MySQL分库分表

环境：rhel7.5虚拟机三台，关闭防火墙，selinux，配置好yum

Ip地址：192.168.4.51 db1 安装好mariadb mariadb-server,root,123456

192.168.4.52 db2 安装好mariadb mariadb-server,root,123456

192.168.4.53 mycat服务器

说明：由于硬件问题，此处采用mariadb，个人实验时采用mysql5.7，注意版本特性

#db的配置文件

[root@server51 ~]# cat /etc/my.cnf | grep -v ^$ | grep -v ^#

[mysqld]

character\_set\_server='utf8' //服务器编码

innodb\_file\_per\_table=1 //innodb采用独立表空间

lower\_case\_table\_names=1 //忽略表名大小写

datadir=/var/lib/mysql

socket=/var/lib/mysql/mysql.sock

symbolic-links=0

[mysqld\_safe]

log-error=/var/log/mariadb/mariadb.log

pid-file=/var/run/mariadb/mariadb.pid

!includedir /etc/my.cnf.d

#还原成干净的数据库即可

#配置mycat

[root@server53 ~]# ls

Mycat-server-1.4-beta-20150604171601-linux.tar.gz

[root@server53 ~]# yum -y install java-1.8.0-openjdk java-1.8.0-openjdk-headless

[root@server53 ~]# tar -xf Mycat-server-1.4-beta-20150604171601-linux.tar.gz

[root@server53 ~]# ls mycat/

bin catlet conf lib logs version.txt

[root@server53 ~]# mv mycat/ /usr/local/

[root@server53 ~]# ls /usr/local/mycat/

bin catlet conf lib logs version.txt

#配置server.xml

#不做任何修改，test用户有读写权限，user用户有只读权限，虚拟库名TESTDB

#配置schema.xml

[root@server51 ~]# mysql -uroot -p123456

MariaDB [(none)]> create database db1;

Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> show databases;

+--------------------+

| Database |

+--------------------+

| information\_schema |

| db1 |

| mysql |

| performance\_schema |

| test |

+--------------------+

5 rows in set (0.00 sec)

MariaDB [(none)]> grant all on \*.\* to admin@'192.168.4.53' identified by '123456';

Query OK, 0 rows affected (0.01 sec)

[root@server52 ~]# mysql -uroot -p123456

MariaDB [(none)]> create database db2;

Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> show databases;

+--------------------+

| Database |

+--------------------+

| information\_schema |

| db2 |

| mysql |

| performance\_schema |

| test |

+--------------------+

5 rows in set (0.00 sec)

MariaDB [(none)]> grant all on \*.\* to admin@'192.168.4.53' identified by '123456';

Query OK, 0 rows affected (0.00 sec)

#测试授权

[root@server53 mycat]# mysql -h 192.168.4.52 -uadmin -p123456

[root@server53 mycat]# mysql -h 192.168.4.51 -uadmin -p123456

MariaDB [(none)]> exit

Bye

[root@server53 mycat]# mysql -h 192.168.4.52 -uadmin -p123456

MariaDB [(none)]> exit

Bye

[root@server53 mycat]# cat conf/schema.xml | grep -v ^$

<?xml version="1.0"?>

<!DOCTYPE mycat:schema SYSTEM "schema.dtd">

<mycat:schema xmlns:mycat="http://org.opencloudb/">

<schema name="TESTDB" checkSQLschema="false" sqlMaxLimit="100">

<!-- auto sharding by id (long) -->

<table name="travelrecord" dataNode="dn1,dn2" rule="auto-sharding-long" />

<!-- global table is auto cloned to all defined data nodes ,so can join

with any table whose sharding node is in the same data node -->

<table name="company" primaryKey="ID" type="global" dataNode="dn1,dn2" />

<table name="goods" primaryKey="ID" type="global" dataNode="dn1,dn2" />

<!-- random sharding using mod sharind rule -->

<table name="hotnews" primaryKey="ID" dataNode="dn1,dn2"

rule="mod-long" />

<!-- <table name="dual" primaryKey="ID" dataNode="dnx,dnoracle2" type="global"

needAddLimit="false"/> <table name="worker" primaryKey="ID" dataNode="jdbc\_dn1,jdbc\_dn2,jdbc\_dn3"

rule="mod-long" /> -->

<table name="employee" primaryKey="ID" dataNode="dn1,dn2"

rule="sharding-by-intfile" />

<table name="customer" primaryKey="ID" dataNode="dn1,dn2"

rule="sharding-by-intfile">

<childTable name="orders" primaryKey="ID" joinKey="customer\_id"

parentKey="id">

<childTable name="order\_items" joinKey="order\_id"

parentKey="id" />

</childTable>

<childTable name="customer\_addr" primaryKey="ID" joinKey="customer\_id"

parentKey="id" />

</table>

<!-- <table name="oc\_call" primaryKey="ID" dataNode="dn1$0-743" rule="latest-month-calldate"

/> -->

</schema>

<!-- <dataNode name="dn1$0-743" dataHost="localhost1" database="db$0-743"

/> -->

<dataNode name="dn1" dataHost="c1" database="db1" />

<dataNode name="dn2" dataHost="c2" database="db2" />

<!--<dataNode name="dn3" dataHost="localhost1" database="db3" /> -->

<!-- <dataNode name="jdbc\_dn1" dataHost="jdbchost" database="db1" /> <dataNode

name="jdbc\_dn2" dataHost="jdbchost" database="db2" /> <dataNode name="jdbc\_dn3"

dataHost="jdbchost" database="db3" /> -->

<dataHost name="c1" maxCon="1000" minCon="10" balance="0"

writeType="0" dbType="mysql" dbDriver="native" switchType="1" slaveThreshold="100">

