**NSD PROJECT2 DAY02**

**升级网站运行平台到LNMP 步骤如下：**

**1 清除当前配置**

**停止服务 卸载挂载**

**2 安装LNMP软件**

**安装源码Nginx软件**

**安装php-fpm软件**

**安装php及php-mysql软件**

**安装mariadb-server及 mariadb、mariadb-devel软件(可选安装，因为数据不存储在nginx服务器本机的数据库里)**

**3 修改配置文件**

**4 启动服务**

**4.1 挂载nfs30主机的共享目录到nginx的网页目录下**

**4.2 启动 nginx服务 php-fpm服务**

**5测试配置**

**案例2 ：部署缓存服务**

**目的：提供内存空间存储数据，把网站的热点数据放到内存里，加快访问速度**

**2.1 部署redis集群 ，步骤如下 练习到 12:00**

**搭建redis服务器(6台)，具体操作如下：**

**安装软件**

**初始化配置**

**停止服务**

**修改配置文件，启用集群配置**

**启动服务**

**查看服务信息**

**配置管理主机**

**创建集群**

**查看集群信息**

**[root@localhost ~]# redis-trib.rb info 192.168.4.51:6351**

**192.168.4.51:6351 (c3e25c31...) -> 0 keys | 5461 slots | 1 slaves.**

**192.168.4.53:6353 (9a3fab93...) -> 0 keys | 5461 slots | 1 slaves.**

**192.168.4.52:6352 (051b66a1...) -> 0 keys | 5462 slots | 1 slaves.**

**[OK] 0 keys in 3 masters.**

**0.00 keys per slot on average.**

**[root@localhost ~]#**

**2.2 配置网站服务可以连接集群存取数据**

**安装提供模块的软件redis-cluster-4.3.0.tgz**

**调用模块**

**重启php-fpm服务**

**查看redis模块**

**时间10分钟 到 14:26**

**2.3 测试配置：编写php脚本连接redis集群中任意主机存取数据**

**编写存储数据php脚本**

**nfs30]# vim /sitedir/x.php**

**<?php**

**$redis\_list = ['192.168.4.51:6351','192.168.4.52:6352','192.168.4.53:6353','192.168.4.54:6354','192.168.4.56:6356','192.168.4.57:6379'];**

**$client = new RedisCluster(NUll,$redis\_list);**

**$client->set("i","tarenaA ");**

**$client->set("j","tarenaB ");**

**$client->set("k","tarenaC ");**

**echo "data ok";**

**?>**

**:wq**

**编写取数据的php脚本**

**nfs30]# vim /sitedir/y.php**

**<?php**

**$redis\_list = ['192.168.4.51:6351','192.168.4.52:6352','192.168.4.53:6353','192.168.4.54:6354','192.168.4.56:6356','192.168.4.57:6379'];**

**$client = new RedisCluster(NUll,$redis\_list);**

**echo $client->get("i");**

**echo $client->get("j");**

**echo $client->get("k");**

**?>**

**:wq**

**客户端连接网站服务器访问存储数据的脚本**

**[root@host50 ~]# curl http://192.168.4.33/x.php**

**data ok**

**在Redis服务器 本机命令连接，查看php脚本里的数据是否存储成功**

**[root@host50 ~]# redis-cli -c -h 192.168.4.51 -p 6351**

**192.168.4.51:6351> keys \***

**1) "j"**

**192.168.4.51:6351> exit**

**[root@host50 ~]#**

**[root@host50 ~]# redis-cli -c -h 192.168.4.52 -p 6352**

**192.168.4.52:6352> keys \***

**1) "k"**

**192.168.4.52:6352> exit**

**[root@host50 ~]# redis-cli -c -h 192.168.4.53 -p 6353**

**192.168.4.53:6353> keys \***

**1) "i"**

**192.168.4.53:6353> get i**

**"tarenaA "**

**192.168.4.53:6353> info replication**

**# Replication**

**role:master**

**connected\_slaves:1**

**slave0:ip=192.168.4.54,port=6354,state=online,offset=15135,lag=1**

**客户端连接网站服务器访问取数据的脚本**

**[root@host50 ~]# curl http://192.168.4.33/y.php**

**tarenaA tarenaB tarenaC**

**统一排错步骤：**

**检查存取数据的php脚本代码写对了吗？**

**查看是否 支持 php -m | grep -i redis**

**检查提供模块的软件是 redis-cluster-4.3.0.tgz**

**所有主机的防火墙和selinux 关一遍**

**查看nginx服务日志文件 查看访问报错信息**

**查看Redis服务日志文件 查看访问报错信息**

**数据迁移：把存储在读写分离结构里的数据在线迁移到PXC集群**

**具体步骤如下：**

**1 把66主机配置为11的从数数据库服务器**

**运行运行MySQL数据库服务器（装包 起服务 管理员登陆 修改密码）**

**确保与主数据库服务器数据一致**

**1 11主机 ，不锁表 备份网站存储数据的库 buydb 并记录备份完成后是要的binlog日志名和偏移量位置 把备份文件拷贝给 66 数据库服务器**

**11 yum -y install libev-4.15-1.el6.rf.x86\_64.rpm ; yum -y install percona-xtrabackup-24-2.4.7-1.el7.x86\_64.rpm**

**13 innobackupex --user root --password 123qqq...A /allbak --no-timestamp**

**15 scp -r /allbak root@192.168.4.66:/root/**

**66主机主机执行恢复：停止服务 准备恢复数据 拷贝数据 修改所有者和组用户为mysql 启动服务 管理员登陆查看数据**

**12 yum -y install libev-4.15-1.el6.rf.x86\_64.rpm ; yum -y install percona-xtrabackup-24-2.4.7-1.el7.x86\_64.rpm**

**13 systemctl stop mysqld**

**14 rm -rf /var/lib/mysql/\***

**15 innobackupex --apply-log /root/allbak**

**16 innobackupex --copy-back /root/allbak**

**19 chown -R mysql:mysql /var/lib/mysql**

**20 systemctl start mysqld**

**21 mysql -uroot -p123qqq...A**

**指定server\_id 并重启mysqld服务**

**查看备份文件里记录的日志名和偏移量**

**[root@pxc66 ~]# grep master11 /root/allbak/xtrabackup\_info**

**binlog\_pos = filename 'master11.000003', position '1340'**

**[root@pxc66 ~]#**

**指定主数据库服务器信息**

**mysql> change master to master\_host="192.168.4.11" , master\_user="repluser",master\_password="123qqq...A" , master\_log\_file="master11.000003",master\_log\_pos=1340;**

**Query OK, 0 rows affected, 2 warnings (0.01 sec)**

**mysql> start slave;**

**启动slave进程 mysql> start slave;**

**查看状态**

**mysql> show slave status \G**

**Slave\_IO\_Running: Yes**

**Slave\_SQL\_Running: Yes**

**启动slave进程 mysql> start slave;**

**查看状态**

**mysql> show slave status \G**

**Slave\_IO\_Running: Yes**

**Slave\_SQL\_Running: Yes**

**创建PXC集群 ，步骤如下：**

**1. 在pxcnode66主机,做如下配置：**

**停止mysqld服务、卸载mysqld服务软件 安装PXC软件、**

**修改配置文件 、启动mysql服务**

**数据库管理员登录、用户授权**

**查看集群状态信息show status like "%wsrep%";**

**查看slave进程的状态 show slave status \G**

**2、配置另外2台PXC服务器**

**2.1 主机10做如下配置**

**安装PXC软件、修改配置文件、启动mysql服务**

**数据库管理员登录、查看集群状态信息、查看数据**

**2.2 主机88做如下配置**

**安装PXC软件、修改配置文件、启动mysql服务**

**数据库管理员登录、查看集群状态信息、查看数据**

**3 三台服务器的功能配置**

**wsrep\_cluster\_address=gcomm://192.168.4.66,192.168.4.10,192.168.4.88**

**4 测试配置**

**在网站服务器web33直接连接pxc集群主机访问数据库服务**

**web33]# mysql -h192.168.4.10 -uplj -p123qqq...A**

**web33]# mysql -h192.168.4.66 -uplj -p123qqq...A**

**web33]# mysql -h192.168.4.88 -uplj -p123qqq...A**

**[root@MySQL11 ~]# mysql -uroot -p123qqq...A**

**mysql> alter table buydb.user add id int primary key auto\_increment first;**

**mysql> mysql> select \* from buydb.user;**

**[root@web33 ~]# mysql -h192.168.4.77 -P4006 -uplj -p123qqq...A**

**MySQL [(none)]> insert buydb.user(username,password)values("y","y");**

**[root@pxc66 ~]# mysql -uroot -p123qqq...A -e 'select \* from buydb.user'**

**[root@pxc88 ~]# mysql -uroot -p123qqq...A -e 'select \* from buydb.user'**

**[root@pxc10 ~]# mysql -uroot -p123qqq...A -e 'select \* from buydb.user'**

**案例4 集群配置**

**配置LB 集群**

**在98 主机配置haproxy调度器，步骤如下**

**安装软件**

**修改配置文件**

**启动服务**

**测试网站服务器连接数据库服务的时候范围haproxy主机98**

**124 mysql -h192.168.4.98 -uplj -p123qqq...A -e 'select @@hostname' //多次连接访问显示不同的主机名**

**配置HA集群 ，配置备用调度器，步骤如下：**

**配置备用调度 77**

**安装haproxy软件**

**修改配置文件（配置与haproxy99主机相同）**

**启动服务**

**测试配置**

**配置高可集群步骤如下：**

**1 分别在主调度器和备用调度器安装keepalived 软件**

**2 修改2台服务的配置文件**

**3 分别启动keepalived 服务**

**测试配置：**

**4 客户端连接vip地址访问数据库服务器**

**5 把主调度器的服务停止备用调度器获取vip地址**

1. [案例1：升级网站运行平台](http://tts.tmooc.cn/ttsPage/LINUX/NSDTN202001/PROJECT2/DAY02/CASE/01/index.html#case1)
2. [案例2：部署缓存服务](http://tts.tmooc.cn/ttsPage/LINUX/NSDTN202001/PROJECT2/DAY02/CASE/01/index.html#case2)
3. [案例3：数据迁移](http://tts.tmooc.cn/ttsPage/LINUX/NSDTN202001/PROJECT2/DAY02/CASE/01/index.html#case3)
4. [案例4：部署LB集群](http://tts.tmooc.cn/ttsPage/LINUX/NSDTN202001/PROJECT2/DAY02/CASE/01/index.html#case4)
5. [案例5：部署HA集群](http://tts.tmooc.cn/ttsPage/LINUX/NSDTN202001/PROJECT2/DAY02/CASE/01/index.html#case5)

**1 案例1：升级网站运行平台**

**1.1 问题**

具体配置如下：

1. 清除当前配置
2. 部署LNMP
3. 测试配置

**1.2 步骤**

实现此案例需要按照如下步骤进行。

**步骤一：清除当前配置(web33和web44服务器都要配置)**

1）停止网站服务

1. **[**root@web33 **~]**# systemctl stop httpd
2. **[**root@web33 **~]**# systemctl disable httpd
3. **[**root@web44 **~]**# systemctl stop httpd
4. **[**root@web44 **~]**# systemctl disable httpd

2）卸载共享存储

1. **[**root@web33 **~]**# umount **/var**/www/html //卸载当前挂载
2. **[**root@web33 **~]**# vim **/**etc**/**fstab //清除开机挂载
3. #**192.168.4.30/**sitedir **/var**/www/html nfs defaults **0** **0**
4. **:**wq
5. **[**root@web44 **~]**# umount **/var**/www/html //卸载当前挂载
6. **[**root@web44 **~]**# vim **/**etc**/**fstab //清除开机挂载
7. #**192.168.4.30/**sitedir **/var**/www/html nfs defaults **0** **0**
8. **:**wq

