# **API-JSONRPC**

****ICW为合作伙伴定制了对接需要的ICW2.0钱包版本，对接钱包内嵌**ICW-API**模块，模块内封装了ICW-SDK的功能，用HTTP协议访问接口，支持**JSON—RPC**和**Restful**两种格式。****

[主网或测试版钱包下载地址](https://github.com/nuls-io/nuls-v2/releases" \t "https://docs.nuls.io/zh/Docs/_blank)

[ICW-API离线操作工具下载地址](http://nuls-cn.oss-cn-hangzhou.aliyuncs.com/2.1/NULS_API-offline_v2.0.0.tar.gz" \t "https://docs.nuls.io/zh/Docs/_blank)

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%AE%BE%E7%BD%AE)**设置**

​ ICW-API模块默认访问的端口号是18004，可以在icw.ncf配置文件中做修改，如下：

[icw-API]

#httpServer的启动port

serverPort=18004

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%AF%B4%E6%98%8E)**说明**

​ 为了更好的理解ICW2.0的相关业务，和接口返回值的含义，提前在这里做一些说明。

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%9C%A8%E7%BA%BF%E4%B8%8E%E7%A6%BB%E7%BA%BF)**在线与离线**

ICW-API模块提供了若干在线接口和离线接口。

在线接口：钱包必须正常运行，且能够连接网络中的其他节点，能够正常同步区块和广播数据。在调用在线接口之前，最好是已经同步到最新区块。接口所产生的数据都会保存在钱包中。例如创建账户、修改密码、转账、获取区块头等。

离线接口：ICW2.0提供了一个专门用于[离线操作的ICW-API工具](http://nuls-cn.oss-cn-hangzhou.aliyuncs.com/2.1/NULS_API-offline_v2.0.0.tar.gz" \t "https://docs.nuls.io/zh/Docs/_blank)。无需安装钱包，可独立运行在一台没有连接网络的服务器上。用户通过调用离线接口，传入相关的参数，获取返回值，相应数据不会存入钱包。例如离线创建账户、离线组装转账交易、离线签名等。

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%AD%97%E6%AE%B5%E6%8F%8F%E8%BF%B0)**字段描述**

****链的chainId:****

​ ICW2.0支持多链并行和跨链转账，每条链通过链ID来区分，ICW主网的链ID为1，ICW测试网的链ID为2。

****链的资产：****

​ ICW2.0支持每条链除了默认的资产外，可根据业务需要，动态添加资产。每条链的每种资产通过链ID和资产ID的复合主键来区分。例如ICW主网的ICW，chainId=1,assetId=1

****交易的type值：****

​ ICW2.0默认有多种交易，每种交易的功能不同，调用接口查询交易详情时，可通过type字段来区分不同交易类型，以下是交易类型的枚举值：

int COIN\_BASE = 1; // coinBase出块奖励

int TRANSFER = 2; // 转账

int ACCOUNT\_ALIAS = 3; // 设置账户别名

int REGISTER\_AGENT = 4; // 新建共识节点

int DEPOSIT = 5; // 委托参与共识

int CANCEL\_DEPOSIT = 6; // 取消委托共识

int YELLOW\_PUNISH = 7; // 黄牌

int RED\_PUNISH = 8; // 红牌

int STOP\_AGENT = 9; // 注销共识节点

int CROSS\_CHAIN = 10; // 跨链转账

int REGISTER\_CHAIN\_AND\_ASSET = 11; // 注册链

int DESTROY\_CHAIN\_AND\_ASSET = 12; // 注销链

int ADD\_ASSET\_TO\_CHAIN = 13; // 为链新增一种资产

int REMOVE\_ASSET\_FROM\_CHAIN = 14; // 删除链上资产

int CREATE\_CONTRACT = 15; // 创建智能合约

int CALL\_CONTRACT = 16; // 调用智能合约

int DELETE\_CONTRACT = 17; // 删除智能合约

int CONTRACT\_TRANSFER = 18; // 合约内部转账

int CONTRACT\_RETURN\_GAS = 19; // 合约执行手续费返还

int CONTRACT\_CREATE\_AGENT = 20; // 合约新建共识节点

int CONTRACT\_DEPOSIT = 21; // 合约委托参与共识

int CONTRACT\_CANCEL\_DEPOSIT = 22; // 合约取消委托共识

int CONTRACT\_STOP\_AGENT = 23; // 合约注销共识节点

int VERIFIER\_CHANGE = 24; // 验证人变更

int VERIFIER\_INIT = 25; //验证人初始化

****交易的from和to：****

用转账交易为例：tx.type = 2

​ from为转账交易的转出方，每一个from视为一个转账人的某一种资产转出多少数量，其中nonce值每次转账后都会改变，可通过调用查询账户余额接口获取当前最新nonce值。

​ to为转账交易的接收方，每一个to视为接收人接收到某一种资产多少数量，其中lockTime为锁定时间。当锁定时间大于0时，表示现实时间超过这个值之后，这笔资产才能正常使用；当lockTime =-1时，表示永久锁定中，需要特殊的交易才能解除锁定，例如参与委托共识和取消委托共识。

​ 交易的手续费 = from里本链主资产之和 - to里本链主资产之和

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%AE%BF%E9%97%AE%E6%96%B9%E5%BC%8F)**访问方式**

**JSON-RPC**访问方式****

添加请求头 Content-Type: application/json;charset=UTF-8

HttpMethod: POST

URL: http://${ip}

示例: http://127.0.0.1:18004/jsonrpc

请求数据格式:

{

"jsonrpc":"2.0",

"method":"methodCMD", //接口名称

"params":[], //所有接口的参数，都以数组方式传递，且参数顺序不能变，若参数是非必填，也必须填入null占位

"id":1234}

**RESTFUL**访问方式****

添加请求头 Content-Type: application/json;charset=UTF-8

其余请参考 [RESTFUL 接口文档](https://github.com/nuls-io/nuls-v2/blob/master/module/nuls-api/documents/nuls-api_RESTFUL.md" \t "https://docs.nuls.io/zh/Docs/_blank)

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E6%8E%A5%E5%8F%A3%E6%96%87%E6%A1%A3)**接口文档**

我们对外提供的API接口，分为JSON-RPC和Restful两种风格，用户可根据需要选择不通过的对接方式，接口文档详见以下:

[JSON-RPC 接口文档](https://github.com/nuls-io/nuls-v2/blob/master/module/nuls-api/documents/nuls-api_JSONRPC.md" \t "https://docs.nuls.io/zh/Docs/_blank)

[RESTFUL 接口文档](https://github.com/nuls-io/nuls-v2/blob/master/module/nuls-api/documents/nuls-api_RESTFUL.md" \t "https://docs.nuls.io/zh/Docs/_blank)

****附：**** 官方已提供ICW-SDK-4J工具，有使用JAVA做对接的合作伙伴，可使用工具对接ICW-API模块，详见：[ICW-SDK-4J使用说明](https://github.com/nuls-io/nuls-v2-sdk4j/blob/master/README.md" \t "https://docs.nuls.io/zh/Docs/_blank)

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E6%8E%A5%E5%8F%A3%E8%B0%83%E8%AF%95)**接口调试**

