

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.

[illegible]

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

```
1 const { Conflux } = require('js-conflux-sdk');
2
3 async function main() {
4     // initialize a Conflux object
5     const cfx = new Conflux({
6         url: 'http://mainnet-jsonrpc.conflux-chain.org:12537'
```

```

7     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--){
14      const blockArray = await cfx.getBBlocksByEpochNumber(i)
15      for (block in blockArray) {
16          let result = await cfx.getBlockByHash(blockArray[block])
17          if (result['transactions'].length >= 20 ) {
18              answer = result['hash']
19              break
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.

全部筛选

0x273d13668462ae7cbb14f25fea0eb8bdbac2dfcd4571a3c5139f08a864d160ba

Q

Conflux Oceanus

难度

3359121236

矿工

0x13dff17428ec3bc219e7ac924f09eeacb1fcbcf

安全等级

高

区块哈希

0x273d13668462ae7cbb14f25fea0eb8bdbac2dfcd4571a3c5139f08a864d160ba

父区块哈希

0xd621ecfdb8ca65e4e9ced807a3316eaa9ffe832121e1ca655f526f78a9be6ffa

随机数

0x16408b0002fd9cb2

燃料上限

30000000

时间戳

2020-09-27 23:57:12

容量

24272

交易(22)

引用区块(4)

哈希	发送方	接收方	价值	手续费	燃料价格	块龄
0xb621a7fc2...	0x19c742cec...	Boomflow PROD 20200918	0 CFX	< 0.00001 CFX	< 0.00001 Gdrip	10 天前
0x36380ea4...	0x19c742cec...	Boomflow PROD 20200918	0 CFX	< 0.00001 CFX	< 0.00001 Gdrip	10 天前



Here is the running test:

