**CTC** **Wallet Fit Guide**

**(** **V1.0.4** **)**

2018-05-30 

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[Appendix: Commands Commonly Used in Terminal Command Mode](https://translate.googleusercontent.com/translate_f#_Toc515456502)

**1**        **System environment hardware and software requirements**

OS: Ubuntu 16.04 LTS64 positioning system (Windo w s or more 7 64 -bit version, MacOS )

Hardware: Memory 16GB+ Hard Disk 100GB+

Exchanges and other centralized applications access the underlying wallet via rpc

**2**        **How to start RPC server monitoring**

Start Tcp-JsonRpc mode

Start ctc\_formal with the following parameters on the command line

Ctc\_formal --rpcuser RPC service username --rpcpassword RPC service password --rpcendpoint IP address : TCP port number --httpd endpoint IP address : HTTP port number --server --data-dir data directory

parameter:

--rpcuser JSON RPC service username

--rpcpassword JSON RPC service password

--rpcendpoint JSON RPC service IP port

--httpdendpoint HTTP JSON RPC Service IP Port

--server activates JSON RPC service

--data-dir data directory (which holds the purse account information, private key is also deleted after deleting, please back up the private key information)

Example:

Ctc\_formal --rpcuser ctcrpc --rpcpas sword Cwl19910230 -- rpcendpoint 127.0.0.1:50066 --httpdendpoint 127.0.0.1:50067 --server --data-dir " /ctc\_data/ "

Note: HTTP The request is for adoption HTTP Basic authentication (Basic Authentication) The way

First, through Curl Waiting for the third Party command When executed, the following methods can be used:

              E.g: Curl The way

Curl -d '{"jsonrpc": "2.0", "method": " Interface name ", "params": [" parameter "], "id": ID value }' http:// account name : password @IP address : The port number /rpc

Second, when executed by program code

1 will the user name password Base64 Encoding, encoding format: account name : password

E.g: Ctcrpc:Cwl19910230 base64 The encoded value is   Y3RjcnBjOkN3bDE5OTEwMjMw

2 will encode the value Set to request header

  E.g: conn.setRequestProperty( "Authorization", "Basic Y3RjcnBjOkN3bDE5OTEwMjMw");

3 request interface address

Http://IP address : The port number /rpc

**3**        **Basic operation instructions**

**3.1**     **Interface request response**

**3.1.1**    **Request**

{"method":"","id": ”" , jsonrpc ":"2.0","params":[]}

m ethod : request method   For example: login

Id : request ID (the id value in the response corresponds to this value )   You can use timestamp data, for example " 20180517134424944 ”

Jsonrpc : The version number is currently 2.0

Params : request parameters

**3.1.2**    **Response**

**3.1.2.1**     **Response successful**

{"id":"20180517134424944","result": ” ” }

i d : response identifier (corresponding to the request identifier)

r esult : Result of successful response (see the specific interface description below for return format)

**3.1.2.2**     **Response failed**

{ "id": "20180517134917910" , "error": ""}

i d: Response identifier (corresponding to the request identifier)

e rror : failed response result

E.g:

{

              " id ": "20180517210939297",

              " error ": {

                            " message ": "unspecified",

                            " code ": 0,

                            " data ": {

                                          " code ": 0,

                                          " name ": "exception",

                                          " message ": "unspecified",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1483,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::verify\_json\_connection\_is\_authenticated",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:09:39"

                                                        },

                                                        " format ": "The RPC connection must be logged in before executing this command",

                                                        " data ": {}

                                          }]

                            }

              }

}

Parsing error: error subdomain of data Code , message , The format in the subdomain of the stack

Code : error code

Message : error message

f ormat : Detailed error messages

**3.2**     **Universal Response Failure Description**

The following types of failures may appear in " Create Wallet " , " Open Wallet " , " Unlock Wallet " , " Create Account " , " Inquiry Wallet Account Address " , " Account Transfer " , " Transaction History Query " , " Account Balance Inquiry " , " Whether the trade is up " In the request response of the interface, it is unified here.

The specific failure type corresponding to each interface will be specifically described in the subsequent interface description.

**3.2.1**    **Not logged in**

{

              " id ": "20180517210939297",

              " error ": {

                            " message ": "unspecified",

                            " code ": 0,

                            " data ": {

                                          " code ": 0,

                                          " name ": "exception",

                                          " message ": "unspecified",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1483,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::verify\_json\_connection\_is\_authenticated",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:09:39"

                                                        },

                                                        " format ": "The RPC connection must be logged in before executing this command",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.2.2**    **Wallet not open**

{

              " id ": "20180517212809281",

              " error ": {

                            " message ": "unspecified",

                            " code ": 0,

                            " data ": {

                                          " code ": 0,

                                          " name ": "exception",

                                          " message ": "unspecified",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1488,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::verify\_wallet\_is\_open",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:28:09"

                                                        },

                                                        " format ": "The wallet must be open before executing this command",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.2.3**    **Wallet not unlocked**

{

              " id ": "20180517213501328",

              " error ": {

                            " message ": "unspecified",

                            " code ": 0,

                            " data ": {

                                          " code ": 0,

                                          " name ": "exception",

                                          " message ": "unspecified",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1493,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::verify\_wallet\_is\_unlocked",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:35:01"

                                                        },

                                                        " format ":"The wallet's spending key must be unlocked before executing this command",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.3**     **Rpc login**

Call the premise : tcp-jsonrpc mode must be turned on , and set the user name and password

Request method: login request parameters: rpc username, Rpc password

Request:

{"method":"login","id":20180517134424944,"jsonrpc":"2.0","params" :[ "ctcrpc","Cwl19910230"]}

**3.3.1**    **Response succeeded**

{"id":"20180517134424944","result" :true }

**3.3.2**    **Response error**

**3.3.2.1.1**   **username error**

{

              " id ": "20180517134917910",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1522,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::login",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T05:49:18"

                                                        },

                                                        " format ": "params[0].as\_string() == \_config.rpc\_user: ",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.3.2.1.2**   **wrong password**

{

              " id ": "20180517135236477",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "RpcServer.cpp",

                                                                      " line ": 1523,

                                                                      " method ": "ctccore::rpc::detail::RpcServerImpl::login",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T05:52:36"

                                                        },

                                                        " format ": "params[1].as\_string() == \_config.rpc\_password: ",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.4**     **Get the latest height of the block**

Call conditions : None

Request method: blockchain\_get\_block\_count

Request parameters: None

Request:

{"method":"blockchain\_get\_block\_count","id":20180530150656077,"jsonrpc":"2.0","params":[]}

**3.4.1**    **Response success**

{"id":"20180530150656077","result":292381}

Result : the latest height of the block

**3.5**     **Get block information**

Call conditions: None

Request method: info

Request parameters: None

Request: {"method":"info","id":20180523092052345,"jsonrpc":"2.0","params":[]}

**3.5.1**    **Response success**

{

              " id ": "20180523092052345",

              " result ": {

                            "blockchain\_head\_block\_num": 229825,

                            "blockchain\_head\_block\_age": 2,

                            "blockchain\_head\_block\_timestamp": "2018-05-23T01:20:50",

                            "blockchain\_head\_block\_id": "94be16ad31089df0e6bd3cce433e6c079c567abe",

                            "blockchain\_average\_delegate\_participation": "100.00000000000000000",

                            "blockchain\_confirmation\_requirement": 1,

                            "blockchain\_share\_supply": "90183860000000000",

                            "blockchain\_blocks\_left\_in\_round": 20,

                            "blockchain\_next\_round\_time": 198,

                            "blockchain\_next\_round\_timestamp": "2018-05-23T01:24:10",

                            "blockchain\_random\_seed": "5bb6c5bf4ed8baddaeff711ccd1c382209252c28",

                            "client\_data\_dir": "C :/ Users/zhangzhen/AppData/Roaming/CTC",

                            "client\_version": "CTC",

                            "network\_num\_connections": 3,

                            "network\_num\_connections\_max": 200,

                            "ntp\_time": null,

                            "ntp\_time\_error": null,

                            "wallet\_open": false,

                            "wallet\_unlocked": null,

                            "wallet\_unlocked\_until": null,

                            "wallet\_unlocked\_until\_timestamp": null,

                            "wallet\_last\_scanned\_block\_timestamp": null,

                            "wallet\_scan\_progress": null,

                            "wallet\_block\_production\_enabled": null,

                            "wallet\_next\_block\_production\_time": null,

                            "wallet\_next\_block\_production\_timestamp": null

              }

}

Return parameters:

"blockchain\_head\_block\_num": block number ,

                            "blockchain\_head\_block\_age": The length of time the current largest block was generated .

                            "blockchain\_head\_block\_timestamp": " The time the current block was generated ",

                            "blockchain\_head\_block\_id": " current block ID ",

                            "blockchain\_averag e\_delegate\_participation": " Agent participation rate ",

                            "blockch ain\_confirmation\_requirement": block confirmation period ,

                            "blockchain\_share\_supply": " CTC circulation ",

                            "blockchain\_blocks\_left\_in\_round": how much free round the block,

                            "blockchain\_next\_round\_time": the next block from the remaining time,

                            "blockchain\_next\_round\_timestamp": " Next block start time ",

                            "blockchain\_random\_seed": "When the front block",

                            "client\_data\_dir": " Local client data storage path ",

                            "client\_version": "CTC",

                            "network\_num\_connections": the current number of connections ,

                            "network\_num\_connect ions\_max": the current maximum number of client connections ,

                            "ntp\_time": NTP gets timestamps ,

                            "ntp\_time\_error": NTP Time Hugh positive parameters,

                            "wallet\_open": Whether the wallet is open ,

                            "wallet\_unlocked": whether the wallet is unlocked,

                            "wallet\_unlocked\_until": The number of seconds the wallet is unlocked .

                            "wallet\_unlocked\_until\_timestamp": The next time the wallet is locked ,

                            "wallet\_last\_scanned\_block\_timestamp": the last time the wallet was scanned ,

                            "wallet\_scan\_progress": number of wallet scan threads ,

                            "wallet\_block\_production\_enabled": Whether the wallet is producing fast ,

                            "wallet\_next\_block\_production\_time": The next round of production time in the wallet ,

                            "wallet\_next\_block\_production\_timestamp": the next production timestamp in the wallet

**3.6**     **Create Wallet**

Call the premise : rpc login

Note: After the wallet is successfully created, the wallet is open by default and the unlock time is 60 minutes. When the wallet is over 60 minutes, the wallet is locked again. The unlock duration can be customizedthrough the wallet\_unlock method.

Request method: wallet\_create Request parameters: Create a wallet name ( starting with a lowercase English character, only a lowercase English character , a digit or a dash , a maximum of 63 characters ) , and creating a password (with a length of at least 8 characters )

Request:

{"method":"wallet\_create","id":20180517140651383,"jsonrpc":"2.0",

"params" :[ "cwlbb123","cwl19910230"]}

**3.6.1**    **Response successful**

{"id":"20180517140651383","result" :null }

**3.6.2**    **Response failed**

**3.6.2.1**     **Not logged in**

Refer to 3.2.1

**3.6.2.2**     **Password less than eight**

{

              " id ": "20180517231629067",

              " error ": {

                            " message ": "password too short",

                            " code ": 0,

                            " data ": {

                                          " code ": 20015,

                                          " name ": "password\_too\_short",

                                          " message ": "password too short",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "WalletApi.cpp",

                                                                      " line ": 83,

                                                                      " method ": "ctccore::client::detail::ClientImpl::wallet\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T15:16:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2336,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T15:16:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.6.2.3**     **Invalid wallet name**

{

              " id ": "20180517141141320",

              " error ": {

                            " message ": "invalid account name",

                            " code ": 0,

                            " data ": {

                                          " code ": 20017,

                                          " name ": "invalid\_name",

                                          " message ": "invalid account name",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1024,

                                                                      " method ": "ctccore::wallet::Wallet::create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:11:41"

                                                        },

                                                        " format ": "Invalid name for a wallet!",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb123\_"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1050,

                                                                      " method ": "ctccore::wallet::Wallet::create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:11:41"

                                                        },

                                                        " format ": "Unable to create wallet '${wallet\_name}'",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb123\_"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2336,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:11:41"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.6.2.4**     **Wallet already exists**

{

              " id ": "20180517141240360",

              " error ": {

                            " message ": "wallet already exists",

                            " code ": 0,

                            " data ": {

                                          " code ": 20003,

                                          " name ": "wallet\_already\_exists",

                                          " message ": "wallet already exists",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1028,

                                                                      " method ": "ctccore::wallet::Wallet::create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:12:40"

                                                        },

                                                        " format ": "Wallet name already exists!",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb123"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1050,

                                                                      " method ": "ctccore::wallet::Wallet::create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:12:40"