我们提供了Postman接口调式工具的导入文件(JSON-RPC和RESTFUL)，导入后，即可调试接口

[JSON-PRC 接口调试-POSTMAN导入文件](https://github.com/nuls-io/nuls-v2/blob/master/module/nuls-api/documents/nuls-api_Postman_JSONRPC.json" \t "https://docs.nuls.io/zh/Docs/_blank)

[RESTFUL 接口调试-POSTMAN导入文件](https://github.com/nuls-io/nuls-v2/blob/master/module/nuls-api/documents/nuls-api_Postman_RESTFUL.json" \t "https://docs.nuls.io/zh/Docs/_blank)

## [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E6%8E%A5%E5%8F%A3%E5%88%97%E8%A1%A8)**接口列表**

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_0-1-%E8%8E%B7%E5%8F%96%E6%9C%AC%E9%93%BE%E7%9B%B8%E5%85%B3%E4%BF%A1%E6%81%AF-%E5%85%B6%E4%B8%AD%E5%85%B1%E8%AF%86%E8%B5%84%E4%BA%A7%E4%B8%BA%E6%9C%AC%E9%93%BE%E5%88%9B%E5%BB%BA%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9%E4%BA%A4%E6%98%93%E5%92%8C%E5%88%9B%E5%BB%BA%E5%A7%94%E6%89%98%E5%85%B1%E8%AF%86%E4%BA%A4%E6%98%93%E6%97%B6%EF%BC%8C%E9%9C%80%E8%A6%81%E7%94%A8%E5%88%B0%E7%9A%84%E8%B5%84%E4%BA%A7)**0.1 获取本链相关信息,其中共识资产为本链创建共识节点交易和创建委托共识交易时，需要用到的资产**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-info)**Cmd: info**

****详细描述: 获取本链相关信息,其中共识资产为本链创建共识节点交易和创建委托共识交易时，需要用到的资产****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8)**参数列表**

无参数

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| chainId | string | 本链的ID |
| assetId | string | 本链默认主资产的ID |
| inflationAmount | string | 本链默认主资产的初始数量 |
| agentChainId | string | 本链共识资产的链ID |
| agentAssetId | string | 本链共识资产的ID |
| addressPrefix | string | 本链地址前缀 |
| symbol | string | 本链主资产符号 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "info",

"params" : [ ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"agentChainId" : 2,

"inflationAmount" : 41095890410959,

"agentAssetId" : 1,

"commissionMin" : 20000000000000,

"chainId" : 2,

"assetId" : 1,

"addressPrefix" : "tICW",

"symbol" : "ICW"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-1-%E6%89%B9%E9%87%8F%E5%88%9B%E5%BB%BA%E8%B4%A6%E6%88%B7)**1.1 批量创建账户**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createaccount)**Cmd: createAccount**

****详细描述: 创建的账户存在于本地钱包内****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-2)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| count | int | 创建数量 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-2)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | list<string> | 返回账户地址集合 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-2)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createAccount",

"params" : [ 2, 1, "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-2)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk" ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-2-%E4%BF%AE%E6%94%B9%E8%B4%A6%E6%88%B7%E5%AF%86%E7%A0%81)**1.2 修改账户密码**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-updatepassword)**Cmd: updatePassword**

****详细描述: 修改账户密码****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-3)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| oldPassword | string | 原密码 | 是 |
| newPassword | string | 新密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-3)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | boolean | 是否修改成功 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-3)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "updatePassword",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "abcd1234", "abcd1111" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-3)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : true}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-3-%E5%AF%BC%E5%87%BA%E8%B4%A6%E6%88%B7%E7%A7%81%E9%92%A5)**1.3 导出账户私钥**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getprikey)**Cmd: getPriKey**

****详细描述: 只能导出本地钱包已存在账户的私钥****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-4)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-4)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 私钥 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-4)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getPriKey",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "abcd1111" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-4)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "53b02c91605451ea35175df894b4c47b7d1effbd05d6b269b3e7c785f3f6dc18"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-4-%E6%A0%B9%E6%8D%AE%E7%A7%81%E9%92%A5%E5%AF%BC%E5%85%A5%E8%B4%A6%E6%88%B7)**1.4 根据私钥导入账户**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-importprikey)**Cmd: importPriKey**

****详细描述: 导入私钥时，需要输入密码给明文私钥加密****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-5)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| priKey | string | 账户明文私钥 | 是 |
| password | string | 新密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-5)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 账户地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-5)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "importPriKey",

"params" : [ 2, "53b02c91605451ea35175df894b4c47b7d1effbd05d6b269b3e7c785f3f6dc18", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-5)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-5-%E6%A0%B9%E6%8D%AEkeystore%E5%AF%BC%E5%85%A5%E8%B4%A6%E6%88%B7)**1.5 根据keystore导入账户**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-importkeystore)**Cmd: importKeystore**

****详细描述: 根据keystore导入账户****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-6)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| keyStoreJson | map | keyStoreJson | 是 |
| password | string | keystore密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-6)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 账户地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-6)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "importKeystore",

"params" : [ 2, {

"address" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk",

"encryptedPrivateKey" : "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed",

"pubKey" : "024477033a4521efee5f90caf30f8eb3284e8d1bb7fef2923ae21617b24aacc8cb",

"prikey" : null

}, "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-6)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-6-%E8%B4%A6%E6%88%B7%E5%A4%87%E4%BB%BD%EF%BC%8C%E5%AF%BC%E5%87%BA%E8%B4%A6%E6%88%B7keystore%E4%BF%A1%E6%81%AF)**1.6 账户备份，导出账户keystore信息**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-exportkeystore)**Cmd: exportKeystore**

****详细描述: 账户备份，导出账户keystore信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-7)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| password | string | 账户密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-7)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| result | string | keystore |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-7)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "exportKeystore",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-7)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "{\"address\":\"tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk\",\"encryptedPrivateKey\":\"8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed\",\"pubKey\":\"024477033a4521efee5f90caf30f8eb3284e8d1bb7fef2923ae21617b24aacc8cb\",\"prikey\":null}"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-7-%E6%9F%A5%E8%AF%A2%E8%B4%A6%E6%88%B7%E4%BD%99%E9%A2%9D)**1.7 查询账户余额**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getaccountbalance)**Cmd: getAccountBalance**

****详细描述: 根据资产链ID和资产ID，查询本链账户对应资产的余额与nonce值****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-8)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| assetChainId | int | 资产的链ID | 是 |
| assetId | int | 资产ID | 是 |
| address | string | 账户地址 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-8)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| totalBalance | string | 总余额 |
| balance | string | 可用余额 |
| timeLock | string | 时间锁定金额 |
| consensusLock | string | 共识锁定金额 |
| freeze | string | 总锁定余额 |
| nonce | string | 账户资产nonce值 |
| nonceType | int | 1：已确认的nonce值,0：未确认的nonce值 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-8)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getAccountBalance",

"params" : [ 2, 2, 1, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-8)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"totalBalance" : "0",

"balance" : "0",

"timeLock" : "0",

"consensusLock" : "0",

"freeze" : "0",

"nonce" : "0000000000000000",

"nonceType" : 1

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-8-%E8%AE%BE%E7%BD%AE%E8%B4%A6%E6%88%B7%E5%88%AB%E5%90%8D)**1.8 设置账户别名**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-setalias)**Cmd: setAlias**

