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# MariaDB 10, MHA Replication

- CentOS 7 + MariaDB 10.2 + MHA 0.57
- (3 ), ip vip

	IP	Role
MHA Manager Server	192.168.0.150	(mgr)
Master DB Server	192.168.0.151	(masterdb)
Slave DB Server	192.168.0.152	(slavedb01)

- 3306
- MariaDB 10.2

( )

- 

```
yum install epel-release -y
yum install net-tools sysstat wget lrzsz lsof htop iftop rsync bzip2 unzip
patch syslog -y
```

- MHA

```
yum -y install epel perl-devel perl-CPAN perl-DBD-MySQL perl-Config-Tiny
perl-Log-Dispatch perl-Parallel-ForkManager perl-Module-Install
```

## MariaDB Master / Slave

- DB (Master,Slave)

```
service mysql start
```

- root (Master,Slave)

```
mysql_secure_installation
```

```
Enter current password for root (enter for none): enter
Set root password? [Y/n] y
Remove anonymous users? [Y/n] y
Disallow root login remotely? [Y/n] n
```

```
Remove test database and access to it? [Y/n] n
Reload privilege tables now? [Y/n] y
```

- root (Master,Slave)

```
shell >> mysql -uroot -p
mysql >> show global variables like '%dir%';

base: /usr
datadir: /var/lib/mysql/
```

- Replication (Master,Slave)

```
create user 'rep'@'%' identified by 'rep';
grant replication slave on *.* to 'rep';
flush privileges;
```

- MHA (Master,Slave)

```
grant all privileges on *.* to 'mha'@'%' identified by 'mha';
flush privileges;
```

- DB (Master,Slave)

```
mysql >> exit
shell >> service mysql stop
```

- 

```
vi /etc/my.cnf.d/server.cnf

# Master DB Server
[mariadb]
server_id=1
log-bin=mysql-bin

# Slave DB Server
[mariadb]
server_id=2
log-bin=mysql-bin
read_only=1
relay_log_purge=0
```

- DB (Master,Slave)

```
service mysql start
```

- Master (Master)

```
show master status;
```

```
MariaDB [(none)]> show master status;
+-----+-----+-----+-----+
| File           | Position | Binlog_Do_DB | Binlog_Ignore_DB |
+-----+-----+-----+-----+
| mysql-bin.000005 |      342 |              |                  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

- Slave Replication (Slave)

```
change master to
master_host='192.168.0.151',
master_user='rep',
master_password='rep',
master_port=3306,
master_log_file='mysql-bin.000005',
master_log_pos=342,
master_connect_retry=10;

start slave;

show slave status\G;
```

Slave\_IO\_State, Slave\_IO\_Running, Slave\_SQL\_Running

```
MariaDB [(none)]> show slave status\G;
***** 1. row *****
Slave_IO_State: Waiting for master to send event
Master_Host: 192.168.0.151
Master_User: rep
Master_Port: 3306
Connect_Retry: 10
Master_Log_File: mysql-bin.000005
Read_Master_Log_Pos: 342
Relay_Log_File: slavedb01-relay-bin.000012
Relay_Log_Pos: 641
Relay_Master_Log_File: mysql-bin.000005
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: 342
Relay_Log_Space: 6924
Until_Condition: None
```

- Replication Master Slave

## MHA

- MHA ( )

```
mkdir /mha
```

- MHA ( )

```
useradd -g mysql -d /home/mhauser -m -s /bin/bash mhauser
passwd mhauser
mhauser
chown -R mhauser:mysql /mha
```

- MHA node ( )

```
mkdir /source
cd /source
wget http://cliel.com/data/mha4mysql-node-0.57.tar.gz
tar xvzf mha4mysql-node-0.57.tar.gz
```

```
cd /source/mha4mysql-node-0.57
perl Makefile.PL
make
make install
```

- MHA Manager (MHA Manager )

```
cpan YAML
perl -MCPAN -e "install File::Remove"
perl -MCPAN -e "install Build"
perl -MCPAN -e "install Module::Install"
perl -MCPAN -e "install Net::Telnet"
perl -MCPAN -e "install Log::Dispatch"

cd /source
wget http://cliel.com/data/mha4mysql-manager-0.57.tar.gz
tar xvzf mha4mysql-manager-0.57.tar.gz

cd /source/mha4mysql-manager-0.57
perl Makefile.PL
make
make install
```

- SSH . MHA Failover  
SSH .( )

