MongoDB副本集+数据分片

环境：rhel7.5虚拟机三台，关闭防火墙、SELinux、搭建好yum

环境组件：

Mongos：数据库集群的请求入口，所有的请求通过mongos进行协调

Config server，配置服务器，存储所有数据元信息的配置。Mongos本身没有物理存储分片服务器和数据路由的信息，知识缓存在内存里，通过配置服务器存储这些数据

Shard：分片指将数据库拆分，将数据分散到不同的数据库服务器上

Replca set：副本集，数据备份，防止丢失

Albiter：仲裁者，不存储数据，但是在副本集主节点挂掉后进行投票，选择一个slave升级为primary

服务器规划：

Server21 server22 server23

Mongos mongos mongos

Config server config server config server

Shard server1 主节点 shard server1 从节点 shard server1 从节点

Shard server2 从节点 shard server2主节点 shard server2 从节点

Shard server3 从节点 shard server3 从节点 shard server3 主节点

端口分配：

Mongos：20000

Config：27000

Shard1：27001

Shard2：27002

Shard3: 27003

#部署

##部署server21

[root@server21 ~]# ls mongodb-linux-x86\_64-rhel70-3.6.3.tgz

mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server21 ~]# mkdir /usr/local/mongodb

[root@server21 ~]# tar -xf mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server21 ~]# mv mongodb-linux-x86\_64-rhel70-3.6.3/bin/ /usr/local/mongodb/

[root@server21 ~]# cd /usr/local/mongodb/

[root@server21 mongodb]# ls

bin

[root@server21 mongodb]# mkdir -p etc mongos/log config/data config/log shard1/data shard1/log shard2/data shard2/log shard3/data shard3/log

[root@server21 mongodb]# ls

bin config etc mongos shard1 shard2 shard3

[root@server21 mongodb]# vim /etc/profile

[root@server21 mongodb]# tail -2 /etc/profile

PATH=/usr/local/mongodb/bin:$PATH

export PATH

[root@server21 mongodb]# source /etc/profile

[root@server21 mongodb]# echo $PATH

/usr/local/mongodb/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/root/bin

[root@server22 ~]# ls mongodb-linux-x86\_64-rhel70-3.6.3.tgz

mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server22 ~]# mkdir /usr/local/mongodb

[root@server22 ~]# tar -xf mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server22 ~]# mv mongodb-linux-x86\_64-rhel70-3.6.3/bin/ /usr/local/mongodb/

[root@server22 ~]# cd /usr/local/mongodb/

[root@server22 mongodb]# ls

Bin

[root@server22 mongodb]# mkdir -p etc mongos/log config/data config/log shard1/data shard1/log shard2/data shard2/log shard3/data shard3/log

[root@server22 mongodb]# ls

bin config etc mongos shard1 shard2 shard3

[root@server22 mongodb]# vim /etc/profile

[root@server22 mongodb]# tail -2 /etc/profile

PATH=/usr/local/mongodb/bin:$PATH

export PATH

[root@server22 mongodb]# source /etc/profile

[root@server22 mongodb]# echo $PATH

/usr/local/mongodb/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/root/bin

[root@server23 ~]# ls mongodb-linux-x86\_64-rhel70-3.6.3.tgz

mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server23 ~]# mkdir /usr/local/mongodb

[root@server23 ~]# tar -xf mongodb-linux-x86\_64-rhel70-3.6.3.tgz

[root@server23 ~]# mv mongodb-linux-x86\_64-rhel70-3.6.3/bin/ /usr/local/mongodb/

[root@server23 ~]# cd /usr/local/mongodb/

[root@server23 mongodb]# ls

bin

[root@server23 mongodb]# mkdir -p etc mongos/log config/data config/log shard1/data shard1/log shard2/data shard2/log shard3/data shard3/log

[root@server23 mongodb]# ls

bin config etc mongos shard1 shard2 shard3

[root@server23 mongodb]# vim /etc/profile

[root@server23 mongodb]# source /etc/profile

[root@server23 mongodb]# echo $PATH

/usr/local/mongodb/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/root/bin

#配置config server

[root@server21 mongodb]# vim etc/config.conf

[root@server21 mongodb]# cat etc/config.conf | grep -v ^$

pidfilepath=/usr/local/mongodb/config/log/configsrv.pid

dbpath=/usr/local/mongodb/config/data

logpath=/usr/local/mongodb/config/log/configsrv.log

logappend=true

bind\_ip=0.0.0.0

port=27000

fork=true

configsvr=true

replSet=configs

maxConns=500

[root@server21 mongodb]# scp etc/config.conf 192.168.4.22:/usr/local/mongodb/etc/

root@192.168.4.22's password:

config.conf 100% 244 53.7KB/s 00:00

[root@server21 mongodb]# scp etc/config.conf 192.168.4.23:/usr/local/mongodb/etc/

Warning: Permanently added '192.168.4.23' (ECDSA) to the list of known hosts.

root@192.168.4.23's password:

config.conf 100% 244 56.4KB/s 00:00

##启动config server

[root@server21 mongodb]# mongod -f etc/config.conf

about to fork child process, waiting until server is ready for connections.

forked process: 1889

child process started successfully, parent exiting

[root@server21 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 1889/mongod

[root@server22 mongodb]# mongod -f etc/config.conf

about to fork child process, waiting until server is ready for connections.

forked process: 1825

child process started successfully, parent exiting

[root@server22 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 1825/mongod

[root@server23 mongodb]# mongod -f etc/config.conf

about to fork child process, waiting until server is ready for connections.

forked process: 1857

child process started successfully, parent exiting

[root@server23 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 1857/mongod

##初始化副本集

[root@server21 mongodb]# mongo --port 27000

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:27000/

MongoDB server version: 3.6.3

> config = {

... \_id:"configs",

... members:[

... {\_id:0,host:"192.168.4.21:27000"},

... {\_id:1,host:"192.168.4.22:27000"},

... {\_id:2,host:"192.168.4.23:27000"}

... ]}

{

"\_id" : "configs",

"members" : [

{

"\_id" : 0,

"host" : "192.168.4.21:27000"

},

{

"\_id" : 1,

"host" : "192.168.4.22:27000"

},

{

"\_id" : 2,

"host" : "192.168.4.23:27000"

}

]

}

> rs.initiate(config)

{

"ok" : 1,

"operationTime" : Timestamp(1545620319, 1),

"$gleStats" : {

"lastOpTime" : Timestamp(1545620319, 1),

"electionId" : ObjectId("000000000000000000000000")

},

"$clusterTime" : {

"clusterTime" : Timestamp(1545620319, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

}

}

configs:SECONDARY> rs.status()

{

"set" : "configs",

"date" : ISODate("2018-12-24T03:01:51.812Z"),

"myState" : 1,

"term" : NumberLong(1),

"configsvr" : true,

"heartbeatIntervalMillis" : NumberLong(2000),

"optimes" : {

"lastCommittedOpTime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"readConcernMajorityOpTime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"appliedOpTime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"durableOpTime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

}

},

"members" : [

{

"\_id" : 0,

"name" : "192.168.4.21:27000",

"health" : 1,

"state" : 1,

"stateStr" : "PRIMARY",

"uptime" : 283,

"optime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:01:39Z"),

"electionTime" : Timestamp(1545620329, 1),

"electionDate" : ISODate("2018-12-24T02:58:49Z"),

"configVersion" : 1,

"self" : true

},

{

"\_id" : 1,

"name" : "192.168.4.22:27000",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 192,