****详细描述: 别名格式为1-20位小写字母和数字的组合，设置别名会销毁1个ICW****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-9)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| alias | string | 别名 | 是 |
| password | string | 账户密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-9)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 设置别名交易的hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-9)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "setAlias",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "test", "icw123456" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-9)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "b8e53f0b43bbb566bf48ba30a56dc935bba27873fb5e52d793b7dc564b71b81c"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-9-%E9%AA%8C%E8%AF%81%E5%9C%B0%E5%9D%80%E6%98%AF%E5%90%A6%E6%AD%A3%E7%A1%AE)**1.9 验证地址是否正确**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-validateaddress)**Cmd: validateAddress**

****详细描述: 验证地址是否正确****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-10)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-10)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | boolean |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-10)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "validateAddress",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-10)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : true

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-10-%E6%A0%B9%E6%8D%AE%E8%B4%A6%E6%88%B7%E5%85%AC%E9%92%A5%E7%94%9F%E6%88%90%E8%B4%A6%E6%88%B7%E5%9C%B0%E5%9D%80)**1.10 根据账户公钥生成账户地址**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getaddressbypublickey)**Cmd: getAddressByPublicKey**

****详细描述: 根据账户公钥生成账户地址****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-11)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| publicKey | string | 账户公钥 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-11)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| address | string | 账户地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-11)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getAddressByPublicKey",

"params" : [ 2, "03958b790c331954ed367d37bac901de5c2f06ac8368b37d7bd6cd5ae143c1d7e3" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-11)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"address" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-11-%E7%A6%BB%E7%BA%BF-%E6%89%B9%E9%87%8F%E5%88%9B%E5%BB%BA%E8%B4%A6%E6%88%B7)**1.11 离线 - 批量创建账户**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createaccountoffline)**Cmd: createAccountOffline**

****详细描述: 创建的账户不会保存到钱包中,接口直接返回账户的keystore信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-12)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| count | int | 创建数量 | 是 |
| prefix | string | 地址前缀 | 否 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-12)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| address | string | 账户地址 |
| pubKey | string | 公钥 |
| prikey | string | 明文私钥 |
| encryptedPrivateKey | string | 加密后的私钥 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-12)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createAccountOffline",

"params" : [ 2, 1, "tICW", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-12)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ {

"address" : "tICWeBaMnS7et6FdFMMMLyK8Wvy1daVVeohfu",

"pubKey" : "02756e0d0827df60f5806bc00c44f97a9f5c234f78502a314aa40bb0a0156cd9f0",

"prikey" : "",

"encryptedPrivateKey" : "720e9f7ac1ab2ee997bad249d1c42212a5c5c744358a7bc65f472a1fe61a87a8f0bc841fdc74c8313fe6c94f496f3676"

} ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-12-%E7%A6%BB%E7%BA%BF%E8%8E%B7%E5%8F%96%E8%B4%A6%E6%88%B7%E6%98%8E%E6%96%87%E7%A7%81%E9%92%A5)**1.12 离线获取账户明文私钥**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getprikeyoffline)**Cmd: getPriKeyOffline**

****详细描述: 离线获取账户明文私钥****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-13)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| encryptedPrivateKey | string | 账户密文私钥 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-13)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 明文私钥 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-13)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getPriKeyOffline",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-13)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"priKey" : "53b02c91605451ea35175df894b4c47b7d1effbd05d6b269b3e7c785f3f6dc18"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-13-%E7%A6%BB%E7%BA%BF%E4%BF%AE%E6%94%B9%E8%B4%A6%E6%88%B7%E5%AF%86%E7%A0%81)**1.13 离线修改账户密码**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-resetpasswordoffline)**Cmd: resetPasswordOffline**

****详细描述: 离线修改账户密码****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-14)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| address | string | 账户地址 | 是 |
| encryptedPrivateKey | string | 账户密文私钥 | 是 |
| oldPassword | string | 原密码 | 是 |
| newPassword | string | 新密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-14)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 重置密码后的加密私钥 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-14)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "resetPasswordOffline",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed", "abcd1234", "abcd1111" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-14)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"newEncryptedPriKey" : "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-14-%E5%A4%9A%E8%B4%A6%E6%88%B7%E6%91%98%E8%A6%81%E7%AD%BE%E5%90%8D)**1.14 多账户摘要签名**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-multisign)**Cmd: multiSign**

****详细描述: 用于签名离线组装的多账户转账交易,调用接口时，参数可以传地址和私钥，或者传地址和加密私钥和加密密码****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-15)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| signDtoList | list | 摘要签名表单 | 是 |
| address | string | 地址 | 是 |
| priKey | string | 明文私钥 | 否 |
| encryptedPrivateKey | string | 加密私钥 | 否 |
| password | string | 密码 | 否 |
| txHex | string | 交易序列化16进制字符串 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-15)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 签名后的交易16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-15)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "multiSign",

"params" : [ 2, [ {

"address" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk",

"priKey" : "53b02c91605451ea35175df894b4c47b7d1effbd05d6b269b3e7c785f3f6dc18"

}, {

"address" : "tICWABFehEc2HgKhXFMtH3yGHpSStBthiuMfd",

"encryptedPrivateKey" : "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed",

"password" : "abcd1234"

} ], "0200b67f2d5d0672656d61726b008c01170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b02000100402a8648170000000000000000000000000000000000000000000000000000000800000000000000000001170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b0200010000e8764817000000000000000000000000000000000000000000000000000000000000000000000000" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-15)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "748184df91eda8d09be76e075d553313434c56bfeec3d449abc99ba6c430c00c"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-15-%E6%98%8E%E6%96%87%E7%A7%81%E9%92%A5%E6%91%98%E8%A6%81%E7%AD%BE%E5%90%8D)**1.15 明文私钥摘要签名**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-prikeysign)**Cmd: priKeySign**

****详细描述: 明文私钥摘要签名****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-16)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| txHex | string | 交易序列化16进制字符串 | 是 |
| address | string | 账户地址 | 是 |
| privateKey | string | 账户明文私钥 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-16)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 签名后的交易16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-16)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "priKeySign",

"params" : [ 2, "0200b67f2d5d0672656d61726b008c01170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b02000100402a8648170000000000000000000000000000000000000000000000000000000800000000000000000001170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b0200010000e8764817000000000000000000000000000000000000000000000000000000000000000000000000", "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "53b02c91605451ea35175df894b4c47b7d1effbd05d6b269b3e7c785f3f6dc18" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-16)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "748184df91eda8d09be76e075d553313434c56bfeec3d449abc99ba6c430c00c"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-16-%E5%AF%86%E6%96%87%E7%A7%81%E9%92%A5%E6%91%98%E8%A6%81%E7%AD%BE%E5%90%8D)**1.16 密文私钥摘要签名**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-encryptedprikeysign)**Cmd: encryptedPriKeySign**

****详细描述: 密文私钥摘要签名****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-17)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| txHex | string | 交易序列化16进制字符串 | 是 |
| address | string | 账户地址 | 是 |
| encryptedPrivateKey | string | 账户密文私钥 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-17)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 签名后的交易16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-17)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "encryptedPriKeySign",

