

《Platon研究笔记 Platon Journey》

- [1. CentOS Linux中安装配置Platon](#)
 - [1.1. 使用rpm 安装devtoolset-7](#)
 - [1.2. 使用rpm 安装dos2unix](#)
 - [1.3. 准备Platon代码](#)
 - [1.3.1. 手工拷贝](#)
 - [1.3.2. 从Git下载](#)
 - [1.4. 确保build脚本正常](#)
 - [1.5. 准备mpclib \(待完善\)](#)
 - [1.6. 编译Platon代码](#)
 - [1.7. 重新编译前的清理工作](#)
- [2. 初始化和运行Platon](#)
 - [2.1. Platon节点初始化](#)
 - [2.1.1. 生成 account 和 key_pair](#)
 - [2.1.2. 配置初始化文件](#)
 - [2.1.3. 初始化Platon](#)
 - [2.2. 启动 Platon 节点](#)
 - [2.3. platon help 信息](#)
 - [2.4. 重新初始化Platon节点](#)
- [3. 探索过程 \(供以后备查, 不再需要执行\)](#)
 - [3.1. CentOS升级gcc原始步骤](#)
 - [3.1.1. 安装CentOS-release-scl](#)
 - [3.1.2. 使用yum 安装devtoolset-7](#)
 - [3.2. 编译获得静态库libstdc++.so.6](#)

1. CentOS Linux中安装配置Platon

Ubuntu在社区中很流行，但CentOS在企业级市场中占有较大优势。目前，CentOS在AWS、阿里云、UCloud 云服务商中能够使用的最高官方版本是CentOS 7.5。

1.1. 使用rpm 安装devtoolset-7

因为Platon的WASM库和MPC库依赖，开发和编译环境需要支持C++14。GCC 6.1版本以上是默认支持C++14。 <http://www.gnu.org/software/gcc/projects/cxx-status.html#cxx14>

CentOS 7.5的GCC版本为4.8.5，开发和编译Platon需要升级GCC。Redhat官方的升级方法是通过devtoolset。

- 2018年1月，devtoolset 6 发布。
- 2018年5月，CentOS 7.5 发布。
- 2018年9月，devtoolset 7 发布。 <https://access.redhat.com/solutions/19458> http://mirror.centos.org/centos/7/sclo/x86_64/rh/devtoolset-7/ <https://www.softwarecollections.org/en/scls/rhscl/devtoolset-7/>

