首先启动创世节点eosio

eosio nodes 192.168.1.60:8000

keosd 192.168.1.60:8889

eosio nodes 192.168.1.60:8000 p2p-listen-endpoint = 192.168.1.60:9860

候选节点

test1 nodes 192.168.1.37:8001 p2p-listen-endpoint = 192.168.1.60:9837

test2 nodes 192.168.1.38:8002 p2p-listen-endpoint = 192.168.1.60:9838

test3 nodes 192.168.1.41:8003 p2p-listen-endpoint = 192.168.1.60:9841

p2p-listen-endpoint = 192.168.1.60:9860

p2p-peer-address = 192.168.1.37:9837

p2p-peer-address = 192.168.1.38:9838

p2p-peer-address = 192.168.1.41:9841

**eosio 启动nodeos服务**

./nodeos -e -p eosio --data-dir ./data --config-dir ./config --plugin eosio::chain\_api\_plugin --plugin eosio::history\_api\_plugin --verbose-http-errors --max-transaction-time=1000 --replay-blockchain –replay-blockchain –hard-replay-blockchain  --contracts-console --filter-on "\*"

**启动keosd服务**

./keosd --plugin eosio::wallet\_api\_plugin

**eosio账户的公私钥：**

EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV

5KQwrPbwdL6PhXujxW37FSSQZ1JiwsST4cqQzDeyXtP79zkvFD3

**创建秘钥对**

./cleos create key --to-console

**出块节点账户**

test1

Private key: 5Hsq92Hrf9H93JbJpdVdAdWXA5g6V9PW3J8B2aU2XKGPpCGPFJS

Public key: EOS5fxeiybMtbWFzwagyRqnqiCvF3cYfdJt3K4Ryg6cKpTvDGN8fs

test2

Private key: 5KU9eCpqmUPovez5tafndeurYZsGFv481Y12SvTKZh4S9KzbJjH

Public key: EOS8MWX8iKxpRaDyB8F3ovSg1Cw1pj95CU1wq236Qpu1EnVeCYoGg

test3

Private key: 5JzzedWh2hQnuXTZEEKgVir3XknPFgo51hQZBCdJUaBRZJFTib5

Public key: EOS66YSrPznoLyJxLfXCqHRfcJUMwCe6hQXD4kQvqkAaUJRvER9sb

**普通账户**

user1

Private key: 5KU6EFZXxtRDqm5Zfq7KS1R2UGwZh5htDNRBJv7XZ7GHarhMaj9

Public key: EOS4xMQddUGriCyEyzEwRXBt35u19cKLRw9xDYpr3zyw5Bjz31V1c

user2

Private key: 5JiTDhyfLFoRPpuTBf3mppdfM2nPHgr3kax8MdHJFTesHWv4rrN

Public key: EOS6azxyc9DQTv39kQ2Ch5csotJUfnwCamKKQhkS7DnCx1nn1psri

user3

Private key: 5JUNoVyasdb3CvN4towNFpYE3brD9EpfYkHSidLhmA48VyoYBgh

Public key: EOS8Gvb1qgxgW6Q27roen6BtbysxguoJaxdMxMgg5XYKrFDsEYmha

**创建钱包default**

./cleos wallet create --to-console

PW5JDTGyTkamJKrCpKbyaUer8RNtyvdBwSySErgAVfk57qnvejFmJ

**解锁钱包**

./cleos wallet unlock

PW5JDTGyTkamJKrCpKbyaUer8RNtyvdBwSySErgAVfk57qnvejFmJ

**将eosio账户的私钥导入钱包default**

./cleos wallet import 5KQwrPbwdL6PhXujxW37FSSQZ1JiwsST4cqQzDeyXtP79zkvFD3

**查看公钥下绑定的账户**

./cleos -u http://192.168.1.60:8000 get accounts EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV

**将他们的私钥全部导入钱包**

./cleos wallet import --private-key 5Hsq92Hrf9H93JbJpdVdAdWXA5g6V9PW3J8B2aU2XKGPpCGPFJS

