# **Homework of Lecture 3**

Lecture 3 - Homework & Resources

# transaction classification

1)On which network is this transaction?
0xb97e091e42252571072ae9c605bda16c8f2568cb6a4ff8fd717d384123074b55

Conflux now have a test network(**Conflux Testnet**), and a pre-mainnet network(**Conflux Oceanus**).

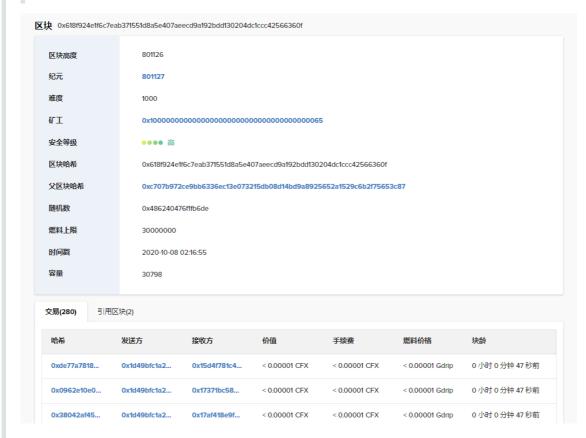
But none of those networks have the requested transaction.

#### block match search

2) Find a block with 20 or more transactions and send us the block hash.

0x618f924e1f6c7eab371551d8a5e407aeecd9a192bdd130204dc1ccc42566360f

note: this block is from the **Conflux Testnet**, and contains **280** transactions.



And there is a JS code to automatically find a block with 20 or more transactions:

```
const { conflux } = require('js-conflux-sdk');

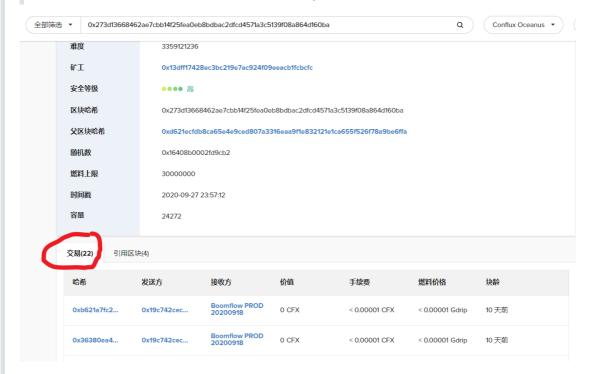
async function main() {
   // initalize a Conflux object
   const cfx = new Conflux({
    url: 'http://mainnet-jsonrpc.conflux-chain.org:12537',
```

```
defaultGasPrice: 100,
 8
        defaultGas: 1000000,
 9
        logger: console,
10
      });
11
      let epochStart = 7742635
12
      let answer = false
13
      for(var i = epochStart; i> 0; i--){
        const blockArray = await cfx.getBlocksByEpochNumber(i)
14
15
        for (block in blockArray) {
16
            let result = await cfx.getBlockByHash(blockArray[block])
            if (result['transactions'].length >=20 ) {
17
18
                answer = result['hash']
                break
19
20
            }
21
        }
22
        if (answer) break
23
      }
24
      console.log('result is ' + answer)
25
    }
26
27
    main();
```

By running it, we can find the results:

0x273d13668462ae7cbb14f25fea0eb8bdbac2dfcd4571a3c5139f08a864d160ba

note: this block is from the **Conflux Oceanus**, and contains **22** transactions.