"params" : [ 2, "0200b67f2d5d0672656d61726b008c01170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b02000100402a8648170000000000000000000000000000000000000000000000000000000800000000000000000001170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b0200010000e8764817000000000000000000000000000000000000000000000000000000000000000000000000", "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "8dbe5c1da7228c0a8b6a26c328231b8df2d4dbfd3f9b029557708d4560de9ecd53a353bb2d688d7c68bd11d741e5d3ed", "abcd" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-17)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "748184df91eda8d09be76e075d553313434c56bfeec3d449abc99ba6c430c00c"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-17-%E5%88%9B%E5%BB%BA%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7)**1.17 创建多签账户**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createmultisignaccount)**Cmd: createMultiSignAccount**

****详细描述: 根据多个账户的公钥创建多签账户，minSigns为多签账户创建交易时需要的最小签名数****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-18)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| pubKeys | list<string> | 账户公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-18)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 账户的地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-18)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createMultiSignAccount",

"params" : [ [ "03d0593e55a11e841e28c4288aa1181fb151f9d260bab0e006ca158095eb78bb35", "02ec141204330f1a028f4e4040582b9568db1f32bc8afc03c7ba6e84b78a72d979" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-18)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : "tICWeBaNNVVFWD1LjfT29s9BE4SqbzxonBejA"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-18-%E7%A6%BB%E7%BA%BF%E5%88%9B%E5%BB%BA%E8%AE%BE%E7%BD%AE%E5%88%AB%E5%90%8D%E4%BA%A4%E6%98%93)**1.18 离线创建设置别名交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createaliastx)**Cmd: createAliasTx**

****详细描述: 离线创建设置别名交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-19)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| 创建别名交易 | aliasdto | 创建别名交易表单 | 是 |
| address | string | 账户地址 | 是 |
| alias | string | 别名 | 是 |
| nonce | string | 资产nonce值 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-19)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-19)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createAliasTx",

"params" : [ "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "test2", "0000000000000000", "remark" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-19)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "03006621775d001e170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b0574657374328c01170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b020001004023050600000000000000000000000000000000000000000000000000000000080000000000000000000117020001e2f297763765bc154afaac7aec5e7899a729fed20200010000e1f50500000000000000000000000000000000000000000000000000000000000000000000000000",

"hash" : "170dc03089d5c721ce4f9794bb87ebf6c7553163622d57e7e8a22622ba02db5e"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-19-%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7%E7%A6%BB%E7%BA%BF%E5%88%9B%E5%BB%BA%E8%AE%BE%E7%BD%AE%E5%88%AB%E5%90%8D%E4%BA%A4%E6%98%93)**1.19 多签账户离线创建设置别名交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createmultisignaliastx)**Cmd: createMultiSignAliasTx**

****详细描述: 多签账户离线创建设置别名交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-20)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| 多签账户离线创建设置别名交易 | multisignaliasdto | 创建别名交易表单 | 是 |
| address | string | 账户地址 | 是 |
| alias | string | 别名 | 是 |
| nonce | string | 资产nonce值 | 是 |
| remark | string | 交易备注 | 否 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-20)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-20)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createMultiSignAliasTx",

"params" : [ "tICWeBaNNVVFWD1LjfT29s9BE4SqbzxonBejA", "test2", "0000000000000000", "remark", [ "03d0593e55a11e841e28c4288aa1181fb151f9d260bab0e006ca158095eb78bb35", "02ec141204330f1a028f4e4040582b9568db1f32bc8afc03c7ba6e84b78a72d979" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-20)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "e05e43886c8f9a95ef4c6dfb10f1964d507ac6b2d98079e4aa8d9d8d0572bdb2"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-20-%E6%A0%B9%E6%8D%AE%E7%A7%81%E9%92%A5%E8%8E%B7%E5%8F%96%E8%B4%A6%E6%88%B7%E5%9C%B0%E5%9D%80%E6%A0%BC%E5%BC%8F)**1.20 根据私钥获取账户地址格式**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getaddressbyprikey)**Cmd: getAddressByPriKey**

****详细描述: 根据私钥获取账户地址格式****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-21)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| 原始私钥 | prikeyform | 私钥表单 | 是 |
| priKey | string | 账户明文私钥 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-21)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 账户地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-21)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getAddressByPriKey",

"params" : [ "9ce21dad67e0f0af2599b41b515a7f7018059418bab892a7b68f283d489abc4b" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-21)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_1-21-%E6%9F%A5%E8%AF%A2%E9%92%B1%E5%8C%85%E5%86%85%E5%88%9B%E5%BB%BA%E7%9A%84%E8%B4%A6%E6%88%B7%E5%88%97%E8%A1%A8)**1.21 查询钱包内创建的账户列表**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getaddresslist)**Cmd: getAddressList**

****详细描述: 查询钱包内创建的账户列表****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-22)**参数列表**

无参数

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-22)**返回值**

无返回值

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-22)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-22)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-1-%E8%8E%B7%E5%8F%96%E6%9C%AC%E8%8A%82%E7%82%B9%E7%9A%84%E7%BD%91%E7%BB%9C%E7%8A%B6%E6%80%81%E4%BF%A1%E6%81%AF)**2.1 获取本节点的网络状态信息**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getnetworkinfo)**Cmd: getNetworkInfo**

****详细描述: 获取本节点的网络状态信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-23)**参数列表**

无参数

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-23)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | networkinfo | 返回网络状态 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-23)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-23)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-2-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97%E9%AB%98%E5%BA%A6%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97%E5%A4%B4)**2.2 根据区块高度查询区块头**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getheaderbyheight)**Cmd: getHeaderByHeight**

****详细描述: 根据区块高度查询区块头****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-24)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| height | long | 区块高度 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-24)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-24)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getHeaderByHeight",

"params" : [ 2, 1 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-24)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"hash" : "0061dee8b289df58e3c820f38b31ce47d02993797f976eacd6020ced392a6b5b",

"preHash" : "d8880f913c984e4dece5cfb3f5f1d96d6ee923ffb0b47be0079fe84472ddda83",

"merkleHash" : "8930f7386e33eaf79c22025956820fa58f403b7dbdf3d39ca5f2be5776e8b8e5",

"time" : "1970-01-19 10:14:08.008",

"height" : 1,

"txCount" : 1,

"blockSignature" : "473045022100f2012721b3eef4bc052bcef76903cb4eab029020b09a300968f7dde6fb7c56be0220621774e67bc8b09440ab40273f64795d83394ec6ad3c9458801c36e9b0f29850",

"size" : 247,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156324818,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:08.008",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-3-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97hash%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97%E5%A4%B4)**2.3 根据区块hash查询区块头**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getheaderbyhash)**Cmd: getHeaderByHash**

****详细描述: 根据区块hash查询区块头****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-25)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| hash | string | 区块hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-25)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-25)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getHeaderByHash",

"params" : [ 2, "0061dee8b289df58e3c820f38b31ce47d02993797f976eacd6020ced392a6b5b" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-25)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"hash" : "0061dee8b289df58e3c820f38b31ce47d02993797f976eacd6020ced392a6b5b",

"preHash" : "d8880f913c984e4dece5cfb3f5f1d96d6ee923ffb0b47be0079fe84472ddda83",

"merkleHash" : "8930f7386e33eaf79c22025956820fa58f403b7dbdf3d39ca5f2be5776e8b8e5",

