Fn internal mining guide

1、Internal test purpose

The purpose of Fn mining is to use the vast miners to simulate the real mining environment to discover the problems in the program and to continuously debug until the fn mining requirements are met. This internal test is the test activity carried out before going online. It is the final stage of the technical test. After passing the internal test phase, the Fn main chain will be officially launched.

2、Internal test plan

The first stage: testing the Fn main chain. It mainly includes test block packing confirmation, transaction signature and so on. At this stage, only the super node and a few miners are involved in the test main chain, and ordinary miners are temporarily unable to participate.

The second stage: testing the IPFS network. It mainly includes the transmission, storage, network stability and performance of test data. At this stage, the average miner can participate. You can use the IPFS network to upload and download data and view the data, but you can't get the mining revenue and see no revenue.

The third stage: officially started the internal test. It mainly includes the impact factor of testing mining revenue (network stability, equipment stability, trust value), consensus mechanism, and prevention of cheating. At this stage, miners can create wallets, configure mining parameters, distribute data, and view Fn revenues.

3、Subcommand

1. Overview

```
C:\miner>miner.exe
Version 1.0.1
Show help for this program.
usage:
       miner add | cat | get | del | storage | init | config | peers | local
               add     Add a single file to the Filenet network.
               cat     Cat data referenced by a hash string.
               get     Retrieve data referenced by a hash string and save it to a local file.
               del     Cat data referenced by a hash string.
               storage Show the storage of a filenet peer.

               init    Initialize your miner account.
               config  Show or edit the miner configuration.
               peers   Show the visiable filenet peers.
               local   Test if the local filenet daemon is running.
```

There are a total of the following subcommands: add, cat, get, del, storage, init, config, peers, local.

Miner and its subcommands can be viewed through the [-h|--help] command line argument.

For example, see the add subcommand description:

```
C:\miner>miner.exe add --help
Add a single file to the Filenet network.
usage:
        miner add [-h|--help] [-f|--file]= [-p|--peer]=
                -h|--help       show help.
                -f|--file       the file is to adding, only one file supported once.
                -p|--peer       optional, the peer to store the file.
You should specify a valid peer id hash string, use the "peers" cmd to list valid peers.
```

The command line option is followed by an "=" indicating that the parameter must be specified with "=", such as:

```
C:\miner>miner.exe add -f=c:/ip.txt -p=QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV
```

Subcommands and options are separated by at least one space.

2. add

```
C:\miner>miner.exe add -h
Add a single file to the Filenet network.
usage:
        miner add [-h|--help] [-f|--file]= [-p|--peer]=
                -h|--help       show help.
                -f|--file       the file is to adding, only one file supported once.
                -p|--peer       optional, the peer to store the file.
You should specify a valid peer id hash string, use the "peers" cmd to list valid peers.
```

a. The add command is used to add a file to the Filenet network. Such as:

```
C:\miner>miner.exe add -f=c:/ip.txt -p=QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV
```

This command adds the file "c:/ip.txt" to the node as "QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV" in the Filenet network.

b. The add subcommand does not specify a Filenet node. The default is to add to the Filenet network through the native Filenet node (provided the local machine runs the Filenet mining program).

c. For the Filenet node, please refer to the peers subcommand.

3. cat

```
C:\miner>miner.exe cat -h
Cat data referenced by a hash string.
usage:
        miner cat [-h|--help] [-k|--key]= [-p|--peer]=
                -h|--help       show help.
                -k|--key        the hash string of the filenet object.
                -p|--peer       optional, the perr to retrieve the hash.
You should specify a valid peer id hash string, use the "peers" cmd to list valid peers.
```

a. The cat subcommand is used to query the Filenet network for a file and output it to the screen. Such as：

```
C:\miner>miner.exe cat -k=QmTbqXvBqsJQ2dsv2ixjGd44mdjq6JhkTdYFXdP376thGW -p=QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV
```

This command uses the node "QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV" to view the data with the hash value "QmTbqXvBqsJQ2dsv2ixjGd44mdjq6JhkTdYFXdP376thGW" and output the data content to the screen.

c. The cat subcommand can also not specify a Filenet node.

4. get

```
C:\miner>miner.exe get -h
Retrieve data referenced by a hash string and save it to a local file.
usage:
        miner get [-h|--help] [-k|--key]= [-o|--out]= [-p|--peer]=
                -h|--help       show help.
                -k|--key        the hash string of the filenet object.
                -o|--out        the directory where to save the output file.
                -p|--peer       optional, the perr to retrieve the hash.
You should specify a valid peer id hash string, use the "peers" cmd to list valid peers.
```

The get subcommand is used to query a file on the Filenet network and save it to a local file. Such as:

```
C:\miner>miner.exe get -k=QmTbqXvBqsJQ2dsv2ixjGd44mdjq6JhkTdYFXdP376thGW -p=QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV
```

This command queries the file with the hash value "QmTbqXvBqsJQ2dsv2ixjGd44mdjq6JhkTdYFXdP376thGW" through the node "QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV" and
The name "QmTbqXvBqsJQ2dsv2ixjGd44mdjq6JhkTdYFXdP376thGW" is saved to the current directory.
The [-o|--out] option of the get subcommand is used to specify the path to save the file.

