

Conflux

- :
- <https://developer.confluxnetwork.org>
 - <https://docs.confluxnetwork.org/go-conflux-sdk> sdk
 - <https://zhuanlan.zhihu.com/p/400583419> <https://zhuanlan.zhihu.com/p/393935101> NFT

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, , IoTa (DAG) , .

CFX

CFX conflux token, Ether. conflux , Drip GDrip, uCFX, CFX. :

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CFX

1. -> CFX ,
2. : ,
3. (staking mechanism):

CFX

1. : .

1. 2CFX
- 2.
3. 4% (PoS)
2. : , . 4%
3. :

ChainID NetworkID

,

- ChainID 1029, 1
- ChainID (transaction replay attacks)
- NetworkID ChainID

conflux base32 , cip317(,)

:

16 0x1386b4185a223ef49592233b69291bbe5a80c527

base32 cfx: aak2rra2njvd77ezwjvx04kkds9fzagfe6ku8scz91

common. Address 16 GetHexString , , conflux

, -> nonce , sbalance , codeHash () :

CONFLUX stakingBalance , storageCollateral , accumulatedInterestReturn , admin , sponsorInfo
(https://developer.confluxnetwork.org/introduction/en/conflux_basics)

field from , to , nonce , gasPrice , gas , value , chainId , data , v , r , s

conflux epochHeight storageLimit , conflux epoch

- 1.
2. , encode(keccak256), (ECDSA), rlp encode -> hexString -> rawtransa
3. rpc , rawtransaction
- 4.
5. 5 epoch -> executed, ()
6. 50 epoch -> confirmed, (,) , epoch
7. -> Finalized, ()

ETH

https://developer.confluxnetwork.org/sending-tx/en/transaction_explain#:~:text=no%20details%20provided.-,Differences%20between%20Conflux%20and%20Ethereum,-%23

, storage token, token ;

X B/64 *(1/16)
64 storage entry

, token , token , (,)

AdminControl contract, SponsorWhitelistControl contract, Staking Contract

AdminControl contract

admin, destroy, , admin

:

1. A B, C -> C admin
2. A B, B C, C D admin. -> admin , A C , B
3. 2 , D , , C admin

SponsorWhitelistControl contract

, sponsor . :

1. sponsor (sponsor)
2. (admin , sponsor)
3. sponsor

Staking Contract

token , storage

: , , 1CFX, 2CFX . (token)

Linux OSX , Windows vs

, <https://developer.confluxnetwork.org/conflux-doc/docs/installation>

run

```
cd run
```

toml toml

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

development.toml

```
mode = "dev"
genesis_secrets = "key.txt" ##
dev_block_interval_ms = 250
jsonrpc_http_port=12537 ## jsonrpc_local_http_port=12539 , localhost 12537
```

keystore, github keystore

```
https://github.com/conflux-fans/conflux-abigen-example/tree/main/keystore
https://wallet.confluxscan.io/login
```

go-sdk

```
go get github.com/Conflux-Chain/go-conflux-sdk
```

sdk keystore ,

```
func createAcc(client *conflux.Client){
    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 *conflux.Client){
    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)
}

```

run key.txt, 1000cfx

```
vim key.txt
```

,

```
sh clear_state.sh
```

```
sh test.sh
```

```

test.sh :
export RUST_BACKTRACE=1
export RUST_BACKTRACE=full
../target/release/conflux --config development.toml

```

sdk

```

func sendTx(client *conflux.Client){
    list := client.GetAccountManager().List()

    var utx types.UnsignedTransaction
    utx.From = &list[0] //use default account if not set
    utx.To = &list[1]

    // unlock account
    err = client.AccountManager.Unlock(acc1, "test")
    if err != nil {
        log.Fatal(err)
    }
    txhash, err := client.SendTransaction(utx)
    if err != nil {

```

```
    log.Fatal(err)
}
fmt.Println(txhash)
}
```

cfxabigen, <https://docs.confluxnetwork.org/go-conflux-sdk/cfxabigen>

```
git clone https://github.com/Conflux-Chain/go-conflux-sdk.git
```

```
go install ./cmd/cfxabigen
```

ERC20

go

```
cfxabigen --sol token.sol --pkg main --out token.go >> token.go
```

<https://github.com/conflux-fans/conflux-abigen-example/blob/main/token/main.go>

ERC721

ERC20 , <https://zhuanlan.zhihu.com/p/400583419> <https://zhuanlan.zhihu.com/p/393935>

