests per second:   54.32 [#/sec] (mean)
Time per request:      184.100 [ms] (mean)
Time per request:      18.410 [ms] (mean, across all concurrent requests)
Transfer rate:         369.46 [Kbytes/sec] received
                      11.14 kb/s sent
                      380.60 kb/s total

Connection Times (ms)
      min  mean[+/-sd] median  max
Connect:    0     1   2.4      0   14
Processing: 68    176  64.1    157  375
Waiting:    37    160  63.1    143  355
Total:      70    177  64.0    158  376

Percentage of the requests served within a certain time (ms)
 50%    158
 66%    184
 75%    217
 80%    244
 90%    278
 95%    305
 98%    356
 99%    376
100%    376 (longest request)
```

## Get /me

```
Server Software:      nginx/1.14.2
Server Hostname:      10.65.2.2
Server Port:          8001

Document Path:        /api/me
Document Length:      42 bytes

Concurrency Level:     10
Time taken for tests:  1.615 seconds
Complete requests:     100
Failed requests:       37
  (Connect: 0, Receive: 0, Length: 37, Exceptions: 0)
Non-2xx responses:     100
Total transferred:     278737 bytes
HTML transferred:      247549 bytes
Requests per second:   61.93 [#/sec] (mean)
Time per request:      161.471 [ms] (mean)
Time per request:      16.147 [ms] (mean, across all concurrent requests)
Transfer rate:         168.58 [Kbytes/sec] received

Connection Times (ms)
      min      mean[+/-sd] median    max
Connect:    0       0   0.5      0      3
Processing: 35     152  39.5    153    253
Waiting:    32     148  38.5    146    253
Total:      38     153  39.2    153    253

Percentage of the requests served within a certain time (ms)
 50%    153
 66%    168
 75%    177
 80%    182
 90%    202
 95%    215
 98%    237
 99%    253
100%    253 (longest request)
```