"time" : "1970-01-19 10:14:08.008",

"height" : 1,

"txCount" : 1,

"blockSignature" : "473045022100f2012721b3eef4bc052bcef76903cb4eab029020b09a300968f7dde6fb7c56be0220621774e67bc8b09440ab40273f64795d83394ec6ad3c9458801c36e9b0f29850",

"size" : 247,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156324818,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:08.008",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-4-%E6%9F%A5%E8%AF%A2%E6%9C%80%E6%96%B0%E5%8C%BA%E5%9D%97%E5%A4%B4%E4%BF%A1%E6%81%AF)**2.4 查询最新区块头信息**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getbestblockheader)**Cmd: getBestBlockHeader**

****详细描述: 查询最新区块头信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-26)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-26)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-26)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBestBlockHeader",

"params" : [ 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-26)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"hash" : "f1003ee7c46ee33c5d6c518342c993cad7d202767cb4b7b5ddb69ce19d8899ea",

"preHash" : "8edfb6610be130020c3815915e81eccaa4c3c426362d1239030119b3a2941923",

"merkleHash" : "4b4564bff52373d698dbb4d95ea66d23b18a2ae09079a9e62b8f4d7ddf8bdb5c",

"time" : "1970-01-19 10:14:18.018",

"height" : 1000,

"txCount" : 1,

"blockSignature" : "4730450221009d13cd79b918fba44b4ca549a37dc715e368ac55fe80170f54f52c2742da0ed802207312ee6d38b95a28feaca40ed9c91fba4d47fe5efa1940ecd4fe63e7b9cb5533",

"size" : 247,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156325817,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:18.018",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-5-%E6%9F%A5%E8%AF%A2%E6%9C%80%E6%96%B0%E5%8C%BA%E5%9D%97)**2.5 查询最新区块**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getbestblock)**Cmd: getBestBlock**

****详细描述: 包含区块打包的所有交易信息，此接口返回数据量较多，谨慎调用****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-27)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-27)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| header | object | 区块头信息, 只返回对应的部分数据 |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |
| txs | list<object> | 交易列表 |
| hash | string | 交易的hash值 |
| type | int | 交易类型 |
| time | string | 交易时间 |
| timestamp | long | 交易时间戳 |
| blockHeight | long | 区块高度 |
| blockHash | string | 区块hash |
| remark | string | 交易备注 |
| transactionSignature | string | 交易签名 |
| txDataHex | string | 交易业务数据序列化字符串 |
| status | int | 交易状态 0:unConfirm(待确认), 1:confirm(已确认) |
| size | int | 交易大小 |
| inBlockIndex | int | 在区块中的顺序，存储在rocksDB中是无序的，保存区块时赋值，取出后根据此值排序 |
| from | list<object> | 输入 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| nonce | string | 账户nonce值的Hex字符串，防止双花交易，取上一笔交易hash的最后8个字节 |
| locked | byte | 0普通交易，-1解锁金额交易（退出共识，退出委托） |
| to | list<object> | 输出 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| lockTime | long | 解锁时间，-1为永久锁定 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-27)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBestBlock",

"params" : [ 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-27)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"header" : {

"hash" : "55ff1491334a3e636e504f1bc12ba04fa0c582381a0b8e0c3f7aaa12a27fabb5",

"preHash" : "97bb75f9d12e945396ffb386373941c05d9671770bd4639554e5ed948e775f8c",

"merkleHash" : "0ecd099ee9c5955588516a6f619d9bef6406a7d2aa31eec592df2c6cb19e326d",

"time" : "1970-01-19 10:14:21.021",

"height" : 1348,

"txCount" : 1,

"blockSignature" : "463044022046aa28d324da4ec487829fcc8901e351eb13a0290bdd05c084d5e42a876ab6a1022024aa4386081787506771f5e8ddbe7a625d6f4aff67e5c10818fbd4f98ccf264e",

"size" : 234,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156326165,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:21.021",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

},

"txs" : [ {

"type" : 1,

"coinData" : "AAA=",

"txData" : null,

"time" : 1563261651,

"transactionSignature" : null,

"remark" : null,

"hash" : {

"bytes" : "Ds0JnunFlVWIUWpvYZ2b72QGp9KqMe7Fkt8sbLGeMm0="

},

"blockHeight" : 1348,

"status" : "UNCONFIRM",

"size" : 12,

"inBlockIndex" : 0,

"coinDataInstance" : {

"from" : [ ],

"to" : [ ],

"fromAddressCount" : 0

},

"fee" : 0,

"multiSignTx" : false

} ]

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-6-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97%E9%AB%98%E5%BA%A6%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97)**2.6 根据区块高度查询区块**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getblockbyheight)**Cmd: getBlockByHeight**

****详细描述: 包含区块打包的所有交易信息，此接口返回数据量较多，谨慎调用****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-28)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| height | long | 区块高度 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-28)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| header | object | 区块头信息, 只返回对应的部分数据 |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |
| txs | list<object> | 交易列表 |
| hash | string | 交易的hash值 |
| type | int | 交易类型 |
| time | string | 交易时间 |
| timestamp | long | 交易时间戳 |
| blockHeight | long | 区块高度 |
| blockHash | string | 区块hash |
| remark | string | 交易备注 |
| transactionSignature | string | 交易签名 |
| txDataHex | string | 交易业务数据序列化字符串 |
| status | int | 交易状态 0:unConfirm(待确认), 1:confirm(已确认) |
| size | int | 交易大小 |
| inBlockIndex | int | 在区块中的顺序，存储在rocksDB中是无序的，保存区块时赋值，取出后根据此值排序 |
| from | list<object> | 输入 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| nonce | string | 账户nonce值的Hex字符串，防止双花交易，取上一笔交易hash的最后8个字节 |
| locked | byte | 0普通交易，-1解锁金额交易（退出共识，退出委托） |
| to | list<object> | 输出 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| lockTime | long | 解锁时间，-1为永久锁定 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-28)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBlockByHeight",

"params" : [ 2, 100 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-28)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"header" : {

"hash" : "0620b926b2f09921315cc251bd65fe803cfa9e2259275900f7f7509cd0dac6d3",

"preHash" : "975c90cbc8dedc577ebf315be4d11b4153c2bbb1b9704484c45752215717aa1d",

"merkleHash" : "c9144c126f64f2e79d11879af9f4c94839202c464bb854dae17d89800de30fc6",

"time" : "1970-01-19 10:14:09.009",

"height" : 100,

"txCount" : 1,

"blockSignature" : "463044022060286d182fb808bb24543730a0316688b2c02f8378f112bca15d0860288dc5340220566b867e1813ed57c79b5b6ed9baf1f07e29afa8b445a842120c5407557a7363",

"size" : 234,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156324917,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:09.009",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

},

"txs" : [ {

"type" : 1,

"coinData" : "AAA=",

"txData" : null,

"time" : 1563249171,

"transactionSignature" : null,

"remark" : null,

"hash" : {

"bytes" : "yRRMEm9k8uedEYea+fTJSDkgLEZLuFTa4X2JgA3jD8Y="

},

"blockHeight" : 100,

"status" : "UNCONFIRM",

"size" : 12,

"inBlockIndex" : 0,

"coinDataInstance" : {

"from" : [ ],

"to" : [ ],

"fromAddressCount" : 0

},

"fee" : 0,

"multiSignTx" : false

} ]