"optime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"optimeDurable" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:01:39Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:01:39Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:01:50.147Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:01:51.148Z"),

"pingMs" : NumberLong(2),

"syncingTo" : "192.168.4.21:27000",

"configVersion" : 1

},

{

"\_id" : 2,

"name" : "192.168.4.23:27000",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 192,

"optime" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"optimeDurable" : {

"ts" : Timestamp(1545620499, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:01:39Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:01:39Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:01:50.146Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:01:51.149Z"),

"pingMs" : NumberLong(1),

"syncingTo" : "192.168.4.21:27000",

"configVersion" : 1

}

],

"ok" : 1,

"operationTime" : Timestamp(1545620499, 1),

"$gleStats" : {

"lastOpTime" : Timestamp(1545620319, 1),

"electionId" : ObjectId("7fffffff0000000000000001")

},

"$clusterTime" : {

"clusterTime" : Timestamp(1545620499, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

}

}

configs:PRIMARY> exit

bye

#配置分片集群

##配置shard1分片集群

[root@server21 mongodb]# vim etc/shard1.conf

[root@server21 mongodb]# cat etc/shard1.conf | grep -v ^$

pidfilepath=/usr/local/mongodb/shard1/log/shard1.pid

dbpath=/usr/local/mongodb/shard1/data

logpath=/usr/local/mongodb/shard1/log/shard1.log

logappend=true

bind\_ip=0.0.0.0

port=27001

fork=true

replSet=shard1

shardsvr=true

maxConns=500

[root@server21 mongodb]# scp etc/shard1.conf 192.168.4.22:/usr/local/mongodb/etc/

root@192.168.4.22's password:

shard1.conf 100% 240 107.5KB/s 00:00

[root@server21 mongodb]# scp etc/shard1.conf 192.168.4.23:/usr/local/mongodb/etc/

root@192.168.4.23's password:

shard1.conf 100% 240 57.3KB/s 00:00

#启动shard1进程

[root@server21 mongodb]# mongod -f etc/shard1.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3225

child process started successfully, parent exiting

[root@server21 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2967/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55580 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55834 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55588 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:60842 192.168.4.22:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55846 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55842 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:59722 192.168.4.23:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55592 ESTABLISHED 2967/mongod

[root@server22 mongodb]# mongod -f etc/shard1.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3036

child process started successfully, parent exiting

[root@server22 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2838/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3036/mongod

tcp 0 0 192.168.4.22:55580 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.23:35976 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55588 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:37842 192.168.4.23:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55592 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.21:60842 ESTABLISHED 2838/mongod

[root@server23 mongodb]# mongod -f etc/shard1.conf

about to fork child process, waiting until server is ready for connections.

forked process: 2837

child process started successfully, parent exiting

[root@server23 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2611/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 2837/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.22:37842 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:35976 192.168.4.22:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55834 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.21:59722 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55842 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55846 192.168.4.21:27000 ESTABLISHED 2611/mongod

#初始化shard1分片集群

[root@server21 mongodb]# mongo --port 27001

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:27001/

MongoDB server version: 3.6.3

Server has startup warnings:

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten]

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* WARNING: Access control is not enabled for the database.

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* Read and write access to data and configuration is unrestricted.

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* WARNING: You are running this process as the root user, which is not recommended.

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten]

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten]

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* WARNING: /sys/kernel/mm/transparent\_hugepage/enabled is 'always'.

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* We suggest setting it to 'never'

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten]

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* WARNING: /sys/kernel/mm/transparent\_hugepage/defrag is 'always'.

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten] \*\* We suggest setting it to 'never'

2018-12-24T11:04:24.873+0800 I CONTROL [initandlisten]

> config = {

... \_id:"shard1",

... members:[

... {\_id:0,host:"192.168.4.21:27001",priority:10},

... {\_id:1,host:"192.168.4.22:27001",priority:5},

... {\_id:2,host:"192.168.4.23:27001",priority:5}

... ]}

{

"\_id" : "shard1",

"members" : [

{

"\_id" : 0,

"host" : "192.168.4.21:27001",

"priority" : 10

},

{

"\_id" : 1,

"host" : "192.168.4.22:27001",

"priority" : 5

},

{

"\_id" : 2,

"host" : "192.168.4.23:27001",

"priority" : 5

}

]

}

> rs.initiate(config）

... ^C

> rs.initiate(config)

{ "ok" : 1 }

shard1:SECONDARY> rs.status()

{

"set" : "shard1",

"date" : ISODate("2018-12-24T03:15:08.631Z"),

"myState" : 1,

"term" : NumberLong(1),

"heartbeatIntervalMillis" : NumberLong(2000),

"optimes" : {

"lastCommittedOpTime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"readConcernMajorityOpTime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"appliedOpTime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"durableOpTime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

}

},

"members" : [

{

"\_id" : 0,

"name" : "192.168.4.21:27001",

"health" : 1,

"state" : 1,

"stateStr" : "PRIMARY",

"uptime" : 645,

"optime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:15:07Z"),

"infoMessage" : "could not find member to sync from",

"electionTime" : Timestamp(1545621295, 1),

"electionDate" : ISODate("2018-12-24T03:14:55Z"),

"configVersion" : 1,

"self" : true

},

{

"\_id" : 1,

"name" : "192.168.4.22:27001",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 24,

"optime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"optimeDurable" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:15:07Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:15:07Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:15:07.653Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:15:08.396Z"),

"pingMs" : NumberLong(2),

"syncingTo" : "192.168.4.21:27001",

"configVersion" : 1

},

{

"\_id" : 2,

"name" : "192.168.4.23:27001",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 24,

"optime" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"optimeDurable" : {

"ts" : Timestamp(1545621307, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2018-12-24T03:15:07Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:15:07Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:15:07.653Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:15:08.381Z"),

"pingMs" : NumberLong(2),

"syncingTo" : "192.168.4.21:27001",

"configVersion" : 1

}

],

"ok" : 1

}

shard1:PRIMARY> exit

bye

##配置shard2分片集群

[root@server21 mongodb]# cat etc/shard2.conf | grep -v ^$

pidfilepath=/usr/local/mongodb/shard2/log/shard2.pid

dbpath=/usr/local/mongodb/shard2/data

logpath=/usr/local/mongodb/shard2/log/shard2.log

logappend=true

bind\_ip=0.0.0.0

port=27002

fork=true

replSet=shard2

shardsvr=true

maxConns=500

[root@server21 mongodb]# scp etc/shard2.conf 192.168.4.22:/usr/local/mongodb/etc/

root@192.168.4.22's password:

shard2.conf 100% 240 104.2KB/s 00:00

[root@server21 mongodb]# scp etc/shard2.conf 192.168.4.23:/usr/local/mongodb/etc/

root@192.168.4.23's password:

shard2.conf 100% 240 71.8KB/s 00:00

##启动shard2进程

[root@server21 mongodb]# mongod -f etc/shard2.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3581

child process started successfully, parent exiting

[root@server21 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2967/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3225/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3581/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43706 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55580 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:55068 192.168.4.23:27001 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55834 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55588 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:60842 192.168.4.22:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55846 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43698 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52348 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:56704 192.168.4.22:27001 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43710 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52336 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55842 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:59722 192.168.4.23:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52346 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55592 ESTABLISHED 2967/mongod

