# 1 MySQL Server 配置

## 1.1 下载

# 操作系统：rhel7.4

cd /home

wget <https://dev.mysql.com/get/Downloads/MySQL-5.7/mysql-5.7.22-el7-x86_64.tar.gz>

tar -xzf mysql-5.7.22-el7-x86\_64.tar.gz

## 1.2 清理mariadb

1、删除所有默认安装的mariadb

**yum -y erase mariadb\***

2、确认无遗留配置文件

**ls -ltr /etc/my.cnf**

**ls -ltr /etc/mysql/\***

## 1.3 安装libaio

**yum list libaio**

**yum -y install libaio**

## 1.4 配置

**cd /usr/local**

**ln -s /home/mysql-5.7.22-el7-x86\_64 mysql**

**cd mysql**

**mkdir mysql-files**

**chown mysql:mysql mysql-files**

**chmod 750 mysql-files**

**bin/mysqld --initialize --user=mysql**

*2018-06-07T01:54:40.210836Z 0 [Warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit\_defaults\_for\_timestamp server option (see documentation for more details).*

*2018-06-07T01:54:40.605104Z 0 [Warning] InnoDB: New log files created, LSN=45790*

*2018-06-07T01:54:40.684189Z 0 [Warning] InnoDB: Creating foreign key constraint system tables.*

*2018-06-07T01:54:40.755579Z 0 [Warning] No existing UUID has been found, so we assume that this is the first time that this server has been started. Generating a new UUID: bdd4f99a-69f5-11e8-a9e3-0800270e521c.*

*2018-06-07T01:54:40.758790Z 0 [Warning] Gtid table is not ready to be used. Table 'mysql.gtid\_executed' cannot be opened.*

*2018-06-07T01:54:40.760548Z 1 [Note] A temporary password is generated for root@localhost: zrEgD7n;WIVw*

**bin/mysql\_ssl\_rsa\_setup**

*Generating a 2048 bit RSA private key*

*..............................+++*

*.....+++*

*writing new private key to 'ca-key.pem'*

*-----*

*Generating a 2048 bit RSA private key*

*.........+++*

*...........+++*

*writing new private key to 'server-key.pem'*

*-----*

*Generating a 2048 bit RSA private key*

*.........................+++*

*................................................................................................................................................................................+++*

*writing new private key to 'client-key.pem'*

*-----*

**chmod 644 ./data/server-key.pem**

**bin/mysqld\_safe --user=mysql &**

*[1] 25029*

*Logging to '/usr/local/mysql/data/mysql-mgr.err'.*

*2018-06-07T02:26:48.846045Z mysqld\_safe Starting mysqld daemon with databases from /usr/local/mysql/data*

**tail -f /usr/local/mysql/data/mysql-mgr.err**

*2018-06-07T02:26:49.253685Z 0 [Note] Found ca.pem, server-cert.pem and server-key.pem in data directory. Trying to enable SSL support using them.*

*2018-06-07T02:26:49.253901Z 0 [ERROR] SSL error: Unable to get private key from 'server-key.pem'*

*2018-06-07T02:26:49.253917Z 0 [Warning] Failed to set up SSL because of the following SSL library error: Unable to get private key*

*2018-06-07T02:26:49.254268Z 0 [Note] Server hostname (bind-address): '\*'; port: 3306*

*2018-06-07T02:26:49.256125Z 0 [Note] IPv6 is available.*

*2018-06-07T02:26:49.256153Z 0 [Note] - '::' resolves to '::';*

*2018-06-07T02:26:49.256193Z 0 [Note] Server socket created on IP: '::'.*

*2018-06-07T02:26:49.271831Z 0 [Note] Event Scheduler: Loaded 0 events*

*2018-06-07T02:26:49.272389Z 0 [Note] /usr/local/mysql/bin/mysqld: ready for connections.*

*Version: '5.7.22' socket: '/tmp/mysql.sock' port: 3306 MySQL Community Server (GPL)*

## 1.5 连库

**sql> set password = password('\*\*\*\*\*\*\*\*\*\*\*[[1]](#footnote-1)')**

**sql> grant all privileges on \*.\* to 'root' @'%' identified by '\*\*\*\*\*\*\*\*\*\*\*\*\*'**

**sql> flush privileges;**

## 1.6 关闭服务

/etc/init.d/mysql stop

/etc/init.d/mysql为BASEDIR/support-files/mysql.server

# 2 组复制搭建 ~ 单一Master模式

# 创建数据目录、日志目录、根目录

mkdir -p /data/mysql57/mysql3306

mkdir -p /data/mysql57/mysql3307

mkdir -p /data/mysql57/mysql3308

mkdir -p /data/mysql57/logs/3306

mkdir -p /data/mysql57/logs/3307

mkdir -p /data/mysql57/logs/3308

cp /home/mysql-5.7.22-el7-x86\_64.tar.gz /data/mysql57/

cd /data/mysql57

tar -xzf mysql-5.7.22-el7-x86\_64.tar.gz

mv mysql-5.7.22-el7-x86\_64 mysql-basedir

chmod -R 777 logs[[2]](#footnote-2)

chmod -R 777 mysql330\*

# 启动配置文件

cat > /data/mysql57/3306.cnf <<!

