Testing_Report-2

Functional testing
Logic test
Unit testing

Functional testing

1.1 test content

Functional testing is mainly to test the new functions developed by dynamic node, mixed consensus and cross-consensus engine, mainly including the mortgage governance node, the creation of the proposed application node, the proposal vote, the implementation of the proposal, switching consensus and other functions.

1.2 test methods

Functional test is to test the function of dynamic node in the process of starting a test network by a python script. Script location https://github.com/dimensionofficial/dimension/blob/master/tutorials/bios-boot-tutorial/bios-boot-tutorial.py

1.3 test flow

Stepkillall / close all nodeon and Keond and prepare the environment
Stepstartwallet / create the Wallet and import the private key
Stepstartboot / start the boot node eonio
Create system-related accounts 'eonio.bpay' , 'eonio.msig' , 'eonio.names' , 'eonio.ram' , 'eonio.ramfee' , 'eonio.saving' , 'eonio.saving' , 'eonio.stk' , 'eonio.vpay' , 'eonio.blkpay' , 'eonio.bppay' , 'eonio.prop'
STEPINSTALLSYSTEMCONTRACTSINSTALL system contract eonio.token, eonio.msig
STEPCREATETOKENS / create and issue 2 billion system tokens for EON
Transfer to EONIO. Blkpay, used for subsequent block awards
Stepset SYSTEMCONTRACT / Installation System Contract EONIO
System Contract / initialization system contract
Stepcreatestakedaccountscreate block node accounts producer111 * and Regular User Accounts Useraaaaaaa *
Stepstart producers / / NODE to start node nodeon for the node preparing the block
Stepstakegnodes / producer111 * Mortgage becomes governance node
Step new propols / governance node creation proposal, request to join outgoing block node
Step options options / all accounts vote on the proposal and the proposal is adopted

Claimrewards / outblock nodes receive rewards

The stepResign / Block is handed over to the new node by the BOOT node

STEPLOG / print log

1.4 process output

stepKillAll

```
1  bios-boot-tutorial.py: killall keond nodeon || true
2  keond: no process found
3  nodeon: no process found
4  sleep 1.5 ...
5  resume
```

stepStartWallet

```
1  bios-boot-tutorial.py: rm -rf dimension/tutorials/bios-boot-
   tutorial/wallet
2  bios-boot-tutorial.py: mkdir -p dimension/tutorials/bios-boot-
   tutorial/wallet
3  bios-boot-tutorial.py: ../../build/programs/keond/keond --unlock-timeout
   999999999 --http-server-address 127.0.0.1:6666 --wallet-dir
   dimension/tutorials/bios-boot-tutorial/wallet
4  sleep 0.4 ...
5  info  2019-10-18T04:15:55.533 thread-0  wallet_plugin.cpp:42
   plugin_initialize    ] initializing wallet plugin
6  info  2019-10-18T04:15:55.534 thread-0  http_plugin.cpp:452
    plugin_initialize    ] configured http to listen on 127.0.0.1:6666
7  info  2019-10-18T04:15:55.534 thread-0  http_plugin.cpp:622
    add_handler          ] add api url: /v1/keond/stop
8  info  2019-10-18T04:15:55.535 thread-0  http_plugin.cpp:530
    plugin_startup       ] start listening for http requests
9  info  2019-10-18T04:15:55.539 thread-0  http_plugin.cpp:622
    add_handler          ] add api url: /v1/node/get_supported_apis
10 ......
```

stepStartBoot

```
1  bios-boot-tutorial.py: rm -rf ./nodes/00-eonio/
2  bios-boot-tutorial.py: mkdir -p ./nodes/00-eonio/
3  bios-boot-tutorial.py: ../../build/programs/nodeon/nodeon    --max-
   irreversible-block-age -1    --contracts-console    --genesis-json
   /home/zmao/Desktop/dimenstion/dimension/tutorials/bios-boot-
   tutorial/genesis.json    --blocks-dir
   /home/zmao/Desktop/dimenstion/dimension/tutorials/bios-boot-
   tutorial/nodes/00-eonio/blocks    --config-dir
   /home/zmao/Desktop/dimenstion/dimension/tutorials/bios-boot-
```

```
   tutorial/nodes/00-eonio   --data-dir
   /home/zmao/Desktop/dimenstion/dimension/tutorials/bios-boot-
   tutorial/nodes/00-eonio   --chain-state-db-size-mb 1024   --access-
   control-allow-origin '*'   --http-server-address 0.0.0.0:8000   --p2p-
   listen-endpoint 0.0.0.0:9000   --max-clients 17   --p2p-max-nodes-per-
   host 17   --enable-stale-production   --producer-name eonio   --
   private-key
   '["eon8Znrtgwt8TfpmbVpTKvA2oB8Nqey625CLN8bCN3TEbgx86Dsvr","5K463ynhZoCDDa4
   RDcr63cUwWLTnKqmdcoTKTHBjqoKfv4u5V7p"]'   --plugin eonio::http_plugin
   --plugin eonio::chain_api_plugin   --plugin eonio::producer_plugin   --
   plugin eonio::history_plugin   --plugin eonio::history_api_plugin
   2>>./nodes/00-eonio/stderr
4  sleep 10 ...
5  resume
```

