

DOKUMENTASI TUGAS 10



PEMROGRAMAN JARINGAN - B

Dosen:

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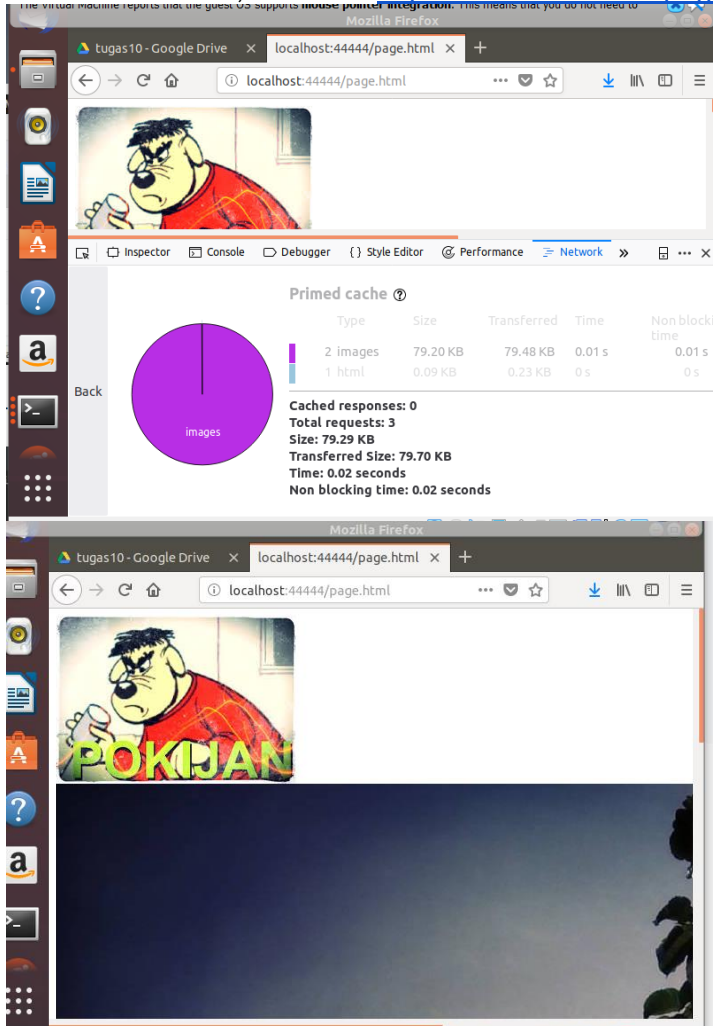
1. Jalankan `async_server.py` pada port 9002, 9003, 9004, 9005 dengan menjalankan `runserver.sh`

```
ayu@ayu-VirtualBox:~/Downloads/Tugas10$ WARNING:root:running on port 9003
WARNING:root:running on port 9002
WARNING:root:running on port 9004
WARNING:root:running on port 9005
```

2. Jalankan file `lb.py`, jalankan di port 44444

```
ayu@ayu-VirtualBox:~/Downloads/Tugas10$ python3 lb.py
WARNING:root:load balancer running on port 44444
```

3. Jalankan browser, akseslah <http://localhost:44444/page.html>



4. Lihatlah di log program, bahwa setiap request akan dilayani oleh backend yang bergantian

```

The Virtual Machine reports that the guest OS supports mouse pointer integration. This means that you do not need to
ayu@ayu-VirtualBox: ~/Downloads/Tugas10
File Edit View Search Terminal Help
ayu@ayu-VirtualBox:~/Downloads$ cd Tugas10/
ayu@ayu-VirtualBox:~/Downloads/Tugas10$ python3 lb.py
WARNING:root:load balancer running on port 44444
WARNING:root:connection from ('127.0.0.1', 34420)
WARNING:root:koneksi dari ('127.0.0.1', 34420) diteruskan ke ('127.0.0.1', 9002)
WARNING:root:connection from ('127.0.0.1', 34426)
WARNING:root:koneksi dari ('127.0.0.1', 34426) diteruskan ke ('127.0.0.1', 9003)
WARNING:root:connection from ('127.0.0.1', 34430)
WARNING:root:koneksi dari ('127.0.0.1', 34430) diteruskan ke ('127.0.0.1', 9004)
WARNING:root:connection from ('127.0.0.1', 34436)
WARNING:root:koneksi dari ('127.0.0.1', 34436) diteruskan ke ('127.0.0.1', 9005)
WARNING:root:connection from ('127.0.0.1', 34440)
WARNING:root:koneksi dari ('127.0.0.1', 34440) diteruskan ke ('127.0.0.1', 9002)
WARNING:root:connection from ('127.0.0.1', 34450)
WARNING:root:koneksi dari ('127.0.0.1', 34450) diteruskan ke ('127.0.0.1', 9003)
WARNING:root:connection from ('127.0.0.1', 34458)
WARNING:root:koneksi dari ('127.0.0.1', 34458) diteruskan ke ('127.0.0.1', 9004)
WARNING:root:connection from ('127.0.0.1', 34462)
WARNING:root:koneksi dari ('127.0.0.1', 34462) diteruskan ke ('127.0.0.1', 9005)

