

LAPORAN BUKTI KERJA

1. Instalasi Sysbench

Sysbench diinstal sebagai alat untuk melakukan pengujian performa CPU dan memori.

```
projek@projek:~$ sudo apt install sysbench -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  liblua5.1-2 liblua5.1-common libmysqlclient21 libpq5 mysql-common
The following NEW packages will be installed:
  liblua5.1-2 liblua5.1-common libmysqlclient21 libpq5 mysql-common sysbench
0 upgraded, 6 newly installed, 0 to remove and 60 not upgraded.
Need to get 1.809 kB of archives.
After this operation, 9.090 kB of additional disk space will be used.
Get:1 http://id.archive.ubuntu.com/ubuntu focal/universe amd64 liblua5.1-common all 2.1.0~beta3+dfsg-5.1build1 [44,3 kB]
Get:2 http://id.archive.ubuntu.com/ubuntu focal/universe amd64 liblua5.1-2 amd64 2.1.0~beta3+dfsg-5.1build1 [228 kB]
Get:3 http://id.archive.ubuntu.com/ubuntu focal/main amd64 mysql-common all 5.8+1.0.5ubuntu2 [7,496 B]
Get:4 http://id.archive.ubuntu.com/ubuntu focal-updates/main amd64 libmysqlclient21 amd64 8.0.42-0ubuntu0.20.04.1 [1,303 kB]
Get:5 http://id.archive.ubuntu.com/ubuntu focal-updates/main amd64 libpq5 amd64 12.22-0ubuntu0.20.04.4 [119 kB]
Get:6 http://id.archive.ubuntu.com/ubuntu focal/universe amd64 sysbench amd64 1.0.18+ds-1 [107 kB]
Fetched 1.809 kB in 4s (420 kB/s)
Selecting previously unselected package liblua5.1-common.
(Sedang membaca basis data ... 72317 berkas atau direktori telah terpasang.)
Preparing to unpack .../0-liblua5.1-common_2.1.0~beta3+dfsg-5.1build1_all.deb ...
Unpacking liblua5.1-common (2.1.0~beta3+dfsg-5.1build1) ...
Selecting previously unselected package liblua5.1-2:amd64.
Preparing to unpack .../1-liblua5.1-2_2.1.0~beta3+dfsg-5.1build1_amd64.deb ...
Unpacking liblua5.1-2:amd64 (2.1.0~beta3+dfsg-5.1build1) ...
Selecting previously unselected package mysql-common.
Preparing to unpack .../2-mysql-common_5.8+1.0.5ubuntu2_all.deb ...
Unpacking mysql-common (5.8+1.0.5ubuntu2) ...
Selecting previously unselected package libmysqlclient21:amd64.
Preparing to unpack .../3-libmysqlclient21_8.0.42-0ubuntu0.20.04.1_amd64.deb ...
```

2. Pengujian Performa CPU

Pengujian CPU dilakukan dengan menjalankan perintah berikut:

```
projek@projek:~$ sysbench cpu --cpu-max-prime=20000 run_
```

```
Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 20000

Initializing worker threads...

Threads started!

CPU speed:
  events per second:    52.39

General statistics:
  total time:           10.0159s
  total number of events: 525

Latency (ms):
  min:                  11.42
  avg:                  18.97
  max:                  30.03
  95th percentile:     27.66
  sum:                  9956.86

Threads fairness:
  events (avg/stddev):  525.0000/0.00
  execution time (avg/stddev): 9.9569/0.00

projek@projek:~$
```

Pengujian ini menghasilkan data berupa:

- Waktu eksekusi (total time)
- Kecepatan pemrosesan (events per second)
- Latency CPU

3. Pengujian Performa Memori

Pengujian memori dilakukan dengan perintah:

```
projek@projek:~$ sysbench memory run
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
  block size: 1KiB
  total size: 102400MiB
  operation: write
  scope: global

Initializing worker threads...

Threads started!

Total operations: 1837819 (183622.55 per second)
1794.75 MiB transferred (179.32 MiB/sec)

General statistics:
  total time:                  10.0020s
  total number of events:      1837819

Latency (ms):
  min:                        0.00
  avg:                        0.00
  max:                        2.21
  95th percentile:           0.00
  sum:                        2911.08

Threads fairness:
  events (avg/stddev):        1837819.0000/0.00
  execution time (avg/stddev): 2.9111/0.00
```

Pengujian ini menghasilkan data berupa:

- Jumlah operasi memori
- Kecepatan transfer memori (MiB/sec)
- Latency memori

4. Mengakhiri Pengujian

Setelah seluruh pengujian selesai, Virtual Machine dimatikan dengan perintah berikut:

`sudo shutdown now` → shutdown normal berfungsi untuk:

- Semua proses ditutup dengan benar
- Data tidak hilang
- File sistem tidak rusak

Kalau nanti kamu nyalakan lagi VM:

- Sistem akan boot normal
- Semua hasil benchmark tetap ada
- Username & password tetap sama