

DOKUMENTASI PERFORMANCE TEST



PEMROGRAMAN JARINGAN - B

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TUGAS 7

Performance test dilakukan untuk mengetahui seberapa kapasitas dari web server yang kita gunakan untuk melayani request dari client (browser, device dsb). Request dari client datang secara **simultan (berbarengan)** dan **konkuren (datang berbarengan tidak pada saat yang bersamaan)**. Untuk meningkatkan layanan, kita tidak bisa memproses request satu demi satu, yang berarti satu selesai baru dilanjutkan ke yang lain. Hal ini selain menghambat layanan, juga membuat resource computing kita menjadi IDLE/ menganggur

Untuk meningkatkan layanan, kita harus memproses layanan kita secara konkuren, artinya request tidak harus menunggu request yang lain selesai terlebih dahulu, memproses layanan secara konkuren dapat menimbulkan efek bahwa layanan dapat dilakukan secara paralel/simultan, walaupun pada kenyataannya, resource yang digunakan hanya satu.

Agar dapat meningkatkan konkurensi, maka model pemrograman penggunaan thread adalah yang kita gunakan saat ini. tapi, semakin banyak request tentu saja akan semakin banyak thread yang dibuat, konsekuensinya tentu saja semakin besar memori yang diperlukan. Tentu saja kapasitas yang dibagi, pasti akan ada batas kemampuannya. Oleh karena itu performance test dibutuhkan untuk melihat kemampuan sistem layanan yang kita berikan.

Banyak tool untuk performance test yang dapat digunakan, seperti apache-benchmark, siege dsb yang bertujuan untuk menilai performance dari web server.

Performance test sederhana, hanya bisa dilakukan di linux/unix based

1. Gunakan apachebenchark, dengan command ab
2. Testlah server anda dengan : `ab -n <jumlahrequest> -c <concurency> http://127.0.0.1:10001/`
3. Dengan parameter sbb:

nomor	Jumlah request	konkurensi
1	10	1,5,10
2	50	1,10,30,50
3	100	1,10,50,100

Concurrency melambangkan user yang mengakses secara bersamaan, concurency berbeda dengan paralel, concurency adalah bagaimana satu resource dibagi ke sekian banyak request yang meminta layanan.

5. Catatlah keluaran hasil performance test tersebut dalam bentuk tabel sbb:

No test	Concurrency level	Time taken for test	Complete request	Failed request	Total transferred	Request per second	Time per request	Transfer rate
1	1	0.033 seconds	10	0	1360 bytes	301.15 [#/sec] (mean)	3.321 [ms] (mean)	40.00 [kbytes/sec] received
2	1	0.330 seconds	50	0	6800 bytes	151.34 [#/sec] (mean)	6.608 [ms] (mean)	20.10 [kbytes/sec] received
3	1	18.747 seconds	100	0	13600 bytes	5.33 [#/sec] (mean)	187.467 [ms] (mean)	0.71 [kbytes/sec] received

Dokumentasi:

Percobaan 1:

```

ayu-98@DESKTOP-31DVHB6: ~
ayu-98@DESKTOP-31DVHB6:~$ ab -n 10 -c 1,5,10 http://127.0.0.1:10001/
This is ApacheBench, Version 2.3 <$Revision: 1807734 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 127.0.0.1 (be patient).....done

Server Software:      myserver/1.0
Server Hostname:      127.0.0.1
Server Port:          10001

Document Path:        /
Document Length:      24 bytes

Concurrency Level:    1
Time taken for tests:  0.033 seconds
Complete requests:    10
Failed requests:      0
Total transferred:    1360 bytes
HTML transferred:     240 bytes
Requests per second:  301.15 [#/sec] (mean)
Time per request:     3.321 [ms] (mean)
Time per request:     3.321 [ms] (mean, across all concurrent requests)
Transfer rate:        40.00 [Kbytes/sec] received

Connection Times (ms)
              min    mean[+/-sd] median    max
Connect:        0      0   0.0      0      0
Processing:     2      3   1.1      3      6

```

```

Connection Times (ms)
      min  mean[+/-sd] median  max
Connect:    0      0   0.0      0      0
Processing:  2      3   1.1      3      6
Waiting:    2      3   0.9      3      5
Total:      2      3   1.1      3      6

Percentage of the requests served within a certain time (ms)
 50%      3
 66%      3
 75%      4
 80%      4
 90%      6
 95%      6
 98%      6
 99%      6
100%      6 (longest request)

```

Percobaan 2:

```

ayu-98@DESKTOP-31DVHB6:~$ ab -n 50 -c 1,10,30,50 http://127.0.0.1:10001/
This is ApacheBench, Version 2.3 <$Revision: 1807734 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 127.0.0.1 (be patient).....done


Server Software:      myserver/1.0
Server Hostname:      127.0.0.1
Server Port:          10001

Document Path:        /
Document Length:      24 bytes

Concurrency Level:    1
Time taken for tests:  0.330 seconds
Complete requests:    50
Failed requests:      0
Total transferred:    6800 bytes
HTML transferred:     1200 bytes
Requests per second:  151.34 [#/sec] (mean)
Time per request:      6.608 [ms] (mean)
Time per request:      6.608 [ms] (mean, across all concurrent requests)
Transfer rate:         20.10 [Kbytes/sec] received

```

```

Connection Times (ms)
      min   mean[+/-sd] median   max
Connect:    0      0   0.0      0      0
Processing:  3      6   3.9      6     20
Waiting:    2      6   3.8      5     20
Total:      3      7   3.9      6     20

Percentage of the requests served within a certain time (ms)
 50%      6
 66%      6
 75%      7
 80%      7
 90%     12
 95%     17
 98%     20
 99%     20
100%     20 (longest request)

```

Percobaan 3

 ayu-98@DESKTOP-31DVHB6: ~

```

ayu-98@DESKTOP-31DVHB6:~$ ab -n 100 -c 1,10,50,100 http://127.0.0.1:10001/
This is ApacheBench, Version 2.3 <$Revision: 1807734 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking 127.0.0.1 (be patient).....done


Server Software:      myserver/1.0
Server Hostname:      127.0.0.1
Server Port:          10001

Document Path:        /
Document Length:      24 bytes

Concurrency Level:     1
Time taken for tests:  18.747 seconds
Complete requests:     100
Failed requests:       0
Total transferred:     13600 bytes
HTML transferred:     2400 bytes
Requests per second:   5.33 [#/sec] (mean)
Time per request:      187.467 [ms] (mean)
Time per request:      187.467 [ms] (mean, across all concurrent requests)
Transfer rate:         0.71 [Kbytes/sec] received

```

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	0 0.0	0	0
Processing:	4	187 1568.0	15	15646
Waiting:	2	185 1568.3	12	15646
Total:	4	187 1568.0	15	15646

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

50%	15
66%	19
75%	21
80%	22
90%	29
95%	41
98%	1447
99%	15646
100%	15646 (longest request)

ayu-98@DESKTOP-31DVHB6:~\$