```
MINGW64:/d/Linux/conflux-playground

'0x7a3ad1213000d784015f574af143b8dfeff7b0d6b19f65a6aea468b876daeb4e',
'0xd346f1e29adc650bf8eb229d9ff4f7cbe59049ab775c640ffe9c015a06baea83',
'0x38e0a5c36b0c0b65a3156bb18fc9918c6fc51300d567809b84ef80a510c67363',
'0x5cb6d5654c8a62584eec434e410d473b1f92bfbca7cec5a65541e8dd7b8cefce',
'0x3487bbbed040241d30b683d76ca40915fdf29b22ad035cd5382a2c0c5413bf102',
'0xd2ca61c1205041f841b1ca3c270822689ad5d70fe532258963dfe629bcd2755',
'0xe27b6d94d28dc922af9c4711eaa90cb65c904ffcf9e0645753fe7338e4e9c29a',
'0x2a5e6e77788675b45a7cd4e04da365a0dc0309db04ea6e9f2e3ecbbe42ca518b',
'0x09d84de0370d9a7b6f7962c510258265ca52ee5dbefedbf157af18a3f9b0324',
'0xed7d0311c2aef76952a160483ced8fd693cc4ba2ae5ad7534b3cd84366e950bc',
'0x89eba17c2eac7943166a2bf7eefcccec6169ce0c85d65922d31ef02eaa577c33',
'0x5e2700a955533b908c2325990e2f0bb48615452c9a9d94dbd958c8c94505d423',
'0x36380ea448c1ffabe6c24c81087ac2be7ff0ea6f53eb05397edaaa6910c9f07e',
'0xb621a7fc256ae25c5a8d6e6739d05b5673473763dfec5043a459cc326e4df613'
],
  transactionsRoot: '0xcd8f2ed580e2bb4ce5264d283900472c467382f8b5396c2c116a22a
0a5b9099e'
},
  duration: 122
}
result is 0x273d13668462ae7cbb14f25fea0eb8bdbac2dfcd4571a3c5139f08a864d160ba
px150@LAPTOP-OD50F928 MINGW64 /d/Linux/conflux-playground
$
```

failed transaction

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

Transactions							Token Txns	Contract	StartTime	~	EndTime		
Hash	From	To	Value	Fee	Gas Price	Age							
0xe6f7cce9fb...	0x163a98b71...	Conflux FC	0 CFX	0.0101 CFX	101 Gdrip	0 hr 17 mins 37 secs ago							
0x78e23072...	0x10bb1f064...	Conflux FC	0 CFX	0.0101 CFX	101 Gdrip	0 hr 18 mins 28 secs ago							
 0x76357497...	0x10bb1f064...	Conflux FC	0 CFX	0.0101 CFX	101 Gdrip	0 hr 18 mins 51 secs ago							
0x887ab1753...	0x1b0a39f70...	Conflux FC	0 CFX	0.0101 CFX	101 Gdrip	0 hr 19 mins 52 secs ago							
 0x6151cf6ceb...	0x10bb1f064...	Conflux FC	0 CFX	0.0101 CFX	101 Gdrip	0 hr 20 mins 15 secs ago							

Failed First

*try:***0x6151cf6ceb0d2156e6f35c258d94e27ebc299d149ee664544db343c8e5d29520**

Failed Second try:

0x7635749799dafce791bb952d7a83859c1c4faca8f6cb3d2652fabb073a992241

Successful Third try:

0x6151cf6ceb0d2156e6f35c258d94e27ebc299d149ee664544db343c8e5d29520

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



合约交互

#3 - 10/8/2020 at 24:54

失败

-10 CFX

详情



来自: 0x1DffcA12Af5b3e637B8B6c753a15e9a908E8... > 至: 0x8B017126d2FEDe908a86B36b43969F17d25F3...

交易

活动日志

数量	10 CFX
燃气上限 (单位)	22339
燃气价格 (GDrip)	0
总量	10 CFX

- + 在 24:54 on 10/8/2020 生成的交易单, 其交易额为 10 CFX。
- 🔗 在 24:54 on 10/8/2020 提交的交易单, 其燃气费为 0 Drip。



合约交互

#2 - 10/8/2020 at 24:48

失败

-10 CFX

详情



来自: 0x1DffcA12Af5b3e637B8B6c753a15e9a908E8... > 至: 0x8B017126d2FEDe908a86B36b43969F17d25F3...

交易

活动日志

数量	10 CFX
燃气上限 (单位)	22000
燃气价格 (GDrip)	0
总量	10 CFX

- + 在 24:48 on 10/8/2020 生成的交易单, 其交易额为 10 CFX。
- 🔗 在 24:51 on 10/8/2020 提交的交易单, 其燃气费为 0 Drip。

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



Vel

详情 已授权的网站

0x1Dff...46bf



79.875 CFX ⓘ

存入 发送

历史记录



合约交互
#1 - 10/8/2020 at 24:42

确认

-10 CFX

详情

来自: 0x1DffA12Af5b3e637B8B6c753a15e9a908E8... > 至: 0x8B017126d2FEde908a86B36b43969F17d25F3...

交易	活动日志
数量	10 CFX
燃气上限 (单位)	33893
已使用燃气量 (单位)	33893
燃气价格 (GDrip)	0
已抵押的存储 (单位)	128
已抵押的存储费用	0.125 CFX
总量	10.125 CFX



CFX已发送
#0 - 10/8/2020 at 24:30

确认

-10 CFX

无法看到您的代币?

点击 添加代币 将其加入您的个人账户

添加代币

5.1) there is a minimal gas limit:

燃气价格 (GDrip) ⓘ

2e-9

燃气上限 ⓘ

0

燃气上限至少要 21000

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



合约交互
#2 - 10/8/2020 at 24:48

失败

-10 CFX

OutcomeStatusErr: Out of gas or contract execution error

详情

来自: 0x1DffA12Af5b3e637B8B6c753a15e9a908E8... > 至: 0x8B017126d2FEde908a86B36b43969F17d25F3...

交易	活动日志
数量	10 CFX
燃气上限 (单位)	22000
