

# Run Conflux Node

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# Conflux

Conflux PoW( ) + PoS( ) RPC node ( client

## ArchiveNode VS FullNode

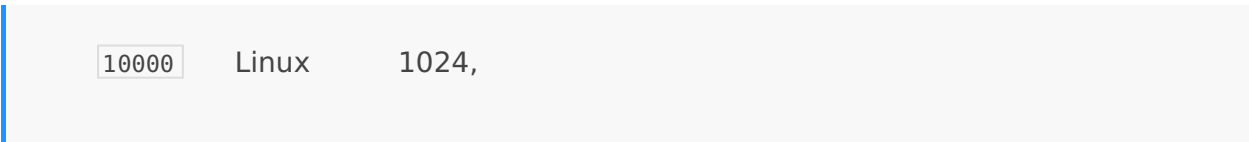
Conflux (ArchiveNode) (FullNode) (LightNode)

, RPC ArchiveNode.

### ArchiveNode

- CPU 4Core
- 16G
- 1T

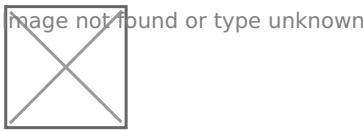
### Fullnode



G7 AWS m5.xlarge

RPC ESSD AWS GP3 6000IOPS Provisioned IOPS SSD

Conflux Github [Rel Conflux-rust](#) Release Release Window



conflux-vx.x.x, conflux-vx.x.x-testnet.

zip run

```
→ tree
.
├─ conflux #
├─ log.yaml #
├─ pos_config # pos
│   ├─ genesis_file
│   ├─ initial_nodes.json
│   └─ pos_config.yaml
├─ start.bat # windows
├─ start.sh # unix
├─ hydra.toml #
└─ throttling.toml #
```

0 directories, 6 files

conflux hydra.toml( tethys.toml), wind(conflux.exe

hydra.toml ( tethys.toml), testnet.toml. bootnodes chainId conflux-rust Github run  
hydra.toml testnet.toml

( )

- node\_type: full ( archive, light

## chainId

- chainId 1029, 1 ID )
- evm\_chain\_id eSpace chainId, 1030, 71 ( )

# Miner related

- `mining_address`: hex40 CIP-37 ( `minint_type` of `stratum` chainId )
- `mining_type`: `stratum`, `cpu`, `disable`
- `stratum_listen_address`: `stratum`
- `stratum_port`: `stratum`
- `stratum_secret`: `stratum`

# RPC related

- `jsonrpc_cors`: `none`, `all`, ( )
- `jsonrpc_http_keep_alive`: `false` or `true` rpc HTTP connections KeepAlive
- `jsonrpc_ws_port`: websocket rpc
- `jsonrpc_http_port`: http rpc
- `public_rpc_apis`: `rall`, `safe`, `txpool`, `pos`, `cfx`, `debug`, `pubsub`, `test`, `trace`  
(`safe=cfx+pubsub`) `safe`
- `persist_tx_index`: `true` or `false` transaction RPCs , Archiv
- `executive_trace`: `true` or `false` trace EVM execution trace database
- `get_logs_filter_max_epoch_range`: Event log `cfx_getLogs` epoch
- `get_logs_filter_max_limit`: `cfx_getLogs` log
- `jsonrpc_http_eth_port` = 8545 eSpace http
- `jsonrpc_ws_eth_port` = 8546 eSpace websocket
- `public_evm_rpc_apis` = "evm" eSpace RPC namespace

# Snapshot

- `additional_maintained_snapshot_count`: stable checkpoint snapshot 0 stable ( snapshot

# directries

- `conflux_data_dir`: block data, state data, node database
- `block_db_dir`: block `conflux_data_dir` `blockchain_db`
- `netconf_dir`: network `net_key`

# Log related

- `log_conf`: `log.yaml` `log_level`
- `log_file`: log stdout
- `log_level`: `error`, `warn`, `info`, `debug`, `trace`, `off`

log

(dev)

Conflux-rust (dev) RPC

- `bootnodes` :
- `mode` : `dev`
- `dev_block_interval_ms` : , (ms)

`Conflux-rust v2.0` `dev` http RPC port

genesis

`dev` `genesis_secrets.txt` `genesis` `genesis_secrets` `0x` , :

```
genesis_secrets = './genesis_secrets.txt'
```

`10000,000,000,000,000,000,000` Drip 1w CFX

- `net_key` : 256 bit node id 64 hex
- `tx_pool_size` : `50W` (
- `tx_pool_min_tx_gas_price` : gas `1` (