createSystemAccounts

```
1  bios-boot-tutorial.py: ../../build/programs/cleon/cleon --wallet-url
   http://127.0.0.1:6666 --url http://127.0.0.1:8000 create account eonio
   eonio.bpay eon8Znrtgwt8TfpmbVpTKvA2oB8Nqey625CLN8bCN3TEbgx86Dsvr
2  executed transaction:
   d9a141851d830f85d0de0151f5bf73d3d24c8db926740d85f4d260a1c5cf2813  200
   bytes  160 us
3  #         eonio <= eonio::newaccount
   {"creator":"eonio","name":"eonio.bpay","owner":{"threshold":1,"keys":
   [{"key":"eon8Znrtgwt8TfpmbVpTKv...
4  ......
```

stepInstallSystemContracts

```
1  bios-boot-tutorial.py: ../../build/programs/cleon/cleon --wallet-url
   http://127.0.0.1:6666 --url http://127.0.0.1:8000 set contract eonio.token
   ../../../eonio.contracts/build/contracts/eonio.token/
4  Reading WASM from
   /home/zmao/Desktop/dimenstion/eonio.contracts/build/contracts/eonio.token/
   eonio.token.wasm...
5  Publishing contract...
6  executed transaction:
   6b247ca4db4e7c997a51b49c87f22ef5ea5bbd2cbfb3bfc15cc706db46c38992  9512
   bytes  3890 us
7  #         eonio <= eonio::setcode
    {"account":"eonio.token","vmtype":0,"vmversion":0,"code":"0061736d0100000
   001b1011d60037f7e7f0060047f...
8  #         eonio <= eonio::setabi
   {"account":"eonio.token","abi":"0e656f73696f3a3a6162692f312e31000807616363
   6f756e7400010762616c616e63...
```

```
 9   warning: transaction executed locally, but may not be confirmed by the
     network yet          ]
10   bios-boot-tutorial.py: ../../build/programs/cleon/cleon --wallet-url
     http://127.0.0.1:6666 --url http://127.0.0.1:8000 set contract eonio.msig
     ../../../eonio.contracts/build/contracts/eonio.msig/
11   Reading WASM from
     /home/zmao/Desktop/dimenstion/eonio.contracts/build/contracts/eonio.msig/e
     onio.msig.wasm...
12   Publishing contract...
13   executed transaction:
     cf1abe553e4594da468f4999de8939d1117a2e9e73d11a7cd7ee4d1b05cf785b  11512
     bytes  5205 us
14   #         eonio <= eonio::setcode
      {"account":"eonio.msig","vmtype":0,"vmversion":0,"code":"0061736d01000000
     01c0011d60057f7e7e7f7f00600...
15   #         eonio <= eonio::setabi
     {"account":"eonio.msig","abi":"0e656f73696f3a3a6162692f312e310010006616374 6
     96f6e0004076163636f756e740...
```

stepCreateTokens

```
 1   bios-boot-tutorial.py: ../../build/programs/cleon/cleon --wallet-url
     http://127.0.0.1:6666 --url http://127.0.0.1:8000 push action eonio.token
     create '["eonio", "20000000000.0000 EON"]' -p eonio.token
 2   executed transaction:
     cb6455996cb3e2210847b3d9423bab0ed67bebdf3ec3824d8f0174a9705f2a84  120
     bytes  1438 us
 3   #   eonio.token <= eonio.token::create
     {"issuer":"eonio","maximum_supply":"20000000000.0000 EON"}
 4   bios-boot-tutorial.py: ../../build/programs/cleon/cleon --wallet-url
     http://127.0.0.1:6666 --url http://127.0.0.1:8000 push action eonio.token
     issue '["eonio", "1000001000.0001 EON", "memo"]' -p eonio
 5   executed transaction:
     7c72b39639fb883cf52474bc2651b254643643e974c163f398475d029c6579ef  128
     bytes  217 us
 6   #   eonio.token <= eonio.token::issue
      {"to":"eonio","quantity":"1000001000.0001 EON","memo":"memo"}
```