[client]

prompt = "(\u@\h) [\d]> "

[mysqld]

server\_id = 3306

user = mysql

port = 3306

socket = /tmp/mysql3306.sock

basedir = /data/mysql57/mysql-basedir

datadir = /data/mysql57/mysql3306

pid-file = /data/mysql57/mysql3306/3306.pid

log-error = /data/mysql57/logs/3306/error-log

log-bin[[3]](#footnote-3) = /data/mysql57/logs/3306/binlog

log-bin-index[[4]](#footnote-4) = /data/mysql57/logs/3306/binlog.index

relay-log[[5]](#footnote-5) = /data/mysql57/logs/3306/relaylog

relay-log-index = /data/mysql57/logs/3306/relaylog.index

master\_info\_repository = TABLE

relay\_log\_info\_repository = TABLE

log\_slave\_updates = ON

binlog\_checksum = NONE

binlog\_format = ROW

transaction\_isolation = READ-COMMITTED

gtid\_mode = ON

enforce\_gtid\_consistency = ON

explicit\_defaults\_for\_timestamp = ON

transaction\_write\_set\_extraction = XXHASH64

loose-group\_replication\_group\_name = "9cde4de9-8595-4b6c-ad30-cd0780b3cccc"

loose-group\_replication\_start\_on\_boot = off

loose-group\_replication\_local\_address = "127.0.0.1:24901"

loose-group\_replication\_group\_seeds = "127.0.0.1:24901,127.0.0.1:24902,127.0.0.1:24903"

loose-group\_replication\_bootstrap\_group = off

!

# 初始化3306实例

**/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3306.cnf --initialize-insecure**

**/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3306.cnf &**

**/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3306.sock**

# 创建复制用户与授权，让其做为group的第一个成员

mysql> **SET SQL\_LOG\_BIN=0;**

mysql> **CREATE USER repl@'%';**

mysql> **GRANT REPLICATION SLAVE ON \*.\* TO repl@'%' IDENTIFIED BY 'repl@123';**

mysql> **FLUSH PRIVILEGES;**

mysql> **SET SQL\_LOG\_BIN=1;**

mysql> **CHANGE MASTER TO MASTER\_USER='repl', MASTER\_PASSWORD='repl@123' FOR CHANNEL 'group\_replication\_recovery';**

# 安装GR插件并检查是否安装成功

mysql> **INSTALL PLUGIN group\_replication SONAME 'group\_replication.so';**

mysql> **SELECT \* FROM information\_schema.plugins WHERE PLUGIN\_NAME LIKE '%group%';**

# 开启组复制

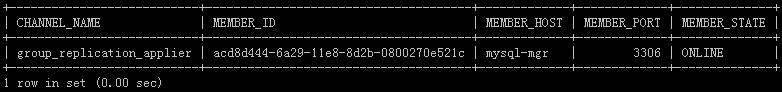
mysql> **SET GLOBAL group\_replication\_bootstrap\_group=ON;**

mysql> **START GROUP\_REPLICATION;**

mysql> **SET GLOBAL group\_replication\_bootstrap\_group=OFF;**

# 检查复制组成员

mysql> **SELECT \* FROM performance\_schema.replication\_group\_members;**



# 创建第二个成员

cp /data/mysql57/3306.cnf /data/mysql57/3307.cnf

sed -i "s/3306/3307/g" /data/mysql57/3307.cnf

sed -i "s/24901\"/24902\"/g" 3307.cnf

/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3307.cnf --initialize-insecure

/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3307.cnf &

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3307.sock

mysql> SET SQL\_LOG\_BIN=0;

mysql> CREATE USER repl@'%';

mysql> GRANT REPLICATION SLAVE ON \*.\* TO repl@'%' IDENTIFIED BY 'repl@123';

mysql> FLUSH PRIVILEGES;

mysql> SET SQL\_LOG\_BIN=1;

mysql> CHANGE MASTER TO MASTER\_USER='repl', MASTER\_PASSWORD='repl@123' FOR CHANNEL 'group\_replication\_recovery';

mysql> INSTALL PLUGIN group\_replication SONAME 'group\_replication.so';

mysql> START GROUP\_REPLICATION;

mysql> SELECT \* FROM performance\_schema.replication\_group\_members;