考虑以上的发布时间顺序、相互具体版本要求，选择在CentOS 7.5中安装devtoolset 7。

将以下33个rpm拷贝到一个目录中，再执行：
\$ sudo rpm -ivh boost-date-time-1.53.0-27.el7.x86_64.rpm efivar-libs-31-4.el7.x86_64.rpm kernel-debug-devel-3.10.0-862.el7.x86_64.rpm libgfortran4-7.2.1-1.1.1.el7.x86_64.rpm libquadmath-4.8.5-28.el7.x86_64.rpm mokutil-12-1.el7.centos.x86_64.rpm scl-utils-20130529-18.el7_4.x86_64.rpm devtoolset-7-7.1-4.el7.x86_64.rpm devtoolset-7-binutils-2.28-11.el7.x86_64.rpm devtoolset-7-dwz-0.12-1.1.el7.x86_64.rpm devtoolset-7-dyninst-9.3.2-3.el7.x86_64.rpm devtoolset-7-elfutils-0.170-5.el7.x86_64.rpm devtoolset-7-elfutils-libelf-0.170-5.el7.x86_64.rpm devtoolset-7-elfutils-libs-0.170-5.el7.x86_64.rpm devtoolset-7-gcc-7.3.1-5.13.el7.x86_64.rpm devtoolset-7-gcc-c++-7.3.1-5.13.el7.x86_64.rpm devtoolset-7-gcc-gfortran-7.3.1-5.13.el7.x86_64.rpm devtoolset-7-gdb-8.0.1-36.el7.x86_64.rpm devtoolset-7-libquadmath-devel-7.3.1-5.13.el7.x86_64.rpm devtoolset-7-libstdc++-devel-7.3.1-5.13.el7.x86_64.rpm devtoolset-7-ltrace-0.7.91-2.el7.x86_64.rpm devtoolset-7-make-4.2.1-3.el7.x86_64.rpm devtoolset-7-memstomp-0.1.5-5.1.el7.x86_64.rpm devtoolset-7-oprofile-1.2.0-2.el7.1.x86_64.rpm devtoolset-7-perftools-7.1-4.el7.x86_64.rpm devtoolset-7-runtime-7.1-4.el7.x86_64.rpm devtoolset-7-strace-4.17-7.el7.x86_64.rpm devtoolset-7-systemtap-3.1-4s.el7.x86_64.rpm devtoolset-7-systemtap-client-3.1-4s.el7.x86_64.rpm devtoolset-7-systemtap-devel-3.1-4s.el7.x86_64.rpm devtoolset-7-systemtap-runtime-3.1-4s.el7.x86_64.rpm devtoolset-7-toolchain-7.1-4.el7.x86_64.rpm devtoolset-7-valgrind-3.13.0-11.el7.x86_64.rpm

```
warning: boost-date-time-1.53.0-27.el7.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID f4a80eb5: NOKEY
```

```
warning: devtoolset-7-7.1-4.el7.x86_64.rpm: Header V4 RSA/SHA1 Signature, key ID f2ee9d55: NOKEY
```

```
Preparing... ##### [100%]
```

```
Updating / installing...
```

```
1:libquadmath-4.8.5-28.el7 ##### [ 3%]
2:libgfortran4-7.2.1-1.1.1.el7 ##### [ 6%]
3:scl-utils-20130529-18.el7_4 ##### [ 9%]
4:devtoolset-7-runtime-7.1-4.el7 ##### [ 12%]
5:devtoolset-7-binutils-2.28-11.el7##### [ 15%]
6:devtoolset-7-elfutils-libelf-0.17##### [ 18%]
7:devtoolset-7-elfutils-libs-0.170-##### [ 21%]
8:devtoolset-7-elfutils-0.170-5.el7##### [ 24%]
9:devtoolset-7-dwz-0.12-1.1.el7 ##### [ 27%]
10:devtoolset-7-gdb-8.0.1-36.el7 ##### [ 30%]
11:devtoolset-7-libstdc++-devel-7.3.##### [ 33%]
12:devtoolset-7-ltrace-0.7.91-2.el7 ##### [ 36%]
13:devtoolset-7-make-4.2.1-3.el7 ##### [ 39%]
14:devtoolset-7-memstomp-0.1.5-5.1.e##### [ 42%]
15:devtoolset-7-oprofile-1.2.0-2.el7##### [ 45%]
16:devtoolset-7-strace-4.17-7.el7 ##### [ 48%]
17:devtoolset-7-valgrind-1:3.13.0-11##### [ 52%]
18:kernel-debug-devel-3.10.0-862.el7##### [ 55%]
19:devtoolset-7-systemtap-devel-3.1-##### [ 58%]
20:efivar-libs-31-4.el7 ##### [ 61%]
21:mokutil-12-1.el7.centos ##### [ 64%]
22:boost-date-time-1.53.0-27.el7 ##### [ 67%]
23:devtoolset-7-gcc-7.3.1-5.13.el7 ##### [ 70%]
24:devtoolset-7-dyninst-9.3.2-3.el7 ##### [ 73%]
25:devtoolset-7-systemtap-runtime-3.##### [ 76%]
26:devtoolset-7-systemtap-client-3.1##### [ 79%]
27:devtoolset-7-systemtap-3.1-4s.el7##### [ 82%]
28:devtoolset-7-perftools-7.1-4.el7 ##### [ 85%]
```

```
29:devtoolset-7-gcc-c++-7.3.1-5.13.e##### [ 88%]
30:devtoolset-7-libquadmath-devel-7.##### [ 91%]
31:devtoolset-7-gcc-gfortran-7.3.1-5##### [ 94%]
32:devtoolset-7-toolchain-7.1-4.el7 ##### [ 97%]
33:devtoolset-7-7.1-4.el7 ##### [100%]
```

1.2. 使用rpm 安装dos2unix

```
$ sudo rpm -ivh dos2unix-6.0.3-7.el7.x86_64.rpm
```

1.3. 准备Platon代码

1.3.1. 手工拷贝

```
$ mkdir -p ~/work/golang/src/manual/PlatONnetwork
```

把手工获得的代码包解压缩，再放入下面的目录中 \$ mv 目录 ~/work/golang/src/manual/PlatONnetwork

1.3.2. 从Git下载

```
$ mkdir -p ~/work/golang/src/github.com/PlatONnetwork
```

```
$ cd ~/work/golang/src/github.com/PlatONnetwork
```

```
$ git clone https://github.com/PlatONnetwork/PlatON-Go
```

1.4. 确保build脚本正常

```
$ cd build
```

```
$ dos2unix *.sh
```

```
$ chmod 755 *.sh
```