                                                        },

                                                        " format ": "Unable to create wallet '${wallet\_name}'",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb123"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2336,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:12:40"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.7**     **Open wallet (wallet already exists)**

Call the premise : rpc login

Request method : wallet \_open request parameters : open wallet name

Request:

{"method":"wallet\_open","id":20180517142746758,"jsonrpc":"2.0","params" :[ "cwlbb77"]}

**3.7.1**    **Response successful**

: {"id":"20180517142746758","result" :null }

**3.7.2**    **Response failed**

**3.7.2.1**     **Not logged in**

Refer to 3.2.1

**3.7.2.2**     **Wallet does not exist**

{

              " id ": "20180517142958093",

              " error ": {

                            " message ": "wallet does not exist",

                            " code ": 0,

                            " data ": {

                                          " code ": 20004,

                                          " name ": "no\_such\_wallet",

                                          " message ": "wallet does not exist",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1063,

                                                                      " method ": "ctccore::wallet::Wallet::open",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:29:58"

                                                        },

                                                        " format ": "No such wallet exists!",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb7722123"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1085,

                                                                      " method ": "ctccore::wallet::Wallet::open",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:29:58"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "wallet\_name": "cwlbb7722123"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2298,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_open",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:29:58"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.8**     **Unlock your wallet**

Call condition: wallet open

Request method: wallet\_unlock request parameters: length (in seconds unlock, 630,720,000 seconds if the maximum may be provided over this time. The wallet will relock. Use the wallet\_unlock method again Customize to open the time), password

Request:

{"method":"wallet\_unlock","id":20180517144003773,"jsonrpc":"2.0",

"params" :[ "99999999","cwl1991020"]}

**3.8.1**    **Response successful**

{"id":"20180517144003773","result" :null }

**3.8.2**    **Response failed**

**3.8.2.1**     **Not logged in**

Refer to 3.2.1

**3.8.2.2**     **Wallet not open**

Refer to 3.2.2

**3.8.2.3**     **Unlock time is too large**

{

              " id ": "20180517215706462",

              " error ": {

                            " message ": "invalid timeout",

                            " code ": 0,

                            " data ": {

                                          " code ": 20020,

                                          " name ": "invalid\_timeout",

                                          " message ": "invalid timeout",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1290,

                                                                      " method ": "ctccore::wallet::Wallet::unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:57:06"

                                                        },

                                                        " format ": "Timeout too large!",

                                                        " data ": {

                                                                      "max\_timeout\_seconds": 2768401871

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1324,

                                                                      " method ": "ctccore::wallet::Wallet::unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:57:06"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "timeout\_seconds": 3999999999

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2768,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T13:57:06"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.8.2.4**     **wrong password**

{

              " id ": "20180517173253517",

              " error ": {

                            " message ": "invalid password",

                            " code ": 0,

                            " data ": {

                                          " code ": 20001,

                                          " name ": "invalid\_password",

                                          " message ": "invalid password",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1302,

                                                                      " method ": "ctccore::wallet::Wallet::unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T09:32:53"

                                                        },

                                                        " format ": "Invalid password!",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1324,

                                                                      " method ": "ctccore::wallet::Wallet::unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T09:32:53"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "timeout\_seconds": 99999999

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2768,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_unlock",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T09:32:53"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.9**     **create Account**

Call condition: wallet unlock

Request method: wallet\_account\_create Request parameter: User name to be created ( starting with lowercase English characters, can only be lowercase English characters , digits or underscores , up to 63 characters )

Request:

{"method":"wallet\_account\_create","id":20180517144818773,"jsonrpc":"2.0",

"params" :[ "cwlaccount4321"]}

**3.9.1**    **Response successful**

{"id":"20180517144818773","result":"CJ32kd2FqDYACt7zr7fz3tstTF8KWXmKUv"}

Result : Create an account address

**3.9.2**    **Response failed**

**3.9.2.1**     **Not logged in**

Refer to 3.2.1

**3.9.2.2**     **Wallet not open**

Refer to 3.2.2

**3.9.2.3**     **Wallet not unlocked**

Refer to 3.2.3

**3.9.2.4**     **Invalid account name**

{

              " id ": "20180517145807300",

              " error ": {

                            " message ": "invalid account name",

                            " code ": 0,

                            " data ": {

                                          " code ": 20017,

                                          " name ": "invalid\_name",

                                          " message ": "invalid account name",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1437,

                                                                      " method ": "ctccore::wallet::Wallet::create\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:58:07"

                                                        },

                                                        " format ": "Invalid account name!",

                                                        " data ": {

                                                                      "account\_name": "cwlaccount—"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1463,

                                                                      " method ": "ctccore::wallet::Wallet::create\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:58:07"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "account\_name": "cwlaccount—"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2924,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_account\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:58:07"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.9.2.5**     **Account already exists**

{

              " id ": "20180517145507714",

              " error ": {

                            " message ": "invalid account name",

                            " code ": 0,

                            " data ": {

                                          " code ": 20017,

                                          " name ": "invalid\_name",

                                          " message ": "invalid account name",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1446,

                                                                      " method ": "ctccore::wallet::Wallet::create\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:55:07"

                                                        },

                                                        " format ": "This name is already in your wallet!",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1463,

                                                                      " method ": "ctccore::wallet::Wallet::create\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:55:07"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "account\_name": "cwlaccount4321"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2924,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_account\_create",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T06:55:07"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.10**         **Query the address of the account in the wallet**

Request method: wallet\_get\_account\_public\_address request parameter: account name

Request:

{"method":"wallet\_get\_account\_public\_address","id":20180517150216550,"jsonrpc":"2.0",

"params" :[ "wlaccount88"]}

**3.10.1**   **Response successful**

{"id":"20180517150216550","result":"CVkft9Tcm5ivCrS6kQWxRhLiEA1QbyeXXk"}

Result : Account address

**3.10.2**   **Response failed**

**3.10.2.1****Not logged in**

Refer to 3.2.1

**3.10.2.2****Wallet not open**

Refer to 3.2.2

**3.10.2.3****Account does not exist**

{

              " id ": "20180517220745386",

              " error ": {

                            " message ": "unknown account",

                            " code ": 0,

                            " data ": {

                                          " code ": 20006,

                                          " name ": "unknown\_account",

                                          " message ": "unknown account",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1585,

                                                                      " method ": "ctccore::wallet::Wallet::get\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:07:45"

                                                        },

                                                        " format ": "Unknown account name!",

                                                        " data ": {

                                                                      "account\_name": "wlaccount23132423sdfwe4234"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 1604,

