# MySQL创建多实例

### 介绍

MySQL具有运行多个实例的功能，这个功能通过mysqld\_multi实现。当一台机器上需要运行多个MySQL服务器的时候，mysqld\_multi是管理多个mysqld的服务进程，这些服务进程程序用不同的unix socket或是监听不同的端口，通过命令可以启动、关闭和报告所管理的服务器的状态。

### 操作步骤

创建新加实例的数据目录：

shell> mkdir -p /mydata/mysql/data\_3316

shell> mkdir -p /mydata/mysql/data\_3317

shell> mkdir -p /mydata/mysql/data\_3318

shell> mkdir -p /mydata/mysql/data\_3319

创建新加实例的二进制文件存放目录：

shell> mkdir -p /mydata/mysql/binlog\_3316

shell> mkdir -p /mydata/mysql/binlog\_3317

shell> mkdir -p /mydata/mysql/binlog\_3318

shell> mkdir -p /mydata/mysql/binlog\_3319

创建临时文件目录：

shell> mkdir -p /mydata/mysql/tmp\_3316

shell> mkdir -p /mydata/mysql/tmp\_3317

shell> mkdir -p /mydata/mysql/tmp\_3318

shell> mkdir -p /mydata/mysql/tmp\_3319

修改目录属主

shell> chown –R mysql:mysql /mydata/mysql/binlog\_331\*

shell> chown –R mysql:mysql /mydata/mysql/tmp\_331\*

分别在这3个数据目录下初始化mysql数据库：

shell> mysql\_install\_db –-basedir=/mydata/mysql/install --datadir=/mydata/mysql/data\_3316 --user=mysql

shell> mysql\_install\_db –-basedir=/mydata/mysql/install --datadir=/mydata/mysql/data\_3317 --user=mysql

shell> mysql\_install\_db –-basedir=/mydata/mysql/install --datadir=/mydata/mysql/data\_3318 --user=mysql

shell> mysql\_install\_db –-basedir=/mydata/mysql/install --datadir=/mydata/mysql/data\_3319 --user=mysql

**注意**：basedir要看mysql是按何种方式安装的，若为rpm安装的，则默认basedir为/usr/bin

编辑配置文件：

shell> vim /etc/my.cnf

[mysqld\_multi]

mysqld = /mydata/mysql/install/bin/mysqld\_safe

mysqladmin = /mydata/mysql/install/bin/mysqladmin

user = root

password = Root!1

[mysqld1]

port = 3316

socket = /mydata/mysql/data\_3316/mysql.sock

default\_storage\_engine = InnoDB

pid-file = /mydata/mysql/data\_3316/mysql3316.pid

datadir = /mydata/mysql/data\_3316

tmpdir = /mydata/mysql/tmp\_3316

user = mysql

server-id = 1

# InnoDB

innodb\_buffer\_pool\_size = 1G

innodb\_file\_per\_table = 1

innodb\_flush\_method = O\_DIRECT

innodb\_flush\_log\_at\_trx\_commit = 1

innodb\_log\_buffer\_size = 64M

innodb\_log\_file\_size = 512M

innodb\_log\_files\_in\_group = 4

# character-set

character-set-server=utf8

collation-server=utf8\_bin

init-connect='SET NAMES utf8'

# name-resolve

skip-host-cache

skip-name-resolve

# Remove leading # to set options mainly useful for reporting servers.

sort\_buffer\_size = 1M

join\_buffer\_size = 1M

read\_buffer\_size = 1M

read\_rnd\_buffer\_size = 512K

thread\_stack = 512K

# LOG

log\_error = /mydata/mysql/data\_3316/mysql-error.log

long\_query\_time = 1

slow-query-log

slow\_query\_log\_file = /mydata/mysql/data\_3316/mysql-slow.log

#general\_log\_file = /mydata/mysql/data\_3316/mysql-query.log

# BINLOG

event\_scheduler = ON

binlog\_format = mixed

binlog\_cache\_size = 1M

log-bin = /mydata/mysql/binlog\_3316/mysql-bin

log-bin-index = /mydata/mysql/binlog\_3316/mysql-bin.index

relay-log = /mydata/mysql/binlog\_3316/relay-bin

relay-log-index = /mydata/mysql/binlog\_3316/relay-bin.index

expire\_logs\_days = 7

sync\_binlog=1

binlog-ignore-db = mysql

binlog-ignore-db = information\_schema

binlog-ignore-db = performance\_schema

replicate-ignore-db = mysql

replicate-ignore-db = information\_schema

replicate-ignore-db = performance\_schema

# Others

sql\_mode=NO\_ENGINE\_SUBSTITUTION,STRICT\_TRANS\_TABLES

explicit\_defaults\_for\_timestamp = true

max\_connections = 500

max\_connect\_errors = 10000

open\_files\_limit = 10240

max\_allowed\_packet = 20M

back\_log = 200

table\_open\_cache = 2048

wait\_timeout = 60

[mysqld2]

