Blockchain API 說明文件

Blockchain API Document

目錄

Block 查詢 / Block query

API endpoint

1. http://api.g-coin.org/api/block/[:hash]
2. http://api.g-coin.org/api/block-index/[:index]

API sample response

1. /api/block/[:hash]

```
{
        "hash": "0000000000002917ed80650c6174aac8dfc46f5fe[...]",
        "confirmations": 289538,
        "size": 4179,
        "height": 123456,
        "version": 1,
        "merkleroot": "0e60651a9934e8f0decd1c5fde39309e48fca0cd1c84a[...]",
        "tx": [
                "5b75086dafeede555fc8f9a810d8b10d[...]",
                "e3d0425ab346dd5b76f44c222a4bb5d[...]",
                "137d247eca8b99dee58e1e923201418[...]",
                "5fd167f7b8c417e59106ef5acfe181b09[...]",
        ],
        "time": 1305200806,
        "nonce": 2436437219,
        "bits": "1a6a93b3",
        "difficulty": 157416.40184364,
        "chainwork": "00000000000000000000000000000000000000000000[...]",
        "previousblockhash": "0000000000000b60bc96a44724fd72daf9b92cf[...]",
        "nextblockhash": "000000000000129f5f02be247070bf7334d3753e4d[...]",
        "reward": 50,
        "isMainChain": true,
        "poolInfo": {}
}
```

2. /api/block-index/[:index]

```
{
        "blockHash": "00000000000000000621e6f0d79724b917de8[...]"
}
```

說明

Block 可由兩種方式查詢：

1. Block 唯一的 hash 值

2. Block 在 blockchain 中的深度索引（index）

透過深度索引查詢可獲得該 block 的 hash 值。深度可視為 block 在 blockchain 中產生的時序記錄。Blockchain 中第一個 block 的深度為 0，爾後接上的 block 其深度為前一個 block 的深度再加一。

每個 block 帶有一至多筆的交易記錄（Transaction）的 hash 值。每筆交易僅可能被記綠在一個 block 中。

Description

There are two ways to query a block：
1. A unique hash value of the block
2. The index of the block in the blockchain

The hash value of a block can be acquired through the block's index. The index value represents the sequence number with which the block is generated in the blockchain. Block index starts from 0 in the blockchain. Every new block would have an index 1 larger than its previous block.

Every block would have at least one hash value of a transaction. Every transaction would be recorded in one block only.

Transaction 查詢 / Transaction query

API endpoint

http://api.g-coin.org/api/tx/[:txid]

API sample response

```
{
        "txid": "e3d0425ab346dd5b76f44c222a4bb5d16640a4247050ef82462[...]",
"version": 1,
        "locktime": 0,
        "vin": [
                {
                        "txid": "4600bf5f3d49660a546c1b9acd3e6b85479ab[...]",
                        "vout": 1,
                        "scriptSig": {
                                "asm": "3045022100c9e35aa55af5ac98cb67c4db7c[...]",
                                "hex": "483045022100c9e35aa55af5ac98cb67c4db7[...]"
                        },
                        "sequence": 4294967295,
                        "n": 0,
                        "addr": "184CQ7agrApMYpnKTzWnsMjV9Wx3raHw7S",
                        "valueSat": 5000000000,
                        "value": 50,
                        "doubleSpentTxID": null
                }
        ],
        "vout": [
                {
                        "value": "43.61000000",
                        "n": 0,
                        "scriptPubKey": {
                                "hex": "76a9146c8de651f8b92f87ff43fb9732[...]",
                                "asm": "OP_DUP OP_HASH160 6c8de651f8b92f87ff43[...]",
                                "addresses": [
                                        "1Atyy5h4SSdqWRuS8pzxgTb4bMe7ZpdunP"
                                ],
                                "type": "pubkeyhash"
                        },
                        "spentTxId": "36f30ed11333b4aeca92e797fe42b6c872[...]",
                        "spentIndex": 0
                },
                {
                        "value": "6.39000000",
```

```json
                    "n": 1,
                    "scriptPubKey": {
                            "hex": "76a9144f006767feebf6438aaf51e[...]",
                            "asm": "OP_DUP OP_HASH160 4f006767feebf6438aaf51[...]",
                            "addresses": [
                                    "18CisDmjM1MmM1MjtqUHPgmoLhZcSJJTKD"
                            ],
                            "type": "pubkeyhash"
                    },
                    "spentTxId": "bba36431e9e7f9c7758e802e681c10d6c010e[...]",
                    "spentIndex": 20
            }

    ],
    "blockhash": "0000000000002917ed80650c6174aac8dfc46f5[...]",
    "blockheight": 123456,
    "confirmations": 289567,
    "time": 1305200806,
    "blocktime": 1305200806,
    "valueOut": 50,
    "size": 258,
    "valueIn": 50,
    "fees": 0
}
```

說明

查詢 transaction 可以得到相對應的資訊。每筆 transaction 包含一個以上的 vin 以及一個以上的 vout。每筆 vout 可作為其它 transaction 的 vin 使用。

如上所述，vin 由許多不同 transaction 的 vout 餘額所組成。以範例的 transaction 為例，該筆 transaction 包含一組 vin，來自 txid 為 4600bf5f3d49660a546c1b9acd3e6b85479ab[...] 的 transaction 中的第 1 筆 vout。該筆 vout 所擁有的價值為 50。每筆 transaction 所具有的價值為 vin 價值的總合。

此筆 transaction 具有 50 單位的價值，如何分配（交易）這 50 單位的價值則是表明在 vout 中。以範例的 transaction 為例，50 單位的價值被分為 2 個 vout，分別具有 43.61 及 6.39 的 價值。每筆 vout 需載明收到該筆金額的地址（address），如此一來，該地址的擁用者便可 將此 vout 作為其它 transaction 的 vin 使用。

此外，有一種特殊的 transaction 稱為 coinbase transaction，其價值用於獎勵將 block 產出的 「礦工」。每次礦工生產出一個 block，礦工將會獲得 coinbase transaction 上記載的價值。

每個 block 最多擁有一個 coinbase transaction，並以 coinbase 欄位註記，為每個 block 中的第一個 transaction。

Description

Each transaction contains one or more vin's and one or more vout's. Each vout can be used as vin in some other transaction.

