mysql主从搭建

1. 目标

- 主从复制
- 故障切换

2. 基础环境

- **OS**：CentOS Linux release 7.3.1611
- **Cpu**: 4C Intel(R) Xeon(R) CPU E5-2680 v4 @ 2.40GHz
- **Mem**: 16G
- **mysql version**：mysql57-community-release-el7-11.noarch
- **服务器IP**：192.168.101.54(master)，**192.168.101.55**(slave)

3. 安装服务器

3.1 下载mysql源：

在MySQL官网中下载YUM源rpm安装包：http://dev.mysql.com/downloads/repo/yum/；
#下载源：
[root@localhost ~]# yum localinstall mysql57-community-release-el7-8.noarch.rpm

#检查mysql源是否安装成功
[root@localhost ~]# yum repolist enabled | grep "mysql.-*community*."

```
mysql-connectors-community/x86_64       MySQL Connectors Community          36
mysql-tools-community/x86_64            MySQL Tools Community               47
mysql57-community/x86_64                MySQL 5.7 Community Server         187
```

上图所示则安装成功。

3.2 安装mysql

[root@localhost ~]# yum install mysql-community-server

3.3 启动mysql服务

3.3.1.修改my.cnf：

- 修改datadir=/var/lib/mysql为datadir=/data/mysql
- 配置默认编码为utf8
  [mysqld]
  character*set*server=utf8
  init_connect='SET NAMES utf8'

3.3.2.启动mysql服务：
[root@localhost ~]# systemctl start mysqld

3.3.3.查看mysql的启动状态
[root@localhost ~]# systemctl status mysqld

3.3.4.设置开机启动
[root@localhost ~]# systemctl enable mysqld
[root@localhost ~]# systemctl daemon-reload

3.3.5.修改root密码 # 查看初始密码:
[root@localhost ~]# grep 'temporary password' /var/log/mysqld.log # 使用初始密码登录： [root@localhost ~]# mysql -uroot -p
修改密码： mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY 'a3mfd4AA<AA';

注意：mysql5.7默认安装了密码安全检查插件（validate_password），默认密码检查策略要求密码必须包含：大小写字母、数字和特殊符号，并且长

度不能少于8位。

分别在192.168.101.54/55按照以上步骤安装即可。

4. 主从复制配置

4.1 修改主服务器54的my.cnf

```
[mysqld]
log-bin=mysql-bin   //[必须]启用二进制日志
server-id=54        //[必须]服务器唯一ID，默认是1，一般取IP最后一段
```

4.2 修改从服务器55的my.cnf

```
[mysqld]
log-bin=mysql-bin   //[必须]启用二进制日志
server-id=55        //[必须]服务器唯一ID，默认是1，一般取IP最后一段
```

4.3 重启两台服务器

[root@localhost ~]# systemctl restart mysqld

4.4 在主服务器上建立帐户并授权slave

[root@localhost ~]# mysql -uroot -pdfdaf3ereWW mysql> GRANT REPLICATION SLAVE ON . to 'hsdcd'@'192.168.101.54' identified by 'fddDDdfd@#$#';

```
mysql> GRANT REPLICATION SLAVE ON *.* to 'hsdcd'@'192.168.101.54' identified by 'cd2017@HSD';
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> show master status;
+------------------+----------+--------------+------------------+-------------------+
| File             | Position | Binlog_Do_DB | Binlog_Ignore_DB | Executed_Gtid_Set |
+------------------+----------+--------------+------------------+-------------------+
| mysql-bin.000001 |      451 |              |                  |                   |
+------------------+----------+--------------+------------------+-------------------+
1 row in set (0.01 sec)

mysql> create database only_test;
Query OK, 1 row affected (0.00 sec)
```

4.5 配置从服务器slave

mysql>change master to master*host='192.168.101.54', master*user='hsdcd', master*password='cd2017@HSD', masterlogfile='mysql-bin.000001', master*log_pos=451; //注意不要断开，451数字前后无单引号。