**步骤二：部署LNMP**

1）安装软件

1. **[**root@web33 **~]**# yum **-**y install gcc zlib**-**devel pcre**-**devel //安装源码Nginx依赖软件
2. 已安装**:**
3. gcc**.**x86\_64 **0:4.8.5-28.**el7 pcre**-**devel**.**x86\_64 **0:8.32-17.**el7 zlib**-**devel**.**x86\_64 **0:1.2.7-17.**el7
4. 作为依赖被安装**:**
5. cpp**.**x86\_64 **0:4.8.5-28.**el7 glibc**-**devel**.**x86\_64 **0:2.17-222.**el7 glibc**-**headers**.**x86\_64 **0:2.17-222.**el7 kernel**-**headers**.**x86\_64 **0:3.10.0-862.**el7 libmpc**.**x86\_64 **0:1.0.1-3.**el7
6. mpfr**.**x86\_64 **0:3.1.1-4.**el7
7. 完毕！
8. **[**root@web33 **~]**#
9. **[**root@web33 **~]**# tar **-**zxvf nginx**-1.12.2.**tar**.**gz //解压
10. **[**root@web33 **~]**# cd nginx**-1.12.2** //进源码目录
11. **[**root@web33 nginx**-1.12.2]**# **.**/configure /**/**配置
12. **......**
13. Configuration summary
14. **+** using system PCRE library
15. **+** OpenSSL library is not used
16. **+** using system zlib library
17. nginx path prefix**:** "/usr/local/nginx"
18. nginx binary file**:** "/usr/local/nginx/sbin/nginx"
19. nginx modules path**:** "/usr/local/nginx/modules"
20. nginx configuration prefix**:** "/usr/local/nginx/conf"
21. nginx configuration file**:** "/usr/local/nginx/conf/nginx.conf"
22. nginx pid file**:** "/usr/local/nginx/logs/nginx.pid"
23. nginx error log file**:** "/usr/local/nginx/logs/error.log"
24. nginx http access log file**:** "/usr/local/nginx/logs/access.log"
25. nginx http client request body temporary files**:** "client\_body\_temp"
26. nginx http proxy temporary files**:** "proxy\_temp"
27. nginx http fastcgi temporary files**:** "fastcgi\_temp"
28. nginx http uwsgi temporary files**:** "uwsgi\_temp"
29. nginx http scgi temporary files**:** "scgi\_temp"
30. **[**root@web33 nginx**-1.12.2]**# make //编译
31. ……
32. ……
33. sed **-**e "s|%%PREFIX%%|/usr/local/nginx|" **\**
34. **-**e "s|%%PID\_PATH%%|/usr/local/nginx/logs/nginx.pid|" **\**
35. **-**e "s|%%CONF\_PATH%%|/usr/local/nginx/conf/nginx.conf|" **\**
36. **-**e "s|%%ERROR\_LOG\_PATH%%|/usr/local/nginx/logs/error.log|" **\**
37. **<** man**/**nginx**.8** **>** objs**/**nginx**.8**
38. make**[1]:** 离开目录“/root/nginx**-1.12.2**”
39. **[**root@web33 nginx**-1.12.2]**#
40. **[**root@web33 nginx**-1.12.2]**# make install //安装
41. ……
42. ……
43. cp conf**/**nginx**.**conf '/usr/local/nginx/conf/nginx.conf.default'
44. test **-**d '/usr/local/nginx/logs' **\**
45. **||** mkdir **-**p '/usr/local/nginx/logs'
46. test **-**d '/usr/local/nginx/logs' **\**
47. **||** mkdir **-**p '/usr/local/nginx/logs'
48. test **-**d '/usr/local/nginx/html' **\**
49. **||** cp **-**R html '/usr/local/nginx'
50. test **-**d '/usr/local/nginx/logs' **\**
51. **||** mkdir **-**p '/usr/local/nginx/logs'
52. make**[1]:** 离开目录“/root/nginx**-1.12.2**”
53. **[**root@web33 nginx**-1.12.2]**#
54. **[**root@web33 nginx**-1.12.2]**# ls **/**usr**/**local**/**nginx //查看安装目录
55. conf html logs sbin
56. **[**root@web33 nginx**-1.12.2]**#
57. **[**root@web33 **~]**# yum **-**y install php**-**fpm //安装php-fpm 软件
58. ……
59. ……
60. 已安装**:**
61. php**-**fpm**.**x86\_64 **0:5.4.16-45.**el7
62. 作为依赖被安装**:**
63. libzip**.**x86\_64 **0:0.10.1-8.**el7 php**-**common**.**x86\_64 **0:5.4.16-45.**el7
64. 完毕！
65. **[**root@web33 **~]**# yum **-**y install php php**-**mysql //安装php 及 php-mysql 软件
66. ……
67. ……
68. 已安装**:**
69. php**.**x86\_64 **0:5.4.16-45.**el7 php**-**mysql**.**x86\_64 **0:5.4.16-45.**el7
70. 作为依赖被安装**:**
71. mariadb**-**libs**.**x86\_64 **1:5.5.56-2.**el7 php**-**cli**.**x86\_64 **0:5.4.16-45.**el7 php**-**pdo**.**x86\_64 **0:5.4.16-45.**el7
72. 完毕！
73. **[**root@web33 **~]**#
74. **[**root@web33 **~]**# yum **-**y install mariadb**-**server mariadb**-**devel mariadb //安装mariadb服务软件
75. ……
76. ……
77. 已安装**:**
78. mariadb**.**x86\_64 **1:5.5.56-2.**el7 mariadb**-**devel**.**x86\_64 **1:5.5.56-2.**el7 mariadb**-**server**.**x86\_64 **1:5.5.56-2.**el7
79. 作为依赖被安装**:**
80. keyutils**-**libs**-**devel**.**x86\_64 **0:1.5.8-3.**el7 krb5**-**devel**.**x86\_64 **0:1.15.1-18.**el7 libaio**.**x86\_64 **0:0.3.109-13.**el7
81. libcom\_err**-**devel**.**x86\_64 **0:1.42.9-11.**el7 libkadm5**.**x86\_64 **0:1.15.1-18.**el7 libselinux**-**devel**.**x86\_64 **0:2.5-12.**el7
82. libsepol**-**devel**.**x86\_64 **0:2.5-8.1.**el7 libverto**-**devel**.**x86\_64 **0:0.2.5-4.**el7 openssl**-**devel**.**x86\_64 **1:1.0.**2k**-12.**el7
83. perl**-**Compress**-**Raw**-**Bzip2**.**x86\_64 **0:2.061-3.**el7 perl**-**Compress**-**Raw**-**Zlib**.**x86\_64 **1:2.061-4.**el7 perl**-**DBD**-**MySQL**.**x86\_64 **0:4.023-6.**el7
84. perl**-**DBI**.**x86\_64 **0:1.627-4.**el7 perl**-**Data**-**Dumper**.**x86\_64 **0:2.145-3.**el7 perl**-**IO**-**Compress**.**noarch **0:2.061-2.**el7
85. perl**-**Net**-**Daemon**.**noarch **0:0.48-5.**el7 perl**-**PlRPC**.**noarch **0:0.2020-14.**el7
86. 完毕！
87. **[**root@web33 **~]**#

[root@web44 ~]# yum -y install gcc zlib-devel pcre-devel //安装源码Nginx依赖软件

已安装:

gcc.x86\_64 0:4.8.5-28.el7 pcre-devel.x86\_64 0:8.32-17.el7 zlib-devel.x86\_64 0:1.2.7-17.el7

作为依赖被安装:

cpp.x86\_64 0:4.8.5-28.el7 glibc-devel.x86\_64 0:2.17-222.el7 glibc-headers.x86\_64 0:2.17-222.el7 kernel-headers.x86\_64 0:3.10.0-862.el7 libmpc.x86\_64 0:1.0.1-3.el7

mpfr.x86\_64 0:3.1.1-4.el7

完毕！

[root@web44 ~]#

[root@web44 ~]# tar -zxvf nginx-1.12.2.tar.gz //解压

[root@web44 ~]# cd nginx-1.12.2 //进源码目录

[root@web44 nginx-1.12.2]# ./configure //配置

......

Configuration summary

+ using system PCRE library

+ OpenSSL library is not used

+ using system zlib library

nginx path prefix: "/usr/local/nginx"

nginx binary file: "/usr/local/nginx/sbin/nginx"

nginx modules path: "/usr/local/nginx/modules"

nginx configuration prefix: "/usr/local/nginx/conf"

nginx configuration file: "/usr/local/nginx/conf/nginx.conf"

nginx pid file: "/usr/local/nginx/logs/nginx.pid"

nginx error log file: "/usr/local/nginx/logs/error.log"

nginx http access log file: "/usr/local/nginx/logs/access.log"

nginx http client request body temporary files: "client\_body\_temp"

nginx http proxy temporary files: "proxy\_temp"

nginx http fastcgi temporary files: "fastcgi\_temp"

nginx http uwsgi temporary files: "uwsgi\_temp"

nginx http scgi temporary files: "scgi\_temp"

[root@web44 nginx-1.12.2]# make //编译

……

……

sed -e "s|%%PREFIX%%|/usr/local/nginx|" \

-e "s|%%PID\_PATH%%|/usr/local/nginx/logs/nginx.pid|" \

-e "s|%%CONF\_PATH%%|/usr/local/nginx/conf/nginx.conf|" \

-e "s|%%ERROR\_LOG\_PATH%%|/usr/local/nginx/logs/error.log|" \

< man/nginx.8 > objs/nginx.8

make[1]: 离开目录“/root/nginx-1.12.2”

[root@web44 nginx-1.12.2]#

[root@web44 nginx-1.12.2]# make install //安装

……

……

cp conf/nginx.conf '/usr/local/nginx/conf/nginx.conf.default'

test -d '/usr/local/nginx/logs' \

|| mkdir -p '/usr/local/nginx/logs'

test -d '/usr/local/nginx/logs' \

|| mkdir -p '/usr/local/nginx/logs'

test -d '/usr/local/nginx/html' \

|| cp -R html '/usr/local/nginx'

test -d '/usr/local/nginx/logs' \

|| mkdir -p '/usr/local/nginx/logs'

make[1]: 离开目录“/root/nginx-1.12.2”

[root@web44 nginx-1.12.2]#

[root@web44 nginx-1.12.2]# ls /usr/local/nginx //查看安装目录

conf html logs sbin

[root@web44 nginx-1.12.2]#

[root@web44 ~]# yum -y install php-fpm //安装php-fpm 软件

……

……

已安装:

php-fpm.x86\_64 0:5.4.16-45.el7

作为依赖被安装:

libzip.x86\_64 0:0.10.1-8.el7 php-common.x86\_64 0:5.4.16-45.el7

完毕！

[root@web44 ~]# yum -y install php php-mysql //安装php 及 php-mysql 软件

……

……

已安装:

php.x86\_64 0:5.4.16-45.el7 php-mysql.x86\_64 0:5.4.16-45.el7

作为依赖被安装:

mariadb-libs.x86\_64 1:5.5.56-2.el7 php-cli.x86\_64 0:5.4.16-45.el7 php-pdo.x86\_64 0:5.4.16-45.el7

完毕！

[root@web44 ~]#

[root@web44 ~]# yum -y install mariadb-server mariadb-devel mariadb //安装mariadb服务软件

……

……

已安装:

mariadb.x86\_64 1:5.5.56-2.el7 mariadb-devel.x86\_64 1:5.5.56-2.el7 mariadb-server.x86\_64 1:5.5.56-2.el7

作为依赖被安装:

keyutils-libs-devel.x86\_64 0:1.5.8-3.el7 krb5-devel.x86\_64 0:1.15.1-18.el7 libaio.x86\_64 0:0.3.109-13.el7

libcom\_err-devel.x86\_64 0:1.42.9-11.el7 libkadm5.x86\_64 0:1.15.1-18.el7 libselinux-devel.x86\_64 0:2.5-12.el7

libsepol-devel.x86\_64 0:2.5-8.1.el7 libverto-devel.x86\_64 0:0.2.5-4.el7 openssl-devel.x86\_64 1:1.0.2k-12.el7

perl-Compress-Raw-Bzip2.x86\_64 0:2.061-3.el7 perl-Compress-Raw-Zlib.x86\_64 1:2.061-4.el7 perl-DBD-MySQL.x86\_64 0:4.023-6.el7

perl-DBI.x86\_64 0:1.627-4.el7 perl-Data-Dumper.x86\_64 0:2.145-3.el7 perl-IO-Compress.noarch 0:2.061-2.el7

perl-Net-Daemon.noarch 0:0.48-5.el7 perl-PlRPC.noarch 0:0.2020-14.el7

完毕！

[root@web44 ~]#

2）挂载共享存储

1. **[**root@web33 **~]**# vim **/**etc**/**fstab //开机挂载
2. **192.168.4.30/**sitedir **/**usr**/**local**/**nginx**/**html nfs defaults **0** **0**
3. **:**wq
4. **[**root@web33 **~]**# mount **-**a //挂载设备
5. **[**root@web33 **~]**# mount **|** grep "/usr/local/nginx/html" //查看挂载
6. **192.168.4.30:**/sitedir on /usr**/**local**/**nginx**/**html type nfs4 **(**rw**,**relatime**,**vers**=4.1,**rsize**=262144,**wsize**=262144,**namlen**=255,**hard**,**proto**=**tcp**,**port**=0,**timeo**=600,**retrans**=2,**sec**=**sys**,**clientaddr**=192.168.4.33,**local\_lock**=**none**,**addr**=192.168.4.30)**
7. **[**root@web33 **~]**#
8. **[**root@web44 **~]**# vim **/**etc**/**fstab //开机挂载
9. **192.168.4.30/**sitedir **/**usr**/**local**/**nginx**/**html nfs defaults **0** **0**
10. **:**wq
11. **[**root@web44 **~]**# mount **-**a //挂载设备
12. **[**root@web44 **~]**# mount **|** grep "/usr/local/nginx/html" //查看挂载
13. **192.168.4.30:**/sitedir on /usr**/**local**/**nginx**/**html type nfs4 **(**rw**,**relatime**,**vers**=4.1,**rsize**=262144,**wsize**=262144,**namlen**=255,**hard**,**proto**=**tcp**,**port**=0,**timeo**=600,**retrans**=2,**sec**=**sys**,**clientaddr**=192.168.4.33,**local\_lock**=**none**,**addr**=192.168.4.30)**
14. **[**root@web44 **~]**#

3）启动服务

1. **[**root@web33 **~]**# vim **+65** **/**usr**/**local**/**nginx**/**conf**/**nginx**.**conf //修改主配置文件
2. location **~** **\.**php$ **{**
3. root html**;**
4. fastcgi\_pass **127.0.0.1:9000;**
5. fastcgi\_index index**.**php**;**
6. # fastcgi\_param SCRIPT\_FILENAME **/**scripts$fastcgi\_script\_name**;**
7. include fastcgi**.**conf**;**
8. **}**
9. **:**wq
10. **[**root@web33 **~]**# /usr/local**/**nginx**/**sbin**/**nginx //启动服务
11. **[**root@web33 **~]**#
12. **[**root@web33 **~]**# netstat **-**utnlp **|** grep **:80** //查看端口
13. tcp **0** **0** **0.0.0.0:80** **0.0.0.0:\*** LISTEN **26335/**nginx**:** master
14. **[**root@web33 **~]**#
15. **[**root@web33 **~]**# systemctl start php**-**fpm
16. **[**root@web33 **~]**#
17. **[**root@web33 **~]**# netstat **-**utnlp **|** grep **:9000**
18. tcp **0** **0** **127.0.0.1:9000** **0.0.0.0:\*** LISTEN **26345/**php**-**fpm**:** mast
19. **[**root@web33 **~]**#
20. **[**root@web44 **~]**# vim **+65** **/**usr**/**local**/**nginx**/**conf**/**nginx**.**conf //修改主配置文件
21. location **~** **\.**php$ **{**
22. root html**;**
23. fastcgi\_pass **127.0.0.1:9000;**
24. fastcgi\_index index**.**php**;**
25. # fastcgi\_param SCRIPT\_FILENAME **/**scripts$fastcgi\_script\_name**;**
26. include fastcgi**.**conf**;**
27. **}**
28. **:**wq
29. **[**root@web44 **~]**# /usr/local**/**nginx**/**sbin**/**nginx //启动服务
30. **[**root@web44 **~]**#
31. **[**root@web44 **~]**# netstat **-**utnlp **|** grep **:80** //查看端口
32. tcp **0** **0** **0.0.0.0:80** **0.0.0.0:\*** LISTEN **26335/**nginx**:** master
33. **[**root@web44 **~]**#
34. **[**root@web44 **~]**# systemctl start php**-**fpm
35. **[**root@web44 **~]**#
36. **[**root@web44 **~]**# netstat **-**utnlp **|** grep **:9000**
37. tcp **0** **0** **127.0.0.1:9000** **0.0.0.0:\*** LISTEN **26345/**php**-**fpm**:** mast
38. **[**root@web44 **~]**#