[root@server22 mongodb]# mongod -f etc/shard2.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3273

child process started successfully, parent exiting

[root@server22 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2838/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3036/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3273/mongod

tcp 0 0 192.168.4.22:52336 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:52348 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:27001 192.168.4.21:56704 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:55580 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.23:35976 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55588 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27001 192.168.4.23:47638 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:52346 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:50692 192.168.4.23:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:37842 192.168.4.23:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55592 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.21:60842 ESTABLISHED 2838/mongod

[root@server23 mongodb]# mongod -f etc/shard2.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3063

child process started successfully, parent exiting

[root@server23 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2611/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 2837/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3063/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.22:37842 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27001 192.168.4.22:50692 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:35976 192.168.4.22:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55834 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.21:59722 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55842 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:43698 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:43710 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:43706 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:47638 192.168.4.22:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:55846 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27001 192.168.4.21:55068 ESTABLISHED 2837/mongod

##初始化shard2分片集群

[root@server21 mongodb]# mongo --port 27002

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:27002/

MongoDB server version: 3.6.3

> config = {

... \_id:"shard2",

... members:[

... {\_id:0,host:"192.168.4.21:27002",priority:5},

... {\_id:1,host:"192.168.4.22:27002",priority:10},

... {\_id:2,host:"192.168.4.23:27002",priority:5}

... ]}

{

"\_id" : "shard2",

"members" : [

{

"\_id" : 0,

"host" : "192.168.4.21:27002",

"priority" : 5

},

{

"\_id" : 1,

"host" : "192.168.4.22:27002",

"priority" : 10

},

{

"\_id" : 2,

"host" : "192.168.4.23:27002",

"priority" : 5

}

]

}

> rs.initiate(config)

{ "ok" : 1 }

shard2:SECONDARY> rs.status()

{

"set" : "shard2",

"date" : ISODate("2018-12-24T03:22:02.369Z"),

"myState" : 2,

"term" : NumberLong(2),

"syncingTo" : "192.168.4.23:27002",

"heartbeatIntervalMillis" : NumberLong(2000),

"optimes" : {

"lastCommittedOpTime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"readConcernMajorityOpTime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"appliedOpTime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"durableOpTime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

}

},

"members" : [

{

"\_id" : 0,

"name" : "192.168.4.21:27002",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 262,

"optime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:21:59Z"),

"syncingTo" : "192.168.4.23:27002",

"configVersion" : 1,

"self" : true

},

{

"\_id" : 1,

"name" : "192.168.4.22:27002",

"health" : 1,

"state" : 1,

"stateStr" : "PRIMARY",

"uptime" : 67,

"optime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"optimeDurable" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:21:59Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:21:59Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:22:01.850Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:22:01.871Z"),

"pingMs" : NumberLong(2),

"electionTime" : Timestamp(1545621677, 2),

"electionDate" : ISODate("2018-12-24T03:21:17Z"),

"configVersion" : 1

},

{

"\_id" : 2,

"name" : "192.168.4.23:27002",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 67,

"optime" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"optimeDurable" : {

"ts" : Timestamp(1545621719, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:21:59Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:21:59Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:22:01.858Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:22:00.606Z"),

"pingMs" : NumberLong(2),

"syncingTo" : "192.168.4.22:27002",

"configVersion" : 1

}

],

"ok" : 1

}

##配置shard3分片集群

[root@server21 mongodb]# cat etc/shard3.conf | grep -v ^$

pidfilepath=/usr/local/mongodb/shard3/log/shard3.pid

dbpath=/usr/local/mongodb/shard3/data

logpath=/usr/local/mongodb/shard3/log/shard3.log

logappend=true

bind\_ip=0.0.0.0

port=27003

fork=true

replSet=shard3

shardsvr=true

maxConns=500

[root@server21 mongodb]# scp etc/shard3.conf 192.168.4.22:/usr/local/mongodb/etc/

root@192.168.4.22's password:

shard3.conf 100% 240 44.0KB/s 00:00

[root@server21 mongodb]# scp etc/shard3.conf 192.168.4.23:/usr/local/mongodb/etc/

root@192.168.4.23's password:

shard3.conf 100% 240 74.3KB/s 00:00

##启动shard3进程

[root@server21 mongodb]# mongod -f etc/shard3.conf

about to fork child process, waiting until server is ready for connections.

forked process: 4151

child process started successfully, parent exiting

[root@server21 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2967/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3225/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3581/mongod

tcp 0 0 0.0.0.0:27003 0.0.0.0:\* LISTEN 4151/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43706 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:57196 192.168.4.23:27002 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55580 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:55068 192.168.4.23:27001 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55834 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55588 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:60842 192.168.4.22:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:57198 192.168.4.23:27002 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55846 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43698 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52348 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:56704 192.168.4.22:27001 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:36716 192.168.4.22:27002 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.23:43710 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:57200 192.168.4.23:27002 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52336 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.23:55842 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:59722 192.168.4.23:27000 ESTABLISHED 2967/mongod

tcp 0 0 192.168.4.21:27002 192.168.4.23:36854 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27001 192.168.4.22:52346 ESTABLISHED 3225/mongod

tcp 0 0 192.168.4.21:27002 192.168.4.22:34612 ESTABLISHED 3581/mongod

tcp 0 0 192.168.4.21:27000 192.168.4.22:55592 ESTABLISHED 2967/mongod

[root@server22 mongodb]# mongod -f etc/shard3.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3555

child process started successfully, parent exiting

[root@server22 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2838/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 3036/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3273/mongod

tcp 0 0 0.0.0.0:27003 0.0.0.0:\* LISTEN 3555/mongod

tcp 0 0 192.168.4.22:52336 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:27002 192.168.4.23:60014 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:27002 192.168.4.23:60004 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:52348 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:27001 192.168.4.21:56704 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:57814 192.168.4.23:27002 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:55580 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.23:35976 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55588 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27002 192.168.4.23:60012 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:27001 192.168.4.23:47638 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:52346 192.168.4.21:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:50692 192.168.4.23:27001 ESTABLISHED 3036/mongod

tcp 0 0 192.168.4.22:34612 192.168.4.21:27002 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:27002 192.168.4.21:36716 ESTABLISHED 3273/mongod

tcp 0 0 192.168.4.22:37842 192.168.4.23:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:55592 192.168.4.21:27000 ESTABLISHED 2838/mongod

tcp 0 0 192.168.4.22:27000 192.168.4.21:60842 ESTABLISHED 2838/mongod

[root@server23 mongodb]# mongod -f etc/shard3.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3317

child process started successfully, parent exiting

[root@server23 mongodb]# netstat -antpu | grep mongo

tcp 0 0 0.0.0.0:27000 0.0.0.0:\* LISTEN 2611/mongod

tcp 0 0 0.0.0.0:27001 0.0.0.0:\* LISTEN 2837/mongod

tcp 0 0 0.0.0.0:27002 0.0.0.0:\* LISTEN 3063/mongod

tcp 0 0 0.0.0.0:27003 0.0.0.0:\* LISTEN 3317/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.22:37842 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27001 192.168.4.22:50692 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:35976 192.168.4.22:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27002 192.168.4.21:57196 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:55834 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27000 192.168.4.21:59722 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:55842 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:60014 192.168.4.22:27002 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:43698 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:43710 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:43706 192.168.4.21:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:27002 192.168.4.22:57814 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:27002 192.168.4.21:57200 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:60004 192.168.4.22:27002 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:60012 192.168.4.22:27002 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:27002 192.168.4.21:57198 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:47638 192.168.4.22:27001 ESTABLISHED 2837/mongod

tcp 0 0 192.168.4.23:36854 192.168.4.21:27002 ESTABLISHED 3063/mongod

tcp 0 0 192.168.4.23:55846 192.168.4.21:27000 ESTABLISHED 2611/mongod

tcp 0 0 192.168.4.23:27001 192.168.4.21:55068 ESTABLISHED 2837/mongod

#初始化shard3分片集群

[root@server21 mongodb]# mongo --port 27003

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:27003/

MongoDB server version: 3.6.3

> config = { \_id:"shard3", members:[ {\_id:0,host:"192.168.4.21:27003",priority:5}, {\_id:1,host:"192.168.4.22:27003",priority:5}, {\_id:2,host:"192.168.4.23:27003",priority:10} ]}

