Load Balancing with ProxySQL

Before starting load balancing in proxy SQL you must have a group replication ready,

Since you are here, I am assuming you have already configured group replication from

Document 1.1 (Group replication in MySQL).

- Install proxy SQL (we are using proxysql 2.5)

Conf file: /etc/proxysql.cnf

* It contains the default admin password of proxysql

- Install mysql-client on proxy sql server

#~ dnf install mysql -y

- Start proxysql and access it through mysql-client

#~ systemctl start proxysql

#~ mysql -u admin -padmin -h 127.0.0.1 -P6032 --prompt 'ProxySQL Admin : '

- Check admin credentials through proxysql and change them if necessary

ProxySQL Admin> SELECT \* FROM global\_variables WHERE variable\_name = 'admin-admin\_credentials';

ProxySQL Admin> UPDATE global\_variables SET variable\_value='admin:SecurePassword' WHERE variable\_name='admin-admin\_credentials';

ProxySQL Admin> LOAD ADMIN VARIABLES TO RUNTIME;

ProxySQL Admin> SAVE ADMIN VARIABLES TO DISK;

- Now let’s add backend mysql servers in proxysql for LB

ProxySQL server:

ProxySQL Admin> SHOW CREATE TABLE mysql\_group\_replication\_hostgroups\G

ProxySQL Admin> INSERT INTO mysql\_group\_replication\_hostgroups (writer\_hostgroup, backup\_writer\_hostgroup, reader\_hostgroup, offline\_hostgroup, active, max\_writers, writer\_is\_also\_reader, max\_transactions\_behind) VALUES (2, 4, 3, 1, 1, 3, 1, 100);

ProxySQL Admin> INSERT INTO mysql\_servers(hostgroup\_id,hostname,port) VALUES (2,'1.1.1.1',3306);

ProxySQL Admin> INSERT INTO mysql\_servers(hostgroup\_id,hostname,port) VALUES (2,'1.1.1.2',3306);

ProxySQL Admin> INSERT INTO mysql\_servers(hostgroup\_id,hostname,port) VALUES (2,'1.1.1.3',3306);

ProxySQL Admin> LOAD MYSQL SERVERS TO RUNTIME;

ProxySQL Admin> SAVE MYSQL SERVERS TO DISK;

ProxySQL Admin> SELECT \* FROM mysql\_servers;

- Now let’s configure monitoring to check the health of backend mysql servers

MySQL Server: (run the command on any one mysql user considering group replication is already running)

mysql> CREATE USER 'monitor'@'%' IDENTIFIED WITH 'mysql\_native\_password' BY 'Monitor123!';

mysql> GRANT SELECT on sys.\* to 'monitor'@'%';

mysql> GRANT SELECT on performance\_schema.\* to 'monitor'@'%';

mysql> GRANT USAGE, REPLICATION CLIENT ON.\* TO 'monitor'@'%';

mysql> FLUSH PRIVILEGES;

- Next we need to install sql functions to allow proxysql to query replication state

COPY THE STATEMENTS FROM BELOW Github directory,

<https://github.com/R4ngoo/PROXYSQLFunctions.git>

1. Open function 1 in git repo and copy the code, paste it in any one of mysql servers
2. Run the below mentioned command to check if it’s working properly:

mysql> SELECT \* FROM gr\_member\_routing\_candidate\_status;

1. If it returns any error code, then Open function 2 and copy the code, paste it in mysql server. The error will be resolve when you will run the same command again.

- Now open proxy sql server and add monitor user

ProxySQL server:

ProxySQL Admin> UPDATE global\_variables SET variable\_value='monitor' WHERE variable\_name='mysql-monitor\_username';

ProxySQL Admin> UPDATE global\_variables SET variable\_value='Monitor123!' WHERE variable\_name='mysql-monitor\_password';

ProxySQL Admin> LOAD MYSQL VARIABLES TO RUNTIME;

ProxySQL Admin> SAVE MYSQL VARIABLES TO DISK;

- Backend’s Health Check ProxySQL Server:

ProxySQL Admin> SHOW TABLES FROM monitor;

ProxySQL Admin> SELECT \* FROM monitor.mysql\_server\_connect\_log ORDER BY time\_start\_us DESC LIMIT 3;

ProxySQL Admin> SELECT \* FROM monitor.mysql\_server\_ping\_log ORDER BY time\_start\_us DESC LIMIT 3;

ProxySQL Admin> LOAD MYSQL SERVERS TO RUNTIME;

ProxySQL Admin> SAVE MYSQL VARIABLES TO DISK;

ProxySQL Admin> SELECT \* FROM mysql\_servers;

- Create a mysql user (we are creating user ‘lazy’ with full privileges as an example)

MySQL Server:

mysql> CREATE USER 'lazy'@'%' IDENTIFIED BY 'password123';

mysql> GRANT ALL PRIVILEGES ON \**.*\* TO 'lazy'@'%';

mysql> flush privileges;

- Allowing connection to MySQL with the user we created

ProxySQL Server:

ProxySQL Admin> INSERT INTO mysql\_users(username, password, default\_hostgroup) VALUES ('lazy', 'password123', 2);

ProxySQL Admin> SELECT \* FROM mysql\_users;

ProxySQL Admin> LOAD MYSQL USERS TO RUNTIME;

ProxySQL Admin> SAVE MYSQL USERS TO DISK;

- To test the LB is working, run the below mentioned command in proxysql server

#~ mysql -u lazy -ppassword123 -h 127.0.0.1 -P6033 -e "SELECT @@hostname;"

You will be able to see the hostname changing if you continuously run this command