4）测试配置

1. **[**root@nfs30 **~]**# vim **/**sitedir**/**test2**.**php //在nfs30共享目录编写php脚本文件
2. **<?**php
3. $school**=**"tarena" **;** //定义变量
4. echo $school **;** //输出变量值
5. **?>**
6. **:**wq
7. **[**root@client50 **~]**# curl http**:**//192.168.4.33/test2.php //访问web33服务器
8. tarena
9. **[**root@client50 **~]**# curl http**:**//192.168.4.44/test2.php //访问web44服务器
10. tarena

**2 案例2：部署缓存服务**

**2.1 问题**

具体操作如下：

1. 部署redis服务器
2. 创建redis集群
3. 配置网站服务器
4. 测试配置

**2.2 方案**

克隆7台虚拟机配置要求如图-1所示。



图-1

**2.3 步骤**

实现此案例需要按照如下步骤进行。

**步骤一：部署redis服务器（6台都要配置）**

1）搭建redis服务器

1. **[**root@redisA **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
2. **[**root@redisA **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
3. **[**root@redisA **~]**# cd redis**-4.0.8/** //进源码目录
4. **[**root@redisA redis**-4.0.8]**# make install //安装软件
5. ……
6. ……
7. INSTALL install
8. INSTALL install
9. INSTALL install
10. INSTALL install
11. INSTALL install
12. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
13. **[**root@redisA redis**-4.0.8]**#
14. **[**root@redisA redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
15. Welcome to the redis service installer
16. This script will help you easily set up a running redis server
17. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
18. Selecting **default:** **6379**
19. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
20. Selected **default** **-** /etc/redis**/6379.**conf
21. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
22. Selected **default** **-** /var/log**/**redis\_6379**.**log
23. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
24. Selected **default** **-** /var/lib**/**redis**/6379**
25. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
26. Selected config**:** //配置总结
27. Port **:** **6379**
28. Config file **:** /etc/redis**/6379.**conf
29. Log file **:** /var/log**/**redis\_6379**.**log
30. Data dir **:** /var/lib**/**redis**/6379**
31. Executable **:** /usr/local**/**bin**/**redis**-**server
32. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
33. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
34. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
35. Installing service**...**
36. Successfully added to chkconfig**!**
37. Successfully added to runlevels **345!**
38. Starting Redis server**...** //服务启动提示
39. Installation successful**!** //安装完成提示
40. **[**root@redisA redis**-4.0.8]**#
41. **[**root@redisA redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
42. Stopping **...**
43. Redis stopped
44. **[**root@redisA redis**-4.0.8]**#
45. **[**root@redisA redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
46. **70** bind **192.168.4.51**
47. **815** cluster**-**enabled yes
48. **823** cluster**-**config**-**file nodes**-6379.**conf
49. **829** cluster**-**node**-**timeout **5000**
50. **:**wq
51. **[**root@redisA redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
52. Starting Redis server**...**
53. **[**root@redisA redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
54. tcp **0** **0** **192.168.4.51:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
55. tcp **0** **0** **192.168.4.51:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口
56. **[**root@redisB **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
57. **[**root@redisB **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
58. **[**root@redisB **~]**# cd redis**-4.0.8/** //进源码目录
59. **[**root@redisB redis**-4.0.8]**# make install //安装软件
60. ……
61. ……
62. INSTALL install
63. INSTALL install
64. INSTALL install
65. INSTALL install
66. INSTALL install
67. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
68. **[**root@redisB redis**-4.0.8]**#
69. **[**root@redisB redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
70. Welcome to the redis service installer
71. This script will help you easily set up a running redis server
72. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
73. Selecting **default:** **6379**
74. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
75. Selected **default** **-** /etc/redis**/6379.**conf
76. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
77. Selected **default** **-** /var/log**/**redis\_6379**.**log
78. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
79. Selected **default** **-** /var/lib**/**redis**/6379**
80. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
81. Selected config**:** //配置总结
82. Port **:** **6379**
83. Config file **:** /etc/redis**/6379.**conf
84. Log file **:** /var/log**/**redis\_6379**.**log
85. Data dir **:** /var/lib**/**redis**/6379**
86. Executable **:** /usr/local**/**bin**/**redis**-**server
87. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
88. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
89. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
90. Installing service**...**
91. Successfully added to chkconfig**!**
92. Successfully added to runlevels **345!**
93. Starting Redis server**...** //服务启动提示
94. Installation successful**!** //安装完成提示
95. **[**root@redisB redis**-4.0.8]**#
96. **[**root@redisB redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
97. Stopping **...**
98. Redis stopped
99. **[**root@redisB redis**-4.0.8]**#
100. **[**root@redisB redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
101. **70** bind **192.168.4.52**
102. **815** cluster**-**enabled yes
103. **823** cluster**-**config**-**file nodes**-6379.**conf
104. **829** cluster**-**node**-**timeout **5000**
105. **:**wq
106. **[**root@redisB redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
107. Starting Redis server**...**
108. **[**root@redisB redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
109. tcp **0** **0** **192.168.4.52:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
110. tcp **0** **0** **192.168.4.52:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口
111. **[**root@redisC **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
112. **[**root@redisC **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
113. **[**root@redisC **~]**# cd redis**-4.0.8/** //进源码目录
114. **[**root@redisC redis**-4.0.8]**# make install //安装软件
115. ……
116. ……
117. INSTALL install
118. INSTALL install
119. INSTALL install
120. INSTALL install
121. INSTALL install
122. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
123. **[**root@redisC redis**-4.0.8]**#
124. **[**root@redisC redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
125. Welcome to the redis service installer
126. This script will help you easily set up a running redis server
127. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
128. Selecting **default:** **6379**
129. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
130. Selected **default** **-** /etc/redis**/6379.**conf
131. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
132. Selected **default** **-** /var/log**/**redis\_6379**.**log
133. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
134. Selected **default** **-** /var/lib**/**redis**/6379**
135. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
136. Selected config**:** //配置总结
137. Port **:** **6379**
138. Config file **:** /etc/redis**/6379.**conf
139. Log file **:** /var/log**/**redis\_6379**.**log
140. Data dir **:** /var/lib**/**redis**/6379**
141. Executable **:** /usr/local**/**bin**/**redis**-**server
142. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
143. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
144. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
145. Installing service**...**
146. Successfully added to chkconfig**!**
147. Successfully added to runlevels **345!**
148. Starting Redis server**...** //服务启动提示
149. Installation successful**!** //安装完成提示
150. **[**root@redisC redis**-4.0.8]**#
151. **[**root@redisC redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
152. Stopping **...**
153. Redis stopped
154. **[**root@redisC redis**-4.0.8]**#
155. **[**root@redisC redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
156. **70** bind **192.168.4.53**
157. **815** cluster**-**enabled yes
158. **823** cluster**-**config**-**file nodes**-6379.**conf
159. **829** cluster**-**node**-**timeout **5000**
160. **:**wq
161. **[**root@redisC redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
162. Starting Redis server**...**
163. **[**root@redisC redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
164. tcp **0** **0** **192.168.4.53:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
165. tcp **0** **0** **192.168.4.53:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口
166. **[**root@redisD **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
167. **[**root@redisD **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
168. **[**root@redisD **~]**# cd redis**-4.0.8/** //进源码目录
169. **[**root@redisD redis**-4.0.8]**# make install //安装软件
170. ……
171. ……
172. INSTALL install
173. INSTALL install
174. INSTALL install
175. INSTALL install
176. INSTALL install
177. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
178. **[**root@redisD redis**-4.0.8]**#
179. **[**root@redisD redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
180. Welcome to the redis service installer
181. This script will help you easily set up a running redis server
182. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
183. Selecting **default:** **6379**
184. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
185. Selected **default** **-** /etc/redis**/6379.**conf
186. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
187. Selected **default** **-** /var/log**/**redis\_6379**.**log
188. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
189. Selected **default** **-** /var/lib**/**redis**/6379**
190. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
191. Selected config**:** //配置总结
192. Port **:** **6379**
193. Config file **:** /etc/redis**/6379.**conf
194. Log file **:** /var/log**/**redis\_6379**.**log
195. Data dir **:** /var/lib**/**redis**/6379**
196. Executable **:** /usr/local**/**bin**/**redis**-**server
197. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
198. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
199. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
200. Installing service**...**
201. Successfully added to chkconfig**!**
202. Successfully added to runlevels **345!**
203. Starting Redis server**...** //服务启动提示
204. Installation successful**!** //安装完成提示
205. **[**root@redisD redis**-4.0.8]**#
206. **[**root@redisD redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
207. Stopping **...**
208. Redis stopped
209. **[**root@redisD redis**-4.0.8]**#
210. **[**root@redisD redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
211. **70** bind **192.168.4.54**
212. **815** cluster**-**enabled yes
213. **823** cluster**-**config**-**file nodes**-6379.**conf
214. **829** cluster**-**node**-**timeout **5000**
215. **:**wq
216. **[**root@redisD redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
217. Starting Redis server**...**
218. **[**root@redisD redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
219. tcp **0** **0** **192.168.4.54:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
220. tcp **0** **0** **192.168.4.54:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口
221. **[**root@redisE **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
222. **[**root@redisE **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
223. **[**root@redisE **~]**# cd redis**-4.0.8/** //进源码目录
224. **[**root@redisE redis**-4.0.8]**# make install //安装软件
225. ……
226. ……
227. INSTALL install
228. INSTALL install
229. INSTALL install
230. INSTALL install
231. INSTALL install
232. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
233. **[**root@redisE redis**-4.0.8]**#
234. **[**root@redisE redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
235. Welcome to the redis service installer
236. This script will help you easily set up a running redis server
237. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
238. Selecting **default:** **6379**
239. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
240. Selected **default** **-** /etc/redis**/6379.**conf
241. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
242. Selected **default** **-** /var/log**/**redis\_6379**.**log
243. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
244. Selected **default** **-** /var/lib**/**redis**/6379**
245. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
246. Selected config**:** //配置总结
247. Port **:** **6379**
248. Config file **:** /etc/redis**/6379.**conf
249. Log file **:** /var/log**/**redis\_6379**.**log
250. Data dir **:** /var/lib**/**redis**/6379**
251. Executable **:** /usr/local**/**bin**/**redis**-**server
252. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
253. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
254. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
255. Installing service**...**
256. Successfully added to chkconfig**!**
257. Successfully added to runlevels **345!**
258. Starting Redis server**...** //服务启动提示
259. Installation successful**!** //安装完成提示
260. **[**root@redisE redis**-4.0.8]**#
261. **[**root@redisE redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
262. Stopping **...**
263. Redis stopped
264. **[**root@redisE redis**-4.0.8]**#
265. **[**root@redisE redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
266. **70** bind **192.168.4.56**
267. **815** cluster**-**enabled yes
268. **823** cluster**-**config**-**file nodes**-6379.**conf
269. **829** cluster**-**node**-**timeout **5000**
270. **:**wq
271. **[**root@redisE redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
272. Starting Redis server**...**
273. **[**root@redisE redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
274. tcp **0** **0** **192.168.4.56:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
275. tcp **0** **0** **192.168.4.56:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口
276. **[**root@redisF **~]**# rpm **-**q gcc **||** yum **-**y install gcc //安装编译工具
277. **[**root@redisF **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz //解压
278. **[**root@redisF **~]**# cd redis**-4.0.8/** //进源码目录
279. **[**root@redisF redis**-4.0.8]**# make install //安装软件
280. ……
281. ……
282. INSTALL install
283. INSTALL install
284. INSTALL install
285. INSTALL install
286. INSTALL install
287. make**[1]:** 离开目录“/root/redis**-4.0.8/**src”
288. **[**root@redisF redis**-4.0.8]**#
289. **[**root@redisF redis**-4.0.8]**# **.**/utils/install\_server**.**sh //初始化配置
290. Welcome to the redis service installer
291. This script will help you easily set up a running redis server
292. Please select the redis port **for** **this** instance**:** **[6379]** //端口号
293. Selecting **default:** **6379**
294. Please select the redis config file name **[**/etc/redis**/6379.**conf**]** //主配置文件
295. Selected **default** **-** /etc/redis**/6379.**conf
296. Please select the redis log file name **[**/var/log**/**redis\_6379**.**log**]** //日志文件
297. Selected **default** **-** /var/log**/**redis\_6379**.**log
298. Please select the data directory **for** **this** instance **[**/var/lib**/**redis**/6379]** //数据库目录
299. Selected **default** **-** /var/lib**/**redis**/6379**
300. Please select the redis executable path **[**/usr/local**/**bin**/**redis**-**server**]** //服务启动启动程序
301. Selected config**:** //配置总结
302. Port **:** **6379**
303. Config file **:** /etc/redis**/6379.**conf
304. Log file **:** /var/log**/**redis\_6379**.**log
305. Data dir **:** /var/lib**/**redis**/6379**
306. Executable **:** /usr/local**/**bin**/**redis**-**server
307. Cli Executable **:** /usr/local**/**bin**/**redis**-**cli
308. Is **this** ok**?** Then press ENTER to go on or Ctrl**-**C to abort**.**
309. Copied **/**tmp**/6379.**conf **=>** /etc/init**.**d**/**redis\_6379
310. Installing service**...**
311. Successfully added to chkconfig**!**
312. Successfully added to runlevels **345!**
313. Starting Redis server**...** //服务启动提示
314. Installation successful**!** //安装完成提示
315. **[**root@redisF redis**-4.0.8]**#
316. **[**root@redisF redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 stop //停止服务
317. Stopping **...**
318. Redis stopped
319. **[**root@redisF redis**-4.0.8]**#
320. **[**root@redisF redis**-4.0.8]**# vim **/**etc**/**redis**/6379.**conf //修改配置文件，启用集群配置
321. **70** bind **192.168.4.57**
322. **815** cluster**-**enabled yes
323. **823** cluster**-**config**-**file nodes**-6379.**conf
324. **829** cluster**-**node**-**timeout **5000**
325. **:**wq
326. **[**root@redisF redis**-4.0.8]**# /etc/init**.**d**/**redis\_6379 start //启动服务
327. Starting Redis server**...**
328. **[**root@redisF redis**-4.0.8]**# netstat **-**utnlp **|** grep redis**-**server //查看端口
329. tcp **0** **0** **192.168.4.57:6379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //redis服务端口
330. tcp **0** **0** **192.168.4.57:16379** **0.0.0.0:\*** LISTEN **29720/**redis**-**server //集群端口