{

"\_id" : "shard3",

"members" : [

{

"\_id" : 0,

"host" : "192.168.4.21:27003",

"priority" : 5

},

{

"\_id" : 1,

"host" : "192.168.4.22:27003",

"priority" : 5

},

{

"\_id" : 2,

"host" : "192.168.4.23:27003",

"priority" : 10

}

]

}

> rs.initiate(config)

{ "ok" : 1 }

shard3:SECONDARY> rs.status()

2018-12-24T11:36:19.216+0800 E QUERY [thread1] Error: error doing query: failed: network error while attempting to run command 'replSetGetStatus' on host '127.0.0.1:27003' :

DB.prototype.runCommand@src/mongo/shell/db.js:168:1

DB.prototype.adminCommand@src/mongo/shell/db.js:186:16

rs.status@src/mongo/shell/utils.js:1224:12

@(shell):1:1

2018-12-24T11:36:19.218+0800 I NETWORK [thread1] trying reconnect to 127.0.0.1:27003 (127.0.0.1) failed

2018-12-24T11:36:19.233+0800 I NETWORK [thread1] reconnect 127.0.0.1:27003 (127.0.0.1) ok

shard3:SECONDARY> rs.status()

{

"set" : "shard3",

"date" : ISODate("2018-12-24T03:36:23.752Z"),

"myState" : 2,

"term" : NumberLong(2),

"syncingTo" : "192.168.4.23:27003",

"heartbeatIntervalMillis" : NumberLong(2000),

"optimes" : {

"lastCommittedOpTime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"readConcernMajorityOpTime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"appliedOpTime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"durableOpTime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

}

},

"members" : [

{

"\_id" : 0,

"name" : "192.168.4.21:27003",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 265,

"optime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:36:21Z"),

"syncingTo" : "192.168.4.23:27003",

"configVersion" : 1,

"self" : true

},

{

"\_id" : 1,

"name" : "192.168.4.22:27003",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 37,

"optime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"optimeDurable" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:36:21Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:36:21Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:36:23.604Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:36:21.973Z"),

"pingMs" : NumberLong(1),

"syncingTo" : "192.168.4.23:27003",

"configVersion" : 1

},

{

"\_id" : 2,

"name" : "192.168.4.23:27003",

"health" : 1,

"state" : 1,

"stateStr" : "PRIMARY",

"uptime" : 37,

"optime" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"optimeDurable" : {

"ts" : Timestamp(1545622581, 1),

"t" : NumberLong(2)

},

"optimeDate" : ISODate("2018-12-24T03:36:21Z"),

"optimeDurableDate" : ISODate("2018-12-24T03:36:21Z"),

"lastHeartbeat" : ISODate("2018-12-24T03:36:23.604Z"),

"lastHeartbeatRecv" : ISODate("2018-12-24T03:36:22.149Z"),

"pingMs" : NumberLong(1),

"electionTime" : Timestamp(1545622570, 1),

"electionDate" : ISODate("2018-12-24T03:36:10Z"),

"configVersion" : 1

}

],

"ok" : 1

}

shard3:SECONDARY> exit

bye

#配置路由服务器

##先启动配置服务器和分片服务器，然后再启动路由服务

[root@server21 mongodb]# vim etc/mongos.conf

[root@server21 mongodb]# cat etc/mongos.conf | grep -v ^$

pidfilepath=/usr/local/mongodb/mongos/log/mongos.pid

logpath=/usr/local/mongodb/mongos/log/mongos.log

logappend=true

bind\_ip=0.0.0.0

port=20000

fork=true

configdb=configs/192.168.4.21:27000,192.168.4.22:27000,192.168.4.23:27000

maxConns=1000

[root@server21 mongodb]# scp etc/mongos.conf 192.168.4.22:/usr/local/mongodb/etc/

root@192.168.4.22's password:

mongos.conf 100% 246 89.0KB/s 00:00

[root@server21 mongodb]# scp etc/mongos.conf 192.168.4.23:/usr/local/mongodb/etc/

root@192.168.4.23's password:

mongos.conf 100% 246 62.6KB/s 00:00

##启动路由服务

[root@server21 mongodb]# mongos -f etc/mongos.conf

about to fork child process, waiting until server is ready for connections.

forked process: 4779

child process started successfully, parent exiting

[root@server21 mongodb]# netstat -antpu | grep mongos

tcp 0 0 0.0.0.0:20000 0.0.0.0:\* LISTEN 4779/mongos

tcp 0 0 192.168.4.21:57294 192.168.4.21:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:59802 192.168.4.23:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:60914 192.168.4.22:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:60924 192.168.4.22:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:57288 192.168.4.21:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:57298 192.168.4.21:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:57292 192.168.4.21:27000 ESTABLISHED 4779/mongos

tcp 0 0 192.168.4.21:59792 192.168.4.23:27000 ESTABLISHED 4779/mongos

[root@server22 mongodb]# mongos -f etc/mongos.conf

about to fork child process, waiting until server is ready for connections.

forked process: 4131

child process started successfully, parent exiting

[root@server22 mongodb]# netstat -antpu | grep mongos

tcp 0 0 0.0.0.0:20000 0.0.0.0:\* LISTEN 4131/mongos

tcp 0 0 192.168.4.22:55644 192.168.4.21:27000 ESTABLISHED 4131/mongos

tcp 0 0 192.168.4.22:38752 192.168.4.22:27000 ESTABLISHED 4131/mongos

tcp 0 0 192.168.4.22:38766 192.168.4.22:27000 ESTABLISHED 4131/mongos

tcp 0 0 192.168.4.22:37914 192.168.4.23:27000 ESTABLISHED 4131/mongos

tcp 0 0 192.168.4.22:55656 192.168.4.21:27000 ESTABLISHED 4131/mongos

tcp 0 0 192.168.4.22:37904 192.168.4.23:27000 ESTABLISHED 4131/mongos

[root@server23 mongodb]# mongos -f etc/mongos.conf

about to fork child process, waiting until server is ready for connections.

forked process: 3900

child process started successfully, parent exiting

[root@server23 mongodb]# netstat -antpu | grep mongos

tcp 0 0 0.0.0.0:20000 0.0.0.0:\* LISTEN 3900/mongos

tcp 0 422 192.168.4.23:55908 192.168.4.21:27000 ESTABLISHED 3900/mongos

tcp 0 0 192.168.4.23:55900 192.168.4.21:27000 ESTABLISHED 3900/mongos

tcp 0 0 192.168.4.23:36034 192.168.4.22:27000 ESTABLISHED 3900/mongos

tcp 0 0 192.168.4.23:34276 192.168.4.23:27000 ESTABLISHED 3900/mongos

tcp 0 0 192.168.4.23:36046 192.168.4.22:27000 ESTABLISHED 3900/mongos

tcp 0 0 192.168.4.23:34282 192.168.4.23:27000 ESTABLISHED 3900/mongos

#启用分片

[root@server21 mongodb]# mongo --port 20000

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:20000/

MongoDB server version: 3.6.3

Server has startup warnings:

2018-12-24T12:01:54.297+0800 I CONTROL [main]

2018-12-24T12:01:54.298+0800 I CONTROL [main] \*\* WARNING: Access control is not enabled for the database.

