以太坊私网建立 (3) - 通过创世区块来初始化区块链

孔壹学院：国内区块链职业教育领先品牌

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genesis block file example

```
{
  "config": {
    "chainId": 15,
    "homesteadBlock": 0,
    "eip155Block": 0,
    "eip158Block": 0
  },
  "difficulty": "4",
  "gasLimit": "2100000",
  "alloc": {
    "7df9a875a174b3bc565e6424a0050ebc1b2d1d82": {
      "balance": "300000"
    },
    "f41c74c9ae680c1aa78f42e5647a62f353b7bdde": {
      "balance": "400000"
    }
  }
}
```

config, difficulty, gasLimit, alloc创始区块文件中，这几个文件是必须的。

Start Coding

创建创世区块文件

```
/Users/liyuechun/Desktop/1015/townodes
liyuechun:townodes yuechunli$ cat > genesis.json
{
```

```
    "config": {
      "chainId": 15,
      "homesteadBlock": 0,
      "eip155Block": 0,
      "eip158Block": 0
    },
    "difficulty": "4",
    "gasLimit": "2100000",
    "alloc": {
      "7df9a875a174b3bc565e6424a0050ebc1b2d1d82": {
        "balance": "300000"
      },
      "f41c74c9ae680c1aa78f42e5647a62f353b7bdde": {
        "balance": "400000"
      }
    }
}
^C
liyuechun:townodes yuechunli$ cat genesis.json
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      },
      "f41c74c9ae680c1aa78f42e5647a62f353b7bdde": {
        "balance": "400000"
      }
    }
}
liyuechun:townodes yuechunli$
```

初始化区块链，并且创建一个文件夹来存储区块数据

```
liyuechun:townodes yuechunli$ geth init genesis.json --datadir blockchainDat
a
WARN [10-15|07:50:09] No etherbase set and no accounts found as default
INFO [10-15|07:50:09] Allocated cache and file handles    database=/Use
rs/liyuechun/Desktop/1015/townodes/blockchainData/geth/chaindata cache=16 ha
```

```
ndles=16
INFO [10-15|07:50:09] Writing custom genesis block
INFO [10-15|07:50:09] Successfully wrote genesis state       database=chai
ndata                                          hash=884fa3
…0409fd
INFO [10-15|07:50:09] Allocated cache and file handles       database=/Use
rs/liyuechun/Desktop/1015/townodes/blockchainData/geth/lightchaindata cache=
16 handles=16
INFO [10-15|07:50:09] Writing custom genesis block
INFO [10-15|07:50:09] Successfully wrote genesis state       database=ligh
tchaindata                                        hash=8
84fa3…0409fd
liyuechun:townodes yuechunli$
```

打开终端

```
geth --networkid 123 --datadir blockchainData  console
```

警告

> WARN [10-15|07:53:09] No etherbase set and no accounts found as default

出现这个警告的原因是因为，我们创世区块没有创建任何账号。

查看余额

```
> eth.getBalance("7df9a875a174b3bc565e6424a0050ebc1b2d1d82")
300000
>
```

开始 mining

```
> miner.start()
INFO [10-15|07:57:15] Updated mining threads                      threads=0
INFO [10-15|07:57:15] Transaction pool price threshold updated price=1800000
0000
ERROR[10-15|07:57:15] Cannot start mining without etherbase    err="etherbas
e address must be explicitly specified"
Error: etherbase missing: etherbase address must be explicitly specified
    at web3.js:3104:20
```

```
    at web3.js:6191:15
    at web3.js:5004:36
    at <anonymous>:1:1

>
```

如果你直接挖矿，会出现上面的错误。需要设置一个挖矿的账号。

```
> miner.setEtherbase("7df9a875a174b3bc565e6424a0050ebc1b2d1d82")
true
>
```

接下来开始挖矿。

```
> miner.start()
INFO [10-15|07:58:46] Updated mining threads                    threads=0
INFO [10-15|07:58:46] Transaction pool price threshold updated price=1800000
0000
INFO [10-15|07:58:46] Starting mining operation
null
> INFO [10-15|07:58:46] Commit new mining work                   number=1 tx
s=0 uncles=0 elapsed=159.05µs
INFO [10-15|07:58:48] Successfully sealed new block             number=1 hash
=cf9d01…e0ec7a
INFO [10-15|07:58:48] 🔨 mined potential block                  number=1 has
h=cf9d01…e0ec7a
INFO [10-15|07:58:48] Commit new mining work                    number=2 txs=
0 uncles=0 elapsed=107.264µs
INFO [10-15|07:58:48] Successfully sealed new block             number=2 hash
=1619e2…814e17
INFO [10-15|07:58:48] 🔨 mined potential block                  number=2 has
h=1619e2…814e17
INFO [10-15|07:58:48] Commit new mining work                    number=3 txs=
0 uncles=0 elapsed=107.323µs
INFO [10-15|07:58:50] Successfully sealed new block             number=3 hash
=3c1363…683a88
INFO [10-15|07:58:50] 🔨 mined potential block                  number=3 has
h=3c1363…683a88
INFO [10-15|07:58:50] Commit new mining work                    number=4 txs=
0 uncles=0 elapsed=113.813µs
INFO [10-15|07:58:51] Successfully sealed new block             number=4 hash
=f5878d…646398
INFO [10-15|07:58:51] 🔨 mined potential block                  number=4 has
h=f5878d…646398
INFO [10-15|07:58:51] Commit new mining work                    number=5 txs=
```

```
                                                 0 uncles=0 elapsed=110.545µs
INFO [10-15|07:58:51] Successfully sealed new block              number=5 hash
=0dba65…e37ab9
INFO [10-15|07:58:51] ⛏ mined potential block                    number=5 has
h=0dba65…e37ab9
INFO [10-15|07:58:51] Commit new mining work                     number=6 txs=
0 uncles=0 elapsed=92.426µs
INFO [10-15|07:58:51] Successfully sealed new block              number=6 hash
=703015…47e9f9
INFO [10-15|07:58:51] 🔗 block reached canonical chain            number=1 has
h=cf9d01…e0ec7a
INFO [10-15|07:58:51] ⛏ mined potential block                    number=6 has
h=703015…47e9f9
INFO [10-15|07:58:51] Mining too far in the future               wait=2s
INFO [10-15|07:58:53] Commit new mining work                     number=7 txs=
0 uncles=0 elapsed=2.001s
INFO [10-15|07:58:53] Successfully sealed new block              number=7 hash
=98e5b7…8d2d1a
INFO [10-15|07:58:53] 🔗 block reached canonical chain            number=2 has
h=1619e2…814e17
INFO [10-15|07:58:53] ⛏ mined potential block                    number=7 has
h=98e5b7…8d2d1a
INFO [10-15|07:58:53] Commit new mining work                     number=8 txs=
0 uncles=0 elapsed=171.147µs
INFO [10-15|07:58:54] Successfully sealed new block              number=8 hash
=3a9142…fee188
```

技术交流

- 区块链技术交流QQ群：348924182

- 「区块链部落」官方公众号

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