                                                                      " method ": "ctccore::wallet::Wallet::get\_account",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:07:45"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "WalletApi.cpp",

                                                                      " line ": 1227,

                                                                      " method ": "ctccore::client::detail::ClientImpl::wallet\_get\_account\_public\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:07:45"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "account\_name": "wlaccount23132423sdfwe4234"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3565,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_get\_account\_public\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:07:45"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.11**         **Determine if the address is valid**

Call condition: wallet open

Request method: wallet\_check\_address

Request parameters: address to be verified

Request:

{"method":"wallet\_check\_address","id":20180530142836601,"jsonrpc":"2.0",

"params" :[ "CZ35LexSddgq6DgH3VTPPWzT13MTzuqARN"]}

**3.11.1**   **Response successful**

**3.11.1.1****The address is legal**

{"id":"20180530143029254","result" :true }

**3.11.1.2****The address is illegal**

{"id":"20180530143109876","result" :false }

**3.11.2**   **Response failed**

**3.11.2.1****Not logged in**

Refer to 3.2.1

**3.11.2.2****Wallet not open**

Refer to 3.2.2

**3.11.2.3****Address resolution error**

{

              " id ": "20180530143229613",

              " error ": {

                            " message ": "Parse Error",

                            " code ": 0,

                            " data ": {

                                          " code ": 4,

                                          " name ": "parse\_error\_exception",

                                          " message ": "Parse Error",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "base58.cpp",

                                                                      " line ": 621,

                                                                      " method ": "fc::from\_base58",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-30T06:32:29"

                                                        },

                                                        " format ": "Unable to decode base58 string ${base58\_str}",

                                                        " data ": {

                                                                      "base58\_str": "CbNDfboKcjMAvkWRuvk6HcWSASv3b3YjJe8e21078b48c84b159ac0526918c388e"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2896,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_check\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-30T06:32:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.12**         **Account transfer**

Call the premise: the wallet is unlocked and there is an account in the wallet

Request Method: wallet\_transfer\_to\_address

Request parameters: transfer amount, Transfer asset type ( CTC ) , withdrawal account, Transfer to account address, info , remarks information

Request:

{"method":"wallet\_transfer\_to\_address","id":20180517150833029,"jsonrpc":"2.0",

"params":["23","CTC","cwlaccount517","CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ","infoxinx","beizhuxinx"]}

**3.12.1**   **Response successful**

{

              " id ": "20180517150833029",

              " result ": {

                            " index ": 0,

                            " entry\_id ": "9a724455119eff62607c6a04f99728dfff44c604",

                            "block\_num": 0,

                            "is\_virtual": false,

                            "is\_confirmed": false,

                            "is\_market": false,

                            " trx ": {

                                          " expiration ": "2018-05-17T08:08:29",

                                          " info ": [

                                                        ["1", "infoxinx"]

                                          ],

                                          "sub\_account": "",

                                          "sub\_inport\_asset": {

                                                        " amount ": 0,

                                                        "asset\_id": 0

                                          },

                                          " operations ": [{

                                                        " type ": "withdraw\_op\_type",

                                                        " data ": {

                                                                      "balance\_id": "CLgedWcoMyrQbwjwZcyBZwQM2VEpGMgrwJ",

                                                                      " amount ": 2301000000,

                                                                      "claim\_input\_data": ""

                                                        }

                                          }, {

                                                        " type ": "deposit\_op\_type",

                                                        " data ": {

                                                                      " amount ": 2300000000,

                                                                      " condition ": {

                                                                                    "asset\_id": 0,

                                                                                    "slate\_id": 0,

                                                                                    " type ": "withdraw\_signature\_type",

                                                                                    "balance\_type": "withdraw\_common\_type",

                                                                                    " data ": {

                                                                                                  " owner ": "CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ"

                                                                                    }

                                                                      }

                                                        }

                                          }, {

                                                        " type ": "imessage\_memo\_op\_type",

                                                        " data ": {

                                                                      " imessage ": "beizhuxinx"

                                                        }

                                          }],

                                          "result\_trx\_type": "origin\_transaction",

                                          "result\_trx\_id": "0000000000000000000000000000000000000000",

                                          " signatures ": ["207a2e5d1e4b787b4865e0e6dc836c671760d97df647a14144babf74862f2df859701ed5d4927d2fe227244edc79e86a89961df0a48f02fd4063864d0afb87fdc0"]

                            },

                            "ledger\_entries": [{

                                          "from\_account": "C8TQCUMtQ1cn3FTbax5hU9Vuoq4XGdjDnJShXv5RhcvF2Ht7uFA",

                                          "to\_account": "C6Z9LSx6NLwCMFaVLtQ1jaALyVToxaXzLJyRQNAySqweEFdN3ee",

                                          " amount ": {

                                                        " amount ": 2300000000,

                                                        "asset\_id": 0

                                          },

                                          " memo ": "beizhuxinx"

                            }],

                            " fee ": {

                                          " amount ": 1000000,

                                          "asset\_id": 0

                            },

                            "created\_time": "2018-05-17T07:08:29",

                            "received\_time": "2018-05-17T07:08:29",

                            "extra\_addresses": ["CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ"],

                            "trx\_data": ""

              }

}

Return parameters :

Index: reserved field

Entry\_id: ticket number ( important )

Block\_num: block number

Is\_virtual: reserved field

Is\_confirmed: Confirm

Is\_market: reserved field

Trx: structure type name

**3.12.2**   **Response failed**

**3.12.2.1****Not logged in**

Refer to 3.2.1

**3.12.2.2****Wallet not open**

Refer to 3.2.2

**3.12.2.3****Wallet not unlocked**

{

              " id ": "20180517234504871",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3705,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T15:45:04"

                                                        },

                                                        " format ": "is\_unlocked(): Wallet not unlock!",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3815,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T15:45:04"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "real\_amount\_to\_transfer": "1",

                                                                      "amount\_to\_transfer\_symbol": "",

                                                                      "from\_account\_name": "cwlaccount517",

                                                                      "to\_address": "CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ",

                                                                      "memo\_message": ""

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3049,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_transfer\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T15:45:04"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.12.2.4****Asset ID does not exist**

{

              " id ": "20180517224857080",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3706,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:48:57"

                                                        },

                                                        " format ": "my->\_blockchain->is\_valid\_symbol(amount\_to\_transfer\_symbol): Invalid asset symbol",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3815,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:48:57"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "real\_amount\_to\_transfer": "2",