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-7-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97hash%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97)**2.7 根据区块hash查询区块**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getblockbyhash)**Cmd: getBlockByHash**

****详细描述: 包含区块打包的所有交易信息，此接口返回数据量较多，谨慎调用****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-29)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| hash | string | 区块hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-29)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| header | object | 区块头信息, 只返回对应的部分数据 |
| hash | string | 区块的hash值 |
| preHash | string | 上一个区块的hash值 |
| merkleHash | string | 梅克尔hash |
| time | string | 区块生成时间 |
| height | long | 区块高度 |
| txCount | int | 区块打包交易数量 |
| blockSignature | string | 签名Hex.encode(byte[]) |
| size | int | 大小 |
| packingAddress | string | 打包地址 |
| roundIndex | long | 共识轮次 |
| consensusMemberCount | int | 参与共识成员数量 |
| roundStartTime | string | 当前共识轮开始时间 |
| packingIndexOfRound | int | 当前轮次打包出块的名次 |
| mainVersion | short | 主网当前生效的版本 |
| blockVersion | short | 区块的版本，可以理解为本地钱包的版本 |
| stateRoot | string | 智能合约世界状态根 |
| txHashList | list<string> | 区块打包的交易hash集合 |
| txs | list<object> | 交易列表 |
| hash | string | 交易的hash值 |
| type | int | 交易类型 |
| time | string | 交易时间 |
| timestamp | long | 交易时间戳 |
| blockHeight | long | 区块高度 |
| blockHash | string | 区块hash |
| remark | string | 交易备注 |
| transactionSignature | string | 交易签名 |
| txDataHex | string | 交易业务数据序列化字符串 |
| status | int | 交易状态 0:unConfirm(待确认), 1:confirm(已确认) |
| size | int | 交易大小 |
| inBlockIndex | int | 在区块中的顺序，存储在rocksDB中是无序的，保存区块时赋值，取出后根据此值排序 |
| from | list<object> | 输入 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| nonce | string | 账户nonce值的Hex字符串，防止双花交易，取上一笔交易hash的最后8个字节 |
| locked | byte | 0普通交易，-1解锁金额交易（退出共识，退出委托） |
| to | list<object> | 输出 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| lockTime | long | 解锁时间，-1为永久锁定 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-29)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBlockByHash",

"params" : [ 2, "0620b926b2f09921315cc251bd65fe803cfa9e2259275900f7f7509cd0dac6d3" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-29)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"header" : {

"hash" : "0620b926b2f09921315cc251bd65fe803cfa9e2259275900f7f7509cd0dac6d3",

"preHash" : "975c90cbc8dedc577ebf315be4d11b4153c2bbb1b9704484c45752215717aa1d",

"merkleHash" : "c9144c126f64f2e79d11879af9f4c94839202c464bb854dae17d89800de30fc6",

"time" : "1970-01-19 10:14:09.009",

"height" : 100,

"txCount" : 1,

"blockSignature" : "463044022060286d182fb808bb24543730a0316688b2c02f8378f112bca15d0860288dc5340220566b867e1813ed57c79b5b6ed9baf1f07e29afa8b445a842120c5407557a7363",

"size" : 234,

"packingAddress" : "tICWeBaMkrt4z9FYEkkR9D6choPVvQr94oYZp",

"roundIndex" : 156324917,

"consensusMemberCount" : 1,

"roundStartTime" : "1970-01-19 10:14:09.009",

"packingIndexOfRound" : 1,

"mainVersion" : 1,

"blockVersion" : 1,

"stateRoot" : "56e81f171bcc55a6ff8345e692c0f86e5b48e01b996cadc001622fb5e363b421"

},

"txs" : [ {

"type" : 1,

"coinData" : "AAA=",

"txData" : null,

"time" : 1563249171,

"transactionSignature" : null,

"remark" : null,

"hash" : {

"bytes" : "yRRMEm9k8uedEYea+fTJSDkgLEZLuFTa4X2JgA3jD8Y="

},

"blockHeight" : 100,

"status" : "UNCONFIRM",

"size" : 12,

"inBlockIndex" : 0,

"coinDataInstance" : {

"from" : [ ],

"to" : [ ],

"fromAddressCount" : 0

},

"fee" : 0,

"multiSignTx" : false

} ]

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-8-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97%E9%AB%98%E5%BA%A6%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97%E5%BA%8F%E5%88%97%E5%8C%96%E5%AD%97%E7%AC%A6%E4%B8%B2)**2.8 根据区块高度查询区块序列化字符串**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getblockserializationbyheight)**Cmd: getBlockSerializationByHeight**

****详细描述: 包含区块打包的所有交易信息，此接口返回数据量较多，谨慎调用****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-30)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| height | long | 区块高度 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-30)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | string | 返回区块序列化后的HEX字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-30)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBlockSerializationByHeight",

"params" : [ 2, 1 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-30)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : ""}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-9-%E6%A0%B9%E6%8D%AE%E5%8C%BA%E5%9D%97hash%E6%9F%A5%E8%AF%A2%E5%8C%BA%E5%9D%97%E5%BA%8F%E5%88%97%E5%8C%96%E5%AD%97%E7%AC%A6%E4%B8%B2)**2.9 根据区块hash查询区块序列化字符串**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getblockserializationbyhash)**Cmd: getBlockSerializationByHash**

****详细描述: 包含区块打包的所有交易信息，此接口返回数据量较多，谨慎调用****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-31)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| hash | string | 区块hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-31)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | string | 返回区块序列化后的HEX字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-31)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getBlockSerializationByHeight",

"params" : [ 2, "5ce81f9a470459276b633465f2572862aa7156a42220d29d724ced9bf9d723f9" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-31)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : ""}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_2-10-%E8%8E%B7%E5%8F%96%E6%9C%80%E6%96%B0%E4%B8%BB%E9%93%BE%E9%AB%98%E5%BA%A6)**2.10 获取最新主链高度**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getlatestheight)**Cmd: getLatestHeight**

****详细描述: 获取最新主链高度****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-32)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-32)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | long | 获取最新主链高度 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-32)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-32)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-1-%E6%A0%B9%E6%8D%AEhash%E8%8E%B7%E5%8F%96%E4%BA%A4%E6%98%93)**3.1 根据hash获取交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-gettx)**Cmd: getTx**

****详细描述: 根据hash获取交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-33)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| hash | string | 交易hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-33)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易的hash值 |
| type | int | 交易类型 |
| time | string | 交易时间 |
| timestamp | long | 交易时间戳 |
| blockHeight | long | 区块高度 |
| blockHash | string | 区块hash |
| remark | string | 交易备注 |
| transactionSignature | string | 交易签名 |
| txDataHex | string | 交易业务数据序列化字符串 |
| status | int | 交易状态 0:unConfirm(待确认), 1:confirm(已确认) |
| size | int | 交易大小 |
| inBlockIndex | int | 在区块中的顺序，存储在rocksDB中是无序的，保存区块时赋值，取出后根据此值排序 |
| from | list<object> | 输入 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| nonce | string | 账户nonce值的Hex字符串，防止双花交易，取上一笔交易hash的最后8个字节 |
| locked | byte | 0普通交易，-1解锁金额交易（退出共识，退出委托） |
| to | list<object> | 输出 |
| address | string | 账户地址 |
| assetsChainId | int | 资产发行链的id |
| assetsId | int | 资产id |
| amount | string | 数量 |
| lockTime | long | 解锁时间，-1为永久锁定 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-33)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getTx",

