# Percona Server 5.7 多实例搭建（5.7.21）

# ****Percona Server 5.7.17 ~ 19 多实例搭建 在往下翻是5.7.21的安装****

## Percona-Server版本

Percona-Server-server-57.17 ~ 19

## OS

Centos 6.5 ~ 6.9

## 安装方法

1.yum安装

rpm -ivh https://www.percona.com/redir/downloads/percona-release/redhat/latest/percona-release-0.1-4.noarch.rpm

yum install -y Percona-Server-server-57

## my.cnf的配置

my.cnf



[mysqld\_multi]

mysqld     =  /usr/bin/mysqld\_safe

mysqladmin =  /usr/bin/mysqladmin

user       = root

[mysqld1]

# GENERAL

#basedir                                    = /usr/local/mysql

datadir                                 = /data/mysqldata\_3306

tmpdir                                  =  /tmp

socket                                  =  /data/mysqldata\_3306/mysql\_3306 .sock

pid\_file                                =  /data/mysqldata\_3306/mysql\_3306 .pid

binlog\_cache\_size                           = 16M

user                                    = mysql

port                                    = 3306

explicit\_defaults\_for\_timestamp                     =  true

character- set -server                            = utf8

skip-name-resolve

#bind-address                               = 192.168.1.75

bind-address                                = 0.0.0.0

sql-mode                                                                = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION

# INNODB

innodb\_buffer\_pool\_size                         = 4G

innodb\_buffer\_pool\_instances                        = 2

innodb\_thread\_concurrency                                   = 4

innodb\_log\_buffer\_size                          = 32M

innodb\_log\_file\_size                            = 1024M

innodb\_online\_alter\_log\_max\_size                    = 512M

innodb\_open\_files                           = 1024

innodb\_purge\_threads                            = 2

innodb\_data\_home\_dir                            =  /data/mysqldata\_3306

innodb\_data\_file\_path                           = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)

innodb\_read\_io\_threads                          = 2

innodb\_write\_io\_threads                         = 2

innodb\_file\_per\_table                           = 1

innodb\_flush\_method                         = O\_DIRECT

innodb\_max\_dirty\_pages\_pct                      = 70

# MyISAM

key\_buffer\_size                             = 32M

# LOGS

#general\_log                                = 1

#general\_log\_file                           = /data/logs/mysql/mysql\_general\_3306.log

log\_warnings                                = 2

log\_error                               =  /data/logs/mysql/mysql\_error\_3306 .log

slow\_query\_log                              = ON

slow\_query\_log\_file                         = /data/logs/mysql/ mysql\_slow\_3306 .log

log\_queries\_not\_using\_indexes                       = 1

long\_query\_time                             = 2

expire\_logs\_days                            = 1

log-bin                                                                 = mysql-bin.log

max\_binlog\_size                             = 512M

innodb\_print\_all\_deadlocks                      = 1

relay-log                                                               = relay-log

relay-log-index                                                         = relay-log

#Replication

server- id                        = 3306  #inet\_aton('119.254.115.75')

binlog\_format                                                       = ROW

binlog\_rows\_query\_log\_events                                    = 1

log\_slave\_updates                           = 1

gtid-mode                               = on

enforce\_gtid\_consistency                        =  true

#Replication Semi Sync

#rpl\_semi\_sync\_master\_enabled                       = 1

#rpl\_semi\_sync\_master\_timeout                       = 1000

#rpl\_semi\_sync\_slave\_enabled                        = 1

#read\_only                                                               = 1

binlog\_checksum                             = CRC32

slave\_allow\_batching                            = 1

master\_verify\_checksum                          = 1

slave\_sql\_verify\_checksum                       = 1

master\_info\_repository                          = TABLE

relay\_log\_info\_repository                       = TABLE

# OTHER

tmp\_table\_size                              = 32M

max\_heap\_table\_size                         = 128M

query\_cache\_type                            = 0

query\_cache\_size                                    = 128M

max\_connections                                     = 1024

thread\_cache\_size                                   = 200

open\_files\_limit                                    = 65535

innodb\_buffer\_pool\_load\_at\_startup                  = ON

innodb\_buffer\_pool\_dump\_at\_shutdown                 = ON

# Monitoring

innodb\_monitor\_enable                           =  '%'

performance\_schema                          = ON

performance\_schema\_instrument                       =  '%=on'