Vin's originate from the vout's of one or more transactions. The sample response contains one vin, which comes from the vout (indexed 1) of the transaction whose txid is 4600bf5f3d49660a546c1b9acd3e6b85479ab[...]. This vout has a value of 50. The total value of the transaction equals the sum of the vin value.

This transaction has value of 50, and the distribution of this value is written in the vout. In this case, the value of 50 is divided into 2 vouts, carrying value of 43.61 and 6.39, respectively. Each vout specifies the output address receiving the value; therefore, the owner of the address can spend the value of this vout in the vin of another transaction.

Further, there is a special type of transaction, the coinbase transaction, which includes the mining reward for the "miner". Coinbase transaction (or genesis transaction) is the first transaction in a block, created by a miner, and is always the first transaction appearing in every block.

Address tx 查詢 / Address tx query

API endpoint

http://api.g-coin.org/api/txs/?address=ADDR[&pageNum=n]

API sample response

```
{
        "pagesTotal": 7,
        "txs": [
                {
                        "txid": "a6374df970ddaccf42722302b1a822a8da723b8f80[...]",
                        "version": 1,
                        "locktime": 0,
                        "vin": [
                                {
                                        "txid": "ab1237f7f948f83443f9e9c4cdd965f2[...]",
                                        "vout": 1,
                                        "scriptSig": {
                                                "asm": "3046022100a5839b75c1ea6bb9[...]",
                                                "hex": "493046022100a5839b75c1ea6b[...]"
                                        },
                                        "sequence": 4294967295,
                                        "n": 0,
                                        "addr": "18CisDmjM1MmM1MjtqUHPgm[...]",
                                        "valueSat": 177000000,
                                        "value": 1.77,
                                        "doubleSpentTxID": null
                                },
                                [...]
                        ],
                        "vout": [
                                {
                                        "value": "194.00000000",
                                        "n": 0,
                                        "scriptPubKey": {
                                                "hex": "76a9142be2d897573aa99d2540c2[...]",
                                                "asm": "OP_DUP OP_HASH160 2be2d897[...]",
                                                "addresses": [
                                                        "1513onmxFqDbavkXZrXQcs[...]"
                                                ],
                                                "type": "pubkeyhash"
                                        },
                                        "spentTxId": "7d3d7161abb264af5d728ebcf7c2b6[...]",
```

```
                              "spentIndex": 0
                          },
                          [...]
                      ],
                         "blockhash": "00000000000004136c02838bb5d1884e5be4181c[...]",
                      "blockheight": 145176,
                      "confirmations": 267939,
                      "time": 1315923108,
                      "blocktime": 1315923108,
                      "valueOut": 194,
                      "size": 1667,
                      "valueIn": 194,
                      "fees": 0
                  },
                  [...]
            ]
}
```

說明

透過 address 來查詢 transactions，可以獲得與這個 address 相關的所有 transactions，不論是出現在 vin 或是 vout 的。另外因為回傳的數量龐大，所以需要指定預領取的 pageNum，例如 &pageNum=3 可以拿到第三頁的 transactions 。若沒有指定頁面，預設會回傳第零頁的 transactions 回來。

Description

This API queries transactions through address. All transactions related to this address will be listed, no matter whether they appear in vin or vout. However, there might be very large number of transactions sent back. To cope with it, you can add 'pageNum' at the end of query, such as adding '&pageNum=3' to indicate receiving transactions in page 3 only. (Without specifying which page to get, it works as getting the first page by default.)

Address 查詢 / Address Query

API endpoint

http://api.g-coin.org/api/addr/[:addr]

API sample response

```
{
        "addrStr": "18CisDmjM1MmM1MjtqUHPgmoLhZcSJJTKD",
        "balance": 0,
        "balanceSat": 0,
        "totalReceived": 394.71,
        "totalReceivedSat": 39471000000,
        "totalSent": 394.71,
        "totalSentSat": 39471000000,
        "unconfirmedBalance": 0,
        "unconfirmedBalanceSat": 0,
        "unconfirmedTxApperances": 0,
        "txApperances": 65,
        "transactions": [
                "e0ddd2e42b39624e6c10991daf3c1c4c8d2ff9311464ad2f099[...]",
                "4a88ab93545e234fafdc80173172c9c8a454c5cb3237ca52da[...]",
                "ea217a82fc9eded4fdb765a3c5f143db04f137c0343b3ec04a2[...]",
                ...
        ]
}
```

說明

查詢 address 會獲得相對應的內容。balance 即是這個 address 的餘額，而 totalReceived 和 totalSent 則是這個 address 的總收入以及總支出，另外還有三個以 Sat 結尾的則是單位為 Satoshis，而最後也會附上這筆 address 的相關 transactions。

Description

This API provides the information of a certain address. The field 'balance' shows how many bitcoins are left in this address, and 'totalRecieved' indicates the total input to this address while 'totalSent' represents total output from this address. Meanwhile, fields ending with 'Sat' mean the amount is counted in 'Satoshi' unit, which is the smallest transaction unit. The last field 'transactions' lists all transactions related to this address.