1.5. 准备mpclib（待完善）

```
https://download.platon.network/mpclib.tar.gz $ tar xf mpclib.tar.gz
```

```
$ mv mpclib ~/work/golang/src/github.com/PlatONnetwork/PlatON-Go/
```

1.6. 编译Platon代码

```
$ scl enable devtoolset-7 bash
```

```
$ export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:~/work/golang/src/github.com/PlatONnetwork/PlatON-Go/mpclib
```

```
$ echo $LD_LIBRARY_PATH
```

```
/opt/rh/devtoolset-7/root/usr/lib64:/opt/rh/devtoolset-7/root/usr/lib:/opt/rh/devtoolset-7/root/usr/lib64/dyninst:/opt/rh/devtoolset-7/root/usr/lib/dyninst:/opt/rh/devtoolset-7/root/usr/lib64:/opt/rh/devtoolset-7/root/usr/lib:/home/wxuser/work/golang/src/github.com/PlatONnetwork/PlatON-Go/mpclib
```

```
$ cd PlatON-Go/
```

- 不带mpc编译

```
$ make platon > ~/temp/make_platon.txt
```

```
$ make all > ~/temp/make_platon.txt
```

- 带mpc编译（待完善）

```
$ make platon -with-mpc > ~/temp/make_platon.txt
```

```
$ make all -with-mpc > ~/temp/make_platon.txt
```

编译后生成的可执行程序在 build/ 中。

1.7. 重新编译前的清理工作

```
$ make clean
```

```
$ rm -rf build/_workspace/*
```

2. 初始化和运行Platon

2.1. Platon节点初始化

2.1.1. 生成 account 和 key pair

```
$ ./platon --datadir ./data account new
```

```
INFO [01-09|17:25:14.269] Maximum peer count          ETH=50 LES=0
total=50
Your new account is locked with a password. Please give a password. Do not forget this
password.
Passphrase:
Repeat passphrase:
Address: {60208c048e7eb8e38b0fac40406b819ce95aa7af}
```

本次操作密码设成了“0”。

```
$ ll data/keystore/
```

```
-rw----- 1 wxuser wxuser 491 Jan  9 17:25 UTC--2019-01-09T09-25-28.487164507Z-
-60208c048e7eb8e38b0fac40406b819ce95aa7af
```

```
$ ./ethkey genkeypair
```

```
$ sudo updatedb
$ locate nodekey
```

2.1.2. 配置初始化文件

[illegible]