                                                                      "amount\_to\_transfer\_symbol": "a",

                                                                      "from\_account\_name": "cwlaccount517",

                                                                      "to\_address": "CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ",

                                                                      "memo\_message": ""

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3049,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_transfer\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:48:57"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.12.2.5****Money withdrawal account does not exist**

{

              " id ": "20180517221223376",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3707,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:12:23"

                                                        },

                                                        " format ": "my->is\_receive\_account(from\_account\_name): Invalid account name",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3815,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:12:23"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "real\_amount\_to\_transfer": "2",

                                                                      "amount\_to\_transfer\_symbol": "CTC",

                                                                      "from\_account\_name": "cwlaccount5173",

                                                                      "to\_address": "CQWxiu96TdP562XsuAVD1sabQwR7T72d3k",

                                                                      "memo\_message": ""

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3049,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_transfer\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:12:23"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.12.2.6****Transfer to account address does not exist**

{

              " id ": "20180517221532552",

              " error ": {

                            " message ": "Out of Range",

                            " code ": 0,

                            " data ": {

                                          " code ": 8,

                                          " name ": "out\_of\_range\_exception",

                                          " message ": "Out of Range",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "datastream.cpp",

                                                                      " line ": 6,

                                                                      " method ": "fc::detail::throw\_datastream\_range\_error",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        " format ": "${method} datastream of length ${len} over by ${over}",

                                                        " data ": {

                                                                      " method ": "read",

                                                                      " len ": 25,

                                                                      " over ": -24

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "raw.hpp",

                                                                      " line ": 123,

                                                                      " method ": "fc::raw::unpack",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        " format ": "fc::array<type,length>",

                                                        " data ": {

                                                                      " type ": "char",

                                                                      " length ": 33

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "raw.hpp",

                                                                      " line ": 279,

                                                                      "method": "fc::raw:object\_visitor<class fc::datastream<char const \*>,struct ctccore::consensus::PublicKeyType::BinaryKey>::operator ()",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        " format ": "Error unpacking field ${field}",

                                                        " data ": {

                                                                      " field ": "data"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "raw.hpp",

                                                                      " line ": 519,

                                                                      " method ": "fc::raw::unpack",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        " format ": "error unpacking ${type}",

                                                        " data ": {

                                                                      " type ": "ctccore::consensus::PublicKeyType::BinaryKey"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "raw.hpp",

                                                                      " line ": 551,

                                                                      " method ": "fc::raw::unpack",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        " format ": "error unpacking ${type}",

                                                        " data ": {

                                                                      " type ": "ctccore::consensus::PublicKeyType::BinaryKey"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3049,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_transfer\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:15:32"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.12.2.7 Insufficient****balance**

{

              " id ": "20180517152647857",

              " error ": {

                            " message ": "insufficient funds",

                            " code ": 0,

                            " data ": {

                                          " code ": 20010,

                                          " name ": "insufficient\_funds",

                                          " message ": "insufficient funds",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 252,

                                                                      " method ": "ctccore::wallet::detail::WalletImpl::withdraw\_to\_transaction",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T07:26:47"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      " required ": "100.01000000 CTC",

                                                                      " available ": "28.99000000 CTC",

                                                                      "balance\_entrys": [

                                                                                    ["cwlaccount517", [{

                                                                                                  " condition ": {

                                                                                                                "asset\_id": 0,

                                                                                                                "slate\_id": 0,

                                                                                                                " type ": "withdraw\_signature\_type",

                                                                                                                "balance\_type": "withdraw\_common\_type",

                                                                                                                " data ": {

                                                                                                                              " owner ": "CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ"

                                                                                                                }

                                                                                                  },

                                                                                                  " balance ": 2899000000,

                                                                                                  "deposit\_date": "2018-05-17T03:41:08",

                                                                                                  "last\_update": "2018-05-17T07:08:30",

                                                                                                  "meta\_data": null

                                                                                    }]]

                                                                      ]

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 253,

                                                                      " method ": "ctccore::wallet::detail::WalletImpl::withdraw\_to\_transaction",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T07:26:47"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "amount\_to\_withdraw": {

                                                                                    " amount ": "10001000000",

                                                                                    "asset\_id": 0

                                                                      },

                                                                      "from\_account\_name": "cwlaccount517",

                                                                      " trx ": {

                                                                                    " expiration ": "1970-01-01T00:00:00",

                                                                                    " info ": [

                                                                                                  ["1", "infoxinx"]

                                                                                    ],

                                                                                    "sub\_account": "",

                                                                                    "sub\_inport\_asset": {

                                                                                                  " amount ": 0,

                                                                                                  "asset\_id": 0

                                                                                    },

                                                                                    " operations ": [{

                                                                                                  " type ": "withdraw\_op\_type",

                                                                                                  " data ": {

                                                                                                                "balance\_id": "CLgedWcoMyrQbwjwZcyBZwQM2VEpGMgrwJ",

                                                                                                                " amount ": 2899000000,

                                                                                                                "claim\_input\_data": ""

                                                                                                  }

                                                                                    }],

                                                                                    "result\_trx\_type": "origin\_transaction",

                                                                                    "result\_trx\_id": "0000000000000000000000000000000000000000",

                                                                                    " signatures ": []

                                                                      },

                                                                      "required\_signatures": ["CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ"]

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "Wallet.cpp",

                                                                      " line ": 3815,

                                                                      " method ": "ctccore::wallet::Wallet::transfer\_asset\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T07:26:47"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "real\_amount\_to\_transfer": "100",

                                                                      "amount\_to\_transfer\_symbol": "CTC",

                                                                      "from\_account\_name": "cwlaccount517",

                                                                      "to\_address": "CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ",

                                                                      "memo\_message": "beizhuxinx"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 3049,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_transfer\_to\_address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T07:26:47"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.13****transaction record query**

Call the premise: wallet opens , there is an account in the wallet

Request method: wallet\_account\_transaction\_history

Request parameters: account name ( the case of empty is the query for all accounts in the current wallet ) , asset identification ( the case of empty is to query the current wallet all asset records ) , the default value of the number of returned transactions is 0 , 0 represents Block number without restriction, start query , default value is 0 ( inclusive ) , end block number defaults to -1 , which represents the transaction returned to the current block ( inclusive )

Request:

{"method":"wallet\_account\_transaction\_history","id":20180517153307898,"jsonrpc":"2.0",

"params" :[ "cwlaccount517","CTC",0,0,-1]}

**3.13.1****Response is successful**

**3.13.1.1****There is a transaction record** 

Note 1 : There are four conditions

1        Both the from and to addresses have two records for the account (the first is from the account's posting information, the second is the to account's accounting information) . To address is the name of the inquiring account. No fee is displayed

2        Transaction records only to have accounts there is a record, it is to account recorded information. No display fee

3        Both the from and to addresses have two records for the account (the first is the account information from the account, and the second is the account information for the to account). From address is the name of the inquiring account, showing the fee

4        Transaction records only from there accounts there is a record, is from the account of the account information. Display fee

Note 2 : Fees. If the account name being queried is empty, the fee will be displayed.