2018-12-24T12:01:54.298+0800 I CONTROL [main] \*\* Read and write access to data and configuration is unrestricted.

2018-12-24T12:01:54.298+0800 I CONTROL [main] \*\* WARNING: You are running this process as the root user, which is not recommended.

2018-12-24T12:01:54.298+0800 I CONTROL [main]

mongos> use admin

switched to db admin

mongos> sh.addShard("shard1/192.168.4.21:27001,192.168.4.22:27001,192.168.4.23:27001")

{

"shardAdded" : "shard1",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545629009, 8),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545629009, 8)

}

mongos> sh.addShard("shard2/192.168.4.21:27002,192.168.4.22:27002,192.168.4.23:27002")

{

"shardAdded" : "shard2",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545629030, 6),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545629030, 6)

}

mongos> sh.addShard("shard3/192.168.4.21:27003,192.168.4.22:27003,192.168.4.23:27003")

{

"shardAdded" : "shard3",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545629043, 7),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545629043, 7)

}

mongos> sh.status()

--- Sharding Status ---

sharding version: {

"\_id" : 1,

"minCompatibleVersion" : 5,

"currentVersion" : 6,

"clusterId" : ObjectId("5c204b6b02f27413ee8b645d")

}

shards:

{ "\_id" : "shard1", "host" : "shard1/192.168.4.21:27001,192.168.4.22:27001,192.168.4.23:27001", "state" : 1 }

{ "\_id" : "shard2", "host" : "shard2/192.168.4.21:27002,192.168.4.22:27002,192.168.4.23:27002", "state" : 1 }

{ "\_id" : "shard3", "host" : "shard3/192.168.4.21:27003,192.168.4.22:27003,192.168.4.23:27003", "state" : 1 }

active mongoses:

"3.6.3" : 3

autosplit:

Currently enabled: yes

balancer:

Currently enabled: yes

Currently running: no

Failed balancer rounds in last 5 attempts: 0

Migration Results for the last 24 hours:

No recent migrations

databases:

{ "\_id" : "config", "primary" : "config", "partitioned" : true }

mongos> db.runCommand({listshards:1})

{

"shards" : [

{

"\_id" : "shard1",

"host" : "shard1/192.168.4.21:27001,192.168.4.22:27001,192.168.4.23:27001",

"state" : 1

},

{

"\_id" : "shard2",

"host" : "shard2/192.168.4.21:27002,192.168.4.22:27002,192.168.4.23:27002",

"state" : 1

},

{

"\_id" : "shard3",

"host" : "shard3/192.168.4.21:27003,192.168.4.22:27003,192.168.4.23:27003",

"state" : 1

}

],

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545634641, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545634641, 1)

}

mongos>

#测试分片

##指定需要分片的数据库和集合

[root@server21 mongodb]# mongo --host 127.0.0.1 --port 20000

MongoDB shell version v3.6.3

connecting to: mongodb://127.0.0.1:20000/

MongoDB server version: 3.6.3

mongos> use admin

switched to db admin

mongos> db.runCommand({enablesharding:"mydb"})

{

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545635043, 6),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545635043, 6)

}

#此处必须使用hashed算法，如果是1的话，只会往一个分片中写入

mongos> db.runCommand({shardcollection:"mydb.mytable",key:{id:"hashed"}})

{

"collectionsharded" : "mydb.mytable",

"collectionUUID" : UUID("2f3f72b4-e003-4b62-80a1-e498fb8f96e0"),

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545635102, 13),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545635102, 1)

}

mongos> use mydb

switched to db mydb

mongos> for(var i=1;i<=100;i++)db.mytable.save({id:i,"test1":"testval1"})

WriteResult({ "nInserted" : 1 })

mongos> db.mytable.stats()

{

"sharded" : true,

"capped" : false,

"ns" : "mydb.mytable",

"count" : 100,

"size" : 5400,

"storageSize" : 12288,

"totalIndexSize" : 24576,

"indexSizes" : {

"\_id\_" : 12288,

"id\_hashed" : 12288

},

"avgObjSize" : 54,

"nindexes" : 2,

"nchunks" : 6,

"shards" : {

"shard1" : {

"ns" : "mydb.mytable",

"size" : 1296,

"count" : 24,

"avgObjSize" : 54,

"storageSize" : 4096,

"capped" : false,

"wiredTiger" : {

"metadata" : {

"formatVersion" : 1

},

"creationString" : "access\_pattern\_hint=none,allocation\_size=4KB,app\_metadata=(formatVersion=1),assert=(commit\_timestamp=none,read\_timestamp=none),block\_allocation=best,block\_compressor=snappy,cache\_resident=false,checksum=on,colgroups=,collator=,columns=,dictionary=0,encryption=(keyid=,name=),exclusive=false,extractor=,format=btree,huffman\_key=,huffman\_value=,ignore\_in\_memory\_cache\_size=false,immutable=false,internal\_item\_max=0,internal\_key\_max=0,internal\_key\_truncate=true,internal\_page\_max=4KB,key\_format=q,key\_gap=10,leaf\_item\_max=0,leaf\_key\_max=0,leaf\_page\_max=32KB,leaf\_value\_max=64MB,log=(enabled=true),lsm=(auto\_throttle=true,bloom=true,bloom\_bit\_count=16,bloom\_config=,bloom\_hash\_count=8,bloom\_oldest=false,chunk\_count\_limit=0,chunk\_max=5GB,chunk\_size=10MB,merge\_custom=(prefix=,start\_generation=0,suffix=),merge\_max=15,merge\_min=0),memory\_page\_max=10m,os\_cache\_dirty\_max=0,os\_cache\_max=0,prefix\_compression=false,prefix\_compression\_min=4,source=,split\_deepen\_min\_child=0,split\_deepen\_per\_child=0,split\_pct=90,type=file,value\_format=u",