```

5. Perbandingan hasil performance

Async_http.py

No test	Concurren cy level	Time taken for test	Comple t request	Failed request	Total transferr ed	Request per second	Time per request	Transfer rate
1	1	1.362 second s	1000	0	122000 bytes	734.01[#/se c]	1.362 [ms]	87.45 [kbytes/se c]
2	5	1.488 second s	1000	0	122000 bytes	672.17[#/se c]	1.488 [ms]	80.08 [kbytes/se c]
3	10	1.351 second s	1000	0	122000 bytes	740.06[#/se c]	1.351 [ms]	88.17 [kbytes/se c]
4	50	14.375 second s	1000	0	122000 bytes	69.56[#/sec]	14.375 [ms]	8.29 [kbytes/se c]
5	100	1.674 second s	1000	0	122000 bytes	597.40[#/se c]	1.674 [ms]	71.17 [kbytes/se c]
6	250	1.699 second s	1000	0	122000 bytes	588.45[#/se c]	1.699 [ms]	70.11 [kbytes/se c]

Server_async_http.py dengan port 45000

No test	Concurrency level	Time taken for test	Complete request	Failed request	Total transferred	Request per second	Time per request	Transfer rate
1	1	1.099 seconds	1000	0	122000 bytes	909.81[#/sec]	1.099 [ms]	108.40 [kbytes/sec]
2	5	1.126 seconds	1000	0	122000 bytes	887.77[#/sec]	1.126 [ms]	105.77 [kbytes/sec]
3	10	1.260 seconds	1000	0	122000 bytes	793.86[#/sec]	1.260 [ms]	94.58 [kbytes/sec]
4	50	7.580 seconds	1000	0	122000 bytes	131.92[#/sec]	7.580 [ms]	15.72 [kbytes/sec]
5	100	27.273 seconds	1000	0	122000 bytes	36.67[#/sec]	27.273 [ms]	4.37 [kbytes/sec]
6	250	14.249 seconds	1000	0	122000 bytes	70.18[#/sec]	14.249 [ms]	8.36 [kbytes/sec]
7	500	14.234 seconds	1000	0	122000 bytes	70.26[#/sec]	14.234 [ms]	8.37 [kbytes/sec]
8	1000	4.371 seconds	1000	0	122000 bytes	228.7[#/sec] 6	4.371 [ms]	27.25 [kbytes/sec]

Server_thread_http.py dengan port 45000

No test	Concurrency level	Time taken for test	Complete request	Failed request	Total transferred	Request per second	Time per request	Transfer rate
1	1	1.284 seconds	1000	0	122000 bytes	778.98[#/sec]	1.284 [ms]	92.81[kbytes/sec]

2	5	1.313 seconds	1000	0	122000 bytes	761.46[#/sec]	1.313 [ms]	90.72 [kbytes/sec]
3	10	2.689 seconds	1000	0	122000 bytes	371.90[#/sec]	2.689 [ms]	44.31 [kbytes/sec]
4	50	1.872 seconds	1000	0	122000 bytes	534.19[#/sec]	1.872 [ms]	63.64 [kbytes/sec]
5	100	2.738 seconds	1000	0	122000 bytes	365.24[#/sec]	2.738 [ms]	43.51 [kbytes/sec]
6	250	54.691 seconds	1000	0	122000 bytes	18.28[#/sec]	54.691 [ms]	2.18 [kbytes/sec]

Dokumentasi Foto:

1. Async_http.py concurrency level 1

```

File Edit View Search Terminal Help
Document Path: /
Document Length: 4 bytes

Concurrency Level: 1
Time taken for tests: 1.362 seconds
Complete requests: 1000
Failed requests: 0
Non-2xx responses: 1000
Keep-Alive requests: 0
Total transferred: 122000 bytes
HTML transferred: 4000 bytes
Requests per second: 734.01 [#/sec] (mean)
Time per request: 1.362 [ms] (mean)
Time per request: 1.362 [ms] (mean, across all concurrent requests)
Transfer rate: 87.45 [Kbytes/sec] received

Connection Times (ms)
      min      mean[+/-sd] median   max
Connect:    0       0  0.1      0     5
Processing:  1       1  1.0      1     7
Waiting:    1       1  1.0      1     7
Total:      1       1  1.0      1     9

Percentage of the requests served within a certain time (ms)
 50%    1
 66%    1
 75%    1
 80%    2
 90%    3