`dev_pos_private_key_encryption_password`

```
#  
$ ./start.sh
```

stdout :

```
2021-04-14T11:54:23.518634+08:00 INFO main network::thr -  
throttling.initialize: min = 10M, max = 64M, cap = 256M
```

[illegible]

```
2021-04-14T11:54:23.519271+08:00 INFO    main                confluent-kafka-go - Starting full
client...
```

```
blockchain_data, log
```

catch up

epoch

```
2021-04-16T14:49:11.896942+08:00 INFO IO Worker #1 cfxcore::syn - Catch-up mode:
true, latest epoch: 102120 missing_bodies: 0
2021-04-16T14:49:12.909607+08:00 INFO IO Worker #3 cfxcore::syn - Catch-up mode:
true, latest epoch: 102120 missing_bodies: 0
2021-04-16T14:49:13.922918+08:00 INFO IO Worker #1 cfxcore::syn - Catch-up mode:
true, latest epoch: 102120 missing_bodies: 0
2021-04-16T14:49:14.828910+08:00 INFO IO Worker #1 cfxcore::syn - Catch-up mode:
true, latest epoch: 102180 missing_bodies: 0
```

## cfx\_getStatus

epochNumber

scan

epoch

# RPC

RPC

Dapp

RPC url .

```
http: //node- ip: 12537
```

## Portal

SDK

# Docker

Docker [Docker](#) pull image

image

tag pipeline:

- `x.x.x-mainnet`:
- `x.x.x-testnet`:
- `x.x.x`:

# Conflux v2.0 Updates

Conflux v2.0 (Hydra) 8 CIP PoS eSpace

`tethys.toml` `hydra.toml`

- `evm_chain_id = 1030` eSpace `chainId` 1030 71
- `jsonrpc_http_eth_port = 8545` eSpace http
- `jsonrpc_ws_eth_port = 8546` eSpace websocket
- `public_evm_rpc_apis = "evm"` eSpace RPC namespace
- `dev_pos_private_key_encryption_password = "your-password"` ( ) PoS `pos_k`  
`dev_pos_private_key_encryption_password`

`bootnodes`

## pos\_config

V2.0 hardfork pos\_config PoS genesis

- `genesis_file`
- `initial_nodes.json`
- `pos_config.yaml`

`pos_config` .

`pos_key` , **PoS**

conflux binary dev\_pos\_private\_key\_encryption\_password pos\_key ,

Conflux 1 200G 1T(ArchiveNode)

PoS

- PoS PoS PoS PoS
- pos\_key PoS
  - pos\_key CFX PoS
  - (foreRetired) PoS unlock unlock 14 PoS

PoS forceRetired

- PoS
1. PoS ./conflux rpc local pos stop\_election null PoS PoS
  2. PoS null PoS
  3. null PoS 2-3 PoS

PoS pos\_key

PoS pos\_key pos\_db/secure\_storage.json pos\_key

checkpoint replay checkpoint .

?



?

:

- `persist_tx_index`
- `executive_trace`

.

archive node ?

2022.8.1

300 G

?

GPU

archive node

[fullnode-node](#)

error ?

`start.sh` `stderr.txt`

IP

RPC

Conflux

IP

v2

No such device or address

v1.x

v2

`dev_pos_private_key_encryption_password`

```
Error: "failed to start full client: \0s { code: 6, kind: Uncategorized, message: \\"No such device or address\\" }\\\""
```

- 
-

# Conflux (local)

<https://developer.confluxnetwork.org/conflux-doc/docs/installation/> ( linux osx, windows)

conflux

```
$ git clone https://github.com/Conflux-Chain/conflux-rust
$ cd conflux-rust
$ git checkout v2.0.0
```

```
$ cargo build --release
```

conflux run

```
$ cd conflux-rust/run
```

toml dev toml

```
$ cp hydra.toml development.toml
```

development.toml

```
# boostnode
# mode = "dev"
# dev_block_interval_ms = 250
```

```
export RUST_BACKTRACE=1
export RUST_BACKTRACE=full
../target/release/conflux --config development.toml
```

```
2022-06-13T14:14:37.433135500+08:00 INFO main network::thr -
throttling.initialize: min = 10M, max = 64M, cap = 256M
2022-06-13T14:14:37.435180+08:00 INFO main conflux -
:'#####::'#####::'##::##:'#####'##:::##::'##'##:::'##
'##..##'##...##.###:##.##.....:##:::##::##.##:'##:
##:::##:##.###.##.##:::##:::##::##.##'##:
##:::##.##.###.##.##:::##:::##::##.##.##'##:
##:::##.##.##.##.###.##:::##:::##::##.##.###:
##:::##.##.##.##.###.##.##:::##:::##::##.##.##:
##::.##.##.##.##.##.###.##:::##:::##::##.##.##:
.#####.#####:##.##.##:::#####.#####:##.##.##
:.....
```