./cleos wallet import --private-key 5KU9eCpqmUPovez5tafndeurYZsGFv481Y12SvTKZh4S9KzbJjH

./cleos wallet import --private-key 5JzzedWh2hQnuXTZEEKgVir3XknPFgo51hQZBCdJUaBRZJFTib5

./cleos wallet import --private-key 5KU6EFZXxtRDqm5Zfq7KS1R2UGwZh5htDNRBJv7XZ7GHarhMaj9

./cleos wallet import --private-key 5JiTDhyfLFoRPpuTBf3mppdfM2nPHgr3kax8MdHJFTesHWv4rrN

./cleos wallet import --private-key 5JUNoVyasdb3CvN4towNFpYE3brD9EpfYkHSidLhmA48VyoYBgh

**加载BIOS合约**

用于管理链上的堆栈和非堆栈资源，通过确认用户持有的token控制资源分配，包括带宽、CPU以及内存资源。

./cleos -u http://192.168.1.60:8000 set contract eosio /home/lsf/eos/build/contracts/eosio.bios -p eosio@active

用eosio的秘钥对创建以下9个账户

eosio.bpay:矿工获取出块奖励的临时代管账户，增发EOS的1%的25%会先转到这个账户

eosio.msig:多重签名管理的账户

eosio.names:靓号账户拍卖管理的账户

eosio.ram:内存买卖管理的账户

eosio.ramfee:内存买卖收取手续费的账户，按照每笔交易5%的费率收取手续费

eosio.saving:增发EOS临时存放账户，增发总量 5%，其中80%放在此账户，另外 20%再分成25%和75%，分别给eosio.bpay和eosio.vpay

eosio.stake:管理EOS抵押的账户

eosio.token:发行和管理token的账户

eosio.vpay:矿工按照获得投票多少比例获取奖励的临时代管账户，增发EOS的1%的75%会先转到这个账户

**创建合约账户和系统子账户**

./cleos -u http://192.168.1.60:8000 create account eosio eosio.token EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.msig EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.bpay EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.names EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.ram EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.ramfee EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.saving EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.stake EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

./cleos -u http://192.168.1.60:8000 create account eosio eosio.vpay EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV -p eosio

**部署eosio.token合约**

./cleos -u http://192.168.1.60:8000 set contract eosio.token /home/lsf/eos/build/contracts/eosio.token -p eosio.token@active

**发币**

./cleos -u http://192.168.1.60:8000 push action eosio.token create '[ "eosio", "1000000000.0000 SYS"]' -p eosio.token@active

**分配代币**

./cleos -u http://192.168.1.60:8000 push action eosio.token issue '[ "eosio", "1000000000.0000 SYS", "init" ]' -p eosio@active

**部署eosio.system合约**

./cleos -u http://192.168.1.60:8000 set contract eosio /home/lsf/eos/build/contracts/eosio.system -p eosio@active

**创建账户**

test1

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio test4 EOS5fxeiybMtbWFzwagyRqnqiCvF3cYfdJt3K4Ryg6cKpTvDGN8fs EOS5fxeiybMtbWFzwagyRqnqiCvF3cYfdJt3K4Ryg6cKpTvDGN8fs -p eosio

test2

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio test2 EOS8MWX8iKxpRaDyB8F3ovSg1Cw1pj95CU1wq236Qpu1EnVeCYoGg EOS8MWX8iKxpRaDyB8F3ovSg1Cw1pj95CU1wq236Qpu1EnVeCYoGg -p eosio

test3

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio test3 EOS66YSrPznoLyJxLfXCqHRfcJUMwCe6hQXD4kQvqkAaUJRvER9sb EOS66YSrPznoLyJxLfXCqHRfcJUMwCe6hQXD4kQvqkAaUJRvER9sb -p eosio

user1

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio user1 EOS4xMQddUGriCyEyzEwRXBt35u19cKLRw9xDYpr3zyw5Bjz31V1c EOS4xMQddUGriCyEyzEwRXBt35u19cKLRw9xDYpr3zyw5Bjz31V1c -p eosio