port = 3317

socket = /mydata/mysql/data\_3317/mysql.sock

default\_storage\_engine = InnoDB

pid-file = /mydata/mysql/data\_3317/mysql3317.pid

datadir = /mydata/mysql/data\_3317

tmpdir = /mydata/mysql/tmp\_3317

user = mysql

server-id = 2

# InnoDB

innodb\_buffer\_pool\_size = 1G

innodb\_file\_per\_table = 1

innodb\_flush\_method = O\_DIRECT

innodb\_flush\_log\_at\_trx\_commit = 1

innodb\_log\_buffer\_size = 64M

innodb\_log\_file\_size = 512M

innodb\_log\_files\_in\_group = 4

# character-set

character-set-server=utf8

collation-server=utf8\_bin

init-connect='SET NAMES utf8'

# name-resolve

skip-host-cache

skip-name-resolve

# Remove leading # to set options mainly useful for reporting servers.

sort\_buffer\_size = 1M

join\_buffer\_size = 1M

read\_buffer\_size = 1M

read\_rnd\_buffer\_size = 512K

thread\_stack = 512K

# LOG

log\_error = /mydata/mysql/data\_3317/mysql-error.log

long\_query\_time = 1

slow-query-log

slow\_query\_log\_file = /mydata/mysql/data\_3317/mysql-slow.log

#general\_log\_file = /mydata/mysql/data\_3317/mysql-query.log

# BINLOG

event\_scheduler = ON

binlog\_format = mixed

binlog\_cache\_size = 1M

log-bin = /mydata/mysql/binlog\_3317/mysql-bin

log-bin-index = /mydata/mysql/binlog\_3317/mysql-bin.index

relay-log = /mydata/mysql/binlog\_3317/relay-bin

relay-log-index = /mydata/mysql/binlog\_3317/relay-bin.index

expire\_logs\_days = 7

sync\_binlog=1

binlog-ignore-db = mysql

binlog-ignore-db = information\_schema

binlog-ignore-db = performance\_schema

replicate-ignore-db = mysql

replicate-ignore-db = information\_schema

replicate-ignore-db = performance\_schema

# Others

sql\_mode=NO\_ENGINE\_SUBSTITUTION,STRICT\_TRANS\_TABLES

explicit\_defaults\_for\_timestamp = true

max\_connections = 500

max\_connect\_errors = 10000

open\_files\_limit = 10240

max\_allowed\_packet = 20M

back\_log = 200

table\_open\_cache = 2048

wait\_timeout = 60

[mysqld3]

port = 3318

socket = /mydata/mysql/data\_3318/mysql.sock

default\_storage\_engine = InnoDB

pid-file = /mydata/mysql/data\_3318/mysql3318.pid

datadir = /mydata/mysql/data\_3318

tmpdir = /mydata/mysql/tmp\_3318

user = mysql

server-id = 3

# InnoDB

innodb\_buffer\_pool\_size = 1G

innodb\_file\_per\_table = 1

innodb\_flush\_method = O\_DIRECT

innodb\_flush\_log\_at\_trx\_commit = 1

innodb\_log\_buffer\_size = 64M

innodb\_log\_file\_size = 512M

innodb\_log\_files\_in\_group = 4

# character-set

character-set-server=utf8

collation-server=utf8\_bin

init-connect='SET NAMES utf8'