The first case: Both the from and to addresses have two records in the account . To address is the name of the inquiry account , no fee

{

              " id ": "20180517155038815",

              " result ": [{

                            "is\_virtual": false,

                            "is\_confirmed": true,

                            "is\_market": false,

                            "is\_market\_cancel": false,

                            "trx\_id": "09ee4ea3a0619d4a53a251f2a5b648c1b2c36cea",

                            "block\_num": 178621,

                            "block\_position": 0,

                            "trx\_type": 0,

                            "ledger\_entries": [{

                                          "from\_account": "wlaccount88",

                                          "from\_account\_name": "",

                                          "to\_account": "CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 401000000,

                                                        "asset\_id": 0

                                          },

                                          "memo": "",

                                          "running\_balances": []

                            }, {

                                          "from\_account": "wlaccount88",

                                          "from\_account\_name": "",

                                          "to\_account": "cwlaccount517",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 400000000,

                                                        "asset\_id": 0

                                          },

                                          " memo ": "depoist to CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ",

                                          "running\_balances": []

                            }],

                            " fee ": {

                                          " amount ": 0,

                                          "asset\_id": 0

                            },

                            " timestamp ": "2018-05-17T03:06:43",

                            "expiration\_timestamp": "2018-05-17T04:06:43"

              },

The second case: transaction records only to have accounts there is a record , is to account recorded information. No display fee

{

                            "is\_virtual": false,

                            "is\_confirmed": true,

                            "is\_market": false,

                            "is\_market\_cancel": false,

                            "trx\_id": "344c2c2bc6be9203ca1616f569a3ab8eb291aea6",

                            "block\_num": 178718,

                            "block\_position": 0,

                            "trx\_type": 0,

                            "ledger\_entries": [{

                                          "from\_account": "CQWxiu96TdP562XsuAVD1sabQwR7T72d3k",

                                          "from\_account\_name": "",

                                          "to\_account": "cwlaccount517",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 1100000000,

                                                        "asset\_id": 0

                                          },

                                          " memo ": "gpkw",

                                          "running\_balances": []

                            }],

                            " fee ": {

                                          " amount ": 0,

                                          "asset\_id": 0

                            },

                            " timestamp ": "2018-05-17T03:23:00",

                            "expiration\_timestamp": "2018-05-17T04:22:58"

              },

Third case: from and to addresses have an account there are two records. From address is the name of the inquiry account, showing the fee

{

                            "is\_virtual": false,

                            "is\_confirmed": true,

                            "is\_market": false,

                            "is\_market\_cancel": false,

                            "trx\_id": "5c49b1687f04238191f786ca97d312948b2bd6d9",

                            "block\_num": 180281,

                            "block\_position": 0,

                            "trx\_type": 0,

                            "ledger\_entries": [{

                                          "from\_account": "cwlaccount517",

                                          "from\_account\_name": "",

                                          "to\_account": "CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 701000000,

                                                        "asset\_id": 0

                                          },

                                          "memo": "",

                                          "running\_balances": []

                            }, {

                                          "from\_account": "cwlaccount517",

                                          "from\_account\_name": "",

                                          "to\_account": "cwlaccount02",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 700000000,

                                                        "asset\_id": 0

                                          },

                                          " memo ": "depoist to CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ",

                                          "running\_balances": []

                            }],

                            " fee ": {

                                          " amount ": 1000000,

                                          "asset\_id": 0

                            },

                            " timestamp ": "2018-05-17T07:43:24",

                            "expiration\_timestamp": "2018-05-17T08:43:24"

              } ,

Case 4: transaction records only from there accounts there is a record, is from the account of the account information. Display fee

{

                            "is\_virtual": false,

                            "is\_confirmed": true,

                            "is\_market": false,

                            "is\_market\_cancel": false,

                            "trx\_id": "f37b14d1bf2e6a527f933548d0ccb21bbb498578",

                            "block\_num": 180408,

                            "block\_position": 0,

                            "trx\_type": 0,

                            "ledger\_entries": [{

                                          "from\_account": "cwlaccount517",

                                          "from\_account\_name": "",

                                          "to\_account": "CQWxiu96TdP562XsuAVD1sabQwR7T72d3k",

                                          "to\_account\_name": "",

                                          " amount ": {

                                                        " amount ": 201000000,

                                                        "asset\_id": 0

                                          },

                                          "memo": "",

                                          "running\_balances": []

                            }],

                            " fee ": {

                                          " amount ": 1000000,

                                          "asset\_id": 0

                            },

                            " timestamp ": "2018-05-17T08:04:34",

                            "expiration\_timestamp": "2018-05-17T09:04:34"

              } ]

}

Return parameters :

Trx\_id: ticket number

Block\_num: block number

Ledger\_entries : Transaction information

Fee : Fee information

**3.13.1.2****There is no transaction record for the account**

{"id":"20180517161751093","result":[]}

**3.13.1.3****Account does not exist**

{"id":"20180519164458501","result":[]}

**3.13.2****Response failed**

**3.13.2.1****Not logged in**

Refer to 3.2.1

**3.13.2.2 The****wallet is not open**

Refer to 3.2.2

**3.13.2.3 The****asset identifier does not exist**

{

              " id ": "20180517223629793",

              " error ": {

                            " The Message ": "invalid Asset Symbol",

                            " code ": 0,

                            " data ": {

                                          " code ": 20024,

                                          " name ": "invalid\_asset\_symbol",

                                          " The Message ": "invalid Asset Symbol",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "TransactionLedger.cpp",

                                                                      " line ": 1542,

                                                                      " method ": "ctccore::wallet::Wallet::get\_transaction\_history",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:36:29"

                                                        },

                                                        " format ": "Invalid asset symbol!",

                                                        " data ": {

                                                                      "asset\_symbol": "a"

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "TransactionLedger.cpp",

                                                                      " line ": 1618,

                                                                      " method ": "ctccore::wallet::Wallet::get\_transaction\_history",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:36:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "TransactionLedger.cpp",