**步骤二：创建redis集群**

1）配置管理主机

1. **[**root@mgm **~]**# yum **-**y install ruby rubygems //安装依赖
2. ……
3. ……
4. 已安装**:**
5. ruby**.**x86\_64 **0:2.0.0.648-33.**el7\_4 rubygems**.**noarch **0:2.0.14.1-33.**el7\_4
6. 作为依赖被安装**:**
7. libyaml**.**x86\_64 **0:0.1.4-11.**el7\_0 ruby**-**irb**.**noarch **0:2.0.0.648-33.**el7\_4 ruby**-**libs**.**x86\_64 **0:2.0.0.648-33.**el7\_4 rubygem**-**bigdecimal**.**x86\_64 **0:1.2.0-33.**el7\_4
8. rubygem**-**io**-**console**.**x86\_64 **0:0.4.2-33.**el7\_4 rubygem**-**json**.**x86\_64 **0:1.7.7-33.**el7\_4 rubygem**-**psych**.**x86\_64 **0:2.0.0-33.**el7\_4 rubygem**-**rdoc**.**noarch **0:4.0.0-33.**el7\_4
9. 完毕！
10. **[**root@mgm **~]**#
11. **[**root@mgm **~]**# gem install redis**-3.2.1.**gem //安装依赖软件gem程序
12. Successfully installed redis**-3.2.1**
13. Parsing documentation **for** redis**-3.2.1**
14. Installing ri documentation **for** redis**-3.2.1**
15. **1** gem installed
16. **[**root@mgm **~]**#
17. **[**root@mgm **~]**# tar **-**zxvf redis**-4.0.8.**tar**.**gz
18. **[**root@mgm **~]**# cp redis**-4.0.8/**src**/**redis**-**trib**.**rb **/**root**/**bin**/** //拷贝脚本
19. **[**root@mgm **~]**#
20. **[**root@mgm **~]**# chmod **+**x **/**root**/**bin**/**redis**-**trib**.**rb //确保脚本有执行权限
21. **[**root@mgm **~]**#
22. **[**root@mgm **~]**# redis**-**trib**.**rb help //查看帮助
23. Usage**:** redis**-**trib **<**command**>** **<**options**>** **<**arguments **...>**
24. create host1**:**port1 **...** hostN**:**portN
25. **--**replicas **<**arg**>**
26. check host**:**port
27. info host**:**port
28. fix host**:**port
29. **--**timeout **<**arg**>**
30. reshard host**:**port
31. **--**from **<**arg**>**
32. **--**to **<**arg**>**
33. **--**slots **<**arg**>**
34. **--**yes
35. **--**timeout **<**arg**>**
36. **--**pipeline **<**arg**>**
37. rebalance host**:**port
38. **--**weight **<**arg**>**
39. **--**auto**-**weights
40. **--**use**-**empty**-**masters
41. **--**timeout **<**arg**>**
42. **--**simulate
43. **--**pipeline **<**arg**>**
44. **--**threshold **<**arg**>**
45. add**-**node new\_host**:**new\_port existing\_host**:**existing\_port
46. **--**slave
47. **--**master**-**id **<**arg**>**
48. del**-**node host**:**port node\_id
49. set**-**timeout host**:**port milliseconds
50. call host**:**port command arg arg **..** arg
51. import host**:**port
52. **--**from **<**arg**>**
53. **--**copy
54. **--**replace
55. help **(**show **this** help**)**
56. For check**,** fix**,** reshard**,** del**-**node**,** set**-**timeout you can specify the host and port of any working node **in** the cluster**.**
57. **[**root@mgm **~]**#

2）创建集群

1. **]**# redis**-**trib**.**rb create **--**replicas **1** **\**
2. **192.168.4.51:6379** **192.168.4.52:6379** **192.168.4.53:6379** **\** **192.168.4.54:6379** **192.168.4.56:6379** **192.168.4.57:6379**
3. **>>>** Performing hash slots allocation on **6** nodes**...**
4. Using **3** masters**:**
5. **192.168.4.51:6379**
6. **192.168.4.52:6379**
7. **192.168.4.53:6379**
8. Adding replica **192.168.4.57:6379** to **192.168.4.51:6379**
9. Adding replica **192.168.4.56:6379** to **192.168.4.52:6379**
10. Adding replica **192.168.4.54:6379** to **192.168.4.53:6379**
11. M**:** d9f8fe6d6d9dd391be8e7904501db1535e4d17cb **192.168.4.51:6379**
12. slots**:0-5460** **(5461** slots**)** master
13. M**:** 324e05df3f143ef97e50d09be0328a695e655986 **192.168.4.52:6379**
14. slots**:5461-10922** **(5462** slots**)** master
15. M**:** 9e44139cffb8ebd7ed746aabbf4bcea9bf207645 **192.168.4.53:6379**
16. slots**:10923-16383** **(5461** slots**)** master
17. S**:** d9634ba0aa5c1a07193da4a013da6051c1515922 **192.168.4.54:6379**
18. replicates 9e44139cffb8ebd7ed746aabbf4bcea9bf207645
19. S**:** 2d343a9df48f6f6e207949e980ef498466a44dad **192.168.4.57:6379**
20. replicates d9f8fe6d6d9dd391be8e7904501db1535e4d17cb
21. S**:** 894dd0008053f6fb65e9e4a36b755d9351607500 **192.168.4.56:6379**
22. replicates 324e05df3f143ef97e50d09be0328a695e655986
23. Can I set the above configuration**?** **(**type 'yes' to accept**):** yes //同意以上配置
24. **>>>** Nodes configuration updated
25. **>>>** Assign a different config epoch to each node
26. **>>>** Sending CLUSTER MEET messages to join the cluster
27. Waiting **for** the cluster to join**...**
28. **>>>** Performing Cluster Check **(**using node **192.168.4.51:6379)**
29. M**:** d9f8fe6d6d9dd391be8e7904501db1535e4d17cb **192.168.4.51:6379**
30. slots**:0-5460** **(5461** slots**)** master
31. **1** additional replica**(**s**)**
32. S**:** d9634ba0aa5c1a07193da4a013da6051c1515922 **192.168.4.54:6379**
33. slots**:** **(0** slots**)** slave
34. replicates 9e44139cffb8ebd7ed746aabbf4bcea9bf207645
35. S**:** 894dd0008053f6fb65e9e4a36b755d9351607500 **192.168.4.56:6379**
36. slots**:** **(0** slots**)** slave
37. replicates 324e05df3f143ef97e50d09be0328a695e655986
38. M**:** 324e05df3f143ef97e50d09be0328a695e655986 **192.168.4.52:6379**
39. slots**:5461-10922** **(5462** slots**)** master
40. **1** additional replica**(**s**)**
41. M**:** 9e44139cffb8ebd7ed746aabbf4bcea9bf207645 **192.168.4.53:6379**
42. slots**:10923-16383** **(5461** slots**)** master
43. **1** additional replica**(**s**)**
44. S**:** 2d343a9df48f6f6e207949e980ef498466a44dad **192.168.4.57:6379**
45. slots**:** **(0** slots**)** slave
46. replicates d9f8fe6d6d9dd391be8e7904501db1535e4d17cb
47. **[**OK**]** All nodes agree about slots configuration**.**
48. **>>>** Check **for** open slots**...**
49. **>>>** Check slots coverage**...**
50. **[**OK**]** All **16384** slots covered**.** //提示16384个槽分配完毕
51. **[**root@mgm **~]**#

3）查看集群信息

1. **[**root@mgm **~]**# redis**-**trib**.**rb info **192.168.4.51:6379** //查看集群信息
2. **192.168.4.51:6379** **(**d9f8fe6d**...)** **->** **0** keys **|** **5461** slots **|** **1** slaves**.**
3. **192.168.4.52:6379** **(**324e05df**...)** **->** **0** keys **|** **5462** slots **|** **1** slaves**.**
4. **192.168.4.53:6379** **(**9e44139c**...)** **->** **0** keys **|** **5461** slots **|** **1** slaves**.**
5. **[**OK**]** **0** keys **in** **3** masters**.**
6. keys per slot on average

[root@mgm ~]# redis-trib.rb check 192.168.4.51:6379 //检测集群

>>> Performing Cluster Check (using node 192.168.4.51:6379)

M: d9f8fe6d6d9dd391be8e7904501db1535e4d17cb 192.168.4.51:6379

slots:0-5460 (5461 slots) master

1 additional replica(s)

S: d9634ba0aa5c1a07193da4a013da6051c1515922 192.168.4.54:6379

slots: (0 slots) slave

replicates 9e44139cffb8ebd7ed746aabbf4bcea9bf207645

S: 894dd0008053f6fb65e9e4a36b755d9351607500 192.168.4.56:6379

slots: (0 slots) slave

replicates 324e05df3f143ef97e50d09be0328a695e655986

M: 324e05df3f143ef97e50d09be0328a695e655986 192.168.4.52:6379

slots:5461-10922 (5462 slots) master

1 additional replica(s)

M: 9e44139cffb8ebd7ed746aabbf4bcea9bf207645 192.168.4.53:6379

slots:10923-16383 (5461 slots) master

1 additional replica(s)

S: 2d343a9df48f6f6e207949e980ef498466a44dad 192.168.4.57:6379

slots: (0 slots) slave

replicates d9f8fe6d6d9dd391be8e7904501db1535e4d17cb

[OK] All nodes agree about slots configuration.

>>> Check for open slots...

>>> Check slots coverage...

[OK] All 16384 slots covered.

4）测试配置（在客户端连接集群中的任意一台服务器存取数据）

1. **[**root@client50 **~]**# redis**-**cli **-**c **-**h **192.168.4.51** **-**p **6379** //连接服务器51
2. **192.168.4.51:6379>**
3. **192.168.4.51:6379>** set x **100** //存储
4. **->** Redirected to slot **[16287]** located at **192.168.4.53:6379** //提示存储在53主机
5. OK
6. **192.168.4.53:6379>** keys **\***
7. **1)** "x"
8. **192.168.4.53:6379>**
9. **192.168.4.53:6379>** set y **200**
10. OK
11. **192.168.4.53:6379>** keys **\***
12. **1)** "y"
13. **2)** "x"
14. **192.168.4.53:6379>** set z **300** //存储
15. **->** Redirected to slot **[8157]** located at **192.168.4.52:6379** //提示存储在52主机
16. OK
17. **192.168.4.52:6379>** keys **\*** //在52主机查看数据 只有变量z
18. **1)** "z"
19. **192.168.4.52:6379>** get x
20. **->** Redirected to slot **[16287]** located at **192.168.4.53:6379** //连接53主机获取数据
21. "100"
22. **192.168.4.53:6379>** keys **\***
23. **1)** "y"
24. **2)** "x"
25. **192.168.4.53:6379>** get z
26. **->** Redirected to slot **[8157]** located at **192.168.4.52:6379**
27. "300"
28. **192.168.4.52:6379>** set i **400**
29. **->** Redirected to slot **[15759]** located at **192.168.4.53:6379**
30. OK
31. **192.168.4.53:6379>** set j **500**
32. **->** Redirected to slot **[3564]** located at **192.168.4.51:6379**
33. OK
34. **192.168.4.51:6379>**

**步骤三：配置网站服务器 （2台网站服务器都要配置）**

1. **[**root@web33 **~** **]**# yum **-**y install php**-**devel //安装依赖
2. ……
3. ……
4. 已安装**:**
5. php**-**devel**.**x86\_64 **0:5.4.16-45.**el7
6. 作为依赖被安装**:**
7. autoconf**.**noarch **0:2.69-11.**el7 automake**.**noarch **0:1.13.4-3.**el7 m4**.**x86\_64 **0:1.4.16-10.**el7 perl**-**Test**-**Harness**.**noarch **0:3.28-3.**el7 perl**-**Thread**-**Queue**.**noarch **0:3.02-2.**el7
8. 完毕！
9. **[**root@web33 **~]**#
10. **[**root@web33 **~]**# tar **-**zxvf redis**-**cluster**-4.3.0.**tgz //解压
11. **[**root@web33 **~]**# cd redis**-4.3.0/** //进入源码目录
12. **[**root@web33 redis**-4.3.0]**# phpize //创建configure命令及配置信息文件/usr/bin/php-config
13. Configuring **for:**
14. PHP Api Version**:** **20100412**
15. Zend Module Api No**:** **20100525**
16. Zend Extension Api No**:** **220100525**
17. **[**root@web33 redis**-4.3.0]**#
18. **[**root@web33 redis**-4.3.0]**# **.**/configure --with-php-config=/usr**/**bin**/**php**-**config
19. ……
20. ……
21. configure**:** creating **./**config**.**status
22. config**.**status**:** creating config**.**h
23. config**.**status**:** config**.**h is unchanged
24. config**.**status**:** executing libtool commands
25. **[**root@web33 redis**-4.3.0]**#
26. **[**root@web33 redis**-4.3.0]**# make //编译
27. ……
28. ……
29. Build complete**.**
30. Don't forget to run 'make test'.
31. [root@web33 redis-4.3.0]#
32. [root@web33 redis-4.3.0]# make install //安装
33. Installing shared extensions: /usr/lib64/php/modules/ //提示模块安装目录
34. [root@web33 redis-4.3.0]#
35. [root@web33 redis-4.3.0]# ls /usr/lib64/php/modules/ //查看目录列表
36. curl.so fileinfo.so json.so mysqli.so mysql.so pdo\_mysql.so pdo.so pdo\_sqlite.so phar.so redis.so sqlite3.so zip.so
37. [root@web33 redis-4.3.0]#

[root@web44 ~ ]# yum -y install php-devel //安装依赖

……

……

已安装:

php-devel.x86\_64 0:5.4.16-45.el7

作为依赖被安装:

autoconf.noarch 0:2.69-11.el7 automake.noarch 0:1.13.4-3.el7 m4.x86\_64 0:1.4.16-10.el7 perl-Test-Harness.noarch 0:3.28-3.el7 perl-Thread-Queue.noarch 0:3.02-2.el7

完毕！

[root@web44 ~]#

[root@web44 ~]# tar -zxvf redis-cluster-4.3.0.tgz //解压

[root@web44 ~]# cd redis-4.3.0/ //进入源码目录

[root@web44 redis-4.3.0]# phpize //创建configure命令及配置信息文件/usr/bin/php-config

Configuring for:

PHP Api Version: 20100412

Zend Module Api No: 20100525

Zend Extension Api No: 220100525

[root@web44 redis-4.3.0]#

[root@web44 redis-4.3.0]# ./configure --with-php-config=/usr/bin/php-config

……

……

configure: creating ./config.status

config.status: creating config.h

config.status: config.h is unchanged

config.status: executing libtool commands

[root@web44 redis-4.3.0]#

[root@web44 redis-4.3.0]# make //编译

……

……

Build complete.