燃气价格 (GDrip)	0
总量	10 CFX

+

在 24:48 on 10/8/2020 生成的交易单, 其交易额为 10 CFX。

?

在 24:51 on 10/8/2020 提交的交易单, 其燃气费为 0 Drip。

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**)

OutcomeStatusErr. Out of gas or contract execution error



合约交互

#3 - 10/8/2020 at 24:54

失败

-10 CFX

详情

来自: 0x1DffcA12Af5b3e637B8B6c753a15e9a908E8...

>

至: 0x8B017126d2FEDe908a86B36b43969F17d25F3...

交易

数量

10 CFX

燃气上限 (单位)

22339

燃气价格 (GDrip)

0

总量

10 CFX

活动日志

在 24:54 on 10/8/2020 生成的交易单, 其交易额为 10 CFX。

在 24:54 on 10/8/2020 提交的交易单, 其燃气费为 0 Drip。



合约交互

#2 - 10/8/2020 at 24:48

失败

-10 CFX



合约交互

#1 - 10/8/2020 at 24:42

确认

-10 CFX



CFX已发送

#0 - 10/8/2020 at 24:30

确认

-10 CFX

On the contrary, if I choose to buy a second ticket from another account(address): (first, need unauthorize the website, and reconnect to choose another account)



Fud

详情

已授权的网站

0x1E51...93C2



30 CFX

历史记录

合约交互

#0 - 10/8/2020 at 24:59

确认

-10 CFX

详情

来自: 0x1E51D3933D63a3f137f9F380d06a9Bd3C79...

>

至: 0x8B017126d2FEDe908a86B36b43969F17d25F3...

交易

数量

10 CFX

燃气上限 (单位)

33893

已使用燃气量 (单位)

33893

燃气价格 (GDrip)

0

已抵押的存储 (单位)

128

已抵押的存储费用

0.125 CFX

总量

10.125 CFX

活动日志

在 24:59 on 10/8/2020 生成的交易单, 其交易额为 10 CFX。

在 24:59 on 10/8/2020 提交的交易单, 其燃气费为 12500000 GDrip。

交易已通过 24:59 on 10/8/2020 确认。

无法看到您的代币?

点击 添加代币 将其加入您的个人账户

添加代币

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:

Contract Tickets

Address: `0x8b017126d2fede908a86b36b43969f17d25f3770`

Method **owner** ▾

(No inputs)

Query Data

`0x1dbda5dd2e952914bc74a802510d0fa59f9d7636`

Then search for the address:

全部筛选
0x1dbda5dd2e952914bc74a802510d0fa59f9d7636
Q
Conflux Oco

地址
0x1dbda5dd2e952914bc74a802510d0fa59f9d7636

交易数
45

余额
31682.677136... CFX

代币
0 种代币

交易
代币交易
挖出区块
开始时间 ~ 结束时间

哈希	发送方	接收方	价值	手续费	燃料价格	块龄
0x95f8f32be...	0x1dbda5dd2...	0x1d2ec5f24... Out	0.062500000... CFX	< 0.00001 CFX	< 0.00001 Gdrip	5 天前
0x545b75b6...	0x1d2ec5f24... In	0x1dbda5dd2...	0.062499999... CFX	< 0.00001 CFX	< 0.00001 Gdrip	5 天前
0x32545a53...	0x1dbda5dd2...	0x1d2ec5f24... Out	0.062500000... CFX	< 0.00001 CFX	< 0.00001 Gdrip	5 天前
0xd938a6f43...	0x1dbda5dd2...	0x1d2ec5f24... Out	< 0.00001 CFX	< 0.00001 CFX	< 0.00001 Gdrip	5 天前

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

合约交互

确认

-10 CFX

#0 - 10/8/2020 at 24:59

详情

来自: 0x1E51D3933D63a3f137f9F380d06a9Bd3C79... > 至: 0x8B017126d2FEDe908a86B36b43969F17d25F3...

交易

活动日志

数量

10 CFX

燃气上限 (单位)

33893

已使用燃气量 (单位)

33893

燃气价格 (GDrip)

0

已抵押的存储 (单位)

128

已抵押的存储费用

0.125 CFX

总量

10.125 CFX

+ 在 24:59 on 10/8/2020 生成的交易单，其交易额为 10 CFX。

? 在 24:59 on 10/8/2020 提交的交易单，其燃气费为 125000000 GDrip。

✓ 交易已通过 24:59 on 10/8/2020 确认。

将地址复制到剪贴板

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

- most definitely 0x1dbda5dd2e952914bc74a802510d0fa59f9d7636

全部筛选 0x8B017126d2FEde908a86B36b43969f17d25f3770 Q Conflux Oceanus

合约 0x8b017126d2fed2908a86b36b43969f17d25f3770

交易数 135 余额 330 CFX 代币 0 种代币

合约名称标签 暂无 代币搜索器 暂无信息或尚未注册

合约创建者 0x1dbda5dd2... 在 0xb715ff7117... 交易

交易 代币交易 合约 开始时间 结束时间

哈希	发送方	接收方	价值	手续费	燃料价格	块龄
0x86edbba6...	0x1e51d3933...	0x8b017126d2...	10 CFX	< 0.00001 CFX	< 0.00001 Gdrip	0 小时 17 分钟 22 秒前
0x453a62a6...	0x1dfca12af5...	0x8b017126d2...	10 CFX	< 0.00001 CFX	< 0.00001 Gdrip	0 小时 22 分钟 35 秒前
0x24aba27d7...	0x1dfca12af5...	0x8b017126d2...	10 CFX	< 0.00001 CFX	< 0.00001 Gdrip	0 小时 26 分钟 4 秒前

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

The contract's address 0x8b017126d2fed2908a86b36b43969f17d25f3770:

- **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

1. 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

- 
2. Considering the total amount of FC tokens is about 4484424 FC tokens, this could also have a great chance to be the address that holds the most FC tokens