user2

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio user2 EOS6azxyc9DQTv39kQ2Ch5csotJUfnwCamKKQhkS7DnCx1nn1psri EOS6azxyc9DQTv39kQ2Ch5csotJUfnwCamKKQhkS7DnCx1nn1psri -p eosio

user3

./cleos -u http://192.168.1.60:8000 system newaccount --stake-net "50.0000 SYS" --stake-cpu "50.0000 SYS" --buy-ram-kbytes 8888888 eosio user3 EOS8Gvb1qgxgW6Q27roen6BtbysxguoJaxdMxMgg5XYKrFDsEYmha EOS8Gvb1qgxgW6Q27roen6BtbysxguoJaxdMxMgg5XYKrFDsEYmha -p eosio

**启动test1节点**

config.ini

http-server-address = 192.168.1.37:8001

p2p-listen-endpoint = 192.168.1.37:9837

p2p-peer-address = 192.168.1.60:9860

p2p-peer-address = 192.168.1.38:9838

p2p-peer-address = 192.168.1.41:9841

producer-name = test1

signature-provider = EOS5fxeiybMtbWFzwagyRqnqiCvF3cYfdJt3K4Ryg6cKpTvDGN8fs=KEY:5Hsq92Hrf9H93JbJpdVdAdWXA5g6V9PW3J8B2aU2XKGPpCGPFJS

**nohup**  ./nodeos -e -p test1 --data-dir ./data --config-dir ./config --plugin eosio::chain\_api\_plugin --plugin eosio::history\_api\_plugin --verbose-http-errors --max-transaction-time=1000 --replay-blockchain –replay-blockchain –hard-replay-blockchain  --contracts-console --filter-on "\*" &

**启动test2节点**

config.ini

http-server-address = 192.168.1.38:8002

p2p-listen-endpoint = 192.168.1.38:9838

p2p-peer-address = 192.168.1.60:9860

p2p-peer-address = 192.168.1.37:9837

p2p-peer-address = 192.168.1.41:9841

producer-name = test2

signature-provider = EOS8MWX8iKxpRaDyB8F3ovSg1Cw1pj95CU1wq236Qpu1EnVeCYoGg=KEY:5KU9eCpqmUPovez5tafndeurYZsGFv481Y12SvTKZh4S9KzbJjH

**nohup** ./nodeos -e -p test2 --data-dir ./data --config-dir ./config --plugin eosio::chain\_api\_plugin --plugin eosio::history\_api\_plugin --verbose-http-errors --max-transaction-time=1000 --replay-blockchain –replay-blockchain –hard-replay-blockchain  --contracts-console --filter-on "\*" &

**启动test3节点**

config.ini

http-server-address = 192.168.1.41:8003

p2p-listen-endpoint = 192.168.1.41:9841

p2p-peer-address = 192.168.1.60:9860

p2p-peer-address = 192.168.1.37:9837

p2p-peer-address = 192.168.1.38:9838

producer-name = test3

signature-provider = EOS66YSrPznoLyJxLfXCqHRfcJUMwCe6hQXD4kQvqkAaUJRvER9sb=KEY:5JzzedWh2hQnuXTZEEKgVir3XknPFgo51hQZBCdJUaBRZJFTib5

**nohup**  ./nodeos -e -p test3 --data-dir ./data --config-dir ./config --plugin eosio::chain\_api\_plugin --plugin eosio::history\_api\_plugin --verbose-http-errors --max-transaction-time=1000 --replay-blockchain –replay-blockchain –hard-replay-blockchain  --contracts-console --filter-on "\*" &

**注册出块节点候选人**

./cleos -u http://192.168.1.60:8000 system regproducer test1 EOS5fxeiybMtbWFzwagyRqnqiCvF3cYfdJt3K4Ryg6cKpTvDGN8fs