```
visudo

# 가
mhauser ALL = (ALL) NOPASSWD:/sbin/ifconfig
```

. (MHA Manager → Master DB, Slave DB / Master DB → Slave DB, MHA Manager / Slave DB → MasterDB, MHA Manager)

```
:
su - mhauser
ssh-keygen -t rsa [ 3 ]

:
ssh-copy-id -i ~/.ssh/id_rsa.pub mhauser@192.168.56.151
ssh-copy-id -i ~/.ssh/id_rsa.pub mhauser@192.168.56.152

:
ssh 192.168.56.151
ssh 192.168.56.152
```

- ( )

```
su - mhauser  
cd .ssh  
chmod 400 authorized_keys
```

- MHA Manager (MHA Manager )

```
vi .bash_profile 가  
  
set -o vi  
alias sshcheck='/usr/local/bin/masterha_check_ssh --conf=/etc/mha.cnf'  
alias replcheck='/usr/local/bin/masterha_check_repl --conf=/etc/mha.cnf'  
alias start='/usr/local/bin/masterha_manager --conf=/etc/mha.cnf &'  
alias stop='/usr/local/bin/masterha_stop --conf=/etc/mha.cnf'  
alias status='/usr/local/bin/masterha_check_status --conf=/etc/mha.cnf'  
alias log='tail -f /mha/manager.log'  
  
source .bash_profile
```

- MHA config (MHA Manager )

```
cp /source/mha4mysql-manager-0.57/samples/conf/app1.cnf /etc/mha.cnf  
  
vi /etc/mha.cnf  
  
[server default]  
user=mha  
password=mha1122  
  
ssh_user=mhauser  
  
repl_user=rep  
repl_password=rep1122  
  
manager_workdir=/mha  
manager_log=/mha/manager.log  
remote_workdir=/mha  
  
master_binlog_dir=/var/lib/mysql  
  
[server1]  
hostname=192.168.0.151  
candidate_master=1  
  
[server2]  
hostname=192.168.0.152  
candidate_master=1
```



## sshcheck

```
[mhauser@mgr ~]$ sshcheck
Tue Sep 14 15:30:11 2021 - [warning] Global configuration file /etc/masterha_default.cnf not found. Skipping.
Tue Sep 14 15:30:11 2021 - [info] Reading application default configuration from /etc/mha.cnf..
Tue Sep 14 15:30:11 2021 - [info] Reading server configuration from /etc/mha.cnf..
Tue Sep 14 15:30:11 2021 - [info] Starting SSH connection tests..
Tue Sep 14 15:30:12 2021 - [debug]
Tue Sep 14 15:30:11 2021 - [debug] Connecting via SSH from mhauser@192.168.0.151(192.168.0.151:22) to mhauser@192.168.0.152(192.168.0.152:22)..
Tue Sep 14 15:30:12 2021 - [debug] ok.
Tue Sep 14 15:30:12 2021 - [debug]
Tue Sep 14 15:30:12 2021 - [debug] Connecting via SSH from mhauser@192.168.0.152(192.168.0.152:22) to mhauser@192.168.0.151(192.168.0.151:22)..
Tue Sep 14 15:30:12 2021 - [debug] ok.
Tue Sep 14 15:30:12 2021 - [info] All SSH connection tests passed successfully.
```

## replcheck

