

MariaDB Multi-Master Replication

NoteTime: 2015.11.03 09:59 Tuesday

Table Of Contents

1. [Operating System](#)
 2. [Create MariaDB Repository](#)
 3. [Install MariaDB](#)
 4. [Configuring MariaDB](#)
 5. [Errors Occurred](#)
 6. [Related Blog](#)
-

Operating System

使用操作系統是 `Centos 7` , 安裝命令是 `yum` , 服務管理命令是 `systemctl` 。

```
Last login: Tue Nov  3 10:31:41 2015
[root@localhost ~]# uname -r
3.10.0-229.14.1.el7.x86_64
[root@localhost ~]# cat /proc/version
Linux version 3.10.0-229.14.1.el7.x86_64
(builder@kbuilder.dev.centos.org) (gcc version 4.8.3
20140911 (Red Hat 4.8.3-9) (GCC) ) #1 SMP Tue Sep 15
15:05:51 UTC 2015
[root@localhost ~]# cat /etc/redhat-release
CentOS Linux release 7.1.1503 (Core)
[root@localhost ~]#
```

Create MariaDB Repository

安裝MariaDB使用 `yum` 命令，創建 MariaDB Repository。點擊[repo鏈接](#)，依次選擇 `CentOS` -> `CentOS 7 (64-bit)` -> `10.1`，repo格式如下

```
# MariaDB 10.1 CentOS repository list - created
2015-11-03 02:47 UTC
# http://mariadb.org/mariadb/repositories/
[mariadb]
name = MariaDB
baseurl = http://yum.mariadb.org/10.1/centos7-amd64
gpgkey=https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck=1
```

在Server路徑 `/etc/yum.repos.d/` 下創建MariaDB.repo，可使用 `vi` 或 `'vim'` 創建，將上面信息粘貼、保存。然後順序執行命令

```
yum clean all
yum makecache
```

生成yum緩存，即可 `yum` 進行安裝。

Install MariaDB

MariaDB官網操作文檔[Installing MariaDB with yum](#)

執行

```
yum install MariaDB-server MariaDB-client
```

安裝[Sysbench](#)時會報如下錯

```
checking for mysql_config... no
configure: error: mysql_config executable not found
*****
*****

ERROR: cannot find MySQL libraries. If you want to
compile with MySQL support,
    you must either specify file locations
explicitly using
    --with-mysql-includes and --with-mysql-libs
options, or make sure path to
    mysql_config is listed in your PATH
environment variable. If you want to
    disable MySQL support, use --without-mysql
option.
*****
*****
```

需再安裝

```
yum install MariaDB-devel
```

安裝完成後，啟動mysql服務，設置為開機啟動

```
systemctl start mysql  
systemctl enable mysql
```

*注：有些MariaDB版本的服務名可能不是 `mysql`，而是 `mariadb.service`

提高MariaDB安全

```
mysql_secure_installation
```

MariaDB官方文檔說明[mysql_secure_installation](#)

Configuring MariaDB

註：以下操作分別在兩臺Server上操作

修改MariaDB配置文件 `/etc/my.cnf`

```
[mysqld]  
server-id=數值      #server-id唯一，不能相同  
log-bin=mysql-bin  
binlog_format=row  
log-slave-updates  
sync_binlog=1  
auto_increment_increment=1  
auto_increment_offset=數值  #第一台設置為1，第二台設置為2  
slave_skip_errors=1007,1008
```

登入MariaDB

```
mysql -u <username> -p #username是用戶名，如用戶名為root
```

創建用戶並授權

以用戶帳號：'repl'@'%' 密碼：repl12345為例

```
MariaDB [(none)]> grant replication
slave,replication client on *.* to 'repl'@'%'
identified by 'repl12345';
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> flush privileges;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> select User,Host from mysql.user;
+-----+-----+
| User | Host      |
+-----+-----+
| repl | %         |
| root | 127.0.0.1 |
| root | ::1       |
| root | localhost |
+-----+-----+
4 rows in set (0.00 sec)

MariaDB [(none)]>
```

