

第一篇 - 手把手教你理清EOS各种开发环境搭建来龙去脉


2018-04-04 | 阅读：515次

目前来讲，任何学习 EOS 相关技术的资料都来自 <https://github.com/EOSIO/eos>，可能大家在搭建 EOS 开发环境的过程中，会很迷茫，网上资料都很乱，自己也理不清头绪，不知如何下手。在这里，[春哥](#) 将一步步为你揭开层层面纱。




1. 硬件软件环境


因为 EOS 的版本太多，所以你需要先知道如何查看 EOS 对应版本的相关资料。


打开 EOS Github 官网 <https://github.com/EOSIO/eos> ,如下图所示，点击 master ,然后点击 tag ，你将会看到不同的版本及其对应的文档。


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 EOSIO / eos


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An open source smart contract platform <https://eosio.github.io/eos/>

 4,762 commits

 49 branches

 41 releases

 92 contributors

Branch: master 


New pull request










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 wanderingbort Merge pull request #2333 from EOSIO/fix_txn_gen_nonce_again ... Latest commit 96ee032 9 hours ago

 CMakeModules	Remove patch level from doc page	7 days ago
 Docker	feat(docker): add mongo_db_plugin support to docker	22 hours ago
 contracts	Changed include to work with build and with eosiocpp for tutorial. GH #...	2 days ago
 debian	Rename eosiod to nodeos and eosioc to cleos and update docs and scripts.	23 days ago
 docs	Change patch level to 0	7 days ago
 externals	Fix #1795 - install magic_get headers	20 days ago
 libraries	Merge pull request #2332 from EOSIO/no-auth-gh#2284	9 hours ago
 plugins	Merge pull request #2333 from EOSIO/fix_txn_gen_nonce_again	9 hours ago
 programs	Merge pull request #2313 from EOSIO/2294	20 hours ago

scripts	Fedora: fixed typo in version check for boost libraries	2 days ago
tests	Add test for no auth on newaccount #2284	13 hours ago
tools	Update eosiocpp.in	21 days ago
.gitignore	update the testnet.template and tn_up/down scripts for #2111	8 days ago
.gitlab-ci.yml	Standard optimization Docker build	7 months ago
.gitmodules	move magic_get to external	20 days ago
CMakeLists.txt	Don't install genesis.json any more (it's removed from repo)	7 days ago

我在我电脑安装过各种各样的版本，踩过各种各样的莫名其妙的坑，这篇文章我将以如下配置为大家分享。

- 操作系统



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- EOS 版本

Tag: dawn-v3.0.0 ▾

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Branches

Tags

✓ dawn-v3.0.0

dawn-v2.0.0

dawn-v1.0.0

SuperDawn-2018-03-18

SuperDawn-2018-03-04

SuperDawn-2018-03-02

larryk85/fix/create_account_fails ...

Latest commit d9ad8ee 6 days ago

atch level from doc page 7 days ago

walletd references with keosd in docker-compose 8 days ago

request #2154 from EOSIO/remove-unused-contract-tic_tac_toe 7 days ago

osiod to nodeos and eosioc to cleos and update docs and scripts. 23 days ago

atch level to 0 7 days ago

- install magic_get headers 20 days ago

request #2165 from larryk85/fix/create_account_fails 6 days ago

request #2157 from EOSIO/issue2156 7 days ago

2. 编译设置开发环境

2.1 获取 EOS 源码及其所有子模块

```
$ git clone https://github.com/eosio/eos --recursive
```

如果克隆代码时未带 `--recursive` 参数，那么可切换到项目路径下面执行如下命令，更新子模块。

```
$ git submodule update --init --recursive
```