Current Version: 2.0.0

sdk cfx,

keystore

```
# github
https://github.com/conflux-fans/conflux-abigen-example/tree/main/keystore
```

go-sdk , sdk

```
func main(){
    createAcc()
    exportPriKeys()
```

```

}

func createAcc(){
    client, err := conflux.NewClient(local_url, conflux.ClientOption{
        KeystorePath: ".keystore"}) //local_url = "http://127.0.0.1:12537"
    if err != nil {
        panic(err)
    }
    defer client.Close()
    acc1, err := client.AccountManager.Create("test")
    if err != nil {
        log.Fatalln(err)
    }
    fmt.Println(acc1.String())

    acc2, err := client.AccountManager.Create("test")
    if err != nil {
        log.Fatalln(err)
    }
    fmt.Println(acc2.String())
}

func exportPriKeys(){
    client, err := conflux.NewClient(local_url, conflux.ClientOption{
        KeystorePath: ".keystore"}) //local_url = "http://127.0.0.1:12537"
    if err != nil {
        panic(err)
    }
    defer client.Close()
    list := client.GetAccountManager().List()
    priv1, err := client.GetAccountManager().Export(list[0], "test")
    if err != nil {
        panic(err)
    }
    priv2, err := client.GetAccountManager().Export(list[1], "test")
    if err != nil {
        panic(err)
    }
    fmt.Println(priv2)
    fmt.Println(priv1)
}

```

```
}
```

conflux-rust/run

```
vim key.txt
```

```
#          0x,          ,  
# 931fffc586b7596b3f40bf67f4a38150c54d4cf98a96d25e8e679ba0825545cf  
# 628819aeb8c48d044de86706ae17f7a8675af563582aea27502f40bf1ccdd35c
```

development.toml

```
genesis_secrets = "key.txt"
```

```
,
```

```
sh clear_state.sh
```

```
sh test.sh
```

sdk

```
func queryBalance(){  
    client, err := conflux.NewClient(local_url, conflux.ClientOption{  
        KeystorePath: ".keystore"}) //local_url = "http://127.0.0.1:12537"  
    if err != nil {  
        panic(err)  
    }  
    defer client.Close()  
    t, err := client.GetAccountManager().GetDefault()  
    if err != nil {  
        panic(err)  
    }  
    fmt.Println(t.String())  
  
    m, err := client.GetBalance(*t)  
    if err != nil {
```

```
    panic(err)
```

```
}
```

```
fmt.Println(m.String())
```

```
}
```

# PoW

- [Conflux GPU v2.0.0-testnet](#)
- [Conflux GPU v2.0.0-fix](#)
- [F2pool how to mine conflux](#)
- [Youtube video - how to mine conflux \(windows\)](#)



# PoS

Conflux-rust v2.0 PoS finality CFX PoS 10% I  
PoSRegister Conflux PoW

## PoS

PoS Conflux

pos\_key (pos\_config ) pos\_key pos

```
dev_pos_private_key_encryption_password
```

```
CFX_POS_KEY_ENCRYPTION_PASSWORD
```

## PoS

PoS PoS

## forceRetired

Po Po PoS (forceRetired)

- 
- 
- 

1-14 Po1PoS

CFX 1-14

## CFX

PoS CFX . PoS PoS CFX

case PoS node pos\_key PoS

## PoS

- 500GB
- pos\_key pos\_key
- 65536

```
pos_config/pos_key    pos_db/secure_storage.json
```

1. `./conflux rpc local pos stop_election`
2. null
3. checkpoint

Conflux-rust	v2. 0. 1	PoS	/	PoS
--------------	----------	-----	---	-----

PR2438 PR :

	pos_started_as_voter=false	pos_config/pos_key	PoS
•	./conflux rpc local pos voting_status	true	false
•	./conflux rpc local pos start voting	PoS	

- `./conflux rpc local pos stop_voting` `pos_db/secure_storage.json`  
`pos_db/secure_storage.json.save`
- `pos_db` `pos_db/secure_storage.json` `pos_db/secure_storage.json.save`
- `./conflux rpc local pos start_voting` `pos_db/secure_storage.json.save`  
`pos_db/secure_storage.json` ( PoS )

:

PoS

pos\_db/secure\_storage.json

pos\_db/secure\_storage.json.save

pos\_db

PoS

# eSpace

eSpace    Core space

Core

eSpace

eSpace                    :