"type" : "file",

"uri" : "statistics:table:collection-35--8186868887347365531",

"LSM" : {

"bloom filter false positives" : 0,

"bloom filter hits" : 0,

"bloom filter misses" : 0,

"bloom filter pages evicted from cache" : 0,

"bloom filter pages read into cache" : 0,

"bloom filters in the LSM tree" : 0,

"chunks in the LSM tree" : 0,

"highest merge generation in the LSM tree" : 0,

"queries that could have benefited from a Bloom filter that did not exist" : 0,

"sleep for LSM checkpoint throttle" : 0,

"sleep for LSM merge throttle" : 0,

"total size of bloom filters" : 0

},

"block-manager" : {

"allocations requiring file extension" : 0,

"blocks allocated" : 0,

"blocks freed" : 0,

"checkpoint size" : 0,

"file allocation unit size" : 4096,

"file bytes available for reuse" : 0,

"file magic number" : 120897,

"file major version number" : 1,

"file size in bytes" : 4096,

"minor version number" : 0

},

"btree" : {

"btree checkpoint generation" : 243,

"column-store fixed-size leaf pages" : 0,

"column-store internal pages" : 0,

"column-store variable-size RLE encoded values" : 0,

"column-store variable-size deleted values" : 0,

"column-store variable-size leaf pages" : 0,

"fixed-record size" : 0,

"maximum internal page key size" : 368,

"maximum internal page size" : 4096,

"maximum leaf page key size" : 2867,

"maximum leaf page size" : 32768,

"maximum leaf page value size" : 67108864,

"maximum tree depth" : 3,

"number of key/value pairs" : 0,

"overflow pages" : 0,

"pages rewritten by compaction" : 0,

"row-store internal pages" : 0,

"row-store leaf pages" : 0

},

"cache" : {

"bytes currently in the cache" : 3940,

"bytes read into cache" : 0,

"bytes written from cache" : 0,

"checkpoint blocked page eviction" : 0,

"data source pages selected for eviction unable to be evicted" : 0,

"eviction walk passes of a file" : 0,

"eviction walk target pages histogram - 0-9" : 0,

"eviction walk target pages histogram - 10-31" : 0,

"eviction walk target pages histogram - 128 and higher" : 0,

"eviction walk target pages histogram - 32-63" : 0,

"eviction walk target pages histogram - 64-128" : 0,

"eviction walks abandoned" : 0,

"eviction walks gave up because they restarted their walk twice" : 0,

"eviction walks gave up because they saw too many pages and found no candidates" : 0,

"eviction walks gave up because they saw too many pages and found too few candidates" : 0,

"eviction walks reached end of tree" : 0,

"eviction walks started from root of tree" : 0,

"eviction walks started from saved location in tree" : 0,

"hazard pointer blocked page eviction" : 0,

"in-memory page passed criteria to be split" : 0,

"in-memory page splits" : 0,

"internal pages evicted" : 0,

"internal pages split during eviction" : 0,

"leaf pages split during eviction" : 0,

"modified pages evicted" : 0,

"overflow pages read into cache" : 0,

"page split during eviction deepened the tree" : 0,

"page written requiring lookaside records" : 0,

"pages read into cache" : 0,

"pages read into cache requiring lookaside entries" : 0,

"pages requested from the cache" : 24,

"pages seen by eviction walk" : 0,

"pages written from cache" : 0,

"pages written requiring in-memory restoration" : 0,

"tracked dirty bytes in the cache" : 3758,

"unmodified pages evicted" : 0

},

"cache\_walk" : {

"Average difference between current eviction generation when the page was last considered" : 0,

"Average on-disk page image size seen" : 0,

"Average time in cache for pages that have been visited by the eviction server" : 0,

"Average time in cache for pages that have not been visited by the eviction server" : 0,

"Clean pages currently in cache" : 0,

"Current eviction generation" : 0,

"Dirty pages currently in cache" : 0,

"Entries in the root page" : 0,

"Internal pages currently in cache" : 0,

"Leaf pages currently in cache" : 0,

"Maximum difference between current eviction generation when the page was last considered" : 0,

"Maximum page size seen" : 0,

"Minimum on-disk page image size seen" : 0,

"Number of pages never visited by eviction server" : 0,

"On-disk page image sizes smaller than a single allocation unit" : 0,

"Pages created in memory and never written" : 0,

"Pages currently queued for eviction" : 0,

"Pages that could not be queued for eviction" : 0,

"Refs skipped during cache traversal" : 0,

"Size of the root page" : 0,

"Total number of pages currently in cache" : 0

},

"compression" : {

"compressed pages read" : 0,

"compressed pages written" : 0,

"page written failed to compress" : 0,

"page written was too small to compress" : 0,

"raw compression call failed, additional data available" : 0,

"raw compression call failed, no additional data available" : 0,

"raw compression call succeeded" : 0

},

"cursor" : {

"bulk-loaded cursor-insert calls" : 0,

"create calls" : 3,

"cursor-insert key and value bytes inserted" : 1320,

"cursor-remove key bytes removed" : 0,

"cursor-update value bytes updated" : 0,

"insert calls" : 24,

"modify calls" : 0,

"next calls" : 0,

"prev calls" : 1,

"remove calls" : 0,

"reserve calls" : 0,

"reset calls" : 25,

"restarted searches" : 0,

"search calls" : 0,

"search near calls" : 0,

"truncate calls" : 0,

"update calls" : 0

},

"reconciliation" : {

"dictionary matches" : 0,

"fast-path pages deleted" : 0,

"internal page key bytes discarded using suffix compression" : 0,

"internal page multi-block writes" : 0,

"internal-page overflow keys" : 0,

"leaf page key bytes discarded using prefix compression" : 0,

"leaf page multi-block writes" : 0,

"leaf-page overflow keys" : 0,

"maximum blocks required for a page" : 0,

"overflow values written" : 0,

"page checksum matches" : 0,

"page reconciliation calls" : 0,

"page reconciliation calls for eviction" : 0,

"pages deleted" : 0

},

"session" : {

"object compaction" : 0,

"open cursor count" : 3

},

"transaction" : {

"update conflicts" : 0

}

},

"nindexes" : 2,

"totalIndexSize" : 8192,

"indexSizes" : {

"\_id\_" : 4096,

"id\_hashed" : 4096

},

"ok" : 1,

"operationTime" : Timestamp(1545635191, 111),

"$gleStats" : {

"lastOpTime" : Timestamp(0, 0),

"electionId" : ObjectId("7fffffff0000000000000001")

},

"$clusterTime" : {

"clusterTime" : Timestamp(1545635198, 3),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"$configServerState" : {

"opTime" : {

"ts" : Timestamp(1545635198, 3),

"t" : NumberLong(1)

}

}

},

"shard2" : {

"ns" : "mydb.mytable",

"size" : 2214,

"count" : 41,

"avgObjSize" : 54,

"storageSize" : 4096,

"capped" : false,

"wiredTiger" : {

"metadata" : {

"formatVersion" : 1

},

"creationString" : "access\_pattern\_hint=none,allocation\_size=4KB,app\_metadata=(formatVersion=1),assert=(commit\_timestamp=none,read\_timestamp=none),block\_allocation=best,block\_compressor=snappy,cache\_resident=false,checksum=on,colgroups=,collator=,columns=,dictionary=0,encryption=(keyid=,name=),exclusive=false,extractor=,format=btree,huffman\_key=,huffman\_value=,ignore\_in\_memory\_cache\_size=false,immutable=false,internal\_item\_max=0,internal\_key\_max=0,internal\_key\_truncate=true,internal\_page\_max=4KB,key\_format=q,key\_gap=10,leaf\_item\_max=0,leaf\_key\_max=0,leaf\_page\_max=32KB,leaf\_value\_max=64MB,log=(enabled=true),lsm=(auto\_throttle=true,bloom=true,bloom\_bit\_count=16,bloom\_config=,bloom\_hash\_count=8,bloom\_oldest=false,chunk\_count\_limit=0,chunk\_max=5GB,chunk\_size=10MB,merge\_custom=(prefix=,start\_generation=0,suffix=),merge\_max=15,merge\_min=0),memory\_page\_max=10m,os\_cache\_dirty\_max=0,os\_cache\_max=0,prefix\_compression=false,prefix\_compression\_min=4,source=,split\_deepen\_min\_child=0,split\_deepen\_per\_child=0,split\_pct=90,type=file,value\_format=u",