2.2 编译源码生成可执行文件

切换到上面的项目根目录下面，执行如下命令。

```
liyuechun:eos yuechunli$ ./eosio_build.sh darwin full
```

```
liyuechun:eos yuechunli$ ls
CMakeLists.txt      debian              ring.dot
CMakeModules        docs               ring.png
Docker              eos-logo.png       scripts
Doxyfile            eos.doxygen.in     star.dot
HEADER             eosio_build.sh     star.png
Jenkinsfile        externals          testnet-diagrams.sh
LICENSE.txt         libraries          testnet.md
README.md           mesh.dot           testnet.template
build              mesh.png           tests
circle.yml          plugins            tools
contracts           programs
liyuechun:eos yuechunli$ ./eosio_build.sh darwin full
```

```
Beginning build version: 1.2
2018年 4月12日 星期四 07时44分06秒 UTC
git head id: 96ee0325cc925ff3e90f865ebc72b01341196e08
Current branch: * master
```

```
ARCHITECTURE: Darwin
```

```
OS name: Darwin
OS Version: 10.13.3
CPU speed: 250.00Ghz
CPU cores: 4
Physical Memory: 16 Gbytes
Disk space total: 465G
Disk space available: 133G
```

```
.....
```

```
漫长等待，半小时左右，网络不好的话，40 - 50分钟。
```

```
[100%] Linking CXX executable chain_test
```

```
ld: warning: PIE disabled. Absolute addressing (perhaps -mdynamic-no-pic) not allowed in code signed PIE, but used in __gmpn_divexact_1 from /usr/local/lib/libgmp.a(dive_1.0). To fi
[100%] Built target chain_test
```

```
(  _  \ (  _  ) (  _  \  _  / (  _  )
| (  \  | (  ) || (  \  ) (  | (  ) | | | | | |
| (  _  | |  | | | (  _  | |  | |  |
| _  ) | |  | | | (  _  ) | |  | |  |
| (  _  | |  | | | (  _  ) | |  | |  |
| (  _  ^ | (  ) | \  _  ) | _  ) (  _  |
| _  ) / (  _  ) \  _  ) \  _  ) / (  _  )
```

EOS.IO has been successfully built. 0:11:48

To verify your installation run the following commands:

```
/usr/local/bin/mongod -f /usr/local/etc/mongod.conf &
cd /Users/liyuechun/eos/build; make test
```

For more information:

EOS.IO website: <https://eos.io>

EOS.IO Telegram channel @ <https://t.me/EOSProject>

EOS.IO resources: <https://eos.io/resources/>

EOS.IO wiki: <https://github.com/EOSIO/eos/wiki>

EOS 附带的可执行程序:

```
liyuechun:programs yuechunli$ pwd
/Users/liyuechun/Desktop/0402/eos/build/programs
liyuechun:programs yuechunli$ ls
CMakeFiles          cmake_install.cmake      keosd
CTestTestfile.cmake eosio-abigen              nodeos
Makefile             eosio-applesedemo
cleos                eosio-launcher
liyuechun:programs yuechunli$
```

- **nodeos:** 区块链服务器节点生成组建
- **cleos:** 和区块链交互的接口命令
- **keosd:** EOS 钱包
- **eosio-launcher:** 节点网络组成和部署的应用

所有这些程序 `/eos/build/programs` 都存在于这个文件夹。

2.3 建立区块链节点

切换到目录 `eos/build/programs/nodeos` 下面，然后执行如下命令。

`./nodeos` 命令可附带 `--data-dir` 节点文件夹名字 参数，默认文件夹为 `nodeos`。

```
liyuechun:nodeos yuechunli$ ./nodeos
```


如下图所示，执行完 `./nodeos` 程序后会报错，并且有如下两个提示。

```
liyuechun:nodeos yuechunli$ ./nodeos
1471763ms thread-0 chain_plugin.cpp:99 plugin_initialize ] initializing chain plugin
1471763ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 127.0.0.1 port: 8888
1471763ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 127.0.0.1:8888
1471763ms thread-0 net_plugin.cpp:2628 plugin_initialize ] Initialize net plugin
1471763ms thread-0 net_plugin.cpp:2644 plugin_initialize ] Setting net_plugin logging level to info
1471763ms thread-0 net_plugin.cpp:2669 plugin_initialize ] host: 0.0.0.0 port: 9876
1471763ms thread-0 net_plugin.cpp:2745 plugin_initialize ] my node_id is f871ec411d15f05f62e9a89b1fdb4a6
63896ca9666e69d58030d22a45cd34868
1471764ms thread-0 main.cpp:90 main ] nodeos version 96ee0325
1471764ms thread-0 main.cpp:91 main ] eosio root is /Users/liyuechun/Library/Application Support
1471764ms thread-0 chain_plugin.cpp:178 plugin_startup ]
generating default genesis file /Users/liyuechun/Library/Application Support/eosio/nodeos/config/genesis.json
1471817ms thread-0 chain_plugin.cpp:208 plugin_startup ] starting chain in read/write mode
1471817ms thread-0 chain_plugin.cpp:213 plugin_startup ] Blockchain started; head block is #0, genesis
timestamp is 2018-03-01T12:00:00.000
1471817ms thread-0 http_plugin.cpp:213 plugin_startup ] start listening for http requests
1471817ms thread-0 net_plugin.cpp:2757 plugin_startup ] starting listener, max clients is 25
1471817ms thread-0 producer_plugin.cpp:161 plugin_startup ] producer plugin: plugin_startup() begin
1471817ms thread-0 producer_plugin.cpp:175 plugin_startup ] No producers configured! Please add producer
IDs and private keys to configuration.
1471817ms thread-0 producer_plugin.cpp:176 plugin_startup ] producer plugin: plugin_startup() end
1936054ms thread-0 net_plugin.cpp:2771 plugin_shutdown ] shutdown..
1936054ms thread-0 net_plugin.cpp:2774 plugin_shutdown ] close acceptor
1936055ms thread-0 net_plugin.cpp:2777 plugin_shutdown ] close 0 connections
1936055ms thread-0 net_plugin.cpp:2785 plugin_shutdown ] exit shutdown
```