[mysqld2]

# GENERAL

#basedir                                    = /usr/local/mysql

datadir                                 =  /data/mysqldata\_3307

tmpdir                                  =  /tmp

socket                                  =  /data/mysqldata\_3307/mysql\_3307 .sock

pid\_file                                =  /data/mysqldata\_3307/mysql\_3307 .pid

binlog\_cache\_size                           = 16M

user                                    = mysql

port                                    = 3307

explicit\_defaults\_for\_timestamp                     =  true

character- set -server                            = utf8

skip-name-resolve

#bind-address                               = 192.168.1.75

bind-address                                = 0.0.0.0

sql-mode                                                                = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION

# INNODB

innodb\_buffer\_pool\_size                         = 4G

innodb\_buffer\_pool\_instances                        = 2

innodb\_thread\_concurrency                                   = 4

innodb\_log\_buffer\_size                          = 32M

innodb\_log\_file\_size                            = 1024M

innodb\_online\_alter\_log\_max\_size                    = 512M

innodb\_open\_files                           = 1024

innodb\_purge\_threads                            = 2

innodb\_data\_home\_dir                            =  /data/mysqldata\_3307

innodb\_data\_file\_path                           = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)

innodb\_read\_io\_threads                          = 2

innodb\_write\_io\_threads                         = 2

innodb\_file\_per\_table                           = 1

innodb\_flush\_method                         = O\_DIRECT

innodb\_max\_dirty\_pages\_pct                      = 70

# MyISAM

key\_buffer\_size                             = 32M

# LOGS

#general\_log                             = 1

#general\_log\_file                            =  /data/logs/mysql/mysql\_general\_3307 .log

log\_warnings                                = 2

log\_error                               = /data/logs/mysql/ mysql\_error\_3307 .log

slow\_query\_log                              = off

slow\_query\_log\_file                         = /data/logs/mysql/ mysql\_slow\_3307 .log

#log\_queries\_not\_using\_indexes                      = 1

long\_query\_time                             = 2

expire\_logs\_days                            = 2

log-bin                                                                 = mysql-bin.log

max\_binlog\_size                             = 512M

innodb\_print\_all\_deadlocks                      = 1

relay-log                                                               = relay-log

relay-log-index                                                         = relay-log

#Replication

server- id                        = 3307  #inet\_aton('119.254.115.75 3307')

binlog\_format                                                  = ROW

binlog\_rows\_query\_log\_events                         = 1

log\_slave\_updates                           = 1

gtid-mode                               = on

enforce\_gtid\_consistency                        =  true

#Replication Semi Sync

#rpl\_semi\_sync\_master\_enabled                       = 1

#rpl\_semi\_sync\_master\_timeout                       = 1000

#rpl\_semi\_sync\_slave\_enabled                        = 1

#read\_only                                                               = 1

binlog\_checksum                             = CRC32

slave\_allow\_batching                            = 1

master\_verify\_checksum                          = 1

slave\_sql\_verify\_checksum                       = 1

master\_info\_repository                          = TABLE

relay\_log\_info\_repository                       = TABLE

# OTHER

tmp\_table\_size                              = 32M

max\_heap\_table\_size                         = 128M

query\_cache\_type                            = 0

query\_cache\_size                                    = 128M

max\_connections                                     = 256

thread\_cache\_size                                   = 200

open\_files\_limit                                    = 65535

innodb\_buffer\_pool\_load\_at\_startup                  = ON

innodb\_buffer\_pool\_dump\_at\_shutdown                 = ON

# Monitoring

innodb\_monitor\_enable                           =  '%'

performance\_schema                          = ON

performance\_schema\_instrument                       =  '%=on'