"type" : "file",

"uri" : "statistics:table:collection-38--1118710112865546750",

"LSM" : {

"bloom filter false positives" : 0,

"bloom filter hits" : 0,

"bloom filter misses" : 0,

"bloom filter pages evicted from cache" : 0,

"bloom filter pages read into cache" : 0,

"bloom filters in the LSM tree" : 0,

"chunks in the LSM tree" : 0,

"highest merge generation in the LSM tree" : 0,

"queries that could have benefited from a Bloom filter that did not exist" : 0,

"sleep for LSM checkpoint throttle" : 0,

"sleep for LSM merge throttle" : 0,

"total size of bloom filters" : 0

},

"block-manager" : {

"allocations requiring file extension" : 0,

"blocks allocated" : 0,

"blocks freed" : 0,

"checkpoint size" : 0,

"file allocation unit size" : 4096,

"file bytes available for reuse" : 0,

"file magic number" : 120897,

"file major version number" : 1,

"file size in bytes" : 4096,

"minor version number" : 0

},

"btree" : {

"btree checkpoint generation" : 230,

"column-store fixed-size leaf pages" : 0,

"column-store internal pages" : 0,

"column-store variable-size RLE encoded values" : 0,

"column-store variable-size deleted values" : 0,

"column-store variable-size leaf pages" : 0,

"fixed-record size" : 0,

"maximum internal page key size" : 368,

"maximum internal page size" : 4096,

"maximum leaf page key size" : 2867,

"maximum leaf page size" : 32768,

"maximum leaf page value size" : 67108864,

"maximum tree depth" : 3,

"number of key/value pairs" : 0,

"overflow pages" : 0,

"pages rewritten by compaction" : 0,

"row-store internal pages" : 0,

"row-store leaf pages" : 0

},

"cache" : {

"bytes currently in the cache" : 6214,

"bytes read into cache" : 0,

"bytes written from cache" : 0,

"checkpoint blocked page eviction" : 0,

"data source pages selected for eviction unable to be evicted" : 0,

"eviction walk passes of a file" : 0,

"eviction walk target pages histogram - 0-9" : 0,

"eviction walk target pages histogram - 10-31" : 0,

"eviction walk target pages histogram - 128 and higher" : 0,

"eviction walk target pages histogram - 32-63" : 0,

"eviction walk target pages histogram - 64-128" : 0,

"eviction walks abandoned" : 0,

"eviction walks gave up because they restarted their walk twice" : 0,

"eviction walks gave up because they saw too many pages and found no candidates" : 0,

"eviction walks gave up because they saw too many pages and found too few candidates" : 0,

"eviction walks reached end of tree" : 0,

"eviction walks started from root of tree" : 0,

"eviction walks started from saved location in tree" : 0,

"hazard pointer blocked page eviction" : 0,

"in-memory page passed criteria to be split" : 0,

"in-memory page splits" : 0,

"internal pages evicted" : 0,

"internal pages split during eviction" : 0,

"leaf pages split during eviction" : 0,

"modified pages evicted" : 0,

"overflow pages read into cache" : 0,

"page split during eviction deepened the tree" : 0,

"page written requiring lookaside records" : 0,

"pages read into cache" : 0,

"pages read into cache requiring lookaside entries" : 0,

"pages requested from the cache" : 41,

"pages seen by eviction walk" : 0,

"pages written from cache" : 0,

"pages written requiring in-memory restoration" : 0,

"tracked dirty bytes in the cache" : 6031,

"unmodified pages evicted" : 0

},

"cache\_walk" : {

"Average difference between current eviction generation when the page was last considered" : 0,

"Average on-disk page image size seen" : 0,

"Average time in cache for pages that have been visited by the eviction server" : 0,

"Average time in cache for pages that have not been visited by the eviction server" : 0,

"Clean pages currently in cache" : 0,

"Current eviction generation" : 0,

"Dirty pages currently in cache" : 0,

"Entries in the root page" : 0,

"Internal pages currently in cache" : 0,

"Leaf pages currently in cache" : 0,

"Maximum difference between current eviction generation when the page was last considered" : 0,

"Maximum page size seen" : 0,

"Minimum on-disk page image size seen" : 0,

"Number of pages never visited by eviction server" : 0,

"On-disk page image sizes smaller than a single allocation unit" : 0,

"Pages created in memory and never written" : 0,

"Pages currently queued for eviction" : 0,

"Pages that could not be queued for eviction" : 0,

"Refs skipped during cache traversal" : 0,

"Size of the root page" : 0,

"Total number of pages currently in cache" : 0

},

"compression" : {

"compressed pages read" : 0,

"compressed pages written" : 0,

"page written failed to compress" : 0,

"page written was too small to compress" : 0,

"raw compression call failed, additional data available" : 0,

"raw compression call failed, no additional data available" : 0,

"raw compression call succeeded" : 0

},

"cursor" : {

"bulk-loaded cursor-insert calls" : 0,

"create calls" : 2,

"cursor-insert key and value bytes inserted" : 2255,

"cursor-remove key bytes removed" : 0,

"cursor-update value bytes updated" : 0,

"insert calls" : 41,

"modify calls" : 0,

"next calls" : 0,

"prev calls" : 1,

"remove calls" : 0,

"reserve calls" : 0,

"reset calls" : 42,

"restarted searches" : 0,

"search calls" : 0,

"search near calls" : 0,

"truncate calls" : 0,

"update calls" : 0

},

"reconciliation" : {

"dictionary matches" : 0,

"fast-path pages deleted" : 0,

"internal page key bytes discarded using suffix compression" : 0,

"internal page multi-block writes" : 0,

"internal-page overflow keys" : 0,

"leaf page key bytes discarded using prefix compression" : 0,

"leaf page multi-block writes" : 0,

"leaf-page overflow keys" : 0,

"maximum blocks required for a page" : 0,

"overflow values written" : 0,

"page checksum matches" : 0,

"page reconciliation calls" : 0,

"page reconciliation calls for eviction" : 0,

"pages deleted" : 0

},

"session" : {

"object compaction" : 0,

"open cursor count" : 2

},

"transaction" : {

"update conflicts" : 0

}

},

"nindexes" : 2,

"totalIndexSize" : 8192,

"indexSizes" : {

"\_id\_" : 4096,

"id\_hashed" : 4096

},

"ok" : 1,

"operationTime" : Timestamp(1545635191, 110),

"$gleStats" : {

"lastOpTime" : Timestamp(0, 0),

"electionId" : ObjectId("7fffffff0000000000000002")

},

"$clusterTime" : {

"clusterTime" : Timestamp(1545635196, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"$configServerState" : {

"opTime" : {

"ts" : Timestamp(1545635196, 1),

"t" : NumberLong(1)

}

}

},

"shard3" : {

"ns" : "mydb.mytable",

"size" : 1890,

"count" : 35,

"avgObjSize" : 54,

"storageSize" : 4096,

"capped" : false,

"wiredTiger" : {

"metadata" : {

"formatVersion" : 1

},

"creationString" : "access\_pattern\_hint=none,allocation\_size=4KB,app\_metadata=(formatVersion=1),assert=(commit\_timestamp=none,read\_timestamp=none),block\_allocation=best,block\_compressor=snappy,cache\_resident=false,checksum=on,colgroups=,collator=,columns=,dictionary=0,encryption=(keyid=,name=),exclusive=false,extractor=,format=btree,huffman\_key=,huffman\_value=,ignore\_in\_memory\_cache\_size=false,immutable=false,internal\_item\_max=0,internal\_key\_max=0,internal\_key\_truncate=true,internal\_page\_max=4KB,key\_format=q,key\_gap=10,leaf\_item\_max=0,leaf\_key\_max=0,leaf\_page\_max=32KB,leaf\_value\_max=64MB,log=(enabled=true),lsm=(auto\_throttle=true,bloom=true,bloom\_bit\_count=16,bloom\_config=,bloom\_hash\_count=8,bloom\_oldest=false,chunk\_count\_limit=0,chunk\_max=5GB,chunk\_size=10MB,merge\_custom=(prefix=,start\_generation=0,suffix=),merge\_max=15,merge\_min=0),memory\_page\_max=10m,os\_cache\_dirty\_max=0,os\_cache\_max=0,prefix\_compression=false,prefix\_compression\_min=4,source=,split\_deepen\_min\_child=0,split\_deepen\_per\_child=0,split\_pct=90,type=file,value\_format=u",