Don't forget to run 'make test'.

[root@web44 redis-4.3.0]#

[root@web44 redis-4.3.0]# make install //安装

Installing shared extensions: /usr/lib64/php/modules/ //提示模块安装目录

[root@web44 redis-4.3.0]#

[root@web44 redis-4.3.0]# ls /usr/lib64/php/modules/ //查看目录列表

curl.so fileinfo.so json.so mysqli.so mysql.so pdo\_mysql.so pdo.so pdo\_sqlite.so phar.so redis.so sqlite3.so zip.so

[root@web44 redis-4.3.0]#

修改配置文件

1. **[**root@web33 redis**-4.3.0]**# vim **/**etc**/**php**.**ini
2. **728** extension\_dir **=** "/usr/lib64/php/modules/" //模块目录
3. **730** extension **=** "redis.so" //模块名
4. **:**wq
5. **[**root@web33 redis**-4.3.0]**# systemctl restart php**-**fpm //重启php-fpm服务
6. **[**root@web33 redis**-4.3.0]**# php **-**m **|** grep **-**i redis //查看模块
7. redis
8. **[**root@web33 redis**-4.3.0]**#
9. **[**root@web44 redis**-4.3.0]**# vim **/**etc**/**php**.**ini
10. **728** extension\_dir **=** "/usr/lib64/php/modules/" //模块目录
11. **730** extension **=** "redis.so" //模块名
12. **:**wq
13. **[**root@web44 redis**-4.3.0]**# systemctl restart php**-**fpm //重启php-fpm服务
14. **[**root@web44 redis**-4.3.0]**# php **-**m **|** grep **-**i redis //查看模块
15. redis
16. **[**root@web44 redis**-4.3.0]**#

**步骤四：测试配置**

1）在存储服务器共享目录下，创建连接集群PHP脚本

1. nfs30**~** **]**# vim **/**sitedir**/**set\_data**.**php //存储数据脚本
2. **<?**php
3. $redis\_list **=** **[**'192.168.4.51:6379'**,**'192.168.4.52:6379'**,**'192.168.4.53:6379'**,**'192.168.4.54:6379'**,**'192.168.4.56:6379'**,**'192.168.4.57:6379'**];** //定义redis服务器列表
4. $client **=** **new** RedisCluster**(**NUll**,**$redis\_list**);** //定义连接redis服务器变量
5. $client**->**set**(**"i"**,**"tarenaA "**);** //存储数据 变量名 i
6. $client**->**set**(**"j"**,**"tarenaB "**);** //存储数据 变量名 j
7. $client**->**set**(**"k"**,**"tarenaC "**);** //存储数据 变量名 k
8. **?>**
9. **:**wq
10. nfs30**~** **]**# vim **/**sitedir**/**get\_data**.**php //获取数据脚本
11. **<?**php
12. $redis\_list **=** **[**'192.168.4.51:6379'**,**'192.168.4.52:6379'**,**'192.168.4.53:6379'**,**'192.168.4.54:6379'**,**'192.168.4.56:6379'**,**'192.168.4.57:6379'**];** //定义redis服务器列表
13. $client **=** **new** RedisCluster**(**NUll**,**$redis\_list**);** //定义连接redis服务器变量
14. echo $client**->**get**(**"i"**);** //获取变量i 的数据
15. echo $client**->**get**(**"j"**);** //获取变量j 的数据
16. echo $client**->**get**(**"k"**);** //获取变量k 的数据
17. **?>**
18. **:**wq
19. nfs30**~** **]**# vim **/**sitedir**/**test3**.**php //存/取数据脚本
20. **<?**php
21. $redis\_list **=** **[**'192.168.4.51:6379'**,**'192.168.4.52:6379'**,**'192.168.4.53:6379'**,**'192.168.4.54:6379'**,**'192.168.4.56:6379'**,**'192.168.4.57:6379'**];**
22. $client **=** **new** RedisCluster**(**NUll**,**$redis\_list**);**
23. $client**->**set**(**“name“**,**”panglijing”**);** //存数据
24. echo $client**->**get**(**“name”**);** //取数据
25. **?>**
26. **:**wq

2）访问网站执行脚本(在任意主机访问网站服务器都可以)

1. **]**# curl http**:**//192.168.4.33/set\_data.php
2. **]**# curl http**:**//192.168.4.33/get\_data.php
3. **]**# curl http**:**//192.168.4.33/test3.php

3）命令行连接任意一台redis服务器查看数据(在任意主机连接redis服务器都可以)

1. **]**# redis**-**cli **-**c **-**h **192.168.4.51** **-**p **6379**
2. **192.168.4.51:6379>** keys **\***
3. **1)** i
4. **192.168.4.51:6379>** exit
5. **]**# redis**-**cli **-**c **-**h **192.168.4.52** **-**p **6379**
6. **192.168.4.52:6379>** keys **\***
7. **1)** j
8. **192.168.4.52:6379>** exit

**3 案例3：数据迁移**

**3.1 问题**

要求如下：

1. 配置从服务器
2. 配置第1台PXC服务器
3. 配置第2台PXC服务器
4. 配置第3台PXC服务器
5. 公共配置
6. 测试配置

**3.2 方案**

创建3台新的虚拟机，具体配置要求如图-2所示。



图-2

**3.3 步骤**

实现此案例需要按照如下步骤进行。

**步骤一：配置从服务器(把主机192.168.4.66 配置为192.168.4.11的从服务器)**

1）在192.168.4.66主机安装数据库服务软件并启动mysqld服务

1. **[**root@pxcnode66 **~]**# tar **-**xvf mysql**-5.7.17.**tar //解包
2. **./**mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64**.**rpm
3. **./**mysql**-**community**-**common**-5.7.17-1.**el7**.**x86\_64**.**rpm
4. **./**mysql**-**community**-**devel**-5.7.17-1.**el7**.**x86\_64**.**rpm
5. **./**mysql**-**community**-**embedded**-5.7.17-1.**el7**.**x86\_64**.**rpm
6. **./**mysql**-**community**-**embedded**-**compat**-5.7.17-1.**el7**.**x86\_64**.**rpm
7. **./**mysql**-**community**-**embedded**-**devel**-5.7.17-1.**el7**.**x86\_64**.**rpm
8. **./**mysql**-**community**-**libs**-5.7.17-1.**el7**.**x86\_64**.**rpm
9. **./**mysql**-**community**-**libs**-**compat**-5.7.17-1.**el7**.**x86\_64**.**rpm
10. **./**mysql**-**community**-**minimal**-**debuginfo**-5.7.17-1.**el7**.**x86\_64**.**rpm
11. **./**mysql**-**community**-**server**-5.7.17-1.**el7**.**x86\_64**.**rpm
12. **./**mysql**-**community**-**test**-5.7.17-1.**el7**.**x86\_64**.**rpm
13. **[**root@pxcnode66 **~]**#
14. **[**root@pxcnode66 **~]**# ls **\*.**rpm //查看软件列表
15. mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64**.**rpm
16. mysql**-**community**-**common**-5.7.17-1.**el7**.**x86\_64**.**rpm
17. mysql**-**community**-**devel**-5.7.17-1.**el7**.**x86\_64**.**rpm
18. mysql**-**community**-**embedded**-5.7.17-1.**el7**.**x86\_64**.**rpm
19. mysql**-**community**-**embedded**-**compat**-5.7.17-1.**el7**.**x86\_64**.**rpm
20. mysql**-**community**-**embedded**-**devel**-5.7.17-1.**el7**.**x86\_64**.**rpm
21. mysql**-**community**-**libs**-5.7.17-1.**el7**.**x86\_64**.**rpm
22. mysql**-**community**-**libs**-**compat**-5.7.17-1.**el7**.**x86\_64**.**rpm
23. mysql**-**community**-**minimal**-**debuginfo**-5.7.17-1.**el7**.**x86\_64**.**rpm
24. mysql**-**community**-**server**-5.7.17-1.**el7**.**x86\_64**.**rpm
25. mysql**-**community**-**test**-5.7.17-1.**el7**.**x86\_64**.**rpm
26. **[**root@pxcnode66 **~]**#
27. **[**root@pxcnode66 **~]**# yum **-**y install mysql**-**community**-\*.**rpm //安装软件
28. 已加载插件：fastestmirror
29. 正在检查 mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64**.**rpm**:** mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64
30. mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64**.**rpm 将被安装
31. ……
32. ……
33. 已安装**:**
34. mysql**-**community**-**client**.**x86\_64 **0:5.7.17-1.**el7 mysql**-**community**-**common**.**x86\_64 **0:5.7.17-1.**el7
35. mysql**-**community**-**devel**.**x86\_64 **0:5.7.17-1.**el7 mysql**-**community**-**embedded**.**x86\_64 **0:5.7.17-1.**el7
36. mysql**-**community**-**embedded**-**compat**.**x86\_64 **0:5.7.17-1.**el7 mysql**-**community**-**embedded**-**devel**.**x86\_64 **0:5.7.17-1.**el7
37. mysql**-**community**-**libs**.**x86\_64 **0:5.7.17-1.**el7 mysql**-**community**-**libs**-**compat**.**x86\_64 **0:5.7.17-1.**el7
38. mysql**-**community**-**minimal**-**debuginfo**.**x86\_64 **0:5.7.17-1.**el7 mysql**-**community**-**server**.**x86\_64 **0:5.7.17-1.**el7
39. mysql**-**community**-**test**.**x86\_64 **0:5.7.17-1.**el7
40. 作为依赖被安装**:**
41. perl**-**Data**-**Dumper**.**x86\_64 **0:2.145-3.**el7 perl**-**JSON**.**noarch **0:2.59-2.**el7
42. 完毕！
43. **[**root@pxcnode66 **~]**#
44. **[**root@pxcnode66 **~]**# systemctl start mysqld //启动服务
45. **[**root@pxcnode66 **~]**# ls **/var**/lib/mysql //查看数据库文件列表
46. auto**.**cnf client**-**cert**.**pem ibdata1 ibtmp1 mysql**.**sock**.**lock public\_key**.**pem sys
47. ca**-**key**.**pem client**-**key**.**pem ib\_logfile0 mysql performance\_schema server**-**cert**.**pem
48. ca**.**pem ib\_buffer\_pool ib\_logfile1 mysql**.**sock private\_key**.**pem server**-**key**.**pem
49. **[**root@pxcnode66 **~]**# systemctl enable mysqld //设置服务开机运行
50. **[**root@pxcnode66 **~]**# netstat **-**utnlp **|** grep **:3306** //查看端口
51. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **1531/**mysqld
52. **[**root@pxcnode66 **~]**#
53. **[**root@pxcnode66 **~]**# grep password **/var**/log/mysqld**.**log //查看初始密码
54. **2019-07-**05T01**:56:51.**895852Z **1** **[**Note**]** A temporary password is generated **for** root@localhost**:** bB0**\***uCmu**:.**Kj
55. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p'bB0\*uCmu:.Kj' //初始密码登录
56. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
57. Welcome to the MySQL monitor**.** Commands end **with** **;** or **\**g**.**
58. Your MySQL connection id is **3**
59. Server version**:** **5.7.17**
60. Copyright **(**c**)** **2000,** **2016,** Oracle and**/**or its affiliates**.** All rights reserved**.**
61. Oracle is a registered trademark of Oracle Corporation and**/**or its
62. affiliates**.** Other names may be trademarks of their respective
63. owners**.**
64. Type 'help;' or '**\h**' **for** help**.** Type '**\c**' to clear the current input statement**.**
65. mysql**>**
66. mysql**>** alter user root@"localhost" identified by "123qqq...A"**;**//修改登录密码
67. Query OK**,** **0** rows affected **(0.01** sec**)**
68. mysql**>**
69. mysql**>** exit //断开连接
70. Bye
71. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p123qqq**...**A //新密码登录
72. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
73. Welcome to the MySQL monitor**.** Commands end **with** **;** or **\**g**.**
74. Your MySQL connection id is **4**
75. Server version**:** **5.7.17** MySQL Community Server **(**GPL**)**
76. Copyright **(**c**)** **2000,** **2016,** Oracle and**/**or its affiliates**.** All rights reserved**.**
77. Oracle is a registered trademark of Oracle Corporation and**/**or its
78. affiliates**.** Other names may be trademarks of their respective
79. owners**.**
80. Type 'help;' or '**\h**' **for** help**.** Type '**\c**' to clear the current input statement**.**
81. mysql**>** show databases**;** //查看数据库
82. **+--------------------+**
83. **|** Database **|**
84. **+--------------------+**
85. **|** information\_schema **|**
86. **|** mysql **|**
87. **|** performance\_schema **|**
88. **|** sys **|**
89. **+--------------------+**
90. **4** rows **in** set **(0.00** sec**)**
91. Mysql**>**

2）修改服务主配置文件

1. **[**root@pxcnode66 **~]**# vim **/**etc**/**my**.**cnf
2. **[**mysqld**]**
3. server\_id**=66** //指定server\_id
4. **:**wq
5. **[**root@pxcnode66 **~]**# systemctl restart mysqld //重启服务
6. **[**root@pxcnode66 **~]**#