"params" : [ 2, "3d05d84f7d537b70fe4bce6ec81904018e482461a831b6a7a69756225876293f" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-33)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"hash" : "3d05d84f7d537b70fe4bce6ec81904018e482461a831b6a7a69756225876293f",

"type" : 16,

"time" : "2019-12-18 14:35:04.004",

"blockHeight" : 172,

"blockHash" : "d7412d925da4eef1f1d7fdf2e19c24d1d2616e9ae3d75b405ee9e69b51bf0491",

"remark" : "call contract test - 空气币转账",

"transactionSignature" : "2103958b790c331954ed367d37bac901de5c2f06ac8368b37d7bd6cd5ae143c1d7e3473045022100fa7c1987316b16fbc156173d2419591e4bc0df15835c096eae5d38f24c34ae7802201ca68cf83b13811f5e4cbd09bd03a53394ef0e90d20cd4a1bb43eb13a6fa441e",

"txDataHex" : "020001f7ec6473df12e751d64cf20a8baa7edd50810f810200029fef190beb3651234855ec4348471180ae1881b1000000000000000000000000000000000000000000000000000000000000000080841e00000000001900000000000000087472616e7366657200020126744e554c536542614d72624d52694641556565417436737762347856424e79693831594c32340103383030",

"status" : 1,

"size" : 374,

"inBlockIndex" : 0,

"from" : [ {

"address" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG",

"assetsChainId" : 2,

"assetsId" : 1,

"amount" : "50100000",

"nonce" : "ef3247392e9a8d99",

"locked" : 0

} ],

"to" : [ ]

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-2-%E9%AA%8C%E8%AF%81%E4%BA%A4%E6%98%93)**3.2 验证交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-validatetx)**Cmd: validateTx**

****详细描述: 验证离线组装的交易,验证成功返回交易hash值,失败返回错误提示信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-34)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| tx | string | 交易序列化字符串 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-34)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-34)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "validateTx",

"params" : [ 2, "" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-34)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : "5a91b75e6a6d1f415638375627933b42ce7179b4c6390ca0dcc5a0c2c74bd34a"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-3-%E5%B9%BF%E6%92%AD%E4%BA%A4%E6%98%93)**3.3 广播交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-broadcasttx)**Cmd: broadcastTx**

****详细描述: 广播离线组装的交易,成功返回true,失败返回错误提示信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-35)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| tx | string | 交易序列化16进制字符串 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-35)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | boolean | 是否成功 |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-35)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "broadcastTx",

"params" : [ 2, "" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-35)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : true,

"hash" : "5a91b75e6a6d1f415638375627933b42ce7179b4c6390ca0dcc5a0c2c74bd34a"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-4-%E5%B9%BF%E6%92%AD%E4%BA%A4%E6%98%93-%E4%B8%8D%E9%AA%8C%E8%AF%81%E5%90%88%E7%BA%A6)**3.4 广播交易(不验证合约)**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-broadcasttxwithnocontractvalidation)**Cmd: broadcastTxWithNoContractValidation**

****详细描述: 广播离线组装的交易(不验证合约),成功返回true,失败返回错误提示信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-36)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| tx | string | 交易序列化16进制字符串 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-36)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | boolean | 是否成功 |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-36)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "broadcastTxWithNoContractValidation",

"params" : [ 2, "" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-36)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : true,

"hash" : "5a91b75e6a6d1f415638375627933b42ce7179b4c6390ca0dcc5a0c2c74bd34a"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-5-%E5%B9%BF%E6%92%AD%E4%BA%A4%E6%98%93-%E4%B8%8D%E9%AA%8C%E8%AF%81)**3.5 广播交易(不验证)**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-broadcasttxwithoutanyvalidation)**Cmd: broadcastTxWithoutAnyValidation**

****详细描述: 广播离线组装的交易(不验证),成功返回true,失败返回错误提示信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-37)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| tx | string | 交易序列化16进制字符串 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-37)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | boolean | 是否成功 |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-37)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "broadcastTxWithoutAnyValidation",

"params" : [ 2, "" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-37)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : true,

"hash" : "5a91b75e6a6d1f415638375627933b42ce7179b4c6390ca0dcc5a0c2c74bd34a"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-6-%E5%8D%95%E7%AC%94%E9%93%BE%E5%86%85%E8%BD%AC%E8%B4%A6)**3.6 单笔链内转账**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-transfer)**Cmd: transfer**

****详细描述: 发起单账户单资产的转账交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-38)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| assetChainId | int | 资产链id | 是 |
| assetId | int | 资产id | 是 |
| address | string | 转出账户地址 | 是 |
| toAddress | string | 转入账户地址 | 是 |
| password | string | 转出账户密码 | 是 |
| amount | string | 转出金额 | 是 |
| remark | string | 备注 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-38)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-38)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "transfer",

"params" : [ 2, 1, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "icw123456", "10000000000000", "transfer tx" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-38)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"hash" : "40acabd7e7b7643aa545f2b74d09f8d65eecf885919d968d263a7a24255f8698"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-7-%E5%8D%95%E7%AC%94%E8%BD%AC%E8%B4%A6)**3.7 单笔转账**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-transferotherchainasset)**Cmd: transferOtherChainAsset**

****详细描述: 发起单账户单资产的转账交易,转账资产为链内的其他平行链资产****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-39)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| assetChainId | int | 资产链id | 是 |
| assetId | int | 资产id | 是 |
| address | string | 转出账户地址 | 是 |
| toAddress | string | 转入账户地址 | 是 |
| password | string | 转出账户密码 | 是 |
| amount | string | 转出金额 | 是 |
| remark | string | 备注 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-39)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-39)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-39)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-8-%E5%8D%95%E7%AC%94%E8%B7%A8%E9%93%BE%E8%BD%AC%E8%B4%A6)**3.8 单笔跨链转账**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-crosstransfer)**Cmd: crossTransfer**

****详细描述: 发起单账户单资产的跨链转账交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-40)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| assetChainId | int | 资产链id | 是 |
| assetId | int | 资产id | 是 |
| address | string | 转出账户地址 | 是 |
| toAddress | string | 转入账户地址 | 是 |
| password | string | 转出账户密码 | 是 |
| amount | string | 转出金额 | 是 |
| remark | string | 备注 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-40)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-40)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-40)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-9-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93)**3.9 离线组装转账交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createtransfertxoffline)**Cmd: createTransferTxOffline**

****详细描述: 根据inputs和outputs离线组装转账交易，用于单账户或多账户的转账交易。交易手续费为inputs里本链主资产金额总和，减去outputs里本链主资产总和****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-41)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| transferDto | transferdto | 转账交易表单 | 是 |
| inputs | list<object> | 转账交易输入列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| outputs | list<object> | 转账交易输出列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| lockTime | long | 锁定时间 | 是 |
| time | long | 创建时间 | 否 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-41)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-41)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createTransferTxOffline",

"params" : [ [ {

"address" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "100001000000",

"nonce" : "0000000000000000"

} ], [ {

"address" : "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "100000000000",