"type" : "file",

"uri" : "statistics:table:collection-38--1826866215123835731",

"LSM" : {

"bloom filter false positives" : 0,

"bloom filter hits" : 0,

"bloom filter misses" : 0,

"bloom filter pages evicted from cache" : 0,

"bloom filter pages read into cache" : 0,

"bloom filters in the LSM tree" : 0,

"chunks in the LSM tree" : 0,

"highest merge generation in the LSM tree" : 0,

"queries that could have benefited from a Bloom filter that did not exist" : 0,

"sleep for LSM checkpoint throttle" : 0,

"sleep for LSM merge throttle" : 0,

"total size of bloom filters" : 0

},

"block-manager" : {

"allocations requiring file extension" : 0,

"blocks allocated" : 0,

"blocks freed" : 0,

"checkpoint size" : 0,

"file allocation unit size" : 4096,

"file bytes available for reuse" : 0,

"file magic number" : 120897,

"file major version number" : 1,

"file size in bytes" : 4096,

"minor version number" : 0

},

"btree" : {

"btree checkpoint generation" : 216,

"column-store fixed-size leaf pages" : 0,

"column-store internal pages" : 0,

"column-store variable-size RLE encoded values" : 0,

"column-store variable-size deleted values" : 0,

"column-store variable-size leaf pages" : 0,

"fixed-record size" : 0,

"maximum internal page key size" : 368,

"maximum internal page size" : 4096,

"maximum leaf page key size" : 2867,

"maximum leaf page size" : 32768,

"maximum leaf page value size" : 67108864,

"maximum tree depth" : 3,

"number of key/value pairs" : 0,

"overflow pages" : 0,

"pages rewritten by compaction" : 0,

"row-store internal pages" : 0,

"row-store leaf pages" : 0

},

"cache" : {

"bytes currently in the cache" : 5361,

"bytes read into cache" : 0,

"bytes written from cache" : 0,

"checkpoint blocked page eviction" : 0,

"data source pages selected for eviction unable to be evicted" : 0,

"eviction walk passes of a file" : 0,

"eviction walk target pages histogram - 0-9" : 0,

"eviction walk target pages histogram - 10-31" : 0,

"eviction walk target pages histogram - 128 and higher" : 0,

"eviction walk target pages histogram - 32-63" : 0,

"eviction walk target pages histogram - 64-128" : 0,

"eviction walks abandoned" : 0,

"eviction walks gave up because they restarted their walk twice" : 0,

"eviction walks gave up because they saw too many pages and found no candidates" : 0,

"eviction walks gave up because they saw too many pages and found too few candidates" : 0,

"eviction walks reached end of tree" : 0,

"eviction walks started from root of tree" : 0,

"eviction walks started from saved location in tree" : 0,

"hazard pointer blocked page eviction" : 0,

"in-memory page passed criteria to be split" : 0,

"in-memory page splits" : 0,

"internal pages evicted" : 0,

"internal pages split during eviction" : 0,

"leaf pages split during eviction" : 0,

"modified pages evicted" : 0,

"overflow pages read into cache" : 0,

"page split during eviction deepened the tree" : 0,

"page written requiring lookaside records" : 0,

"pages read into cache" : 0,

"pages read into cache requiring lookaside entries" : 0,

"pages requested from the cache" : 35,

"pages seen by eviction walk" : 0,

"pages written from cache" : 0,

"pages written requiring in-memory restoration" : 0,

"tracked dirty bytes in the cache" : 5178,

"unmodified pages evicted" : 0

},

"cache\_walk" : {

"Average difference between current eviction generation when the page was last considered" : 0,

"Average on-disk page image size seen" : 0,

"Average time in cache for pages that have been visited by the eviction server" : 0,

"Average time in cache for pages that have not been visited by the eviction server" : 0,

"Clean pages currently in cache" : 0,

"Current eviction generation" : 0,

"Dirty pages currently in cache" : 0,

"Entries in the root page" : 0,

"Internal pages currently in cache" : 0,

"Leaf pages currently in cache" : 0,

"Maximum difference between current eviction generation when the page was last considered" : 0,

"Maximum page size seen" : 0,

"Minimum on-disk page image size seen" : 0,

"Number of pages never visited by eviction server" : 0,

"On-disk page image sizes smaller than a single allocation unit" : 0,

"Pages created in memory and never written" : 0,

"Pages currently queued for eviction" : 0,

"Pages that could not be queued for eviction" : 0,

"Refs skipped during cache traversal" : 0,

"Size of the root page" : 0,

"Total number of pages currently in cache" : 0

},

"compression" : {

"compressed pages read" : 0,

"compressed pages written" : 0,

"page written failed to compress" : 0,

"page written was too small to compress" : 0,

"raw compression call failed, additional data available" : 0,

"raw compression call failed, no additional data available" : 0,

"raw compression call succeeded" : 0

},

"cursor" : {

"bulk-loaded cursor-insert calls" : 0,

"create calls" : 3,

"cursor-insert key and value bytes inserted" : 1925,

"cursor-remove key bytes removed" : 0,

"cursor-update value bytes updated" : 0,

"insert calls" : 35,

"modify calls" : 0,

"next calls" : 1,

"prev calls" : 1,

"remove calls" : 0,

"reserve calls" : 0,

"reset calls" : 37,

"restarted searches" : 0,

"search calls" : 0,

"search near calls" : 0,

"truncate calls" : 0,

"update calls" : 0

},

"reconciliation" : {

"dictionary matches" : 0,

"fast-path pages deleted" : 0,

"internal page key bytes discarded using suffix compression" : 0,

"internal page multi-block writes" : 0,

"internal-page overflow keys" : 0,

"leaf page key bytes discarded using prefix compression" : 0,

"leaf page multi-block writes" : 0,

"leaf-page overflow keys" : 0,

"maximum blocks required for a page" : 0,

"overflow values written" : 0,

"page checksum matches" : 0,

"page reconciliation calls" : 0,

"page reconciliation calls for eviction" : 0,

"pages deleted" : 0

},

"session" : {

"object compaction" : 0,

"open cursor count" : 3

},

"transaction" : {

"update conflicts" : 0

}

},

"nindexes" : 2,

"totalIndexSize" : 8192,

"indexSizes" : {

"\_id\_" : 4096,

"id\_hashed" : 4096

},

"ok" : 1,

"operationTime" : Timestamp(1545635191, 108),

"$gleStats" : {

"lastOpTime" : Timestamp(0, 0),

"electionId" : ObjectId("7fffffff0000000000000002")

},

"$clusterTime" : {

"clusterTime" : Timestamp(1545635196, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"$configServerState" : {

"opTime" : {

"ts" : Timestamp(1545635196, 1),

"t" : NumberLong(1)

}

}

}

},

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1545635196, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1545635196, 1)

}

mongos>

##一共写入100条数据，shard1写入24条，shard2写入41条，shard3写入35条，被存储的数据已经分片