2.1.3. 初始化Platon

```
$ ./platon --datadir ./data init genesis.json
```

```
INFO [01-09|17:31:58.832] Maximum peer count           ETH=50 LES=0
total=50
INFO [01-09|17:31:58.833] Allocated cache and file handles
database=/home/wxuser/manual-Platon/build/bin/data/platon/chaindata cache=16 handles=16
INFO [01-09|17:31:58.839] writing custom genesis block
INFO [01-09|17:31:58.840] Persisted trie from memory database      nodes=1 size=150.00B
time=34.546µs gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.00B
INFO [01-09|17:31:58.840] Successfully wrote genesis state         database=chaindata
hash=4fe06b...382a26
INFO [01-09|17:31:58.840] Allocated cache and file handles
database=/home/wxuser/manual-Platon/build/bin/data/platon/lightchaindata cache=16
handles=16
INFO [01-09|17:31:58.848] writing custom genesis block
INFO [01-09|17:31:58.848] Persisted trie from memory database      nodes=1 size=150.00B
time=238.177µs gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.00B
INFO [01-09|17:31:58.848] Successfully wrote genesis state         database=lightchaindata
hash=4fe06b...382a26
```

```
$ ll -R data/
```

```
data/:
total 0
drwx----- 2 wxuser wxuser 91 Jan  9 17:25 keystore
drwxr-xr-x 4 wxuser wxuser 45 Jan  9 17:31 platon

data/keystore:
total 4
-rw----- 1 wxuser wxuser 491 Jan  9 17:25 UTC--2019-01-09T09-25-28.487164507Z-
-60208c048e7eb8e38b0fac40406b819ce95aa7af

data/platon:
total 0
drwxr-xr-x 2 wxuser wxuser 85 Jan  9 17:31 chaindata
drwxr-xr-x 2 wxuser wxuser 85 Jan  9 17:31 lightchaindata

data/platon/chaindata:
total 16
-rw-r--r-- 1 wxuser wxuser 1802 Jan  9 17:31 000001.log
-rw-r--r-- 1 wxuser wxuser   16 Jan  9 17:31 CURRENT
-rw-r--r-- 1 wxuser wxuser    0 Jan  9 17:31 LOCK
-rw-r--r-- 1 wxuser wxuser  358 Jan  9 17:31 LOG
-rw-r--r-- 1 wxuser wxuser   54 Jan  9 17:31 MANIFEST-000000

data/platon/lightchaindata:
total 16
-rw-r--r-- 1 wxuser wxuser 1802 Jan  9 17:31 000001.log
```

```
-rw-r--r-- 1 wxuser wxuser 16 Jan 9 17:31 CURRENT
-rw-r--r-- 1 wxuser wxuser 0 Jan 9 17:31 LOCK
-rw-r--r-- 1 wxuser wxuser 358 Jan 9 17:31 LOG
-rw-r--r-- 1 wxuser wxuser 54 Jan 9 17:31 MANIFEST-000000
```

```
$ ./platon --identity "node1" --rpc --rpcaddr 0.0.0.0 --datadir ./data --rpcapi
"db,eth,net,web3,admin,personal,miner" --networkid 300 --mine --verbosity 3 --miner.ethersbase
0x60208c048e7eb8e38b0fac40406b819ce95aa7af
```

```
INFO [01-09|17:42:01.165] Maximum peer count          ETH=50 LES=0
total=50
INFO [01-09|17:42:01.166] Starting peer-to-peer node
instance=Geth/node1/v1.8.16-stable-7ee6fe39/linux-amd64/go1.11.4
INFO [01-09|17:42:01.166] Allocated cache and file handles
database=/home/wxuser/manual-Platon/build/bin/data/platon/chaindata cache=768
handles=512
INFO [01-09|17:42:01.183] Initialised chain configuration      config="{ChainID: 300
Homestead: 1 DAO: <nil> DAOSupport: false EIP150: 2 EIP155: 3 EIP158: 3 Byzantium: 4
Constantinople: <nil> Engine: &{0 0 0 0 0 [{127.0.0.1 16789 16789
68bb049008c7226de3188b6376127354507e1b1e553a2a8b988bb99b33c4d995e426596fc70ce12f7744100b
c69c5f0bce748bc298bf8f0d0de1f5929850b5f4 [149 178 250 27 246 47 49 86 100 108 50 3 199
20 51 180 127 27 0 83 249 53 174 246 71 88 21 59 36 206 116 69] {0 0 <nil>}]}]
000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
<nil>}}}"
INFO [01-09|17:42:01.183] Initialising Ethereum protocol    versions="[63 62]"
network=300
INFO [01-09|17:42:01.184] Loaded most recent local header      number=0 hash=4fe06b...
382a26 age=1mo5d6h
INFO [01-09|17:42:01.184] Loaded most recent local full block   number=0 hash=4fe06b...
382a26 age=1mo5d6h
INFO [01-09|17:42:01.184] Loaded most recent local fast block    number=0 hash=4fe06b...
382a26 age=1mo5d6h
INFO [01-09|17:42:01.184] Read the StateDB instance from the cache map sealHash=bbbae7...
30dbfb
INFO [01-09|17:42:01.184] Loaded local transaction journal      transactions=0
dropped=0
INFO [01-09|17:42:01.185] Regenerated local transaction journal  transactions=0
accounts=0
INFO [01-09|17:42:01.185] Loaded local mpc transaction journal   mpc transactions=0
dropped=0
INFO [01-09|17:42:01.185] Init mpc processor success           osType=linux icepath=
httpEndpoint=http://127.0.0.1:6789
INFO [01-09|17:42:01.185] commitDuration
commitDuration=950.000
INFO [01-09|17:42:01.185] Set the block time at the end of the last round of consensus
startTimeOfEpoch=1543979656
INFO [01-09|17:42:01.185] Starting P2P networking
INFO [01-09|17:42:03.298] UDP listener up
self=enode://aa18a88c1463c1f1026c6cb0b781027d898d19ed9c11b10ad7a3a9ee2d0c09ab607d9b24bc4
580bd816c0194215461cd88bf65955e0d87cf69e0157d464c582b@[::]:16789
```

```
INFO [01-09|17:42:03.299] Transaction pool price threshold updated price=1000000000
INFO [01-09|17:42:03.300] IPC endpoint opened
url=/home/wxuser/manual-Platon/build/bin/data/platon.ipc
INFO [01-09|17:42:03.300] RLPx listener up
self=enode://aa18a88c1463c1f1026c6cb0b781027d898d19ed9c11b10ad7a3a9ee2d0c09ab607d9b24bc4
580bd816c0194215461cd88bf65955e0d87cf69e0157d464c582b@[::]:16789
INFO [01-09|17:42:03.300] HTTP endpoint opened
url=http://0.0.0.0:6789 cors= vhosts=localhost
INFO [01-09|17:42:03.300] Transaction pool price threshold updated price=1000000000
```

2.3. platon help 信息

\$./platon --help

NAME:

platon - the go-platon command line interface

Copyright 2013-2018 The go-ethereum Authors

USAGE:

platon [options] command [command options] [arguments...]