3）确保数据一致 （pxcnode66主机 使用mysql11主机的完全备份恢复数据确保数据一致 ）

1. **[**root@mysql11 **~]**# rpm **-**ivh libev**-4.15-1.**el6**.**rf**.**x86\_64**.**rpm //安装依赖软件
2. **[**root@mysql11 **~]**# yum **-**y install percona**-**xtrabackup**-24-2.4.7-1.**el7**.**x86\_64**.**rpm //安装在线热备软件
3. **[**root@mysql11 **~]**# innobackupex **--**user root **--**password 123qqq**...**A **--**slave**-**info **/**allbak **--**no**-**timestamp //备份所有数据，并记录备份数据对应的binlog日志名
4. **[**root@mysql11 **~]**# scp **-**r **/**allbak root@**192.168.4.66:**/root/ //把备份文件发送给pxcnode66主机
5. **[**root@pxcnode66 **~]**# rpm **-**ivh libev**-4.15-1.**el6**.**rf**.**x86\_64**.**rpm //安装依赖软件
6. **[**root@pxcnode66 **~]**# yum **-**y install percona**-**xtrabackup**-24-2.4.13-1.**el7**.**x86\_64**.**rpm //安装在线热备软件
7. **[**root@pxcnode66 **~]**# systemctl stop mysqld //停止服务
8. **[**root@pxcnode66 **~]**# rm **-**rf **/var**/lib/mysql/\* //清空数据库目录
9. [[root@pxcnode66](mailto:root@pxcnode66) ~]# innobackupex --apply-log /root/allbak/ //准备恢复数据
10. [[root@pxcnode66](mailto:root@pxcnode66) ~]# innobackupex --copy-back /root/allbak/ //恢复数据
11. [[root@pxcnode66](mailto:root@pxcnode66) ~]# chown -R mysql:mysql /var/lib/mysql //修改所有者
12. [[root@pxcnode66](mailto:root@pxcnode66) ~]# systemctl start mysqld //启动服务

4）指定主服务器

1. **[**root@pxcnode66 **~]**# cat **/**root**/**allbak**/**xtrabackup\_info **|** grep master11 //查binlog日志
2. binlog\_pos **=** filename 'master11.000001'**,** position '7700'
3. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p123qqq**...**A //管理员登录指定主服务器信息
4. mysql**>** change master to
5. master\_host**=**"192.168.4.11"**,** //主服务器ip地址
6. master\_user**=**"repluser"**,** //主服务器授权用户
7. master\_password**=**"123qqq...A"**,** //授权密码
8. master\_log\_file**=**"master11.000001"**,** //binlog日志名
9. master\_log\_pos**=7700;** //日志偏移量
10. Query OK**,** **0** rows affected**,** **2** warnings **(0.31** sec**)**
11. mysql**>** start slave **;** //启动slave 程序
12. Query OK**,** **0** rows affected **(0.09** sec**)**
13. mysql**>** exit //断开连接
14. Bye
15. **[**root@pxcnode66 **~]**#
16. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p123qqq**...**A **-**e "show slave status**\G**" **|** grep **-**i **192.168.4.11** //查看主服务器地址
17. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
18. Master\_Host**:** **192.168.4.11** //主服务器ip地址
19. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p123qqq**...**A **-**e "show slave status**\G**" **|** grep **-**i "yes" //查看状态信息
20. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
21. Slave\_IO\_Running**:** Yes //IO线程正常
22. Slave\_SQL\_Running**:** Yes //SQL线程正常
23. **[**root@pxcnode66 **~]**#

**步骤二：配置第1台PXC服务器(192.168.4.66)**

1）停止mysqld服务、卸载mysqld服务软件

1. **[**root@pxcnode66 **~]**# systemctl stop mysqld //停止服务
2. **[**root@pxnode66 **~]**# rpm **-**qa **|** grep **-**i mysql //查看安装的MySQL服务软件
3. mysql**-**community**-**server**-5.7.17-1.**el7**.**x86\_64
4. mysql**-**community**-**embedded**-**compat**-5.7.17-1.**el7**.**x86\_64
5. mysql**-**community**-**common**-5.7.17-1.**el7**.**x86\_64
6. mysql**-**community**-**client**-5.7.17-1.**el7**.**x86\_64
7. mysql**-**community**-**devel**-5.7.17-1.**el7**.**x86\_64
8. mysql**-**community**-**test**-5.7.17-1.**el7**.**x86\_64
9. mysql**-**community**-**libs**-**compat**-5.7.17-1.**el7**.**x86\_64
10. mysql**-**community**-**minimal**-**debuginfo**-5.7.17-1.**el7**.**x86\_64
11. perl**-**DBD**-**MySQL**-4.023-6.**el7**.**x86\_64
12. mysql**-**community**-**libs**-5.7.17-1.**el7**.**x86\_64
13. mysql**-**community**-**embedded**-5.7.17-1.**el7**.**x86\_64
14. mysql**-**community**-**embedded**-**devel**-5.7.17-1.**el7**.**x86\_64
15. **[**root@pxcnode66 **~]**#
16. **[**root@pxcnode66 **~]**# rpm **-**e **--**nodeps mysql**-**community**-**server mysql**-**community**-**embedded**-**compat mysql**-**community**-**common mysql**-**community**-**client mysql**-**community**-**devel **\**
17. **>** mysql**-**community**-**test mysql**-**community**-**libs**-**compat mysql**-**community**-**minimal**-**debuginfo mysql**-**community**-**libs mysql**-**community**-**embedded mysql**-**community**-**embedded**-**devel //卸载所有的MySQL服务软件
18. 警告：/etc/my**.**cnf 已另存为 /etc/my**.**cnf**.**rpmsave
19. **[**root@pxcnode66 **~]**#

2）安装PXC软件、修改配置文件、启动mysql服务

1. **[**root@pxcnode66 **~]**# cd PXC //进软件目录
2. **[**root@pxcnode66 PXC**]**# rpm **-**ivh qpress**-1.1-14.11.**x86\_64**.**rpm //安装依赖
3. 警告：qpress**-1.1-14.11.**x86\_64**.**rpm**:** 头V3 DSA**/**SHA1 Signature**,** 密钥 ID 6cb7b81f**:** NOKEY
4. 准备中**...** ################################# **[100%]**
5. 正在升级**/**安装**...**
6. **1:**qpress**-1.1-14.11** ################################# **[100%]**
7. **[**root@pxcnode66 PXC**]**# rpm -ivh libev-4.15-1.el6.rf.x86\_64.rpm
8. yum -y install percona-xtrabackup-24-2.4.13-1.el7.x86\_64.rpm
9. **[**root@pxcnode66 PXC**]**# tar **-**xvf Percona**-**XtraDB**-**Cluster**-5.7.25-31.35-**r463**-**el7**-**x86\_64**-**bundle**.**tar //解压PXC软件包
10. Percona**-**XtraDB**-**Cluster**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
11. Percona**-**XtraDB**-**Cluster**-57-**debuginfo**-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
12. Percona**-**XtraDB**-**Cluster**-**client**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
13. Percona**-**XtraDB**-**Cluster**-**devel**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
14. Percona**-**XtraDB**-**Cluster**-**full**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
15. Percona**-**XtraDB**-**Cluster**-**garbd**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
16. Percona**-**XtraDB**-**Cluster**-**server**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
17. Percona**-**XtraDB**-**Cluster**-**shared**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
18. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
19. Percona**-**XtraDB**-**Cluster**-**test**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
20. **[**root@pxcnode66 PXC**]**#
21. **[**root@pxcnode66 PXC**]**# yum **-**y install Percona**-**XtraDB**-**Cluster**-\*.**rpm //安装软件
22. 已安装**:**
23. Percona**-**XtraDB**-**Cluster**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-57-**debuginfo**.**x86\_64 **0:5.7.25-31.35.1.**el7
24. Percona**-**XtraDB**-**Cluster**-**client**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**devel**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
25. Percona**-**XtraDB**-**Cluster**-**full**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**garbd**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
26. Percona**-**XtraDB**-**Cluster**-**server**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**shared**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
27. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**test**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
28. 作为依赖被安装**:**
29. keyutils**-**libs**-**devel**.**x86\_64 **0:1.5.8-3.**el7 krb5**-**devel**.**x86\_64 **0:1.15.1-18.**el7 libcom\_err**-**devel**.**x86\_64 **0:1.42.9-11.**el7 libkadm5**.**x86\_64 **0:1.15.1-18.**el7
30. libselinux**-**devel**.**x86\_64 **0:2.5-12.**el7 libsepol**-**devel**.**x86\_64 **0:2.5-8.1.**el7 libverto**-**devel**.**x86\_64 **0:0.2.5-4.**el7 openssl**-**devel**.**x86\_64 **1:1.0.**2k**-12.**el7
31. pcre**-**devel**.**x86\_64 **0:8.32-17.**el7 perl**-**Env**.**noarch **0:1.04-2.**el7 perl**-**Test**-**Harness**.**noarch **0:3.28-3.**el7 perl**-**Test**-**Simple**.**noarch **0:0.98-243.**el7
32. zlib**-**devel**.**x86\_64 **0:1.2.7-17.**el7
33. 完毕！
34. **[**root@pxcnode66 PXC**]**#
35. **[**root@pxcnode66 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**mysqld**.**cnf //修改数据库服务配置文件
36. **[**mysqld**]**
37. server**-**id**=66** //指定server\_id
38. **:**wq
39. **[**root@pxcnode66 PXC**]**#
40. **[**root@pxcnode66 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf //修改集群服务配置文件
41. wsrep\_cluster\_address**=**gcomm**:**//     不需要写ip地址
42. wsrep\_node\_address**=192.168.4.66** //指定本机Ip地址
43. wsrep\_cluster\_name**=**pxc**-**cluster //指定集群名称（另外2台的集群名称要于此相同）
44. wsrep\_node\_name**=**pxcnode66 //指定本机主机名
45. wsrep\_sst\_auth**=**"sstuser:123qqq...A" //数据全量同步授权用户及密码
46. **:**wq
47. **[**root@pxcnode66 PXC**]**#
48. **[**root@pxcnode66 PXC**]**# systemctl start mysql //启动服务
49. **[**root@pxcnode66 PXC**]**# netstat **-**utnlp **|** grep **:3306** //查看MySQL服务端口
50. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **24482/**mysqld
51. **[**root@pxcnode66 PXC**]**# netstat **-**utnlp **|** grep **:4567** //查看集群通信端口
52. tcp **0** **0** **0.0.0.0:4567** **0.0.0.0:\*** LISTEN **24472/**mysqld
53. **[**root@pxcnode66 PXC**]**# systemctl enable mysql //设置服务开机运行
54. **[**root@pxcnode66 PXC**]**#

3）数据库管理员登录、用户授权、查看状态信息

1. **[**root@pxcnode66 PXC**]**# mysql **-**uroot **-**p123qqq**...**A //管理员登录
2. mysql**>** grant all on **\*.\*** to sstuser@"localhost" identified by "123qqq...A"**;** //用户授权
3. Query OK**,** **0** rows affected**,** **1** warning **(0.10** sec**)**
4. mysql**>** show status like "%wsrep%"**;** //查看集群状态信息
5. **|** wsrep\_incoming\_addresses **|** **192.168.4.66:3306** **|**
6. **|** wsrep\_cluster\_weight **|** **1** **|**
7. **|** wsrep\_desync\_count **|** **0** **|**
8. **|** wsrep\_evs\_delayed **|** **|**
9. **|** wsrep\_evs\_evict\_list **|** **|**
10. **|** wsrep\_evs\_repl\_latency **|** **0/0/0/0/0** **|**
11. **|** wsrep\_evs\_state **|** OPERATIONAL **|**
12. **|** wsrep\_gcomm\_uuid **|** 73809cc5**-**cf00**-11e9-**aac3**-**b223959fecdf **|**
13. **|** wsrep\_cluster\_conf\_id **|** **1** **|**
14. **|** wsrep\_cluster\_size **|** **1** **|**
15. **|** wsrep\_cluster\_state\_uuid **|** 73848b1a**-**cf00**-11e9-9058-**36c1ac1e1359 **|**
16. **|** wsrep\_cluster\_status **|** Primary **|**
17. **|** wsrep\_connected **|** ON **|**
18. **|** wsrep\_local\_bf\_aborts **|** **0** **|**
19. **|** wsrep\_local\_index **|** **0** **|**
20. **|** wsrep\_provider\_name **|** Galera **|**
21. **|** wsrep\_provider\_vendor **|** Codership Oy **<**info@codership**.**com**>** **|**
22. **|** wsrep\_provider\_version **|** **3.35(**rddf9876**)** **|**
23. **|** wsrep\_ready **|** ON **|**
24. **+----------------------------------+--------------------------------------+**
25. **71** rows **in** set **(0.00** sec**)**
26. mysql**>** exit **;**
27. **[**root@pxcnode66 **~]**#
28. **[**root@pxcnode66 **~]**# mysql **-**uroot **-**p123qqq**...**A **-**e "show slave status**\G**" **|** grep **-**i "yes" //查看状态信息依然是192.168.4.11的从服务器
29. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
30. Slave\_IO\_Running**:** Yes //IO线程正常
31. Slave\_SQL\_Running**:** Yes //SQL线程正常
32. **[**root@pxcnode66 **~]**#