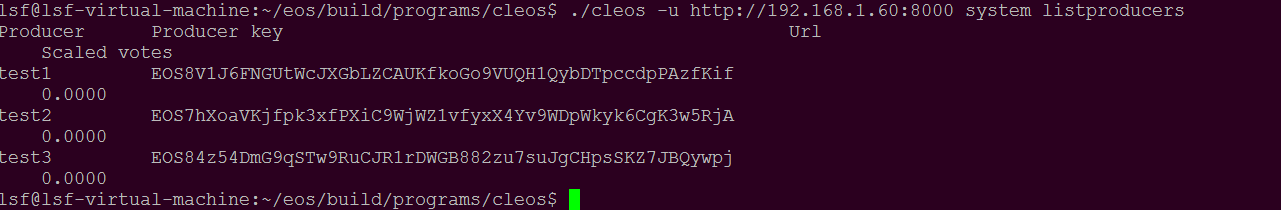
./cleos -u http://192.168.1.60:8000 system regproducer test2 EOS8MWX8iKxpRaDyB8F3ovSg1Cw1pj95CU1wq236Qpu1EnVeCYoGg

./cleos -u http://192.168.1.60:8000 system regproducer test3 EOS66YSrPznoLyJxLfXCqHRfcJUMwCe6hQXD4kQvqkAaUJRvER9sb

**查看投票投票情况**

**由于没有投票，投票率为0**

./cleos -u http://192.168.1.60:8000 system listproducers



**给user1、user2、user3分别转账**

./cleos -u http://192.168.1.60:8000 push action eosio.token transfer '["eosio", "user1","50000000.0000 SYS","vote"]' -p eosio

./cleos -u http://192.168.1.60:8000 push action eosio.token transfer '["eosio", "user2","50000000.0000 SYS","vote"]' -p eosio

./cleos -u http://192.168.1.60:8000 push action eosio.token transfer '["eosio", "user3","50000000.0000 SYS","vote"]' -p eosio

./cleos -u http://192.168.1.60:8000 get account user1

**给uesr1、user2、user3分别抵押25000000.0000SYS，占系统15%**

**以下命令分别执行5次，这里有一点就是如果一次抵押数值太大就会越界，具体峰值不知道，刚开始25000000.0000的时候报错**

**抵押资源**

./cleos -u http://192.168.1.60:8000 system delegatebw user1 user1 "5000000.0000 SYS" "5000000.0000 SYS"

./cleos -u http://192.168.1.60:8000 system delegatebw user2 user2 "5000000.0000 SYS" "5000000.0000 SYS"

./cleos -u http://192.168.1.60:8000 system delegatebw user3 user3 "5000000.0000 SYS" "5000000.0000 SYS"

**投票**

./cleos -u http://192.168.1.60:8000 system voteproducer prods user1 test1

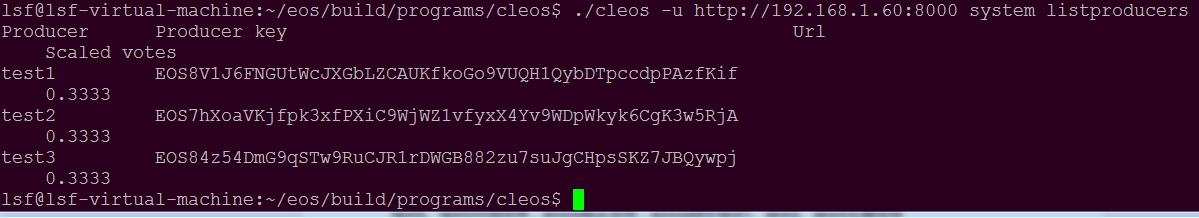
./cleos -u http://192.168.1.60:8000 system voteproducer prods user2 test2