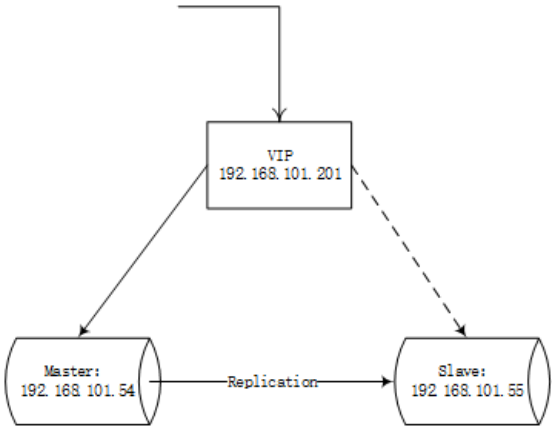
mysql>start slave; // 启动从服务器复制功能

4.6 检查从服务器复制功能状态

```
mysql> show slave status\G
*************************** 1. row ***************************
               Slave_IO_State: Waiting for master to send event
                  Master_Host: 192.168.101.54
                  Master_User: hsdcd
                  Master_Port: 3306
                Connect_Retry: 60
              Master_Log_File: mysql-bin.000001
          Read_Master_Log_Pos: 1100
               Relay_Log_File: localhost-relay-bin.000002
                Relay_Log_Pos: 969
        Relay_Master_Log_File: mysql-bin.000001
             Slave_IO_Running: Yes
            Slave_SQL_Running: Yes
              Replicate_Do_DB:
          Replicate_Ignore_DB:
           Replicate_Do_Table:
       Replicate_Ignore_Table:
      Replicate_Wild_Do_Table:
  Replicate_Wild_Ignore_Table:
                   Last_Errno: 0
                   Last_Error:
                 Skip_Counter: 0
          Exec_Master_Log_Pos: 1100
              Relay_Log_Space: 1180
              Until_Condition: None
               Until_Log_File:
                Until_Log_Pos: 0
           Master_SSL_Allowed: No
           Master_SSL_CA_File:
           Master_SSL_CA_Path:
              Master_SSL_Cert:
            Master_SSL_Cipher:
               Master_SSL_Key:
        Seconds_Behind_Master: 0
Master_SSL_Verify_Server_Cert: No
                Last_IO_Errno: 0
                Last_IO_Error:
               Last_SQL_Errno: 0
               Last_SQL_Error:
  Replicate_Ignore_Server_Ids:
             Master_Server_Id: 54
                  Master_UUID: 927667ed-62c1-11e7-bd67-d60389a35c74
             Master_Info_File: /data/mysql/master.info
                    SQL_Delay: 0
          SQL_Remaining_Delay: NULL
      Slave_SQL_Running_State: Slave has read all relay log; waiting for more updates
           Master_Retry_Count: 86400
                  Master_Bind:
```

5. keepalived配置（故障切换）

5.1 拓扑图



客户端通过vip来访问，后端mysql服务器对客户端透明。

5.2 修改keepalived配置文件

修改54上的/etc/keepalived/keepalived.conf文件

```
global_defs {
   notification_email {
     acassen@firewall.loc
     failover@firewall.loc
     sysadmin@firewall.loc
   }
   notification_email_from Alexandre.Cassen@firewall.loc
   smtp_server 192.168.200.1
   smtp_connect_timeout 30
   router_id KEEP_MySQL
}

vrrp_instance VI_1 {
    state BACKUP
    interface eth0
    virtual_router_id 51
    priority 90
    advert_int 1
    authentication {
        auth_type PASS
        auth_pass 1111
    }
    virtual_ipaddress {
        192.168.101.201
    }
}

virtual_server 192.168.101.201 3306 {
    delay_loop 2
    lb_algo rr
    lb_kind NAT
    nat_mask 255.255.255.0
    persistence_timeout 60
    protocol TCP

    real_server 192.168.201.54 3306 {
        weight 3
        notify_down /data/script/keepalived_shutdown.sh
        TCP_CHECK {
            connect_timeout 10 #连接超时时间
            nb_get_retry 3 #重连次数
            delay_before_retry 3 #重连间隔时间
            connect_port 3306 #健康检查端口，配置自己mysql服务端口
        }
    }
}
```

修改55上的/etc/keepalived/keepalived.conf文件

```
! Configuration File for keepalived

global_defs {
   notification_email {
     acassen@firewall.loc
     failover@firewall.loc
     sysadmin@firewall.loc
   }
   notification_email_from Alexandre.Cassen@firewall.loc
   smtp_server 192.168.101.1
   smtp_connect_timeout 30
   router_id KEEP_MySQL
}

vrrp_instance VI_1 {
    state BACKUP
    interface eth0
    virtual_router_id 51
    priority 100
    advert_int 1
    authentication {
        auth_type PASS
        auth_pass 1111
    }
    virtual_ipaddress {
        192.168.101.201
    }
}

virtual_server 192.168.101.201 3306 {
    delay_loop 2
    lb_algo rr
    lb_kind NAT
    nat_mask 255.255.255.0
    persistence_timeout 60
    protocol TCP

    real_server 192.168.101.55 3306 {
        weight 3
        notify_down /data/script/keepalived_shutdown.sh #当mysq服down时，执行此脚本，杀死keepalived实现切换，自杀脚本.
        TCP_CHECK {
            connect_timeout 10
            nb_get_retry 3
            delay_before_retry 3
            connect_port 3306
        }
    }
}
```

其中54的优先级：priority 90，55的优先级：priority 100

5.3 客户端连接vip

mysql -uroot -h192.168.101.201 -p