VERSION:

1.8.16-stable-7ee6fe39

COMMANDS:

account	Manage accounts
attach	Start an interactive JavaScript environment (connect to node)
bug	opens a window to report a bug on the platon repo
console	Start an interactive JavaScript environment
copydb	Create a local chain from a target chaindata folder
dump	Dump a specific block from storage
dumpconfig	Show configuration values
export	Export blockchain into file
export-preimages	Export the preimage database into an RLP stream
import	Import a blockchain file
import-preimages	Import the preimage database from an RLP stream
init	Bootstrap and initialize a new genesis block
js	Execute the specified JavaScript files
license	Display license information
makecache	Generate ethash verification cache (for testing)
makedag	Generate ethash mining DAG (for testing)
monitor	Monitor and visualize node metrics
removedb	Remove blockchain and state databases
version	Print version numbers
wallet	Manage Ethereum presale wallets
help, h	Shows a list of commands or help for one command

ETHEREUM OPTIONS:

--config value	TOML configuration file
--datadir "/home/wxuser/.ethereum"	Data directory for the databases and keystore

<code>--keystore</code>	Directory for the keystore (default = inside the datadir)
<code>--nousb</code>	Disables monitoring for and managing USB hardware wallets
<code>--networkid value</code>	Network identifier (integer, 1=Frontier, 2=Morden (disused), 3=Ropsten, 4=Rinkeby) (default: 1)
<code>--testnet</code>	Ropsten network: pre-configured proof-of-work test network
<code>--rinkeby</code>	Rinkeby network: pre-configured proof-of-authority test network
<code>--syncmode "full"</code>	Blockchain sync mode ("fast", "full", or "light")
<code>--gcmode value</code>	Blockchain garbage collection mode ("full", "archive") (default: "full")
<code>--ethstats value</code>	Reporting URL of a ethstats service (nodename:secret@host:port)
<code>--identity value</code>	Custom node name
<code>--lightserv value</code>	Maximum percentage of time allowed for serving LES requests (0-90) (default: 0)
<code>--lightpeers value</code>	Maximum number of LES client peers (default: 100)
<code>--lightkdf</code>	Reduce key-derivation RAM & CPU usage at some expense of KDF strength

DEVELOPER CHAIN OPTIONS:

<code>--dev</code>	Ephemeral proof-of-authority network with a pre-funded developer account, mining enabled
<code>--dev.period value</code>	Block period to use in developer mode (0 = mine only if transaction pending) (default: 0)

TRANSACTION POOL OPTIONS:

<code>--txpool.locals value</code>	Comma separated accounts to treat as locals (no flush, priority inclusion)
<code>--txpool.nolocals</code>	Disables price exemptions for locally submitted transactions
<code>--txpool.journal value</code>	Disk journal for local transaction to survive node restarts (default: "transactions.rlp")
<code>--txpool.rejournal value</code>	Time interval to regenerate the local transaction journal (default: 1h0m0s)
<code>--txpool.pricelimit value</code>	Minimum gas price limit to enforce for acceptance into the pool (default: 1)
<code>--txpool.pricebump value</code>	Price bump percentage to replace an already existing transaction (default: 10)
<code>--txpool.accountslots value</code>	Minimum number of executable transaction slots guaranteed per account (default: 16)
<code>--txpool.globalslots value</code>	Maximum number of executable transaction slots for all accounts (default: 4096)
<code>--txpool.accountqueue value</code>	Maximum number of non-executable transaction slots permitted per account (default: 64)
<code>--txpool.globalqueue value</code>	Maximum number of non-executable transaction slots for all accounts (default: 1024)
<code>--txpool.globaltxcount value</code>	Maximum number of transactions for package (default: 3000)
<code>--txpool.lifetime value</code>	Maximum amount of time non-executable transaction are queued (default: 3h0m0s)

PERFORMANCE TUNING OPTIONS:

--cache value Megabytes of memory allocated to internal caching (default: 1024)
--cache.database value Percentage of cache memory allowance to use for database io (default: 75)
--cache.gc value Percentage of cache memory allowance to use for trie pruning (default: 25)
--trie-cache-gens value Number of trie node generations to keep in memory (default: 120)

ACCOUNT OPTIONS:

--unlock value Comma separated list of accounts to unlock
--password value Password file to use for non-interactive password input

API AND CONSOLE OPTIONS:

--rpc Enable the HTTP-RPC server
--rpcaddr value HTTP-RPC server listening interface (default: "localhost")
--rpcport value HTTP-RPC server listening port (default: 6789)
--rpcapi value API's offered over the HTTP-RPC interface
--ws Enable the WS-RPC server
--wsaddr value WS-RPC server listening interface (default: "localhost")
--wsport value WS-RPC server listening port (default: 6790)
--wsapi value API's offered over the WS-RPC interface
--wsorigins value Origins from which to accept websockets requests
--ipcdisable Disable the IPC-RPC server
--ipcpath Filename for IPC socket/pipe within the datadir (explicit paths escape it)
--rpccorsdomain value Comma separated list of domains from which to accept cross origin requests (browser enforced)
--rpcvhosts value Comma separated list of virtual hostnames from which to accept requests (server enforced). Accepts '*' wildcard. (default: "localhost")
--jspath loadScript JavaScript root path for loadScript (default: ".")
--exec value Execute JavaScript statement
--preload value Comma separated list of JavaScript files to preload into the console

NETWORKING OPTIONS:

--bootnodes value Comma separated enode URLs for P2P discovery bootstrap (set v4+v5 instead for light servers)
--bootnodesv4 value Comma separated enode URLs for P2P v4 discovery bootstrap (light server, full nodes)
--bootnodesv5 value Comma separated enode URLs for P2P v5 discovery bootstrap (light server, light nodes)
--port value Network listening port (default: 16789)
--maxpeers value Maximum number of network peers (network disabled if set to 0) (default: 25)
--maxpendpeers value Maximum number of pending connection attempts (defaults used if set to 0) (default: 0)
--nat value NAT port mapping mechanism (any|none|upnp|pmp|extip:<IP>) (default: "any")
--nodiscover Disables the peer discovery mechanism (manual peer addition)
--v5disc Enables the experimental RLPx v5 (Topic Discovery) mechanism

```

--netrestrict value    Restricts network communication to the given IP networks (CIDR
masks)
--nodekey value        P2P node key file
--nodekeyhex value     P2P node key as hex (for testing)

MINER OPTIONS:
--mine                  Enable mining
--miner.threads value  Number of CPU threads to use for mining (default: 0)
--miner.notify value   Comma separated HTTP URL list to notify of new work
packages
--miner.gasprice "1000000000" Minimum gas price for mining a transaction
--miner.gastarget value Target gas floor for mined blocks (default:
3150000000)
--miner.gaslimit value Target gas ceiling for mined blocks (default:
3150000000)
--miner.etherbase value Public address for block mining rewards (default =
first account) (default: "0")
--miner.extradata value Block extra data set by the miner (default = client
version)
--miner.recommit value  Time interval to recreate the block being mined
(default: 3s)
--miner.noverify        Disable remote sealing verification

GAS PRICE ORACLE OPTIONS:
--gpoblocks value      Number of recent blocks to check for gas prices (default: 20)
--gpopercentile value  Suggested gas price is the given percentile of a set of recent
transaction gas prices (default: 60)

VIRTUAL MACHINE OPTIONS:
--vmdebug              Record information useful for VM and contract debugging
--vm.evm value         External EVM configuration (default = built-in interpreter)
--vm.ewasm value       External ewasm configuration (default = built-in interpreter)

LOGGING AND DEBUGGING OPTIONS:
--fakepow              Disables proof-of-work verification
--nocompaction         Disables db compaction after import
--verbosity value      Logging verbosity: 0=silent, 1=error, 2=warn, 3=info,
4=debug, 5=detail (default: 3)
--vmodule value        Per-module verbosity: comma-separated list of <pattern>=
<level> (e.g. eth/*=5,p2p=4)
--backtrace value      Request a stack trace at a specific logging statement (e.g.
"block.go:271")
--debug                Prepends log messages with call-site location (file and line
number)
--pprof                Enable the pprof HTTP server
--pprofaddr value      pprof HTTP server listening interface (default:
"127.0.0.1")
--pprofport value      pprof HTTP server listening port (default: 6060)
--memprofilerate value Turn on memory profiling with the given rate (default:
524288)
--blockprofilerate value Turn on block profiling with the given rate (default: 0)
--cpuprofile value     Write CPU profile to the given file
--trace value          Write execution trace to the given file