# name-resolve

skip-host-cache

skip-name-resolve

# Remove leading # to set options mainly useful for reporting servers.

sort\_buffer\_size = 1M

join\_buffer\_size = 1M

read\_buffer\_size = 1M

read\_rnd\_buffer\_size = 512K

thread\_stack = 512K

# LOG

log\_error = /mydata/mysql/data\_3318/mysql-error.log

long\_query\_time = 1

slow-query-log

slow\_query\_log\_file = /mydata/mysql/data\_3318/mysql-slow.log

#general\_log\_file = /mydata/mysql/data\_3318/mysql-query.log

# BINLOG

event\_scheduler = ON

binlog\_format = mixed

binlog\_cache\_size = 1M

log-bin = /mydata/mysql/binlog\_3318/mysql-bin

log-bin-index = /mydata/mysql/binlog\_3318/mysql-bin.index

relay-log = /mydata/mysql/binlog\_3318/relay-bin

relay-log-index = /mydata/mysql/binlog\_3318/relay-bin.index

expire\_logs\_days = 7

sync\_binlog=1

binlog-ignore-db = mysql

binlog-ignore-db = information\_schema

binlog-ignore-db = performance\_schema

replicate-ignore-db = mysql

replicate-ignore-db = information\_schema

replicate-ignore-db = performance\_schema

# Others

sql\_mode=NO\_ENGINE\_SUBSTITUTION,STRICT\_TRANS\_TABLES

explicit\_defaults\_for\_timestamp = true

max\_connections = 500

max\_connect\_errors = 10000

open\_files\_limit = 10240

max\_allowed\_packet = 20M

back\_log = 200

table\_open\_cache = 2048

wait\_timeout = 60

[mysqld4]

port = 3319

socket = /mydata/mysql/data\_3319/mysql.sock

default\_storage\_engine = InnoDB

pid-file = /mydata/mysql/data\_3319/mysql3319.pid

datadir = /mydata/mysql/data\_3319

tmpdir = /mydata/mysql/tmp\_3319

user = mysql

server-id = 4

# InnoDB

innodb\_buffer\_pool\_size = 1G

innodb\_file\_per\_table = 1

innodb\_flush\_method = O\_DIRECT

innodb\_flush\_log\_at\_trx\_commit = 1

innodb\_log\_buffer\_size = 64M

innodb\_log\_file\_size = 512M

innodb\_log\_files\_in\_group = 4

# character-set

character-set-server=utf8

collation-server=utf8\_bin

init-connect='SET NAMES utf8'

# name-resolve

skip-host-cache

skip-name-resolve

# Remove leading # to set options mainly useful for reporting servers.

sort\_buffer\_size = 1M

join\_buffer\_size = 1M

read\_buffer\_size = 1M

read\_rnd\_buffer\_size = 512K

thread\_stack = 512K

# LOG

log\_error = /mydata/mysql/data\_3319/mysql-error.log

long\_query\_time = 1

slow-query-log

slow\_query\_log\_file = /mydata/mysql/data\_3319/mysql-slow.log

#general\_log\_file = /mydata/mysql/data\_3319/mysql-query.log

# BINLOG

event\_scheduler = ON

binlog\_format = mixed

binlog\_cache\_size = 1M

log-bin = /mydata/mysql/binlog\_3319/mysql-bin

log-bin-index = /mydata/mysql/binlog\_3319/mysql-bin.index

relay-log = /mydata/mysql/binlog\_3319/relay-bin

relay-log-index = /mydata/mysql/binlog\_3319/relay-bin.index

expire\_logs\_days = 7

sync\_binlog=1

binlog-ignore-db = mysql

binlog-ignore-db = information\_schema

binlog-ignore-db = performance\_schema

replicate-ignore-db = mysql

replicate-ignore-db = information\_schema

replicate-ignore-db = performance\_schema

# Others

sql\_mode=NO\_ENGINE\_SUBSTITUTION,STRICT\_TRANS\_TABLES

explicit\_defaults\_for\_timestamp = true

max\_connections = 500

max\_connect\_errors = 10000

open\_files\_limit = 10240

max\_allowed\_packet = 20M

back\_log = 200

table\_open\_cache = 2048

wait\_timeout = 60

**注意**：若为rpm安装的，这里路径需要更改

mysqld = /usr/bin/mysqld\_safe

mysqladmin = /usr/bin/mysqladmin

#### 启动：

shell> mysqld\_multi --defaults-file=/etc/my.cnf start

#### 停止：

shell> mysqld\_multi --defaults-file=/etc/my.cnf stop

#### 查看：

shell> mysqld\_multi --defaults-file=/etc/my.cnf report

可以在start、stop、report后面加上具体数字1,2,3等。如：

shell> mysqld\_multi --defaults-file=/etc/my.cnf start 1,3

则只会启动端口号为3317和3319的MySQL实例。

也可以启动一个区间，如：

shell> mysqld\_multi --defaults-file=/etc/my.cnf start 1-3

则会启动端口号为3317、3318、3319的实例。

#### 登录：

shell> mysql -h 127.0.0.1 -p -P3317

#### 修改密码：

默认情况是没有密码的，而且存在匿名用户，为了安全需要删除匿名用户和创建root密码

注意：若不创建密码，使用mysqld\_multi是无法关闭实例的

#### 设置root用户密码为Root!1：

mysql> update mysql.user set password=password('Root!1') where user='root';

#### 删除匿名用户和无密用户：

mysql> delete from mysql.user where user='';

mysql> delete from mysql.user where password='';

#### 刷新权限表：

mysql> flush privileges;