[mysql]

default-character- set                            = utf8

prompt                                  = "\\u@\\h : \\d \\R:\\m:\\s>"

no-auto-rehash

这里我们使用一个配置文件管理

## 创建相关目录

mkdir -p /data/mysqldata\_3306

mkdir -p /data/logs/mysql

touch /data/logs/mysql/mysql\_error\_3306.log

touch /data/logs/mysql/mysql\_slow\_3306.log

chown -R mysql:mysql /data/mysqldata\_\*

chown -R mysql:mysql /data/logs

chmod -R 755 /data/mysqldata\_\*

chmod -R 755 /data/logs

## 初始化mysql

在mysql5.7中初始化可以通过start来完成，所以这里我们直接操作就可以，具体的初始化信息会在初始化完毕之后写到相应的error中，

初始化3306端口mysql

# start后面的值取决于配置文件中[mysqld1]

mysqld\_multi start 1

# 查看初始密码

cat /root/.mysql\_secret

# Password set for user 'root@localhost' at 2017-08-15 19:06:17 adT!JesK-ikh

或者再ERROR LOG里面查找

cat /data/logs/mysql/mysql\_error.log |grep password

adT!JesK-ikh

初始化3307端口mysql，操作和上面一样

mysqld\_multi start 2

cat /root/.mysql\_secret

## 修改root初始化密码(****一定要修改初始化密码****)

mysql -uroot -p'adT!JesK-ikh' -S /data/mysqldata\_3306/mysql\_3306.sock

mysql>set password=PASSWORD('Yooli.WanSui2017');

## 管理mysqld\_multi

启动/关闭多实例的方法：

mysqld\_multi --user='root' --password='Yooli.Wansui2017' start/stop 1 ：是只启动/关闭第一个实例

mysqld\_multi --user='root' --password='Yooli.Wansui2017' start/stop 2 ：是只启动/关闭第二个实例

mysqld\_multi --user='root' --password='Yooli.Wansui2017' start/stop : 是启动/关闭所有的实例

查看mysqld\_multi group的运行状态

mysqld\_multi --user='root' --password='Yooli.Wansui2017' report

## For DBA Group

在修改root密码之后，每一次管理实例都需要指定user和password。

为了解决这一问题，我们可以修改mysqld\_multi。

vim /usr/bin/mysqld\_multi

mysqld\_multi



#!/usr/bin/perl

# Copyright (c) 2000, 2016, Oracle and/or its affiliates. All rights reserved.  
#  
# This program is free software; you can redistribute it and/or  
# modify it under the terms of the GNU Library General Public  
# License as published by the Free Software Foundation; version 2  
# of the License.  
#  
# This program is distributed in the hope that it will be useful,  
# but WITHOUT ANY WARRANTY; without even the implied warranty of  
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
# Library General Public License for more details.  
#  
# You should have received a copy of the GNU Library General Public  
# License along with this library; if not, write to the Free  
# Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston,  
# MA 02110-1301, USA

use Getopt::Long;  
use POSIX qw(strftime getcwd);  
use File::Path qw(mkpath);

$|=1;  
$VER="2.16";

my @defaults\_options; # Leading --no-defaults, --defaults-file, etc.

$opt\_example = 0;  
$opt\_help = 0;  
$opt\_log = undef();  
$opt\_mysqladmin = "/usr/bin/mysqladmin";  
$opt\_mysqld = "/usr/sbin/mysqld";  
$opt\_no\_log = 0;  
~~# $opt\_password = undef();~~  
$opt\_password = "Yooli.Wansui2017";  
$opt\_tcp\_ip = 0;  
$opt\_user = "root";  
$opt\_version = 0;  
$opt\_silent = 0;  
$opt\_verbose = 0;

省略一万行

# ****Percona-Server-server-5.7.21多实例安装****

Server version: 5.7.17-13-log Percona Server (GPL)

1.安装同上

2.创建log文件并赋予权限：(与上面步骤相同，多了一些注意事项)