`generating default genesis file /Users/liyuechun/Library/Application Support/eosio/nodeos/config/genesis.json` 表示创建了一个 `nodeos` 节点文件夹。

`No producers configured! Please add producer IDs and private keys to configuration.` 表示

```
liyuechun:nodeos yuechunli$ cd /Users/liyuechun/Library/Application\ Support/eosio/
liyuechun:eosio yuechunli$ ls
nodeos
liyuechun:eosio yuechunli$ cd nodeos/
liyuechun:nodeos yuechunli$ ls
config data
liyuechun:nodeos yuechunli$ cd config/
liyuechun:config yuechunli$ ls
config.ini genesis.json
liyuechun:config yuechunli$ cd ..
```

```
liyuechun:nodeos yuechunli$ ls
config  data
liyuechun:nodeos yuechunli$ cd data/
liyuechun:data yuechunli$ ls
blocks      default.wallet  shared_mem
liyuechun:data yuechunli$
```

`config` 是区块链配置文件，`data` 是区块链交易数据、钱包数据存储文件。我们需要修改 `config.ini` 文件里面的相关配置。

我的文件的内容如下：

```
# Track only transactions whose scopes involve the listed accounts. Default is to track all transactions. (eosio::account_history_plugin)
# filter_on_accounts =

# Limits the maximum time (in milliseconds) processing a single get_transactions call. (eosio::account_history_plugin)
get-transactions-time-limit = 3

# File to read Genesis State from (eosio::chain_plugin)
genesis-json = "/Users/liyuechun/Library/Application Support/eosio/nodeos/config/genesis.json"

# override the initial timestamp in the Genesis State file (eosio::chain_plugin)
# genesis-timestamp =

# the location of the block log (absolute path or relative to application data dir) (eosio::chain_plugin)
block-log-dir = "blocks"

# Pairs of [BLOCK_NUM,BLOCK_ID] that should be enforced as checkpoints. (eosio::chain_plugin)
# checkpoint =

# Limits the maximum time (in milliseconds) that a reversible block is allowed to run before being considered invalid (eosio::chain_plugin)
max-reversible-block-time = -1

# Limits the maximum time (in milliseconds) that is allowed a pushed transaction's code to execute before being considered invalid (eosio::chain_plugin)
max-pending-transaction-time = -1

# Limits the maximum time (in milliseconds) that is allowed a to push deferred transactions at the start of a block (eosio::chain_plugin)
max-deferred-transaction-time = 20

# Override default WASM runtime (eosio::chain_plugin)
# wasm-runtime =

# Time to wait, in milliseconds, between creating next faucet created account. (eosio::faucet_testnet_plugin)
faucet-create-interval-ms = 1000

# Name to use as creator for faucet created accounts. (eosio::faucet_testnet_plugin)
faucet-name = faucet

# [public key, WIF private key] for signing for faucet creator account (eosio::faucet_testnet_plugin)
faucet-private-key = ["EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV", "5KQwrPbwdL6PhXujxW37FSSQZ1JiwsST4cqQzDeyXtP79zkvFD3"]

# The local IP and port to listen for incoming http connections. (eosio::http_plugin)
http-server-address = 127.0.0.1:8888

# Specify the Access-Control-Allow-Origin to be returned on each request. (eosio::http_plugin)
```

```
# access-control-allow-origin =

# Specify the Access-Control-Allow-Headers to be returned on each request. (eosio::http_plugin)
# access-control-allow-headers =

# Specify if Access-Control-Allow-Credentials: true should be returned on each request. (eosio::http_plugin)
access-control-allow-credentials = false

# The queue size between nodeos and MongoDB plugin thread. (eosio::mongo_db_plugin)
mongodb-queue-size = 256

# MongoDB URI connection string, see: https://docs.mongodb.com/master/reference/connection-string/. If not specified then plugin is disabled. Default database 'EOS' is used if not specified
# mongodb-uri =

# The actual host:port used to listen for incoming p2p connections. (eosio::net_plugin)
p2p-listen-endpoint = 0.0.0.0:9876

# An externally accessible host:port for identifying this node. Defaults to p2p-listen-endpoint. (eosio::net_plugin)
# p2p-server-address =

# The public endpoint of a peer node to connect to. Use multiple p2p-peer-address options as needed to compose a network. (eosio::net_plugin)
# p2p-peer-address =

# The name supplied to identify this node amongst the peers. (eosio::net_plugin)
agent-name = "EOS Test Agent"