<heartbeat>select user()</heartbeat>

<!-- can have multi write hosts -->

<writeHost host="hostM1" url="192.168.4.51:3306" user="admin"

password="123456">

<!-- can have multi read hosts -->

</writeHost>

<!-- <writeHost host="hostS1" url="localhost:3316" user="root"

password="123456" /> -->

<!-- <writeHost host="hostM2" url="localhost:3316" user="root" password="123456"/> -->

</dataHost>

<dataHost name="c2" maxCon="1000" minCon="10" balance="0"

writeType="0" dbType="mysql" dbDriver="native" switchType="1" slaveThreshold="100">

<heartbeat>select user()</heartbeat>

<!-- can have multi write hosts -->

<writeHost host="hostM1" url="192.168.4.52:3306" user="admin"

password="123456">

<!-- can have multi read hosts -->

</writeHost>

<!-- <writeHost host="hostS1" url="localhost:3316" user="root"

password="123456" /> -->

<!-- <writeHost host="hostM2" url="localhost:3316" user="root" password="123456"/> -->

</dataHost>

<!-- <dataHost name="oracle1" maxCon="1000" minCon="1" balance="0" writeType="0"

dbType="oracle" dbDriver="jdbc"> <heartbeat>select 1 from dual</heartbeat>

<connectionInitSql>alter session set nls\_date\_format='yyyy-mm-dd hh24:mi:ss'</connectionInitSql>

<writeHost host="hostM1" url="jdbc:oracle:thin:@127.0.0.1:1521:nange" user="base"

password="123456" > </writeHost> </dataHost> <dataHost name="jdbchost" maxCon="1000"

minCon="1" balance="0" writeType="0" dbType="mongodb" dbDriver="jdbc"> <heartbeat>select

user()</heartbeat> <writeHost host="hostM" url="mongodb://192.168.0.99/test"

user="admin" password="123456" ></writeHost> </dataHost> <dataHost name="sparksql"

maxCon="1000" minCon="1" balance="0" dbType="spark" dbDriver="jdbc"> <heartbeat>

</heartbeat> <writeHost host="hostM1" url="jdbc:hive2://feng01:10000" user="jifeng"

password="jifeng"></writeHost> </dataHost> -->

<!-- <dataHost name="jdbchost" maxCon="1000" minCon="10" balance="0" dbType="mysql"

dbDriver="jdbc"> <heartbeat>select user()</heartbeat> <writeHost host="hostM1"

url="jdbc:mysql://localhost:3306" user="root" password="123456"> </writeHost>

</dataHost> -->

</mycat:schema>

#启动服务

[root@server53 mycat]# ls bin/

mycat rehash.sh startup\_nowrap.sh wrapper-linux-ppc-64 wrapper-linux-x86-32 wrapper-linux-x86-64

[root@server53 mycat]# ./bin/mycat start

[root@server53 mycat]# netstat -antpu | grep 8066

tcp6 0 0 :::8066 :::\* LISTEN 2454/java

#测试

[root@room8pc205 ~]# mysql -h192.168.4.53 -P8066 -utest -ptest

mysql> show databases;

+----------+

| DATABASE |

+----------+

| TESTDB |

+----------+

1 row in set (0.00 sec)

mysql> show tables;

+------------------+

| Tables in TESTDB |

+------------------+

| company |

| customer |

| customer\_addr |

| employee |

| goods |

| hotnews |

| orders |

| order\_items |

| travelrecord |

+------------------+

9 rows in set (0.00 sec)

mysql> create table employee ( id int not null primary key, name char(10), age int(2), sharding\_id int);

Query OK, 0 rows affected (0.05 sec)

mysql> desc employee;

+-------------+----------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+----------+------+-----+---------+-------+

| id | int(11) | NO | PRI | NULL | |

| name | char(10) | YES | | NULL | |

| age | int(2) | YES | | NULL | |

| sharding\_id | int(11) | YES | | NULL | |

+-------------+----------+------+-----+---------+-------+

4 rows in set (0.00 sec)

#注意，向表内写入数据的时候必须带上字段名

mysql> insert into employee (id,name,age,sharding\_id) values(1,'zhangsan',25,10000),(2,'lisi',18,10010),(3,'wangwu',43,10010),(4,'zhaoliu',34,10010);

Query OK, 4 rows affected (0.05 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select \* from employee ;

+----+----------+------+-------------+

| id | name | age | sharding\_id |

+----+----------+------+-------------+

| 1 | zhangsan | 25 | 10000 |

| 2 | lisi | 18 | 10010 |

| 3 | wangwu | 43 | 10010 |

| 4 | zhaoliu | 34 | 10010 |

+----+----------+------+-------------+

4 rows in set (0.08 sec)

#db1上检查

MariaDB [db1]> show tables;

+---------------+

| Tables\_in\_db1 |

+---------------+

| employee |

+---------------+

1 row in set (0.00 sec)

MariaDB [db1]> select \* from employee;

+----+----------+------+-------------+

| id | name | age | sharding\_id |

+----+----------+------+-------------+

| 1 | zhangsan | 25 | 10000 |

+----+----------+------+-------------+

1 row in set (0.00 sec)

#db2上检测

MariaDB [(none)]> use db2

Reading table information for completion of table and column names

You can turn off this feature to get a quicker startup with -A

Database changed

MariaDB [db2]> select \* from employee;

+----+---------+------+-------------+

| id | name | age | sharding\_id |

+----+---------+------+-------------+

| 2 | lisi | 18 | 10010 |

| 3 | wangwu | 43 | 10010 |

| 4 | zhaoliu | 34 | 10010 |

+----+---------+------+-------------+

3 rows in set (0.00 sec)