```

2. Async_http.py concurrency level 5

```
ayu@ayu-VirtualBox: ~/Downloads/Tugas10
File Edit View Search Terminal Help
Server Hostname: 127.0.0.1
Server Port: 44444

Document Path: /
Document Length: 4 bytes

Concurrency Level: 5
Time taken for tests: 1.488 seconds
Complete requests: 1000
Failed requests: 0
Non-2xx responses: 1000
Keep-Alive requests: 0
Total transferred: 122000 bytes
HTML transferred: 4000 bytes
Requests per second: 672.17 [#/sec] (mean)
Time per request: 7.439 [ms] (mean)
Time per request: 1.488 [ms] (mean, across all concurrent requests)
Transfer rate: 80.08 [Kbytes/sec] received

Connection Times (ms)
      min      mean[+/-sd] median   max
Connect:    0       0   0.1      0      4
Processing:  1       7   3.0      7     29
Waiting:    1       6   3.0      6     28
Total:      1       7   3.0      7     29

Percentage of the requests served within a certain time (ms)
 50%      7
 66%      8
```

3. Async_http.py concurrency level 10

```
ayu@ayu-VirtualBox: ~/Downloads/Tugas10
File Edit View Search Terminal Help
Server Hostname: 127.0.0.1
Server Port: 44444

Document Path: /
Document Length: 4 bytes

Concurrency Level: 10
Time taken for tests: 1.351 seconds
Complete requests: 1000
Failed requests: 0
Non-2xx responses: 1000
Keep-Alive requests: 0
Total transferred: 122000 bytes
HTML transferred: 4000 bytes
Requests per second: 740.06 [#/sec] (mean)
Time per request: 13.513 [ms] (mean)
Time per request: 1.351 [ms] (mean, across all concurrent requests)
Transfer rate: 88.17 [Kbytes/sec] received

Connection Times (ms)
      min      mean[+/-sd] median   max
Connect:    0       3   54.9      0    1004
Processing:  2      10   3.3      9     24
Waiting:    2       9   3.3      8     23
Total:      2      13  55.1      9    1016

Percentage of the requests served within a certain time (ms)
 50%      9
 66%     11
```

4. Async_http.py concurrency level 5

```
Server Software: myserver/1.0
Server Hostname: 127.0.0.1
Server Port: 44444

Document Path: /
Document Length: 4 bytes

Concurrency Level: 50
Time taken for tests: 14.375 seconds
Complete requests: 1000
Failed requests: 0
Non-2xx responses: 1000
Keep-Alive requests: 0
Total transferred: 122000 bytes
HTML transferred: 4000 bytes
Requests per second: 69.56 [#/sec] (mean)
Time per request: 718.756 [ms] (mean)
Time per request: 14.375 [ms] (mean, across all concurrent requests)
Transfer rate: 8.29 [Kbytes/sec] received

Connection Times (ms)
      min      mean[+/-sd] median   max
Connect:    0      45 209.1      0    1020
Processing:  2     129 935.4      9   13346
Waiting:    2     128 935.5      8   13346
Total:      2     174 1072.2      9   14365
```

5. Async_http.py concurrency level 100

```
File Edit View Search Terminal Help

Server Software:      myserver/1.0
Server Hostname:     127.0.0.1
Server Port:         44444

Document Path:       /
Document Length:     4 bytes

Concurrency Level:    100
Time taken for tests: 1.674 seconds
Complete requests:    1000
Failed requests:      0
Non-2xx responses:    1000
Keep-Alive requests:  0
Total transferred:    122000 bytes
HTML transferred:     4000 bytes
Requests per second:  597.40 [#/sec] (mean)
Time per request:     167.393 [ms] (mean)
Time per request:     1.674 [ms] (mean, across all concurrent requests)
Transfer rate:        71.17 [Kbytes/sec] received

Connection Times (ms)
      min    mean[+/-sd] median   max
Connect:    0      0   0.8      0    13
Processing:  7     15   2.0     15    23
Waiting:    5     13   1.9     13    20
Total:      8     15   2.0     15    24
```

6. Async_http.py concurrency level 250

```
File Edit View Search Terminal Help

The Virtual Machine reports that the guest OS supports mouse pointer integration. This means that you do not need to
ayu@ayu-VirtualBox: ~/Downloads/Tugas10

Server Hostname:     127.0.0.1
Server Port:         44444

Document Path:       /
Document Length:     4 bytes

Concurrency Level:    250
Time taken for tests: 1.699 seconds
Complete requests:    1000
Failed requests:      0
Non-2xx responses:    1000
Keep-Alive requests:  0
Total transferred:    122000 bytes
HTML transferred:     4000 bytes
Requests per second:  588.45 [#/sec] (mean)
Time per request:     424.849 [ms] (mean)
Time per request:     1.699 [ms] (mean, across all concurrent requests)
Transfer rate:        70.11 [Kbytes/sec] received

Connection Times (ms)
      min    mean[+/-sd] median   max
Connect:    0      3  56.2      0  1028
Processing: 10     16  14.7     15   426
Waiting:    7      14  14.7     13   425
Total:     10     19  68.1     15  1452

Percentage of the requests served within a certain time (ms)
 50%      15
66%      16
```