\*\*\*必须手动创建上，否则初始化无法启动\*\*\*

touch /data/logs/mysql/mysql\_error\_3306.log

touch /data/logs/mysql/mysql\_error\_3307.log

touch /data/logs/mysql/mysql\_error\_3308.log

chown -R mysql:mysql /data/logs/

chmod -R 755 /data/logs/

先上配置文件：

这两个配置文件均需要上传到服务器。

①

此配置文件为初始化脚本，用于新加入实例的初始化工作。（\*\*\*重点关注ibdata1是否等于128M\*\*\*）

/etc/my.initialize.cnf



[mysqld]  
server-id = 857964189 #\*\*\*\*\*\*与/etc/my.cnf相同\*\*\*\*\*  
innodb\_data\_file\_path = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)  
innodb\_log\_file\_size = 1024M  
innodb\_file\_per\_table = 1  
sql-mode = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION  
log-bin = mysql-bin.log  
max\_binlog\_size = 512M  
binlog\_checksum = CRC32  
slave\_allow\_batching = 1  
master\_verify\_checksum = 1  
slave\_sql\_verify\_checksum = 1  
master\_info\_repository = TABLE  
relay\_log\_info\_repository = TABLE

②

/etc/my.cnf



[mysqld\_multi]

mysqld = /usr/bin/mysqld\_safe  
mysqladmin = /usr/bin/mysqladmin  
user = root #\*\*\*\*\*\*在使用mysqld\_mutil命令时，需要使用到的用户名，需要在数据库中存在，我们这里默认root空密码，密码可通过password=123来指定\*\*\*\*\*

[mysqld3306]  
# GENERAL  
#basedir = /usr/local/mysql  
datadir =/data/mysqldata\_3306  
tmpdir = /tmp  
socket = /data/mysqldata\_3306/mysql\_3306.sock  
pid\_file = /data/mysqldata\_3306/mysql\_3306.pid  
binlog\_cache\_size = 16M  
user = mysql  
port = 3306  
explicit\_defaults\_for\_timestamp = true  
character-set-server = utf8  
skip-name-resolve  
bind-address = 0.0.0.0  
sql-mode = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION  
# INNODB  
innodb\_buffer\_pool\_size = 4G  
innodb\_buffer\_pool\_instances = 2  
innodb\_thread\_concurrency = 4  
innodb\_log\_buffer\_size = 32M  
innodb\_log\_file\_size = 1024M  
innodb\_online\_alter\_log\_max\_size = 512M  
innodb\_open\_files = 1024  
innodb\_purge\_threads = 2  
innodb\_data\_home\_dir = /data/mysqldata\_3306  
innodb\_data\_file\_path = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)  
innodb\_read\_io\_threads = 2  
innodb\_write\_io\_threads = 2  
innodb\_file\_per\_table = 1  
innodb\_flush\_method = O\_DIRECT  
innodb\_max\_dirty\_pages\_pct = 70  
# MyISAM  
key\_buffer\_size = 32M  
# LOGS  
log\_warnings = 2  
log\_error = /data/logs/mysql/mysql\_error\_3306.log  
slow\_query\_log = ON  
slow\_query\_log\_file = /data/logs/mysql/mysql\_slow\_3306.log  
log\_queries\_not\_using\_indexes = 1  
long\_query\_time = 2  
expire\_logs\_days = 1  
log-bin = mysql-bin.log  
max\_binlog\_size = 512M  
innodb\_print\_all\_deadlocks = 1  
relay-log = relay-log  
relay-log-index = relay-log  
#Replication  
server-id = 7531456 #inet\_aton('119.254.115.75')  
binlog\_format = ROW  
binlog\_rows\_query\_log\_events = 1  
log\_slave\_updates = 1  
gtid-mode = on  
enforce\_gtid\_consistency = true  
binlog\_checksum = CRC32  
slave\_allow\_batching = 1  
master\_verify\_checksum = 1  
slave\_sql\_verify\_checksum = 1  
master\_info\_repository = TABLE  
relay\_log\_info\_repository = TABLE  
# OTHER  
tmp\_table\_size = 32M  
max\_heap\_table\_size = 128M  
query\_cache\_type = 0  
query\_cache\_size = 128M  
max\_connections = 1024  
thread\_cache\_size = 200  
open\_files\_limit = 65535  
innodb\_buffer\_pool\_load\_at\_startup = ON  
innodb\_buffer\_pool\_dump\_at\_shutdown = ON  
# Monitoring  
innodb\_monitor\_enable = '%'  
performance\_schema = ON  
performance\_schema\_instrument = '%=on'

