



LAPORAN PRAKTIKUM
Basis Data Terdistribusi
“Praktikum 8 Load Balancing”

Oleh:

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PROGRAM STUDI SISTEM INFORMASI
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Di praktikum kali saya asumsikan kua sudah punya cluster di praktikum sebelumnya, jadi saya tidak akan membahas cara membuat cluster lagi. Di cluster terdapat 3 node yaitu 192.168.184.170, 192.168.184.180, 192.168.184.184. Untuk IP dari load balancer nya adalah 192.168.184.194

Pertama kita install dulu haproxy dengan perintah apt-get install haproxy

```
blegoh@blegoh:~$ sudo apt-get install haproxy
[sudo] password for blegoh:
Reading package lists... Done
Building dependency tree
Reading state information... Done
haproxy is already the newest version.
```

Selanjutnya install mysql client

```
blegoh@blegoh:~$ sudo apt-get install mariadb-client-core-5.5
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  galera-3 iproute libaio1 libdbi-perl libjemalloc1
Use 'apt-get autoremove' to remove them.
The following extra packages will be installed:
  libmariadbclient18 libmysqlclient18 mariadb-common
The following NEW packages will be installed:
  libmariadbclient18 libmysqlclient18 mariadb-client-core-5.5 mariadb-common
0 upgraded, 4 newly installed, 0 to remove and 195 not upgraded.
Need to get 635 kB/1,215 kB of archives.
After this operation, 10.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

Lakukan konfigurasi haproxy

edit file /etc/haproxy/haproxy.cfg, dan masukkan semau node ke dalam nya

```
# Load Balancing for Galera Cluster
listen galera 192.168.184.194:3306
    balance source
    mode tcp
    option tcpka
    option mysql-check user haproxy
    server node1 192.168.184.170:3306 check weight 1
    server node2 192.168.184.180:3306 check weight 1
    server node3 192.168.184.184:3306 check weight 1
```

Selanjutnya buat user haproxy di cluster

```
MariaDB [(none)]> CREATE USER 'haproxy'@'192.168.184.194';
Query OK, 0 rows affected (0.13 sec)

MariaDB [(none)]> flush privileges;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MariaDB server version for the right syntax to use near 'pri
viles' at line 1
MariaDB [(none)]> flush privileges;
Query OK, 0 rows affected (0.01 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON *.* TO 'root'@'192.168.184.194' IDENT
IFIED BY 'blegoh' WITH GRANT OPTION;
Query OK, 0 rows affected (0.02 sec)

MariaDB [(none)]> flush privileges;
Query OK, 0 rows affected (0.01 sec)
```

Jika sudah maka, start service haproxy nya

```
:~$ sudo service haproxy start
:~$
```

Untuk mengecek koneksi dari haproxy kita bisa masukke mysql dengan host ip dari haproxy

```
blegoh@blegoh:~$ mysql -u root -h 192.168.184.194 -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 7677
Server version: 10.1.13-MariaDB-1~trusty mariadb.org binary distribution

Copyright (c) 2000, 2016, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

Kita bisa mengakses cluster dengan host 192.168.184.194. Kita tidak menginstall MariaDB Server di IP tersebut

Untuk mengetes Load balancing Kita bisa menggunakan query “show varaibles “ dan juga looping

```
blegoh@blegoh:~$ for ((i=1;i<1001;i++)); do mysql -u root -h 192.168.184.194 -pblegoh -e "show variables like 'server_id'"; done
+-----+
| Variable_name | Value |
+-----+
| server_id     | 1     |
+-----+
+-----+
| Variable_name | Value |
+-----+
| server_id     | 1     |
+-----+
+-----+
| Variable_name | Value |
+-----+
| server_id     | 1     |
+-----+
+-----+
| Variable_name | Value |
+-----+
| server_id     | 1     |
+-----+
```