./cleos -u http://192.168.1.60:8000 system voteproducer prods user3 test3

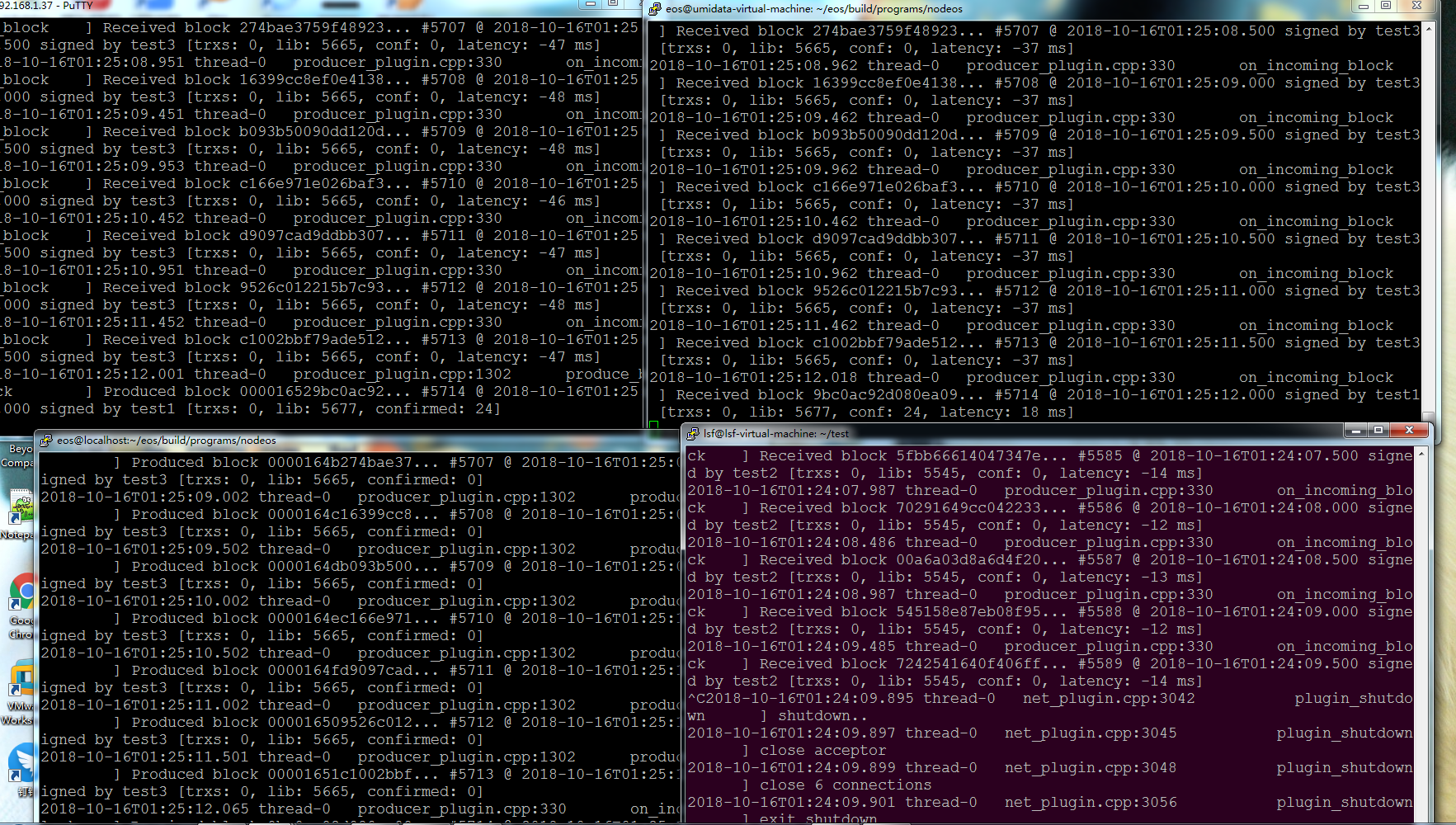
**再次查看投票投票情况**

**投票完成，每个候选节点获得33%的票**

./cleos -u http://192.168.1.60:8000 system listproducers



**投票前，由eosio出块，test1、test2、test3分别同步eosio的出块信息，当投票完成后，test1、test2、test3分别出块，eosio停止出块，eosio同步test1、test2、test3交替出块**



2018-10-16T01:24:00.254 thread-0 net\_plugin.cpp:1956 operator() ] connection failed to 192.168.1.38:9838: No route to host

2018-10-16T01:26:02.245 thread-0 net\_plugin.cpp:1956 operator() ] connection failed to 192.168.1.60:9860: Connection refused