5. del

Not yet implemented

6. storage

Not yet implemented

7. init

```
C:\miner>miner.exe init -h
Initialize your miner account.
usage:
        miner init [-h|--help] [-p|--print] [-m|--mine]= [-w|--wallet]= [-e|--email]= [-u|--user]= [--pwd]=
                -h|--help       show help.
                -p|--print      print your miner account.
                -m|--mine       optional, enable filenet mining on this machine, false or true.
                -w|--wallet     specify a valid filenet wallet address to initialize miner account.
                -e|--email      specify a valid email address to initialize miner account.
                -u|--user       linux only, specify the current login account.
                   --pwd        linux only, specify the password of the current login account.
```

a. The init subcommand is used to initialize the mining account. You need to provide wallet and email information through [-w|--wallet] and [-e|--email] respectively. To create an account under linux, you need to provide linux account through [-u|--user] and [--pwd]. Name and password.

b. Use the [-m|--mine] option to determine if the mining program is installed locally.

8. config

```
C:\miner>miner.exe config -h
Show or edit the miner configuration.
usage:
        miner config [-h|--help] [-p|--print] [-c|--mcode]= [-i|--ip]=
                -h|--help       show help.
                -p|--print      print filenet configuration.
                -c|--mcode      specify a valid miner code to configure filenet.
                -i|--ip         the ip of the miner you are going to configure.
You should specify a valid ip, use the "peers --simple" cmd to list valid miners.
```

a. The config subcommand is used to configure the Filenet mining node. Currently only mine code is supported to mine, and the miner code is configured by the [-c|--mcode] option. A miner code can only be assigned to one Filenet node. Such as:

```
C:\miner>miner.exe config -c=xxxxxx -i=192.168.31.123
```

This command assigns the miner code "xxxxxx" to the miner with the ip address "192.168.31.123".

b. For the ip address, please refer to the peers subcommand.

9. peers

```
C:\miner>miner.exe peers -h
Show the visiable filenet peers.
usage:
        miner peers [-h|--help] [-s|--simple]
                -h|--help   show help.
                -s|--simple use simple mode, only show ip.
```

The peers subcommand is used to view the miner information in the LAN.

```
C:\miner>miner.exe peers
1 filenet peers found.
ip                  sn              api                             peer_id
192.168.1.223       002914658768    /ip4/192.168.1.223/tcp/5001     QmU2uMsNksjCaExsB3NnAqLb6PCwwzQKVQfSqJnuBW4VXV
```

Mine information includes: ip, sn (serial number), api (Filenet interface), peer_id (Filenet node)

[-s|--simple] option means simple mode, only query ip, sn information

```
C:\miner>miner.exe peers -s
1 filenet miners found.
ip                  sn
192.168.1.223       002914658768
```

10. local

```
C:\miner>miner.exe local -h
Test if the local filenet daemon is running.
usage:
        miner local [-h|--help]
                -h|--help       show help.
```

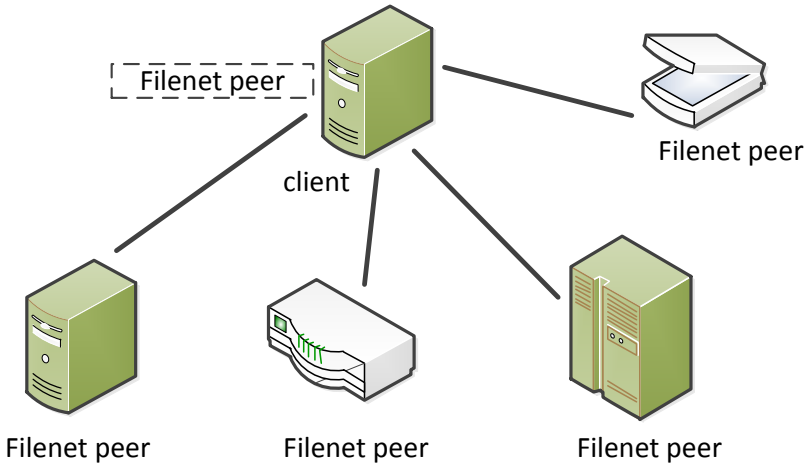
The local subcommand tests whether the native mining program is running.

4、Mining guide

1. Create a wallet

Download "Fn digital currency wallet" on the official website, create or import a wallet to get the Fn wallet address.

2. Configure the wallet address



The configuration of the wallet address is only required on the client node. The Filenet peer node does not need to be configured, but the mining program needs to be installed on the Filenet peer node.

```
F:\test>miner.exe init -w=wallet001
```

2. Installation of mining procedures

Currently only mine miners are allowed to mine, so the corresponding number of mining procedures are installed according to the number of miners.

As shown in the figure above, this client program runs on the “client” machine, and all “mining nodes” need to install the mining program.

```
F:\test>miner.exe init -m=true
successfully install the filenet system service 'daemon.exe'.
successfully start the filenet service.
```

The executable file under Linux must have executable properties, and the file obtained after decompressing the linux installation package miner-linux.tar.gz:

```
fminer  libcrypto.so.1.1  libgo.so  libjsoncpp.so.19  libssl.so.1.1  miner  spawn_sys.sh  sys.sh
```

In the miner folder, add miner, spawn_sys.sh, sys.sh to the executable properties.

chmod +x miner、spawn_sys.sh、sys.sh // Add executable properties
tar zxvf miner-linux.tag.gz // Unzip the linux installation package

The following two programs need to be installed under Linux:
sudo yum install expect // Centos system
sudo apt-get install expect // Ubuntu system
Verify that expect is installed successfully
which expect

3.1 Query node

```
C:\miner>miner.exe peers -s
1 filenet miners found.
ip                  sn
192.168.1.223       002914658768
```

3.2 Configuration node

```
C:\miner>miner.exe config -c=M175396845c0 -i=192.168.1.223
config miner '192.168.1.223' successfully.
```