**步骤三：配置第2台PXC服务器(192.168.4.10)**

1）安装PXC软件

1. **[**root@pxcnode10 **~]**# cd PXC //进软件目录
2. **[**root@pxcnode10 PXC**]**# rpm **-**ivh qpress**-1.1-14.11.**x86\_64**.**rpm //安装依赖
3. 警告：qpress**-1.1-14.11.**x86\_64**.**rpm**:** 头V3 DSA**/**SHA1 Signature**,** 密钥 ID 6cb7b81f**:** NOKEY
4. 准备中**...** ################################# **[100%]**
5. 正在升级**/**安装**...**
6. **1:**qpress**-1.1-14.11** ################################# **[100%]**
7. **[**root@pxcnode10 PXC**]**#
8. **[**root@pxcnode10 PXC**]**# tar **-**xvf Percona**-**XtraDB**-**Cluster**-5.7.25-31.35-**r463**-**el7**-**x86\_64**-**bundle**.**tar //解压PXC软件包
9. Percona**-**XtraDB**-**Cluster**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
10. Percona**-**XtraDB**-**Cluster**-57-**debuginfo**-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
11. Percona**-**XtraDB**-**Cluster**-**client**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
12. Percona**-**XtraDB**-**Cluster**-**devel**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
13. Percona**-**XtraDB**-**Cluster**-**full**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
14. Percona**-**XtraDB**-**Cluster**-**garbd**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
15. Percona**-**XtraDB**-**Cluster**-**server**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
16. Percona**-**XtraDB**-**Cluster**-**shared**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
17. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
18. Percona**-**XtraDB**-**Cluster**-**test**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
19. **[**root@pxcnode10 PXC**]**#
20. **[**root@pxcnode10 PXC**]**# yum **-**y install Percona**-**XtraDB**-**Cluster**-\*.**rpm //安装软件
21. 已安装**:**
22. Percona**-**XtraDB**-**Cluster**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-57-**debuginfo**.**x86\_64 **0:5.7.25-31.35.1.**el7
23. Percona**-**XtraDB**-**Cluster**-**client**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**devel**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
24. Percona**-**XtraDB**-**Cluster**-**full**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**garbd**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
25. Percona**-**XtraDB**-**Cluster**-**server**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**shared**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
26. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**test**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
27. 作为依赖被安装**:**
28. keyutils**-**libs**-**devel**.**x86\_64 **0:1.5.8-3.**el7 krb5**-**devel**.**x86\_64 **0:1.15.1-18.**el7 libcom\_err**-**devel**.**x86\_64 **0:1.42.9-11.**el7 libkadm5**.**x86\_64 **0:1.15.1-18.**el7
29. libselinux**-**devel**.**x86\_64 **0:2.5-12.**el7 libsepol**-**devel**.**x86\_64 **0:2.5-8.1.**el7 libverto**-**devel**.**x86\_64 **0:0.2.5-4.**el7 openssl**-**devel**.**x86\_64 **1:1.0.**2k**-12.**el7
30. pcre**-**devel**.**x86\_64 **0:8.32-17.**el7 perl**-**Env**.**noarch **0:1.04-2.**el7 perl**-**Test**-**Harness**.**noarch **0:3.28-3.**el7 perl**-**Test**-**Simple**.**noarch **0:0.98-243.**el7
31. zlib**-**devel**.**x86\_64 **0:1.2.7-17.**el7
32. 完毕！
33. **[**root@pxcnode10 PXC**]**#

2）修改配置文件

1. **[**root@pxcnode10 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**mysqld**.**cnf //修改数据库服务配置
2. **[**mysqld**]**
3. server**-**id**=10** //指定server\_id
4. **:**wq
5. **[**root@pxcnode10 PXC**]**#
6. **[**root@pxcnode10 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf //修改集群服务配置文件
7. wsrep\_cluster\_address**=**gcomm**:**//192.168.4.66,192.168.4.10     //集群成员列表
8. wsrep\_node\_address**=192.168.4.10** //指定本机Ip地址
9. wsrep\_cluster\_name**=**pxc**-**cluster //指定集群名称（另外2台的集群名称要于此相同）
10. wsrep\_node\_name**=**pxcnode10 //指定本机主机名
11. wsrep\_sst\_auth**=**"sstuser:123qqq...A" //数据全量同步授权用户及密码
12. **:**wq
13. **[**root@pxcnode10 PXC**]**#

3）启动mysql服务

1. **[**root@pxcnode10 PXC**]**# systemctl start mysql //启动服务
2. **[**root@pxcnode10 PXC**]**# systemctl enable mysql //服务开机运行
3. **[**root@pxcnode10 PXC**]**# netstat **-**utnlp **|** grep **:3306** //查看MySQL服务端口
4. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **24482/**mysqld
5. **[**root@pxcnode10 PXC**]**# netstat **-**utnlp **|** grep **:4567** //查看集群端口
6. tcp6 **0** **0** **:::4567** **:::\*** LISTEN **24489/**mysqld
7. **[**root@pxcnode10 PXC**]**#
8. mysql**>** show status like "%wsrep%"**;** //查看集群状态信息
9. **|** wsrep\_incoming\_addresses **|** **192.168.4.66:3306**，**192.168.4.10:3306|**
10. **|** wsrep\_cluster\_weight **|** **1** **|**
11. **|** wsrep\_desync\_count **|** **0** **|**
12. **|** wsrep\_evs\_delayed **|** **|**
13. **|** wsrep\_evs\_evict\_list **|** **|**
14. **|** wsrep\_evs\_repl\_latency **|** **0/0/0/0/0** **|**
15. **|** wsrep\_evs\_state **|** OPERATIONAL **|**
16. **|** wsrep\_gcomm\_uuid **|** 73809cc5**-**cf00**-11e9-**aac3**-**b223959fecdf **|**
17. **|** wsrep\_cluster\_conf\_id **|** **1** **|**
18. **|** wsrep\_cluster\_size **|** **1** **|**
19. **|** wsrep\_cluster\_state\_uuid **|** 73848b1a**-**cf00**-11e9-9058-**36c1ac1e1359 **|**
20. **|** wsrep\_cluster\_status **|** Primary **|**
21. **|** wsrep\_connected **|** ON **|**
22. **|** wsrep\_local\_bf\_aborts **|** **0** **|**
23. **|** wsrep\_local\_index **|** **0** **|**
24. **|** wsrep\_provider\_name **|** Galera **|**
25. **|** wsrep\_provider\_vendor **|** Codership Oy **<**info@codership**.**com**>** **|**
26. **|** wsrep\_provider\_version **|** **3.35(**rddf9876**)** **|**
27. **|** wsrep\_ready **|** ON **|**
28. **+----------------------------------+--------------------------------------+**
29. **71** rows **in** set **(0.00** sec**)**
30. mysql**>** exit **;**
31. **[**root@pxcnode10 **~]**#

**步骤四：配置第3台PXC服务器(192.168.4.88)**

1）安装PXC软件

1. **[**root@pxcnode88 **~]**# cd PXC //进软件目录
2. **[**root@pxcnode88 PXC**]**# rpm **-**ivh qpress**-1.1-14.11.**x86\_64**.**rpm //安装依赖
3. 警告：qpress**-1.1-14.11.**x86\_64**.**rpm**:** 头V3 DSA**/**SHA1 Signature**,** 密钥 ID 6cb7b81f**:** NOKEY
4. 准备中**...** ################################# **[100%]**
5. 正在升级**/**安装**...**
6. **1:**qpress**-1.1-14.11** ################################# **[100%]**
7. **[**root@pxcnode88 PXC**]**#
8. **[**root@pxcnode88 PXC**]**# tar **-**xvf Percona**-**XtraDB**-**Cluster**-5.7.25-31.35-**r463**-**el7**-**x86\_64**-**bundle**.**tar //解压PXC软件包
9. Percona**-**XtraDB**-**Cluster**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
10. Percona**-**XtraDB**-**Cluster**-57-**debuginfo**-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
11. Percona**-**XtraDB**-**Cluster**-**client**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
12. Percona**-**XtraDB**-**Cluster**-**devel**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
13. Percona**-**XtraDB**-**Cluster**-**full**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
14. Percona**-**XtraDB**-**Cluster**-**garbd**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
15. Percona**-**XtraDB**-**Cluster**-**server**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
16. Percona**-**XtraDB**-**Cluster**-**shared**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
17. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
18. Percona**-**XtraDB**-**Cluster**-**test**-57-5.7.25-31.35.1.**el7**.**x86\_64**.**rpm
19. **[**root@pxcnode88 PXC**]**#
20. **[**root@pxcnode88 PXC**]**# yum **-**y install Percona**-**XtraDB**-**Cluster**-\*.**rpm //安装软件
21. 已安装**:**
22. Percona**-**XtraDB**-**Cluster**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-57-**debuginfo**.**x86\_64 **0:5.7.25-31.35.1.**el7
23. Percona**-**XtraDB**-**Cluster**-**client**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**devel**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
24. Percona**-**XtraDB**-**Cluster**-**full**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**garbd**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
25. Percona**-**XtraDB**-**Cluster**-**server**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**shared**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
26. Percona**-**XtraDB**-**Cluster**-**shared**-**compat**-57.**x86\_64 **0:5.7.25-31.35.1.**el7 Percona**-**XtraDB**-**Cluster**-**test**-57.**x86\_64 **0:5.7.25-31.35.1.**el7
27. 作为依赖被安装**:**
28. keyutils**-**libs**-**devel**.**x86\_64 **0:1.5.8-3.**el7 krb5**-**devel**.**x86\_64 **0:1.15.1-18.**el7 libcom\_err**-**devel**.**x86\_64 **0:1.42.9-11.**el7 libkadm5**.**x86\_64 **0:1.15.1-18.**el7
29. libselinux**-**devel**.**x86\_64 **0:2.5-12.**el7 libsepol**-**devel**.**x86\_64 **0:2.5-8.1.**el7 libverto**-**devel**.**x86\_64 **0:0.2.5-4.**el7 openssl**-**devel**.**x86\_64 **1:1.0.**2k**-12.**el7
30. pcre**-**devel**.**x86\_64 **0:8.32-17.**el7 perl**-**Env**.**noarch **0:1.04-2.**el7 perl**-**Test**-**Harness**.**noarch **0:3.28-3.**el7 perl**-**Test**-**Simple**.**noarch **0:0.98-243.**el7
31. zlib**-**devel**.**x86\_64 **0:1.2.7-17.**el7
32. 完毕！
33. **[**root@pxcnode88 PXC**]**#

2）修改配置文件

1. **[**root@pxcnode88 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**mysqld**.**cnf //修改数据库服务配置
2. **[**mysqld**]**
3. server**-**id**=88** //指定server\_id
4. **:**wq
5. **[**root@pxcnode88 PXC**]**#
6. **[**root@pxcnode88 PXC**]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf //修改集群服务配置文件
7. wsrep\_cluster\_address**=**gcomm**:**//192.168.4.66     //集群成员ip地址
8. wsrep\_node\_address**=192.168.4.88** //指定本机Ip地址
9. wsrep\_cluster\_name**=**pxc**-**cluster //指定集群名称（另外2台的集群名称要于此相同）
10. wsrep\_node\_name**=**pxcnode88 //指定本机主机名
11. wsrep\_sst\_auth**=**"sstuser:123qqq...A" //数据全量同步授权用户及密码
12. **:**wq
13. **[**root@pxcnode88 PXC**]**#

3）启动mysql服务

1. **[**root@pxcnode88 PXC**]**# systemctl start mysql //启动服务
2. **[**root@pxcnode88 PXC**]**# systemctl enable mysql //服务开机运行
3. **[**root@pxcnode88 PXC**]**# netstat **-**utnlp **|** grep **:3306** //查看MySQL服务端口
4. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **24472/**mysqld
5. **[**root@pxcnode88 PXC**]**# netstat **-**utnlp **|** grep **:4567** //查看集群端口
6. tcp6 **0** **0** **:::4567** **:::\*** LISTEN **24486/**mysqld
7. **[**root@pxcnode88 PXC**]**#
8. #

**步骤五：公共配置(192.168.4.88、192.168.4.10、192.168.4.66)**

1）修改192.168.4.88主机的集群配置文件

1. **[**root@pxcnode88 **~]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf
2. wsrep\_cluster\_address**=**gcomm**:**//192.168.4.66,192.168.4.10,192.168.4.88 //指定集群成员列表
3. **:**wq
4. **[**root@pxcnode88 **~]**#

2）修改192.168.4.10主机的集群配置文件

1. **[**root@pxcnode10 **~]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf
2. wsrep\_cluster\_address**=**gcomm**:**//192.168.4.66,192.168.4.88,192.168.4.10 //指定集群成员列表
3. **:**wq
4. **[**root@pxcnode10 **~]**#

3）修改192.168.4.66主机的集群配置文件

1. **[**root@pxcnode66 **~]**# vim **/**etc**/**percona**-**xtradb**-**cluster**.**conf**.**d**/**wsrep**.**cnf
2. wsrep\_cluster\_address**=**gcomm**:**//192.168.4.66,192.168.4.88,192.168.4.10 //指定集群成员列表
3. **:**wq
4. **[**root@pxcnode66 **~]**#

**步骤6：测试配置:在网站服务器连接PXC集群主机存取数据：**

1）存储数据：在网站服务器连接PXC集群主机存储数据

1. **[**root@web33 **~]**# mysql **-**h192**.168.4.66** **-**uyaya99 **-**p123qqq…A gamedb
2. Mysql**>** insert into gamedb**.**user values **(**“pljA”**);**
3. Mysql**>** exit **;**
4. **[**root@web33 **~]**# mysql **-**h192**.168.4.10** **-**uyaya99 **-**p123qqq…A gamedb
5. Mysql**>** insert into gamedb**.**user values **(**“pljB”**);**
6. Mysql**>** exit **;**
7. **[**root@web33 **~]**# mysql **-**h192**.168.4.88** **-**uyaya99 **-**p123qqq…A gamedb
8. Mysql**>** insert into gamedb**.**user values **(**“pljC”**);**
9. Mysql**>** exit **;**

2）查询数据：在网站服务器连接PXC集群主机查询数据

1. **[**root@web44 **~]**# mysql **-**h192**.168.4.66** **-**uyaya99 **-**p123qqq…A gamedb
2. Mysql**>** select **\*** from gamedb**.**user**;**
3. **+------+**
4. **|** name**|**
5. **+------+**
6. **|** pljA**|**
7. **|** pljB**|**
8. **|** pljC**|**
9. **+------+**
10. Mysql**>** exit **;**
11. **[**root@web44 **~]**# mysql **-**h192**.168.4.10** **-**uyaya99 **-**p123qqq…A gamedb
12. Mysql**>** select **\*** from gamedb**.**user**;**
13. **+------+**
14. **|** name**|**
15. **+------+**
16. **|** pljA**|**
17. **|** pljB**|**
18. **|** pljC**|**
19. **+------+**
20. Mysql**>** exit **;**Mysql**>** exit **;**
21. **[**root@web44 **~]**# mysql **-**h192**.168.4.88** **-**uyaya99 **-**p123qqq…A gamedb
22. Mysql**>** select **\*** from gamedb**.**user**;**
23. **+------+**
24. **|** name**|**
25. **+------+**
26. **|** pljA**|**
27. **|** pljB**|**
28. **|** pljC**|**
29. **+------+**
30. Mysql**>** exit **;**Mysql**>** exit **;**