- `evm_chain_id = 1030` eSpace chainId      1030      71
- `jsonrpc_http_eth_port = 8545` eSpace http
- `jsonrpc_ws_eth_port = 8546` eSpace websocket
- `public_evm_rpc_apis = "evm"` eSpace RPC      namespace

Archive-tool

Conflux

# Docker

Docker

Conflux

docker

docker hub

Conflux

2.0.2

tag

- conflux-rust: 2. 0. 2-mainnet

 mainnet Conflux
- conflux-rust: 2. 0. 2-fix-testnet

 testnet Conflux
- conflux-rust: 2. 0. 2

 latest tag

```
//
docker pull confluxchain/conflux-rust: 2. 0. 2
```

```
docker run -p 12537:12537 --rm --name cfx-node confluxchain/conflux-rust: 2. 0. 2
```

Fluent	“	”	RPC URL	ID
--------	---	---	---------	----

<

网络管理

网络名称

local

RPC URL

http://localhost:12537

区块链 ID

1617

网络类型

Conflux Network

代币符号 (可选的)

CFX

区块链浏览器地址 (可选的)

保存

```
curl --data '{ "jsonrpc": "2.0", "method": "cfx_getStatus", "params": [], "id": 0 }'  
localhost:12537 -H 'content-type: application/json'
```

```
git clone https://github.com/Conflux-Chain/conflux-docker.git  
cd conflux-docker/fullnode-configs/hydra/testnet  
cp testnet.toml conflux.toml
```

```
docker conflux.toml fullnode-configs/hydra/testnet/testnet.toml conflux.toml conflux.toml
```

1. `jsonrpc_http_port=12537`
2. `dev_pos_private_key_encryption_password = "your-pos-pwd" pos_key`

```
//          conflux-docker/fullnode-configs/hydra/testnet
docker run -p 12537:12537 -v $PWD:/root/run --rm --name cfx-node confluxchain/conflux-
rust:2.0.2-fix-testnet
```

```
curl --data '{ "jsonrpc": "2.0", "method": "cfx_getStatus", "params": [], "id": 0 }'
localhost:12537 -H 'content-type: application/json'
```

chainId 1



Misc

# Fullstate node

- Hydra Hardfork      archive
- 

```
enable_single_mpt_storage=true  
single_mpt_space="evm"   #           eSpace fullstate
```

```
core space   fullstat --features u64-mpt-db-key
```

Misc

Catch-up mode

Catch-up mode true false

Catch-up mode latest epoch

Statistics: StatisticsInner inserted\_block\_count inserted\_header\_count inserted\_block\_count  
activated\_block\_count processed\_block\_count

```
2022-10-11T22:00:32.918557596+08:00 INFO IO Worker #1 cfxcore::sta - Statistics:
StatisticsInner { sync_graph: SyncGraphStatistics { inserted_block_count: 198117,
inserted_header_count: 371367 }, consensus_graph: ConsensusGraphStatistics {
inserted_block_count: 136125, activated_block_count: 371361, processed_block_count: 371366 } }
```

Conflux

- fullnode 500G archivenode 1T
- fullnode 300G, archivenode 700G

peer

1024 65536

bootnode

conflux binary

## archivenode

```
archadditional_maintained_snapshot_count100
```

start.sh start.bat

stderr.txt

# PoS Pool

PoS Pool

# PoS

conflux-fans [PoS Pool](#)

PoS

Dapp UI

PoS

- 1. Conflux
- 2.
- 3. PoS
- 4. Pool

## Conflux PoS

[PoS](#)

pos-pool

## Pool UI

pos-pool [UI](#)

PoS Pool

PoS

PoS Pool PoS PoS PoS

ForceRetire PoS unlock unlock 7-14 withdraw 7- 14 PoS

PoS

- 1. [forceRetire](#)
- 2.

pos-pool Proxy1967

ForceRetire

pos-pool forceRetire

PoS Pool

# eSpace

eSpace [pos-pool](#)



# FAQs

## ./conflux account new

keystore

- Mac /Users/USER\_NAME/Library/Application Support/conflux
- Linux: /root/.local/share/Conflux
- Windows: C:\Users\USER\_NAME\AppData\Roaming\Foo Corp\Bar App\config

Keystore      UTC-- -- ,      Linux

```
find / -name UTC--*
```

[app\\_dirs v1.2.1](#)

## peer

binary +      binary +

peer      bootnodes

## GLIBC\_2.27 not found

./conflux: /lib64/libc.so.6: version GLIBC\_2.27 not found (required by ./conflux)

GLIBC