, Openzeppelin

npm

```
sudo apt install npm
```

Openzeppelin

```
npm install @openzeppelin/contracts
```

```
remix          abi,          nft.bin nft.abi ( : ipfs url          ,          )
```

cfxabigen

```
cfxabigen --abi nft.abi --bin nft.bin --pkg main --out nft.go >> nft.go
```

```
nft.go      sdk
```

```
func deployNFT(client *conflux.Client){
    err := client.AccountManager.UnlockDefault("test1")
    if err != nil {
        log.Fatal(err)
    }

    //tx, hash, t, err := DeployMain(nil, client)

    tx, hash, _, err := DeployMain(nil, client)
    if err != nil {
        panic(err)
    }
    fmt.Println(tx)
    fmt.Println(hash)

    receipt, err := client.WaitForTransactionReceipt(*hash, time.Second)
    if err != nil {
        panic(err)
    }

    logrus.WithFields(logrus.Fields{
        "tx":          tx,
        "hash":         hash,
        "contract address": receipt.ContractCreated,
    }).Info("deploy token done")
}
```


NFT

```
func mintNFT(client *conflux.Client) {
    acc, _ := client.GetAccountManager().GetDefault()
    err := client.AccountManager.UnlockDefault("test")
    if err != nil {
        panic(err)
    }

    contractAddr := cfxaddress.MustNew("cfx: acdujjy8mrjm3913cnztf0zbgp5h3fbby7jcwp2pc")

    instance, err := NewMain(contractAddr, client)
    if err != nil {
        panic(err)
    }

    err = client.AccountManager.UnlockDefault("test")
    if err != nil {
        panic(err)
    }

    //to := cfxaddress.MustNew("cfx: aap05tb7b9bsxdn5rn365y3peta8pr6mxefp7m682a")

    comacc, _, _ := acc.ToCommon()
    tx, hash, err := instance.Mint(nil, comacc)
    if err != nil {
        panic(err)
    }

    logrus.WithField("tx", tx).WithField("hash", hash).Info("transfer")
    receipt, err := client.WaitForTransationReceipt(*hash, time.Second)
    if err != nil {
        panic(err)
    }

    logrus.WithField("transfer receipt", receipt).Info()
}
```

nft

```
func queryNFT(client *conflux.Client){
    acc, _ := client.GetAccountManager().GetDefault()
    err := client.AccountManager.UnlockDefault("test1")
    if err != nil {
        panic(err)
    }

    contractAddr := cfxaddress.MustNew("cfx:acdujjy8mrjm3913cnztf0zbgp5h3fbby7jcwp2pc")

    instance, err := NewMain(contractAddr, client)
    if err != nil {
        panic(err)
    }

    comacc, _, _ := acc.ToCommon()
    res, err := instance.MainCaller.BalanceOf(nil, comacc)
    if err != nil {
        panic(err)
    }
    res1, _ := instance.MainCaller.Symbol(nil)
    fmt.Println(res)
    fmt.Println(res1)
}
```

nft nft symbol

nft

```
func transferNFT(client *conflux.Client){
    acc, _ := client.GetAccountManager().GetDefault()
    err := client.AccountManager.UnlockDefault("test1")
    if err != nil {
        panic(err)
    }
```

```
contractAddr := cfxaddress.MustNew("cfx:acdujy8mrjm3913cnztf0zbgp5h3fbby7jcwp2pc")
```

```
instance, err := NewMain(contractAddr, client)
```

```
if err != nil {
```

```
    panic(err)
```

```
}
```

```
comacc, _, _ := acc.ToCommon()
```

```
list := client.GetAccountManager().List()
```

```
toacc, _, _ := list[len(list)-1].ToCommon()
```

```
err = client.AccountManager.Unlock(list[len(list)-1], "test")
```

```
if err != nil {
```

```
    panic(err)
```

```
}
```

```
id := big.NewInt(0)
```

```
tx, hash, err := instance.TransferFrom(nil, comacc, toacc, id)
```

```
if err != nil {
```

```
    panic(err)
```

```
}
```

```
receipt, err := client.WaitForTransationReceipt(*hash, time.Second)
```

```
if err != nil {
```

```
    panic(err)
```

```
}
```

```
logrus.WithFields(logrus.Fields{
```

```
    'tx': tx,
```

```
    'hash': hash,
```

```
    'contract address': receipt.ContractCreated,
```

```
}).Info("deploy token done")
```

```
res, err := instance.MainCaller.BalanceOf(nil, comacc)
```

```
if err != nil {
```

```
    panic(err)
```

```
}
```

```
res1, err := instance.MainCaller.BalanceOf(nil, toacc)
if err != nil {
    panic(err)
}

fmt.Println(res)
fmt.Println(res1)
}
```

0, 1,

Revision #7

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