[mysqld3307]  
# GENERAL  
#basedir = /usr/local/mysql  
datadir = /data/mysqldata\_3307  
tmpdir = /tmp  
socket = /data/mysqldata\_3307/mysql\_3307.sock  
pid\_file = /data/mysqldata\_3307/mysql\_3307.pid  
binlog\_cache\_size = 16M  
user = mysql  
port = 3307  
explicit\_defaults\_for\_timestamp = true  
character-set-server = utf8  
skip-name-resolve  
bind-address = 0.0.0.0  
sql-mode = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION  
# INNODB  
innodb\_buffer\_pool\_size = 4G  
innodb\_buffer\_pool\_instances = 2  
innodb\_thread\_concurrency = 4  
innodb\_log\_buffer\_size = 32M  
innodb\_log\_file\_size = 1024M  
innodb\_online\_alter\_log\_max\_size = 512M  
innodb\_open\_files = 1024  
innodb\_purge\_threads = 2  
innodb\_data\_home\_dir = /data/mysqldata\_3307  
innodb\_data\_file\_path = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)  
innodb\_read\_io\_threads = 2  
innodb\_write\_io\_threads = 2  
innodb\_file\_per\_table = 1  
innodb\_flush\_method = O\_DIRECT  
innodb\_max\_dirty\_pages\_pct = 70  
# MyISAM  
key\_buffer\_size = 32M  
# LOGS  
log\_warnings = 2  
log\_error = /data/logs/mysql/mysql\_error\_3307.log  
slow\_query\_log = off  
slow\_query\_log\_file = /data/logs/mysql/mysql\_slow\_3307.log  
#log\_queries\_not\_using\_indexes = 1  
long\_query\_time = 2  
expire\_logs\_days = 2  
log-bin = mysql-bin.log  
max\_binlog\_size = 512M  
innodb\_print\_all\_deadlocks = 1  
relay-log = relay-log  
relay-log-index = relay-log  
#Replication  
server-id = 6987125 #inet\_aton('119.254.115.75 3307')  
binlog\_format = ROW  
binlog\_rows\_query\_log\_events = 1  
log\_slave\_updates = 1  
gtid-mode = on  
enforce\_gtid\_consistency = true  
binlog\_checksum = CRC32  
slave\_allow\_batching = 1  
master\_verify\_checksum = 1  
slave\_sql\_verify\_checksum = 1  
master\_info\_repository = TABLE  
relay\_log\_info\_repository = TABLE  
# OTHER  
tmp\_table\_size = 32M  
max\_heap\_table\_size = 128M  
query\_cache\_type = 0  
query\_cache\_size = 128M  
max\_connections = 256  
thread\_cache\_size = 200  
open\_files\_limit = 65535  
innodb\_buffer\_pool\_load\_at\_startup = ON  
innodb\_buffer\_pool\_dump\_at\_shutdown = ON  
# Monitoring  
innodb\_monitor\_enable = '%'  
performance\_schema = ON  
performance\_schema\_instrument = '%=on'