**4 案例4：部署LB集群**

**4.1 问题**

配置步骤如下：

1. 安装软件
2. 修改配置文件
3. 启动服务
4. 测试配置

**4.2 方案**

拓扑结构如图-3所示。创建1台新的虚拟机，配置ip地址 eth0 192.168.4.99 主机名 haproxy99 ；运行haproxy服务 接受客户端访问数据库的连接请求，把请求平均分发给3台PXC集群主机。



图-3

**4.3 步骤**

实现此案例需要按照如下步骤进行。

**步骤一：安装软件: 在haproxy99主机上安装haproxy软件**

1. **[**root@haproxy99 **~]**# yum **-**y install haproxy
2. ……
3. Running transaction
4. 正在安装 **:** haproxy**-1.5.18-7.**el7**.**x86\_64 **1/1**
5. 验证中 **:** haproxy**-1.5.18-7.**el7**.**x86\_64 **1/1**
6. 已安装**:**
7. haproxy**.**x86\_64 **0:1.5.18-7.**el7
8. 完毕！
9. **[**root@haproxy99 **~]**#

步骤二：修改配置文件

1. **[**root@haproxy99 **~]**# vim **/**etc**/**haproxy**/**haproxy**.**cfg
2. Global //全局配置默认即可
3. log **127.0.0.1** local2
4. chroot **/var**/lib/haproxy
5. pidfile **/var**/run/haproxy**.**pid
6. maxconn **4000**
7. user haproxy
8. group haproxy
9. daemon
10. stats socket **/var**/lib/haproxy**/**stats
11. defaults //默认配置(不需要修改)
12. mode http
13. log global
14. option httplog
15. option dontlognull
16. option http**-**server**-**close
17. option forwardfor except **127.0.0.0/8**
18. option redispatch
19. retries **3**
20. timeout http**-**request 10s
21. timeout queue 1m
22. timeout connect 10s
23. timeout client 1m
24. timeout server 1m
25. timeout http**-**keep**-**alive 10s
26. timeout check 10s
27. maxconn **3000**
28. listen status //定义监控页面
29. mode http //模式为http
30. bind **\*:80** //端口80
31. stats enable //启用配置
32. stats uri **/**admin //访问目录名
33. stats auth admin**:**admin //登录用户与密码
34. listen mysql\_3306 **\*:3306** //定义haproxy服务名称与端口号
35. mode tcp //mysql服务 得使用 tcp 协议
36. option tcpka //使用长连接
37. balance roundrobin //调度算法
38. server mysql\_01 **192.168.4.66:3306** check //第1台数据库服务器
39. server mysql\_02 **192.168.4.10:3306** check //第2台数据库服务器
40. server mysql\_03 **192.168.4.88:3306** check //第3台数据库服务器
41. **:**wq
42. **[**root@haproxy99 haproxy**]**#

**步骤三：启动服务**

1. **[**root@haproxy99 **~]**# systemctl start haproxy //启动服务
2. **[**root@haproxy99 **~]**# systemctl enable haproxy //开机运行
3. Created symlink from **/**etc**/**systemd**/**system**/**multi**-**user**.**target**.**wants**/**haproxy**.**service to **/**usr**/**lib**/**systemd**/**system**/**haproxy**.**service**.**
4. **[**root@haproxy99 **~]**# netstat **-**utnlp **|** grep **:3306** //查看端口
5. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **29768/**haproxy
6. **[**root@haproxy99 **~]**#

**步骤四：测试配置：在网站服务器连接haproxy99主机访问数据**

1. **[**root@web33 **~]**# mysql –h192**.168.4.99** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
2. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
3. **+------------+**
4. **|** @@hostname **|**
5. **+------------+**
6. **|** pxcnode66 **|** //第1次连接
7. **+------------+**
8. **[**root@web33 **~]**#
9. **[**root@web33 **~]**# mysql –h192**.168.4.99** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
10. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
11. **+------------+**
12. **|** @@hostname **|**
13. **+------------+**
14. **|** pxcnode10 **|** //第2次连接
15. **+------------+**
16. **[**root@web33 **~]**#
17. **[**root@web33 **~]**# mysql –h192**.168.4.99** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
18. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
19. **+------------+**
20. **|** @@hostname **|**
21. **+------------+**
22. **|** pxcnode88 **|** //第3次连接
23. **+------------+**
24. **[**root@web33 **~]**#

**5 案例5：部署HA集群**

**5.1 问题**

具体配置如下：

1. 准备备用调度器主机
2. 安装软件
3. 修改配置文件
4. 启动服务
5. 测试配置

**5.2 方案**

拓扑结构如图-4所示。创建1台新的虚拟机，在eth0 接口配置ip地址为192.168.4.98做备用调度器。

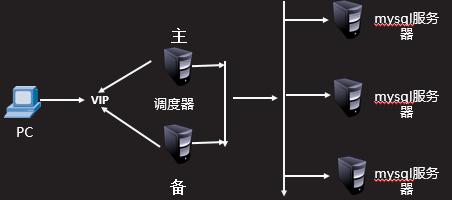


图-4

**5.3 步骤**

实现此案例需要按照如下步骤进行。

**步骤一：准备备用调度器主机**

1）克隆好虚拟机后配置ip地址、设置主机名

1. **[**root@localhost **~]**# setip
2. Network name**(**eth0**/**eth1**/**eth2**/**eth3**):**eth0
3. Set IP**(**IP**/24):192.168.4.98/24**
4. Set Gateway**(default** none**):**
5. **192.168.4.98/24**
6. 连接已成功激活（D**-**Bus 活动路径：/org/freedesktop**/**NetworkManager**/**ActiveConnection**/7**）
7. **[**root@localhost **~]**# hostname haproxy98
8. **[**root@localhost **~]**# ifconfig eth0 **|** head **-2**
9. Eth0**:** flags**=4163<**UP**,**BROADCAST**,**RUNNING**,**MULTICAST**>** mtu **1500**
10. inet **192.168.4.98** netmask **255.255.255.0** broadcast **192.168.2.255** **[**root@localhost **~]**#
11. **[**root@haproxy98 **~]**# yum **-**y install haproxy
12. 正在安装 **:** haproxy**-1.5.18-7.**el7**.**x86\_64 **1/1**
13. 验证中 **:** haproxy**-1.5.18-7.**el7**.**x86\_64 **1/1**
14. 已安装**:**
15. haproxy**.**x86\_64 **0:1.5.18-7.**el7
16. 完毕！
17. **[**root@haproxy98 **~]**#

3）修改haproxy98主机haproxy.conf文件（直接拷贝haproxy99主机的配置文件也可以）

1. **[**root@haproxy98 **~]**# scp root@**192.168.4.99:**/etc/haproxy**/**haproxy**.**cfg **/**etc**/**haproxy**/**
2. Warning**:** Permanently added '192.168.4.99' **(**ECDSA**)** to the list of known hosts**.**
3. root@**192.168.4.99**'s password: //输入haproxy99主机的密码
4. haproxy.cfg 100% 3142 6.0MB/s 00:00
5. [root@haproxy98 ~]#

4）启动haproxy服务

1. **[**root@haproxy98 **~]**# systemctl start haproxy //启动服务
2. **[**root@haproxy98 **~]**# systemctl enable haproxy //服务开机运行
3. Created symlink from **/**etc**/**systemd**/**system**/**multi**-**user**.**target**.**wants**/**haproxy**.**service to **/**usr**/**lib**/**systemd**/**system**/**haproxy**.**service**.**
4. **[**root@haproxy98 **~]**# netstat **-**utnlp **|** grep **:3306** //查看端口
5. tcp6 **0** **0** **:::3306** **:::\*** LISTEN **29768/**haproxy

**步骤二：安装软件**

1）在haproxy99主机安装keepalived软件

1. **[**root@haproxy99 **~]**# yum **-**y install keepalived**.**x86\_64
2. 已安装**:**
3. keepalived**.**x86\_64 **0:1.3.5-6.**el7
4. 作为依赖被安装**:**
5. lm\_sensors**-**libs**.**x86\_64 **0:3.4.0-4.**20160601gitf9185e5**.**el7 net**-**snmp**-**agent**-**libs**.**x86\_64 **1:5.7.2-32.**el7
6. net**-**snmp**-**libs**.**x86\_64 **1:5.7.2-32.**el7
7. **[**root@haproxy99 **~]**#

2）在haproxy98主机安装keepalived软件

1. **[**root@haproxy98 **~]**# yum **-**y install keepalived**.**x86\_64
2. 已安装**:**
3. keepalived**.**x86\_64 **0:1.3.5-6.**el7
4. 作为依赖被安装**:**
5. lm\_sensors**-**libs**.**x86\_64 **0:3.4.0-4.**20160601gitf9185e5**.**el7 net**-**snmp**-**agent**-**libs**.**x86\_64 **1:5.7.2-32.**el7
6. net**-**snmp**-**libs**.**x86\_64 **1:5.7.2-32.**el7
7. **[**root@haproxy98 **~]**#
8. 完毕！
9. **[**root@haproxy98 **~]**#

**步骤三：修改配置文件**

1）修改haproxy99主机的配置文件

1. **[**root@haproxy99 **~]**# sed **-**i '36,$d' /etc/keepalived**/**keepalived**.**conf //删除无关的配置行
2. **[**root@haproxy99 **~]**#vim **/**etc**/**keepalived**/**keepalived**.**conf
3. global\_defs **{**
4. ……
5. ……
6. vrrp\_iptables //禁止iptables
7. **}**
8. vrrp\_instance VI\_1 **{**
9. state MASTER //主服务器标识
10. **interface** eth0
11. virtual\_router\_id **51**
12. priority **150** //haproxy99 主机做主服务器，优先级要比 haproxy88主机高
13. advert\_int **1**
14. authentication **{**
15. auth\_type PASS //主备服务器连接方式
16. auth\_pass **1111** //连接密码
17. **}**
18. virtual\_ipaddress **{**
19. **192.168.4.100** //定义vip地址
20. **}**
21. **}**
22. **[**root@haproxy99 **~]**# scp **/**etc**/**keepalived**/**keepalived**.**conf root@**192.168.4.98:** /etc/keepalived**/**
23. root@**192.168.4.98**'s password: //输入haproxy98主机的密码

2）修改haproxy98主机的配置文件

1. **[**root@haproxy98 **~]**#vim **/**etc**/**keepalived**/**keepalived**.**conf
2. global\_defs **{**
3. ……
4. ……
5. vrrp\_iptables //禁止iptables
6. **}**
7. vrrp\_instance VI\_1 **{**
8. state BACKUP //备用服务器标识
9. **interface** eth0
10. virtual\_router\_id **51**
11. priority **100** //优先级要比 haproxy99低
12. advert\_int **1**
13. authentication **{**
14. auth\_type PASS
15. auth\_pass **1111**
16. **}**
17. virtual\_ipaddress **{**
18. **192.168.4.100** //定义vip地址
19. **}**
20. **}**
21. **[**root@haproxy98 **~]**#

**步骤四：启动服务**

1）在haproxy99主机启动keepalived服务

1. **[**root@haproxy99 **~]**# systemctl start keepalived**.**service //启动服务
2. **[**root@haproxy99 **~]**#
3. **[**root@haproxy99 **~]**# ip addr show **|** grep **192.168.4.100** //查看vip地址
4. inet **192.168.4.100/32** scope global eth0
5. **[**root@haproxy99 **~]**#

2）在haproxy98主机启动keepalived服务

1. **[**root@haproxy98 **~]**# systemctl start keepalived**.**service //启动服务
2. **[**root@haproxy98 **~]**#
3. **[**root@haproxy98 **~]**# ip addr show **|** grep **192.168.4.100** //查看不到vip
4. **[**root@haproxy98 **~]**#

**步骤五：测试配置**

1）客户端连接vip地址，访问数据库服务

1. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
2. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
3. **+------------+**
4. **|** @@hostname **|**
5. **+------------+**
6. **|** pxcnode66 **|**
7. **+------------+**
8. **[**root@web33 **~]**#
9. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
10. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
11. **+------------+**
12. **|** @@hostname **|**
13. **+------------+**
14. **|** pxcnode10 **|**
15. **+------------+**
16. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
17. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
18. **+------------+**
19. **|** @@hostname **|**
20. **+------------+**
21. **|** pxcnode88 **|**
22. **+------------+**
23. **[**root@web33 **~]**#

2）测试高可用

1. **[**root@haproxy99 **~]**# ip addr show **|** grep **192.168.4.100** //在haproxy99 主机查看VIP地址
2. inet **192.168.4.100/32** scope global eth0
3. **[**root@haproxy99 **~]**#
4. **[**root@haproxy99 **~]**# systemctl stop keepalived**.**service //停止keepalived服务
5. **[**root@haproxy99 **~]**#
6. **[**root@haproxy99 **~]**#
7. **[**root@haproxy99 **~]**# ip addr show **|** grep **192.168.4.100** //查看不到vip地址
8. **[**root@haproxy99 **~]**#
9. **[**root@haproxy98 **~]**# ip addr show **|** grep **192.168.4.100** //在备用的haproxy98主机查看地址
10. inet **192.168.4.100/32** scope global eth0
11. **[**root@haproxy98 **~]**#
12. //客户端连接vip地址访问数据库服务
13. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
14. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
15. **+------------+**
16. **|** @@hostname **|**
17. **+------------+**
18. **|** pxcnode66 **|**
19. **+------------+**
20. **[**root@web33 **~]**#
21. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
22. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
23. **+------------+**
24. **|** @@hostname **|**
25. **+------------+**
26. **|** pxcnode10 **|**
27. **+------------+**
28. **[**root@web33 **~]**# mysql **-**h192**.168.4.100** –uyaya99 –p123qqq…A **-**e 'select @@hostname'
29. mysql**:** **[**Warning**]** Using a password on the command line **interface** can be insecure**.**
30. **+------------+**
31. **|** @@hostname **|**
32. **+------------+**
33. **|** pxcnode88 **|**
34. **+------------+**
35. **[**root@web33 **~]**#