# Filecoin operation and maintenance (2)-environment variables and common operation and maintenance operations

FileCoin (https://learnblockchain.cn/tags/FileCoin)

This article introduces the environment variables of Filecoin mining and some common operation and maintenance operations.

## 1. Common environment variables

Lotus data directory: `LOTUS_PATH`

```
1   export LOTUS_PATH=/gamma/lotus/data
```

Miner data directory: `LOTUS_STORAGE_PATH`

```
1   export LOTUS_STORAGE_PATH=/gamma/lotus-storage-miner/data
```

IPFS gateway address:, `IPFS_GATEWAY` used to download and copy proof parameter acceleration

```
1   export IPFS_GATEWAY=https://proof-parameters.s3.cn-south-1.jdcloud-oss.com/ipfs/
```

Temporary folder path: `TMPDIR`

```
1   export TMPDIR=/cache/tmp
```

proof Proof parameter path: `FIL_PROOFS_PARAMETER_CACHE`

```
1   export FIL_PROOFS_PARAMETER_CACHE=/gamma/filecoin-proof-parameters
```

PreCommit1 proof parents cache path (can reduce 56G memory)

```
export FIL_PROOFS_PARENT_CACHE=/gamma/filecoin-parents
```

Maximize memory parameters: `FIL_PROOFS_MAXIMIZE_CACHING`

```
export FIL_PROOFS_MAXIMIZE_CACHING=1
```

Use GPU for Precommit2 acceleration: `FIL_PROOFS_USE_GPU_COLUMN_BUILDER`

```
export FIL_PROOFS_USE_GPU_COLUMN_BUILDER=1
```

Turn on Rust log:

```
export RUST_LOG=Debug
```

Enable source code to compile the underlying library:

```
export FFI_BUILD_FROM_SOURCE=1
```

Start small sector support: (usually used for local test network)

```
export FIL_USE_SMALL_SECTORS=true
```

Set custom GPU parameters:

```
export BELLMAN_CUSTOM_GPU="GeForce RTX 2070 SUPER:2560"
```

# Two, common operation and maintenance operations

## 1. lotus daemon operation

### 1.1 View node information

```
# 查看本节点所监听的地址:
lotus net listen

/ip4/127.0.0.1/tcp/37103/p2p/12D3KooWNvqwb1gbgMNLFXtMAXP3ZwgTVgaLXbDUNqpWDQuKd1sh
/ip4/192.168.1.101/tcp/37103/p2p/12D3KooWNvqwb1gbgMNLFXtMAXP3ZwgTVgaLXbDUNqpWDQuKd1sh
/ip6/::1/tcp/46335/p2p/12D3KooWNvqwb1gbgMNLFXtMAXP3ZwgTVgaLXbDUNqpWDQuKd1sh
# 查看连接的节点列表:
lotus net peers
```

## 1.2 Manually connect to other nodes

This is especially useful when you find that the automatic synchronization fails when you synchronize, and you cannot get the available nodes:

```
lotus net connect {PEER_ADDR}
```

{PEER_ADDR} refers to the node connection address, such as `/ip4/119.33.53.66/tcp/37103/p2p/12D3KooWNvqwb1gbgMNLFXtMAXP3ZwgTVgaLXbDUNqpWDQuKd1sh`.

This is especially useful when you cannot synchronize data on the chain normally when you are synchronizing. At this time, you can try to disable the automatic connection to peers when you start the daemon, and then manually connect to a normal node, for example:

```
lotus daemon --bootstrap=false
lotus net connect {PEER_ADDR}
```

{PEER_ADDR} can be any node address that can synchronize data normally.

## 1.3 View chain synchronization status

```
lotus sync status
# 手动这是链的高度
lotus chain sethead --epoch=3960
```

If there is `Error` then the chain synchronization problems, if the state is `completed`, then the chain synchronization is complete, you can operate the other.

## 1.4 Wallet operation

```
# 创建一个 BLS 钱包
lotus wallet new bls
# 查看钱包列表
lotus wallet list
# 查看钱包余额
lotus wallet balance
```

## 1.5 Manually download proof parameters

```
# 首先记得开启京东云的代理
export IPFS_GATEWAY="https://proof-parameters.s3.cn-south-1.jdcloud-oss.com/ipfs/"
# 下载 2KiB 扇区对应的 Proof 参数
./lotus fetch-params --proving-params 2KiB
下载 32GiB 扇区对应的 Proof 参数
./lotus fetch-params --proving-params 32GiB
```

At present, the parameter of all V27 is 209GB, and the parameter size corresponding to the 32GB sector is 103GB.