[mysqld3308]  
# GENERAL  
#basedir = /usr/local/mysql  
datadir = /data/mysqldata\_3308  
tmpdir = /tmp  
socket = /data/mysqldata\_3308/mysql\_3308.sock  
pid\_file = /data/mysqldata\_3308/mysql\_3308.pid  
binlog\_cache\_size = 16M  
user = mysql  
port = 3308  
explicit\_defaults\_for\_timestamp = true  
character-set-server = utf8  
skip-name-resolve  
#bind-address = 192.168.1.75  
bind-address = 0.0.0.0  
sql-mode = STRICT\_TRANS\_TABLES,NO\_ENGINE\_SUBSTITUTION  
# INNODB  
innodb\_buffer\_pool\_size = 4G  
innodb\_buffer\_pool\_instances = 2  
innodb\_thread\_concurrency = 4  
innodb\_log\_buffer\_size = 32M  
innodb\_log\_file\_size = 1024M  
innodb\_online\_alter\_log\_max\_size = 512M  
innodb\_open\_files = 1024  
innodb\_purge\_threads = 2  
innodb\_data\_home\_dir = /data/mysqldata\_3308  
innodb\_data\_file\_path = [ibdata1:128M:autoextend](http://ibdata1:128M:autoextend)  
innodb\_read\_io\_threads = 2  
innodb\_write\_io\_threads = 2  
innodb\_file\_per\_table = 1  
innodb\_flush\_method = O\_DIRECT  
innodb\_max\_dirty\_pages\_pct = 70  
# MyISAM  
key\_buffer\_size = 32M  
# LOGS  
#general\_log = 1  
#general\_log\_file = /data/logs/mysql/mysql\_general\_3308.log  
log\_warnings = 2  
log\_error = /data/logs/mysql/mysql\_error\_3308.log  
slow\_query\_log = off  
slow\_query\_log\_file = /data/logs/mysql/mysql\_slow\_3308.log  
#log\_queries\_not\_using\_indexes = 1  
long\_query\_time = 2  
expire\_logs\_days = 2  
log-bin = mysql-bin.log  
max\_binlog\_size = 512M  
innodb\_print\_all\_deadlocks = 1  
relay-log = relay-log  
relay-log-index = relay-log  
#Replication  
server-id = 857964189 #inet\_aton('119.254.115.75 3307')  
binlog\_format = ROW  
binlog\_rows\_query\_log\_events = 1  
log\_slave\_updates = 1  
gtid-mode = on  
enforce\_gtid\_consistency = true  
#Replication Semi Sync  
#rpl\_semi\_sync\_master\_enabled = 1  
#rpl\_semi\_sync\_master\_timeout = 1000  
#rpl\_semi\_sync\_slave\_enabled = 1  
#read\_only = 1  
binlog\_checksum = CRC32  
slave\_allow\_batching = 1  
master\_verify\_checksum = 1  
slave\_sql\_verify\_checksum = 1  
master\_info\_repository = TABLE  
relay\_log\_info\_repository = TABLE  
# OTHER  
tmp\_table\_size = 32M  
max\_heap\_table\_size = 128M  
query\_cache\_type = 0  
query\_cache\_size = 128M  
max\_connections = 256  
thread\_cache\_size = 200  
open\_files\_limit = 65535  
innodb\_buffer\_pool\_load\_at\_startup = ON  
innodb\_buffer\_pool\_dump\_at\_shutdown = ON  
# Monitoring  
innodb\_monitor\_enable = '%'  
performance\_schema = ON  
performance\_schema\_instrument = '%=on'  
  
[mysql]  
default-character-set = utf8  
prompt ="\\u@\\h : \\d \\R:\\m:\\s>"  
no-auto-rehash

2.初始化MySQL

mysqld --defaults-file=/etc/my.initialize.cnf --initialize --datadir=/data/mysqldata\_3306/ --user=mysql

mysqld --defaults-file=/etc/my.initialize.cnf --initialize --datadir=/data/mysqldata\_3307/ --user=mysql

mysqld --defaults-file=/etc/my.initialize.cnf --initialize --datadir=/data/mysqldata\_3308/ --user=mysql

3.管理多实例

mysqld\_mutil report

mysqld\_mutil start \*\*一起启动，紧接着通过report查询数据库状态发现都是running。证明启动成功\*\*

4.找到初始化密码并登录MySQL

5.修改初始化密码