                                                                      " line ": 1924,

                                                                      " method ": "ctccore::wallet::Wallet::get\_pretty\_transaction\_history",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:36:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "WalletApi.cpp",

                                                                      " line ": 1260,

                                                                      " method ": "ctccore::client::detail::ClientImpl::wallet\_account\_transaction\_history",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:36:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 2584,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::wallet\_account\_transaction\_history",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T14:36:29"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.14**         **Get all transaction information for a specified block**

Call conditions: None

Request method: blockchain\_get\_block\_transactions

Request parameters: block ID or block number

Request:

{"method":"blockchain\_get\_block\_transactions","id":20180530143848845,"jsonrpc":"2.0",

"params" :[ "178957"]}

**3.14.1 The****response is successful**

**3.14.1.1****There is a transaction record**

{

              " id ": "20180530143848845",

              " result ": [

                            ["4d1324d7d198c138d1abc940d688c525d1adda51", {

                                          " trx ": {

                                                        " expiration ": "2018-05-17T05:02:45",

                                                        "sub\_account": "",

                                                        "sub\_inport\_asset": {

                                                                      " amount ": 0,

                                                                      "asset\_id": 0

                                                        },

                                                        " operations ": [{

                                                                      " type ": "withdraw\_op\_type",

                                                                      " data ": {

                                                                                    "balance\_id": "CWGYvm7BKFSipW2AQ2GT5hSiDVH7wV3HTE",

                                                                                    " amount ": 1101000000,

                                                                                    "claim\_input\_data": ""

                                                                      }

                                                        }, {

                                                                      " type ": "deposit\_op\_type",

                                                                      " data ": {

                                                                                    " amount ": 1100000000,

                                                                                    " condition ": {

                                                                                                  "asset\_id": 0,

                                                                                                  "slate\_id": 0,

                                                                                                  " type ": "withdraw\_signature\_type",

                                                                                                  "balance\_type": "withdraw\_common\_type",

                                                                                                  " data ": {

                                                                                                                " owner ": "CHHUkEZ8i4Q9msHGtUMq7fJySbL3Tn8bqZ"

                                                                                                  }

                                                                                    }

                                                                      }

                                                        }],

                                                        "result\_trx\_type": "origin\_transaction",

                                                        "result\_trx\_id": "0000000000000000000000000000000000000000",

                                                        " signatures ": ["2003c7ab6e76002625864b0d9396df5a2469d75d7ffab8d66a9e16d1e81192a896285d9bc9a3e17c5485473adbd7e2f37ad36a333f2054d18e486464c35e2bf8dd"]

                                          },

                                          "signed\_keys": [],

                                          " deposits ": [

                                                        [0, 1100000000]

                                          ],

                                          " withdraws ": [

                                                        [0, 1101000000]

                                          ],

                                          "contract\_address": "",

                                          " yield ": [],

                                          " deltas ": [

                                                        [0, [

                                                                      [0, -1101000000]

                                                        ]],

                                                        [1, [

                                                                      [0, 1100000000]

                                                        ]]

                                          ],

                                          "required\_fees": {

                                                        " amount ": 0,

                                                        "asset\_id": 0

                                          },

                                          "alt\_fees\_paid": {

                                                        " amount ": 0,

                                                        "asset\_id": 0

                                          },

                                          " balance ": [

                                                        [0, 1000000]

                                          ],

                                          "delegate\_vote\_deltas": [],

                                          "imessage\_length": 0,

                                          " skipexec ": true,

                                          "chain\_location": {

                                                        "block\_num": 178957,

                                                        "trx\_num": 0

                                          }

                            }]

              ]

}

**3.14.1.2****No transaction record**

{"id":"20180530145115714","result":[]}

**3.15**         **Account balance inquiry**

Premise call: Open the wallet , there are accounts purse households

Request method: wallet\_account\_balance request parameter: account name

Request:

{"method":"wallet\_account\_balance","id":20180517161157829,"jsonrpc":"2.0",

"params" :[ "cwlaccount517"]}

**3.15.1****Response Successful**

**3.15.1.1****Account exists**

{"id":"20180517161157829","result" :[ ["cwlaccount517",[[0,1997000000]]]]}

Return parameters result: account , asset type , current balance

**3.15.1.2 The****account does not exist**

{"id":"20180517161349692","result":[]}

**3.15.2****Response failed :**

**3.15.2.1****Not logged in**

Refer to 3.2.1

**3.15.2.2 The****wallet is not open**

Refer to 3.2.2

**3.16**         **Whether the transaction is on the chain**

Call the premise: After the transaction is initiated, the request is made after a period of time

Request method: blockchain\_get\_transaction

Request parameters: Trading the above mentioned id , whether pinpoint, default false ( false when matching rules are former 8 -bit match)

Request:

{"method":"blockchain\_get\_transaction","id":20180517162347398,"jsonrpc":"2.0",

"params" :[ "9a724455119eff62607c6a04f99728dfff44c604","false"]}

**3.16.1****Response Successful**

{

              " id ": "20180517162347398",

              " result ": ["9a724455119eff62607c6a04f99728dfff44c604", {

                            " trx ": {

                                          " expiration ": "2018-05-17T08:08:29",

                                          " info ": [

                                                        ["1", "infoxinx"]

                                          ],

                                          "sub\_account": "",

                                          "sub\_inport\_asset": {

                                                        " amount ": 0,

                                                        "asset\_id": 0

                                          },

                                          " operations ": [{

                                                        " type ": "withdraw\_op\_type",

                                                        " data ": {

                                                                      "balance\_id": "CLgedWcoMyrQbwjwZcyBZwQM2VEpGMgrwJ",

                                                                      " amount ": 2301000000,

                                                                      "claim\_input\_data": ""

                                                        }

                                          }, {

                                                        " type ": "deposit\_op\_type",

                                                        " data ": {

                                                                      " amount ": 2300000000,

                                                                      " condition ": {

                                                                                    "asset\_id": 0,

                                                                                    "slate\_id": 0,

                                                                                    " type ": "withdraw\_signature\_type",

                                                                                    "balance\_type": "withdraw\_common\_type",

                                                                                    " data ": {

                                                                                                  " owner ": "CWoDazT7zfvCYfcb3kZTLYdcRBPQKqvCJZ"

                                                                                    }

                                                                      }

                                                        }

                                          }, {

                                                        " type ": "imessage\_memo\_op\_type",

                                                        " data ": {

                                                                      " imessage ": "beizhuxinx"