```
Binlog found at /var/lib/mysql, up to mysql-bin.000003
Tue Sep 14 15:31:02 2021 - [info] Binlog setting check done.
Tue Sep 14 15:31:02 2021 - [info] Checking SSH publickey authentication and checking recovery script configurations on all alive slave servers.
Tue Sep 14 15:31:02 2021 - [info] Executing command : apply_diff_relay_logs --command=test --slave_user='mha' --slave_host=192.168.0.152 --slave_ip=192.168.0.152 --slave_port=3306 --workdir=/mha --target_version=10.2.40-MariaDB-log --manager_version=0.57 --relay_log_info=/var/lib/mysql/relay-log.info --relay_dir=/var/lib/mysql/ --slave_pass=xxx
Tue Sep 14 15:31:02 2021 - [info] Connecting to mhauser@192.168.0.152(192.168.0.152:22)..
Checking slave recovery environment settings..
Opening /var/lib/mysql/relay-log.info ... ok.
Relay log found at /var/lib/mysql, up to slavedb01-relay-bin.000012
Temporary relay log file is /var/lib/mysql/slavedb01-relay-bin.000012
Testing mysql connection and privileges.. done.
Testing mysqlbinlog output.. done.
Cleaning up test file(s).. done.
Tue Sep 14 15:31:03 2021 - [info] Slaves settings check done.
Tue Sep 14 15:31:03 2021 - [info]
192.168.0.151(192.168.0.151:3306) (current master)
+-192.168.0.152(192.168.0.152:3306)
Tue Sep 14 15:31:03 2021 - [info] Checking replication health on 192.168.0.152..
Tue Sep 14 15:31:03 2021 - [info] ok.
Tue Sep 14 15:31:03 2021 - [info] Checking master_ip_failover_script status:
Tue Sep 14 15:31:03 2021 - [info] /mha/scripts/master_ip_failover --command=status --ssh_user=mhauser --orig_master_host=192.168.0.151 --orig_master_ip=192.168.0.151 --orig_master_port=3306
Tue Sep 14 15:31:03 2021 - [info] OK.
Tue Sep 14 15:31:03 2021 - [warning] shutdown_script is not defined.
Tue Sep 14 15:31:03 2021 - [info] Got exit code 0 (Not master dead).

MySQL Replication Health is OK.
```

## Slave IP <=> Master IP

```
mkdir /mha/scripts
```

```
cp /source/mha4mysql-manager-0.57/samples/scripts/master_ip_online_change
/mha/scripts/master_ip_online_change
```

- vi /mha/scripts/master\_ip\_online\_change

150, 151, 152, 245, 246, 247, 248

가

```
:set number
:150
```

```
149      ## Drop application user so that nobody can connect. Disabling
per-session binlog beforehand
150      # $orig_master_handler->disable_log_bin_local();
151      # print current_time_us() . " Drpping app user on the orig
master..\n";
152      # FIXME_xxx_drop_app_user($orig_master_handler);

:245

244      ## Creating an app user on the new master
245      # print current_time_us() . " Creating app user on the new
master..\n";
246      # FIXME_xxx_create_app_user($new_master_handler);
247      # $new_master_handler->enable_log_bin_local();
248      # $new_master_handler->disconnect();
```

- vi /etc/mha.cnf (master\_ip\_online\_change 가)

```
[server default]
user=mha
password=mha

ssh_user=mhauser

repl_user=rep
repl_password=rep1122

manager_workdir=/mha
manager_log=/mha/manager.log

remote_workdir=/mha

master_binlog_dir=/var/lib/mysql

master_ip_online_change_script=/mha/scripts/master_ip_online_change

[server1]
hostname=192.168.0.151
candidate_master=1

[server2]
hostname=192.168.0.152
candidate_master=1
```

## Failover

```
cp /source/mha4mysql-manager-0.57/samples/scripts/master_ip_failover
/mha/scripts/
```

- vi /mha/scripts/master\_ip\_failover

87, 88, 89, 90, 93

```
:set number
:87

86      ## Creating an app user on the new master
87      # print "Creating app user on the new master..\n";
88      # FIXME_xxx_create_user( $new_master_handler->{dbh} );
89      # $new_master_handler->enable_log_bin_local();
90      # $new_master_handler->disconnect();
91
92      ## Update master ip on the catalog database, etc
93      # FIXME_xxx;
```

- vi /etc/mha.cnf (Failover )

```
[server default]
user=mha
password=mha1122

ssh_user=mhauser

repl_user=rep
repl_password=rep1122

manager_workdir=/mha

manager_log=/mha/manager.log

remote_workdir=/mha

master_binlog_dir=/var/lib/mysql

master_ip_online_change_script=/mha/scripts/master_ip_online_change
master_ip_failover_script=/mha/scripts/master_ip_failover

[server1]
hostname=192.168.0.151
candidate_master=1
```

```
[server2]
hostname=192.168.0.152
candidate_master=1
```

- <https://onestone-note.tistory.com/34>

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