```

```

--wasmlog value          output wasm contract log to file

METRICS AND STATS OPTIONS:
  --metrics              Enable metrics collection and reporting
  --metrics.influxdb     Enable metrics export/push to an external InfluxDB
database
  --metrics.influxdb.endpoint value InfluxDB API endpoint to report metrics to
(default: "http://localhost:8086")
  --metrics.influxdb.database value InfluxDB database name to push reported metrics to
(default: "platon")
  --metrics.influxdb.username value Username to authorize access to the database
(default: "test")
  --metrics.influxdb.password value Password to authorize access to the database
(default: "test")
  --metrics.influxdb.host.tag host   InfluxDB host tag attached to all measurements
(default: "localhost")

WHISPER (EXPERIMENTAL) OPTIONS:
  --shh                  Enable whisper
  --shh.maxmessagesize value Max message size accepted (default: 1048576)
  --shh.pow value        Minimum POW accepted (default: 0.2)
  --shh.restrict-light   Restrict connection between two whisper light clients

DEPRECATED OPTIONS:
  --minerthreads value   Number of CPU threads to use for mining (deprecated, use --
miner.threads) (default: 0)
  --targetgaslimit value Target gas floor for mined blocks (deprecated, use --
miner.gastarget) (default: 3150000000)
  --gasprice "1000000000" Minimum gas price for mining a transaction (deprecated, use -
-miner.gasprice)
  --etherbase value       Public address for block mining rewards (default = first
account, deprecated, use --miner.etherbase) (default: "0")
  --extradata value       Block extra data set by the miner (default = client version,
deprecated, use --miner.extradata)

MPC COMPUTE OPTIONS:
  --mpc                  Enable mpc compute
  --mpc.actor value      The address of actor to exec mpc compute
  --mpc.ice value        Filename for ice to init mvm

MISC OPTIONS:
  --help, -h show help

COPYRIGHT:
  Copyright 2013-2018 The go-ethereum Authors

```

2.4. 重新初始化Platon节点

确保Platon进程已经被杀死，再删除data目录。

```
$ cd build/bin
```

```
$ rm -rf data/platon
```

然后可以再重新初始化。

3. 探索过程（供以后备查，不再需要执行）

3.1. CentOS升级gcc原始步骤

CentOS 7.5升级GCC的原始步骤。

3.1.1. 安装CentOS-release-scl

```
$ sudo yum install centos-release-scl
```

Package	Arch	Version	Repository	Size
Installing:				
centos-release-scl	noarch	2-2.el7.centos	extras	12 k
Installing for dependencies:				
centos-release-scl-rh	noarch	2-2.el7.centos	extras	12 k
Transaction Summary				
Install 1 Package (+1 Dependent package)				
Total download size: 24 k				
Installed size: 39 k				

3.1.2. 使用yum 安装devtoolset-7

```
$ sudo yum install devtoolset-7
```

Package	Arch	Version	Repository	Size
Installing:				
devtoolset-7	x86_64	7.1-4.el7	centos-scl-rh	6.2 k
Installing for dependencies:				
boost-date-time	x86_64	1.53.0-27.el7	CentOS-7_Local	52 k
devtoolset-7-binutils	x86_64	2.28-11.el7	centos-scl-rh	5.3 M
devtoolset-7-dwz	x86_64	0.12-1.1.el7	centos-scl-rh	99 k
devtoolset-7-dyninst	x86_64	9.3.2-3.el7	centos-scl-rh	3.6 M
devtoolset-7-elfutils	x86_64	0.170-5.el7	centos-scl-rh	390 k
devtoolset-7-elfutils-libelf	x86_64	0.170-5.el7	centos-scl-rh	194 k
devtoolset-7-elfutils-libs	x86_64	0.170-5.el7	centos-scl-rh	280 k
devtoolset-7-gcc	x86_64	7.3.1-5.13.el7	centos-scl-rh	29 M
devtoolset-7-gcc-c++	x86_64	7.3.1-5.13.el7	centos-scl-rh	11 M
devtoolset-7-gcc-gfortran	x86_64	7.3.1-5.13.el7	centos-scl-rh	11 M
devtoolset-7-gdb	x86_64	8.0.1-36.el7	centos-scl-rh	3.2 M
devtoolset-7-libquadmath-devel	x86_64	7.3.1-5.13.el7	centos-scl-rh	154 k