# 创建第三个成员

cp /data/mysql57/3306.cnf /data/mysql57/3308.cnf

sed -i "s/3306/3308/g" /data/mysql57/3308.cnf

sed -i "s/24901\"/24093\"/g" /data/mysql57/3308.cnf

/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3308.cnf --initialize-insecure

/data/mysql57/mysql-basedir/bin/mysqld --defaults-file=/data/mysql57/3308.cnf &

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3308.sock

SET SQL\_LOG\_BIN=0;

CREATE USER repl@'%';

GRANT REPLICATION SLAVE ON \*.\* TO repl@'%' IDENTIFIED BY 'repl@123';

FLUSH PRIVILEGES;

SET SQL\_LOG\_BIN=1;

CHANGE MASTER TO MASTER\_USER='repl', MASTER\_PASSWORD='repl@123' FOR CHANNEL 'group\_replication\_recovery';

INSTALL PLUGIN group\_replication SONAME 'group\_replication.so';

START GROUP\_REPLICATION;

# 查看是否只读

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3306.sock -e "SELECT @@read\_only, @@super\_read\_only"; # 仅3306为可写，其他为只读，PRIMARY

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3307.sock -e "SELECT @@read\_only, @@super\_read\_only"; # 不可写

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3308.sock -e "SELECT @@read\_only, @@super\_read\_only"; # 不可写

# 检查Primary member

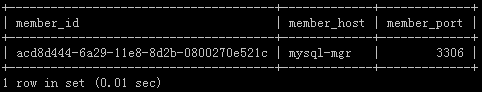
SELECT b.member\_id, b.member\_host, b.member\_port

FROM performance\_schema.global\_status a

JOIN performance\_schema.replication\_group\_members b

ON a.variable\_value = b.member\_id

WHERE a.variable\_name= 'group\_replication\_primary\_member';



# 3 组复制搭建 ~ 多Master模式

# 先停止两个从服务的复制，再停止主服务上的复制

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3307.sock

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3308.sock

/data/mysql57/mysql-basedir/bin/mysql -uroot -p -S /tmp/mysql3306.sock

mysql> STOP GROUP\_REPLICATION;

mysql> SET GLOBAL group\_replication\_single\_primary\_mode=FALSE;

mysql> SET GLOBAL group\_replication\_enforce\_update\_everywhere\_checks=TRUE;

# 在3306上做为第一个成员启动组复制

SET GLOBAL group\_replication\_bootstrap\_group=on;

START GROUP\_REPLICATION;

SET GLOBAL group\_replication\_bootstrap\_group=off;

UPDATE test.tb\_test SET name='灵魂守卫' WHERE id=1;

INSERT INTO test.tb\_test VALUES(3,'幻影斧');

SELECT \* FROM test.tb\_test;

# 在3307、3308上分别开启组复制，看数据能否同步

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3307.sock -e "START GROUP\_REPLICATION;"

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3308.sock -e "START GROUP\_REPLICATION;"

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3307.sock -e "SELECT \* FROM test.tb\_test;"

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3308.sock -e "SELECT \* FROM test.tb\_test;"

# 检查3307、3308是否已经可写

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3307.sock -e "SELECT @@read\_only, @@super\_read\_only;"

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3308.sock -e "SELECT @@read\_only, @@super\_read\_only;"

# 在3307、3308上更改数据，在3306上看复制结果

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3307.sock -e "INSERT INTO test.tb\_test VALUES(4,'吸血面具')";

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3308.sock -e "UPDATE test.tb\_test SET name='撒旦之邪力' WHERE id=4;"

/data/mysql57/mysql-basedir/bin/mysql -u root -p -S /tmp/mysql3306.sock -e "SELECT \* FROM test.tb\_test;"

# 从任何一个实例上看PRIMARY/SECONDARY关系，已无数据

SELECT b.member\_id, b.member\_host, b.member\_port

FROM performance\_schema.global\_status a

JOIN performance\_schema.replication\_group\_members b

ON a.variable\_value = b.member\_id

WHERE a.variable\_name= 'group\_replication\_primary\_member';

1. 明文密码 [↑](#footnote-ref-1)
2. 当执行initialize的时候，会自动使用mysql账户，因此目录755会提示权限不够 [↑](#footnote-ref-2)
3. 二进制日志文件名 [↑](#footnote-ref-3)
4. 二进制索引文件名 [↑](#footnote-ref-4)
5. 主从复制产生的日志文件 [↑](#footnote-ref-5)