# Can be 'any' or 'producers' or 'specified' or 'none'. If 'specified', peer-key must be specified at least once. If only 'producers', peer-key is not required. 'producers' and 'specified' are mutually exclusive
allowed-connection = any

# Optional public key of peer allowed to connect. May be used multiple times. (eosio::net_plugin)
# peer-key =

# Tuple of [PublicKey, WIF private key] (may specify multiple times) (eosio::net_plugin)
# peer-private-key =

# Log level: one of 'all', 'debug', 'info', 'warn', 'error', or 'off' (eosio::net_plugin)
log-level-net-plugin = info

# Maximum number of clients from which connections are accepted, use 0 for no limit (eosio::net_plugin)
max-clients = 25

# number of seconds to wait before cleaning up dead connections (eosio::net_plugin)
connection-cleanup-period = 30

# True to require exact match of peer network version. (eosio::net_plugin)
network-version-match = 0

# number of blocks to retrieve in a chunk from any individual peer during synchronization (eosio::net_plugin)
sync-fetch-span = 100

# Enable block production, even if the chain is stale. (eosio::producer_plugin)
enable-stale-production = true

# Percent of producers (0-100) that must be participating in order to produce blocks (eosio::producer_plugin)
required-participation = 33

# ID of producer controlled by this node (e.g. inita; may specify multiple times) (eosio::producer_plugin)
```



```

producer-name = eosio

# Tuple of [public key, WIF private key] (may specify multiple times) (eosio::producer_plugin)
private-key = ["EOS6MRyAjQq8ud7hVNYcfnVPJqcVpscN5So8BhtHuGYqET5GDW5CV", "5KQwrPbwdL6PhXujxW37FSSQZ1JiwsST4cqQzDeyXtP79zkvFD3"]

# The path of the wallet files (absolute path or relative to application data dir) (eosio::wallet_plugin)
wallet-dir = "."

# Timeout for unlocked wallet in seconds. Wallets will automatically lock after specified number of seconds of inactivity. Activity is defined as any wallet command e.g. list-wallets
# unlock-timeout =

# eosio key that will be imported automatically when a wallet is created. (eosio::wallet_plugin)
# eosio-key =

# Plugin(s) to enable, may be specified multiple times
# Load the block producer plugin, so you can produce blocks
plugin = eosio::producer_plugin
# Wallet plugin
plugin = eosio::wallet_api_plugin
# As well as API and HTTP plugins
plugin = eosio::chain_api_plugin
plugin = eosio::http_plugin

```

你需要做如下设置：

- `genesis-json = "/Users/liyuechun/Library/Application Support/eosio/nodeos/config/genesis.json"`
- `enable-stale-production = true`
- `producer-name = eosio`
- `plugin = eosio::producer_plugin`
- `plugin = eosio::wallet_api_plugin`
- `plugin = eosio::chain_api_plugin`
- `plugin = eosio::http_plugin`

接下来再次启动 `./nodeos` 程序，每 `0.5` 秒会产生一个区块。

```

liyuechun:nodeos yuechunli$ ./nodeos
2212313ms thread-0 chain_plugin.cpp:99 plugin_initialize ] initializing chain plugin
2212313ms thread-0 wallet_plugin.cpp:41 plugin_initialize ] initializing wallet plugin
2212313ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 127.0.0.1 port: 8888
2212313ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 127.0.0.1:8888
2212313ms thread-0 net_plugin.cpp:2628 plugin_initialize ] Initialize net plugin
2212313ms thread-0 net_plugin.cpp:2644 plugin_initialize ] Setting net_plugin logging level to info
2212313ms thread-0 net_plugin.cpp:2669 plugin_initialize ] host: 0.0.0.0 port: 9876
2212313ms thread-0 net_plugin.cpp:2745 plugin_initialize ] my node_id is e03436889c70950da2180e6bc3b215d4283d078a54723ca32cd28c816aa4621b
2212313ms thread-0 main.cpp:90 main ] nodeos version 96ee0325
2212313ms thread-0 main.cpp:91 main ] eosio root is /Users/liyuechun/Library/Application Support
2212329ms thread-0 chain_plugin.cpp:208 plugin_startup ] starting chain in read/write mode
2212329ms thread-0 chain_plugin.cpp:213 plugin_startup ] Blockchain started; head block is #0, genesis timestamp is 2018-03-01T12:00:00.000
2212329ms thread-0 producer_plugin.cpp:161 plugin_startup ] producer plugin: plugin_startup() begin
2212329ms thread-0 producer_plugin.cpp:166 plugin_startup ] Launching block production for 1 producers.