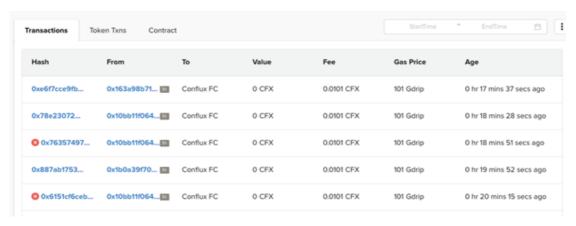


Here is the running test:

```
MINGW64:/d/Linux/conflux-playground
                                                                       \times
     '0xd346f1e29adc650bf8eb229d9ff4f7cbe59049ab775c640ffe9c015a06baea83
     '0x38e0a5c36b0c0b65a3156bb18fc9918c6fc51300d567809b84ef80a510c67363
     0x5cb6d5654c8a62584eec434e410d473b1f92bfbca7cec5a65541e8dd7b8cefce
     '0x3487bbed040241d30b683d76ca40915fdf29b22ad035cd5382a2c0c5413bf102
     '0xd2ca61c1205041f841b1ca3c270822689ad5d70fe532258963dfef629bcd2755
     '0xe27b6d94d28dc922af9c4711eaa90cb65c904ffcf9e0645753fe7338e4e9c29a
     0x2a5e6e77788675b45a7cd4e04da365a0dc0309db04ea6e9f2e3ecbbe42ca518b
     0x09d84de0370d9a7b6f7962c510258265ca52ee5dbebfedbf157af18a3f9b0324
     0xed7d0311c2aef76952a160483ced8fd693cc4ba2ae5ad7534b3cd84366e950bc
     '0x89eba17c2eac7943166a2bf7eeffccec6169ce0c85d65922d31ef02eaa577c33'
     '0x5e2700a955533b908c2325990e2f0bb48615452c9a9d94dbd958c8c94505d423'
     0xb621a7fc256ae25c5a8d6e6739d05b5673473763dfec5043a459cc326e4df613
  transactionsRoot: '0xcd8f2ed580e2bb4ce5264d283900472c467382f8b5396c2c116a22a
a5b9099e
duration: 122
esult is 0x273d13668462ae7cbb14f25fea0eb8bdbac2dfcd4571a3c5139f08a864d160ba
x150@LAPTOP-OD50F928 MINGW64 /d/Linux/conflux-playground
```

#### failed transaction

3)Try to find a failed transaction. Did the sender retry?



Failed First

try:0x6151cf6ceb0d2156e6f35c258d94e27ebc299d149ee664544db343c8e5d29520

Failed Second try:

0x7635749799dafce791bb952d7a83859c1c4faca8f6cb3d2652fabb073a992241

Successful Third try:

0x6151cf6ceb0d2156e6f35c258d94e27ebc299d149ee664544db343c8e5d29520

Doing smart contract actually also has failed several transactions...



### **CFX** faucet test

4)Create a wallet, get some CFX **through the faucet** and send us the corresponding transactions hash.

```
1 {"code":0,"message": {"tx":"0x0163755fe87b34053d2f949ba757b23f3fdbff47ac73b3b0af3e8fb2cabba2d4"}}
```

Use "Deposit" button to get free CFX~~

0x0163755fe87b34053d2f949ba757b23f3fdbff47ac73b3b0af3e8fb2cabba2d4

# buy a ticket

5)Buy a ticket on 167.172.160.61 and send us the corresponding transaction hash.

- 5.1) What happens if you lower the gas limit before sending the transaction?
- 5.2) What happens if you try to buy a second ticket for the same address?
  - 5) 0xbc6e65773ce248c40743c4cbad6472284f3b2a2ab9ef6b86e1a2734b049c0248



5.1) there is a minimal gas limit:



When I lower the gas limit, I get a failed transaction: (Out of gas)



5.2) When I try to buy a second ticket for the same address, I get a failed transaction: (**Execution error**, maybe the smart contract constraints that **one address can only buy one ticket**)



# query ticket purchases

6)Try querying recent ticket purchases. Has there been any?

Yes. Use the Purchase method: (And that "0x1e51d...) address is one of my account)

```
Contract Tickets

Address: 0x8b017126d2fede908a86b36b43969f17d25f3770

Event Purchase 

Query Event Logs

[
{
    "epoch": 8727742,
    "addr": "0x11ce40024a4b1cc54c932ed480029cb5e958cde9"
},
{
    "epoch": 8735543,
    "addr": "0x1dffca12af5b3e637b8b6c753a15e9a908e846bf"
},
{
    "epoch": 8736711,
    "addr": "0x1e51d3933d63a3f137f9f380d06a9bd3c79393c2"
}
]
```