# 2. lotus-storage-miner operation

## 2.1 Check the status of miners

```
lotus-storage-miner info
Miner: t0109653
Sector Size: 32 GiB
Byte Power:   1.812 TiB / 4.888 PiB (0.0362%)
Actual Power: 1.81 Ti / 4.73 Pi (0.0374%)
        Committed: 1.844 TiB
        Proving: 1.812 TiB (32 GiB Faulty, 1.69%)
Expected block win rate: 6.4627/day (every 3h42m48s)

Miner Balance: 128.044817705754006786
        PreCommit:   0
        Locked:      128.043278061722026245
        Available:   0.001539644031980541
Worker Balance: 49.947643260499744805
Market (Escrow):  0.000000000000004064
Market (Locked):  0.000000000000004064

Sectors:
        Total: 72
        Proving: 58
        PreCommit1: 12
        PreCommit2: 1
        SealPreCommit1Failed: 1
```

This is our own test of miners, `info` and it has been running for 2 days now. Here is a brief explanation of the meaning of the various data:

- Byte Power: Proving's computing power has been completed

- Actual Power: Actual effective computing power
- Committed: The computing power that has completed Commiting
- 32 GiB Faulty: The total size of the sector marked as Faulty, that is, invalid computing power.
- Expected block win rate: The expected probability of a block win in the competition, and `6.4627/day` an average of 6 blocks per day can be identified.
- Miner Balance: Current mining revenue (most concerned by the majority of miners)
- Locked: The share of mining revenue locked in (almost all of the previous revenue is locked)

Everyone can understand everything else at a glance, so I won't explain it here.

## 2.2 View sector status

```
# 列举所有扇区信息:
lotus-storage-miner sectors list
# 查看某个扇区的当前状态
lotus-storage-miner sectors status {SectorID}
# 查看某个扇区的历史状态
lotus-storage-miner sectors status --log {SectorID}
```

## 2.3 Modify the state of the sector

```
lotus-storage-miner sectors update-state --really-do-it=true {SectorID} {NewState}
# 例如某个 sector 密封失败一直卡在那里，
# 这时你可以尝试设置其状态为 '', 就可以跳过这扇区。
lotus-storage-miner sectors update-state --really-do-it=true 0 FailedUnrecoverable
```

Note: update-state needs to be operated carefully, because improper operation may cause some strange and unpredictable errors.

## 2.4 View Worker List

```
lotus-storage-miner workers list
```

## 2.5 Increase storage path

```
# 设置数据存储路径，该路径用来存储最终密封好的数据
# 执行该命令可能需要一点时间等待
lotus-storage-miner storage attach --store --init /path/to/persistent_storage

# 设置密封扇区的存储路径，密封完成之后该路径下的数据会被自动清空，相当于临时目录
# 执行该命令可能需要一点时间等待
lotus-storage-miner storage attach --seal --init /path/to/fast_cache
```

**The above two commands can be executed after starting miner, which is a way of dynamically adding storage paths, which is very flexible** .
You can also add weight to the command --weight=10, the default weight is 10. After executing this command, you can view the storage list with the following command:

```
lotus-storage-miner storage list
```

# lotus-seal-worker operation

Start the Worker command:

```
lotus-seal-worker run --address=192.168.1.100:2345 --precommit1=true --precommit2=false --commit=
```

The following points should be paid attention to when starting the worker:

1. The worker needs to be assigned an IP address that can be accessed on the LAN and an unused port of the machine.
2. precommit1, precommit2 and commit are enabled by default, if you want to disable it, you can set it to false
3. **Need to pay attention to the division of the machine's memory and functions** , such as:
   - If you plan to let the current Worker participate in P1, you need at least 128GB of RAM.
   - If you plan to let the current Worker participate in P2, you need at least 64GB of RAM.
   - If you plan to let the current Worker participate in C2, you need at least 192GB of RAM.

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# Reference link