```

```
*****
*                                     *
*  ----- NEW CHAIN -----        *
*  -   Welcome to EOSIO!   -        *
*  -----                     *
*                                     *
*****
```

Your genesis seems to have an old timestamp

Please consider using the --genesis-timestamp option to give your genesis a recent timestamp

```
2212330ms thread-0 producer_plugin.cpp:176 plugin_startup ] producer plugin: plugin_startup() end
2212330ms thread-0 http_plugin.cpp:213 plugin_startup ] start listening for http requests
2212330ms thread-0 wallet_api_plugin.cpp:70 plugin_startup ] starting wallet_api_plugin
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/create
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/get_public_keys
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/import_key
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/list_keys
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/list_wallets
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/lock
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/lock_all
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/open
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/set_timeout
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/sign_transaction
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/unlock
2212330ms thread-0 chain_api_plugin.cpp:62 plugin_startup ] starting chain_api_plugin
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/abi_bin_to_json
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/abi_json_to_bin
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_account
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_block
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_code
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_currency_balance
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_currency_stats
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_info
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_required_keys
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_table_rows
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_block
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_transaction
2212330ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_transactions
2212330ms thread-0 net_plugin.cpp:2757 plugin_startup ] starting listener, max clients is 25
eosio generated block b8001d13... #1 @ 2018-04-12T08:36:52.500 with 0 trxs, lib: 0
eosio generated block 96eab818... #2 @ 2018-04-12T08:36:53.000 with 0 trxs, lib: 1
eosio generated block 635d105b... #3 @ 2018-04-12T08:36:53.500 with 0 trxs, lib: 2
eosio generated block 29ef0516... #4 @ 2018-04-12T08:36:54.000 with 0 trxs, lib: 3
eosio generated block 1fc1ac75... #5 @ 2018-04-12T08:36:54.500 with 0 trxs, lib: 4
eosio generated block 041d331f... #6 @ 2018-04-12T08:36:55.000 with 0 trxs, lib: 5
eosio generated block ebee3c7d... #7 @ 2018-04-12T08:36:55.500 with 0 trxs, lib: 6
eosio generated block eecd62a0... #8 @ 2018-04-12T08:36:56.000 with 0 trxs, lib: 7
eosio generated block c2b27ea5... #9 @ 2018-04-12T08:36:56.500 with 0 trxs, lib: 8
eosio generated block 6c66dc13... #10 @ 2018-04-12T08:36:57.000 with 0 trxs, lib: 9
eosio generated block 2534614c... #11 @ 2018-04-12T08:36:57.500 with 0 trxs, lib: 10
eosio generated block cce2934b... #12 @ 2018-04-12T08:36:58.000 with 0 trxs, lib: 11
eosio generated block 0165d88b... #13 @ 2018-04-12T08:36:58.500 with 0 trxs, lib: 12
eosio generated block fa240aa7... #14 @ 2018-04-12T08:36:59.000 with 0 trxs, lib: 13
eosio generated block 2965e8d4... #15 @ 2018-04-12T08:36:59.500 with 0 trxs, lib: 14
```

3. 查看区块信息

重新打开一个终端，切换到如下路径。

```
liyuechun:cleos yuechunli$ ./cleos -p 8888 get info
{
  "server_version": "96ee0325",
  "head_block_num": 342,
  "last_irreversible_block_num": 341,
  "head_block_id": "0000015609ca5ec4f237bbe49e8eb3aa36dbe8ecec86133340567dad5caf01ba",
  "head_block_time": "2018-04-12T08:39:43",
  "head_block_producer": "eosio"
}
liyuechun:cleos yuechunli$ ./cleos -p 8888 get info
{
  "server_version": "96ee0325",
  "head_block_num": 359,
  "last_irreversible_block_num": 358,
  "head_block_id": "00000167a933b393bc3562ca2998080748a1ed24f79014848e7b0b34f2c0c429",
  "head_block_time": "2018-04-12T08:39:51",
  "head_block_producer": "eosio"
}
```

5. 视频获取方式