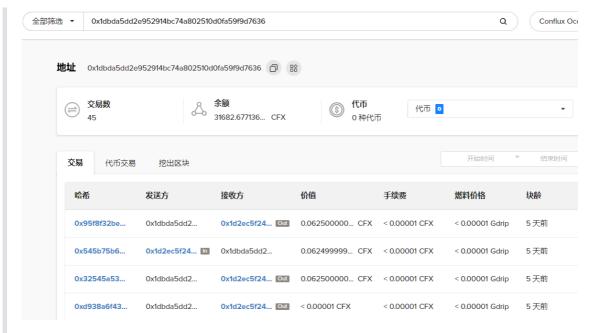
# creator of the Tickets contract

7) Who is the creator of the Tickets contract?

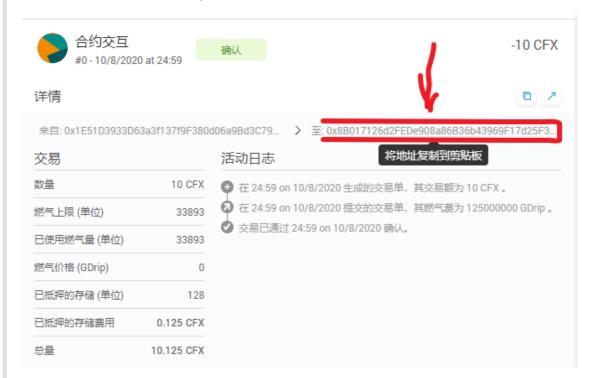
First, use owner method to get an address:



Then search for the address:

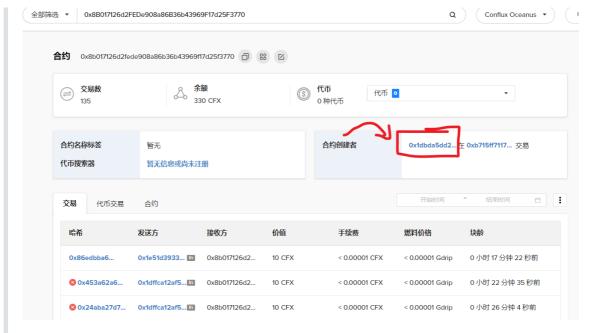


This seems not what we want, so I track which account all the tokens are transferred into:



And...search, with two-step validation, I think I've found the creator of this contract:

• most definitely 0x1dbda5dd2e952914bc74a802510d0fa59f9d7636



And I think [0x8B017126d2FEDe908a86B36b43969F17d25F3770] is the address of this contract. But I couldn't be able to find any source code of the contract using Conflux Scan.

#### balance of this account

8)What is the balance of this account? How do you think this account acquired these tokens?

The creator's address 0x1dbda5dd2e952914bc74a802510d0fa59f9d7636:

- 31682.677136697254853623 CFX
  - earn CFX through mining (<u>mining.confluxnetwork.org</u>) mining is reasonable for this address
  - earn FC through bounty (<u>bounty.conflux-chain.org</u>) design a smart contract might get this

The contract's address 0x8b017126d2fede908a86b36b43969f17d25f3770:

- 330 CFX
  - ▶ people buy tickets from this address and send it 33 \* 10 CFX (which means there are 33 tickets been sold)

# the most FC tokens address

9)Which address holds the most FC tokens?

- 1. the conflux system address
  - 1. System is responsible for 1:1 exchange of FC/CFX transactions
    - In this scenario, the contract creator's address
       0x144aa8f554d2ffbc81e0aa0f533f76f5220db09c might have had the most
       FC tokens because this address is currently holding an enormous amount of
       CFX roughly about 999999996999988 CFX. That's really something.
  - 2. System delivers FC tokens to all other users
  - 3. So in theory it should hold the most FC tokens
- 2. 0x1878e9b8d2fec316a2e666485b927e92a3b4f43e
  - 1. This address holds 55999 FC tokens, and was involved in the first FC contract transaction

	also have a great chance to be the address that holds the most FC tokens

2. Considering the total amount of FC tokens is about 4484424 FC tokens, this could