devtoolset-7-libstdc++-devel	x86_64	7.3.1-5.13.el7	centos-scl0-rh	2.6	M
devtoolset-7-ltrace	x86_64	0.7.91-2.el7	centos-scl0-rh	148	k
devtoolset-7-make	x86_64	1:4.2.1-3.el7	centos-scl0-rh	485	k
devtoolset-7-memstomp	x86_64	0.1.5-5.1.el7	centos-scl0-rh	442	k
devtoolset-7-oprofile	x86_64	1.2.0-2.el7.1	centos-scl0-rh	1.8	M
devtoolset-7-perftools	x86_64	7.1-4.el7	centos-scl0-rh	3.6	k
devtoolset-7-runtime	x86_64	7.1-4.el7	centos-scl0-rh	20	k
devtoolset-7-strace	x86_64	4.17-7.el7	centos-scl0-rh	558	k
devtoolset-7-systemtap	x86_64	3.1-4s.el7	centos-scl0-rh	141	k
devtoolset-7-systemtap-client	x86_64	3.1-4s.el7	centos-scl0-rh	2.1	M
devtoolset-7-systemtap-devel	x86_64	3.1-4s.el7	centos-scl0-rh	2.1	M
devtoolset-7-systemtap-runtime	x86_64	3.1-4s.el7	centos-scl0-rh	405	k
devtoolset-7-toolchain	x86_64	7.1-4.el7	centos-scl0-rh	3.8	k
devtoolset-7-valgrind	x86_64	1:3.13.0-11.el7	centos-scl0-rh	7.6	M
efivar-libs	x86_64	31-4.el7	CentOS-7_Local	68	k
kernel-debug-devel	x86_64	3.10.0-862.el7	CentOS-7_Local	16	M
libgfortran4	x86_64	7.2.1-1.1.1.el7	CentOS-7_Local	676	k
libquadmath	x86_64	4.8.5-28.el7	CentOS-7_Local	188	k
mokutil	x86_64	12-1.el7.centos	CentOS-7_Local	41	k
scl-utils	x86_64	20130529-18.el7_4	CentOS-7_Local	24	k

Transaction Summary

=====

Install 1 Package (+32 Dependent packages)

Total download size: 100 M

Installed size: 289 M

3.2. 编译获得静态库libstdc++.so.6

通过devtoolset 7升级GCC，并不会得到静态库：libstdc++.so.6.0.24。可以在“另一个”CentOS 7.5环境中，编译gcc 7.3.0得到这个文件。

<http://www.netgull.com/gcc/releases/gcc-7.3.0/gcc-7.3.0.tar.gz>

ftp://gcc.gnu.org/pub/gcc/infrastructure/gmp-6.1.0.tar.bz2 ftp://gcc.gnu.org/pub/gcc/infrastructure/mpfr-3.1.4.tar.bz2 ftp://gcc.gnu.org/pub/gcc/infrastructure/mpc-1.0.3.tar.gz
ftp://gcc.gnu.org/pub/gcc/infrastructure/isl-0.16.1.tar.bz2

\$ tar xvf gcc-7.3.0.tar.gz

\$ cd gcc-7.3.0

\$./contrib/download_prerequisites 说明：如果脚本无法成功通过ftp下载文件，就手动下载以上4个压缩包，放到gcc-7.3.0/中，再执行这个脚本，解压缩并建立link。

\$ mkdir build

\$ cd build

\$./configure --enable-checking=release --enable-languages=c,c++ --disable-multilib 说明：--enable-checking=release //增加一些检查，也可以--disable-checking生成的编译器在编译过程中不做检查；--enable-languages=c,c++ //让gcc支持的编程语言；--disable-multilib //取消多目标库编译(取消32位库编译)。

\$ make

libstdc++.so.6.0.24 在 build/x86_64-pc-linux-gnu/libstdc++-v3/src/.libs/libstdc++.so.6.0.24 中。如果需要，可以把它拷贝到另外一个Linux的 /opt/rh/devtoolset-7/root/lib64/ 中。（目前不需要）

```
$ sudo mv libstdc++.so.6.0.24 /opt/rh/devtoolset-7/root/lib64/
```

```
$ cd /opt/rh/devtoolset-7/root/lib64/
```

```
$ sudo chown root.root libstdc++.so.6.0.24
```

```
$ sudo chmod 755 libstdc++.so.6.0.24
```

```
$ sudo ln -s libstdc++.so.6.0.24 libstdc++.so.6
```