                                                        }

                                          }],

                                          "result\_trx\_type": "origin\_transaction",

                                          "result\_trx\_id": "0000000000000000000000000000000000000000",

                                          " signatures ": ["207a2e5d1e4b787b4865e0e6dc836c671760d97df647a14144babf74862f2df859701ed5d4927d2fe227244edc79e86a89961df0a48f02fd4063864d0afb87fdc0"]

                            },

                            "signed\_keys": [],

                            " deposits ": [

                                          [0, 2300000000]

                            ],

                            " withdraws ": [

                                          [0, 2301000000]

                            ],

                            "contract\_address": "",

                            " yield ": [],

                            " deltas ": [

                                          [0, [

                                                        [0, -2301000000]

                                          ]],

                                          [1, [

                                                        [0, 2300000000]

                                          ]]

                            ],

                            "required\_fees": {

                                          " amount ": 0,

                                          "asset\_id": 0

                            },

                            "alt\_fees\_paid": {

                                          " amount ": 0,

                                          "asset\_id": 0

                            },

                            " balance ": [

                                          [0, 1000000]

                            ],

                            "delegate\_vote\_deltas": [],

                            "imessage\_length": 10,

                            " skipexec ": true,

                            "chain\_location": {

                                          "block\_num": 180072,

                                          "trx\_num": 0

                            }

              }]

}

Return parameters :

Transaction id

Trx: Detailed transaction data

Signed\_keys: Signed

Deposits: accounted for assets

Withdraws: account assets

Yield: reserved parameters

Deltas: reserved parameters

Required\_fees: reserved fields

Alt\_fees\_paid: reserved field

Balance: reserved field

Delegate\_vote\_deltas: reserved parameters

Imessage\_length: length of note

Chain\_location: transaction position structure

If the query indicates that the transaction is already on the chain

**3.16.2****Response failed**

**3.16.2.1 Incorrect****transaction number**

{

              " id ": "20180517162956021",

              " error ": {

                            " message ": "Assert Exception",

                            " code ": 0,

                            " data ": {

                                          " code ": 10,

                                          " name ": "assert\_exception",

                                          " message ": "Assert Exception",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "BlockchainApi.cpp",

                                                                      " line ": 284,

                                                                      " method ": "ctccore::client::detail::ClientImpl::blockchain\_get\_transaction",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T08:29:56"

                                                        },

                                                        " format ": "entry.valid(): Transaction not found!",

                                                        " data ": {}

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "BlockchainApi.cpp",

                                                                      " line ": 286,

                                                                      " method ": "ctccore::client::detail::ClientImpl::blockchain\_get\_transaction",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T08:29:56"

                                                        },

                                                        "format": "",

                                                        " data ": {

                                                                      "transaction\_id\_prefix": "19a724455119eff62607c6a04f99728dfff44c604",

                                                                      " exact ": false

                                                        }

                                          }, {

                                                        " context ": {

                                                                      " level ": "warn",

                                                                      " file ": "CommonApiClient.cpp",

                                                                      " line ": 505,

                                                                      " method ": "ctccore::rpc\_stubs::CommonApiClient::blockchain\_get\_transaction",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-17T08:29:56"

                                                        },

                                                        "format": "",

                                                        " data ": {}

                                          }]

                            }

              }

}

**3.17 Obtaining an Address According to the Balanceid**

Call conditions: None

Request method: Blockchain\_get\_balance Request parameters: account name

Request:

{"method":"blockchain\_get\_balance","id":20180530145744995,"jsonrpc":"2.0","params" :[ "CWGYvm7BKFSipW2AQ2GT5hSiDVH7wV3HTE"]}

**3.17.1****Response Successful**

{

              " id ": "20180530145744995",

              " result ": {

                            " condition ": {

                                          "asset\_id": 0,

                                          "slate\_id": 0,

                                          " type ": "withdraw\_signature\_type",

                                          "balance\_type": "withdraw\_common\_type",

                                          " data ": {

                                                        " owner ": "CQWxiu96TdP562XsuAVD1sabQwR7T72d3k"

                                          }

                            },

                            " balance ": "5230562812",

                            "deposit\_date": "2018-05-27T18:33:32",

                            "last\_update": "2018-05-28T14:43:20",

                            "meta\_data": null

              }

}

**3.17.1****Response failed**

**3.17.1.1 The****balanceid does not exist**

{

              " id ": "20180530145936688",

              " error ": {

                            " message ": "invalid address",

                            " code ": 0,

                            " data ": {

                                          " code ": 30028,

                                          " name ": "invalid\_address",

                                          " message ": "invalid address",

                                          " stack ": [{

                                                        " context ": {

                                                                      " level ": "error",

                                                                      " file ": "Address.cpp",

                                                                      " line ": 26,

                                                                      " method ": "ctccore::consensus::Address::Address",

                                                                      "hostname": "",

                                                                      "thread\_name": "th\_a",

                                                                      " timestamp ": "2018-05-30T06:59:36"

                                                        },

                                                        " format ": "invalid address ${a}",

                                                        " data ": {

                                                                      " a ": "CWGYvm7BKFSipW2AQ2GT5hSiDVH7wV3HTA"

                                                        }

                                          }]

                            }

              }

}

**4**        **Precautions**

1. The time in the return value is the standard Greenwich hour
2. The amount of the return value is the amount with precision, need to narrow the 10 000 0000 times the real amount, such as transfer 1 Ge CTC , it marked the return value 100000 000
3. Calling the address form in the http jrp rpc call: http://rpcuser:rpcpassword@IP: port /rpc
4. The Header header of the HTTP response result has an Authorization parameter. In subsequent requests, the request header needs to be passed back. Otherwise, the service returns a 401 error.

**Appendix: Commands Commonly Used in Terminal Command Mode**

1. Create wallet

Wallet\_create testwallet 12345678

Parameter: wallet name wallet password

2. Open wallet

Wallet\_open testwallet

Parameter: Wallet name

3. Create an account

Wallet\_account\_create testaccount

Parameter: account name

4. Import private key

import\_key private key testaccount1 true

Parameters: private key local no account name exists whether to create an account

5. List all accounts under the wallet

Wallet\_list\_accounts

6. List account address

Wallet\_get\_account\_public\_address testaccount

Parameter: account name

7. Export private key

wallet\_dump\_private\_key address or public key

Parameters: address or public key

8. Check balance

Wallet\_account\_balance testaccount

Parameters: Default or query account name

9. Query transaction records

Wallet\_account\_transaction\_history testaccount

Parameters: Default or query account name