查看 Master Status

```
MariaDB [(none)]> show master status\G
***** 1. row
*****

      File: mysql-bin.000166
      Position: 497942023
      Binlog_Do_DB:
      Binlog_Ignore_DB:
1 row in set (0.00 sec)

MariaDB [(none)]>
```

停止 **slave**

```
MariaDB [(none)]> stop slave;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]>
```

執行 **CHANGE MASTER TO** 命令(以其中一臺Server為例)

```
CHANGE MASTER TO
MASTER_HOST='54.187.219.96', MASTER_USER='repl',
MASTER_PASSWORD='repl12345', MASTER_LOG_FILE='mysql-
bin.000166', MASTER_LOG_POS=497942023;
```

註釋：

MASTER_HOST：另一Server的主機地址

MASTER_USER：另一Server的用戶帳號

MASTER_PASSWORD：另一Server的用戶密碼

MASTER_LOG_FILE：另一Server “show master status”中的File
值

MASTER_LOG_POS：另一Server “show master status”中的
Position值

MariaDB官方文档[CHANGE MASTER TO](#)

启动 `slave`

```
MariaDB [(none)]> stop slave;  
Query OK, 0 rows affected (0.00 sec)  
  
MariaDB [(none)]>
```

查看 `slave status`

```
MariaDB [(none)]> show slave status\G
```

```
***** 1. row
```

```
*****
```

```
Slave_IO_State: Waiting for master to  
send event
```

```
Master_Host: 172.30.1.60
```

```
Master_User: repl
```

```
Master_Port: 3306
```

```
Connect_Retry: 60
```

```
Master_Log_File: mysql-bin.000166
```

```
Read_Master_Log_Pos: 497942023
```

```
Relay_Log_File: ip-172-30-1-58-relay-  
bin.000002
```

```
Relay_Log_Pos: 681
```

```
Relay_Master_Log_File: mysql-bin.000166
```

```
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: 497942023
```

```
Relay_Log_Space: 988
```

```
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: 2
      Master_SSL_Crl:
      Master_SSL_Crlpath:
      Using_Gtid: No
      Gtid_IO_Pos:
Replicate_Do_Domain_Ids:
Replicate_Ignore_Domain_Ids:
      Parallel_Mode: conservative
1 row in set (0.00 sec)

MariaDB [(none)]
```

如果創建成功，即可進行數據寫入測試，看是否會同步。

Errors Occurred

show slave status

Error1

```
Last_IO_Errno: 2003
Last_IO_Error: error connecting to master
'repl@52.89.216.33:3306' - retry-time: 60  retries:
86400  message: Can't connect to MySQL server on
'52.89.216.33' (110 "Connection timed out")
```

連接master server失敗，查看網路是否通暢，Mysql3306端口是否允許，帳號密碼是否準確，是否允許遠程連接，設置是否準確...

Error2

```
Last_SQL_Errno: 1008
Last_SQL_Error: Error 'Can't drop database 'apple';
database doesn't exist' on query. Default database:
'apple'. Query: 'drop database apple'
```

參考Blog[Problem Mysql in master/master replication](#)

Error3

```
Last_SQL_Errno: 1146
Last_SQL_Error: Error executing row event: 'Table
'sbtest.sbtest2' doesn't exist'
```

Error4

```
Last_SQL_Errno: 1062
Last_SQL_Error: Error 'Duplicate entry '14' for key
'PRIMARY'' on query. Default database: 'sbtest'.
Query: 'INSERT INTO sbtest18 (id, k, c, pad) VALUES
(0, 593360, '87255848296-55692744523-54185831398-
62879904771-04740888740-94686502050-32461868355-
46389166893-44079937452-32331981230', '40296074541-
11662672902-80614572470-88347339764-93776778804')'
```

出現此類報錯時(測試環境)，個人做法是重新進行如下操作

```
stop slave  
change master to ...  
start slave
```

Related Blog

- [Setting Up Replication](#)
- [MariaDB\(MySQL\) Master-Master Replication](#)
- [Multi-source Replication](#)
- [Global Transaction ID](#)

ToTop

NoteTime: 2015.11.03 12:41 上海.慧谷