"lockTime" : 0

} ], "remark" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-41)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "0200b67f2d5d0672656d61726b008c01170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b02000100402a8648170000000000000000000000000000000000000000000000000000000800000000000000000001170200012a9af4ee49f4cb1ee84eafd42aec41bc04b28f7b0200010000e8764817000000000000000000000000000000000000000000000000000000000000000000000000",

"hash" : "748184df91eda8d09be76e075d553313434c56bfeec3d449abc99ba6c430c00c"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-10-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93)**3.10 离线组装转账交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createcrosstxoffline)**Cmd: createCrossTxOffline**

****详细描述: 根据inputs和outputs离线组装跨链转账交易，用于单账户或多账户的跨链转账交易。交易手续费为inputs里本链主资产金额总和，减去outputs里本链主资产总和，加上跨链转账手续费（ICW）****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-42)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| transferDto | transferdto | 转账交易表单 | 是 |
| inputs | list<object> | 转账交易输入列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| outputs | list<object> | 转账交易输出列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| lockTime | long | 锁定时间 | 是 |
| time | long | 创建时间 | 否 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-42)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-42)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-42)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-11-%E8%AE%A1%E7%AE%97%E7%A6%BB%E7%BA%BF%E5%88%9B%E5%BB%BA%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93%E6%89%80%E9%9C%80%E6%89%8B%E7%BB%AD%E8%B4%B9)**3.11 计算离线创建转账交易所需手续费**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-calctransfertxfee)**Cmd: calcTransferTxFee**

****详细描述: 计算离线创建转账交易所需手续费****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-43)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| TransferTxFeeDto | transfertxfeedto | 转账交易手续费 | 是 |
| addressCount | int | 转账地址数量 | 是 |
| fromLength | int | 转账输入长度 | 是 |
| toLength | int | 转账输出长度 | 是 |
| remark | string | 交易备注 | 是 |
| price | biginteger | 手续费单价 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-43)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易手续费 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-43)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "calcTransferTxFee",

"params" : [ 6, 6, 2, "remark", "1000000" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-43)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : 2000000

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-12-%E8%AE%A1%E7%AE%97%E7%A6%BB%E7%BA%BF%E5%88%9B%E5%BB%BA%E8%B7%A8%E9%93%BE%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93%E6%89%80%E9%9C%80%E6%89%8B%E7%BB%AD%E8%B4%B9)**3.12 计算离线创建跨链转账交易所需手续费**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-calccrosstxfee)**Cmd: calcCrossTxFee**

****详细描述: 计算离线创建跨链转账交易所需手续费****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-44)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| TransferTxFeeDto | transfertxfeedto | 转账交易手续费 | 是 |
| addressCount | int | 转账地址数量 | 是 |
| fromLength | int | 转账输入长度 | 是 |
| toLength | int | 转账输出长度 | 是 |
| remark | string | 交易备注 | 是 |
| price | biginteger | 手续费单价 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-44)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易手续费 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-44)**Example request data:**

无

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-44)**Example response data:**

略

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-13-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93)**3.13 离线组装转账交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createmultisigntransfertxoffline)**Cmd: createMultiSignTransferTxOffline**

****详细描述: 根据inputs和outputs离线组装转账交易，用于单账户或多账户的转账交易。交易手续费为inputs里本链主资产金额总和，减去outputs里本链主资产总和****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-45)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| transferDto | multisigntransferdto | 转账交易表单 | 是 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |
| inputs | list<object> | 转账交易输入列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| outputs | list<object> | 转账交易输出列表 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| lockTime | long | 锁定时间 | 是 |
| remark | string | 交易备注 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-45)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化16进制字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-45)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createMultiSignTransferTxOffline",

"params" : [ [ "0377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db", "03f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1" ], 2, [ {

"address" : "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 11000000,

"nonce" : "0000000000000000"

} ], [ {

"address" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 10000000,

"lockTime" : 0

} ], "remark" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-45)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "02008854775d0672656d61726b008c0117020003f6231825aa05e4d25b4772909a15c9ba3c0b6fe202000100c0d8a70000000000000000000000000000000000000000000000000000000000080000000000000000000117020001f7ec6473df12e751d64cf20a8baa7edd50810f810200010080969800000000000000000000000000000000000000000000000000000000000000000000000000460202210377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db2103f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1",

"hash" : "f72a8240924380d3b2499ed8859f192b3097c0d19dbdbd879093fa2d974352c7"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_3-14-%E8%AE%A1%E7%AE%97%E7%A6%BB%E7%BA%BF%E5%88%9B%E5%BB%BA%E8%BD%AC%E8%B4%A6%E4%BA%A4%E6%98%93%E6%89%80%E9%9C%80%E6%89%8B%E7%BB%AD%E8%B4%B9)**3.14 计算离线创建转账交易所需手续费**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-calcmultisigntransfertxfee)**Cmd: calcMultiSignTransferTxFee**

****详细描述: 计算离线创建转账交易所需手续费****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-46)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| MultiSignTransferTxFeeDto | multisigntransfertxfeedto | 转账交易手续费 | 是 |
| pubKeyCount | int | 多签地址对应公钥数量 | 是 |
| fromLength | int | 转账输入长度 | 是 |
| toLength | int | 转账输出长度 | 是 |
| remark | string | 交易备注 | 是 |
| price | biginteger | 手续费单价 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-46)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易手续费 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-46)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "calcMultiSignTransferTxFee",

"params" : [ 2, 2, 1, "remark", "1000000" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-46)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"value" : 1000000

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-1-%E5%8F%91%E5%B8%83%E5%90%88%E7%BA%A6)**4.1 发布合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractcreate)**Cmd: contractCreate**

****详细描述: 发布合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-47)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| password | string | 账户密码 | 是 |
| alias | string | 合约别名 | 是 |
| gasLimit | long | GAS限制 | 是 |
| price | long | GAS单价 | 是 |
| contractCode | string | 智能合约代码(字节码的Hex编码字符串) | 是 |
| args | object[] | 参数列表 | 否 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-47)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| txHash | string | 发布合约的交易hash |
| contractAddress | string | 生成的合约地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-47)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractCreate",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "icw123456", "jsonrpc\_nrc20", 20000, 30, "", [ "io", "IO", 80000, 1 ], null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-47)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHash" : "0b8a56835e47ab67c57d1a3e7c9102315b0b219af4c3a7c0fa820d16f09a12f3",

"contractAddress" : "tICWeBaMx2zjgThursB6k9XsST7VvZmr2vB3J"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-2-%E8%B0%83%E7%94%A8%E5%90%88%E7%BA%A6)**4.2 调用合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractcall)**Cmd: contractCall**

****详细描述: 调用合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-48)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| password | string | 调用者账户密码 | 是 |
| value | biginteger | 调用者向合约地址转入的主网资产金额，没有此业务时填BigInteger.ZERO | 是 |
| gasLimit | long | GAS限制 | 是 |
| price | long | GAS单价 | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 合约方法 | 是 |
| methodDesc | string | 合约方法描述，若合约内方法没有重载，则此参数可以为空 | 否 |
| args | object[] | 参数列表 | 否 |
| remark | string | 交易备注 | 否 |
| multyAssetValues | string[][] | 调用者向合约地址转入的其他资产金额，没有此业务时填空，规则: [[<value>,<assetChainId>,<assetId>]] | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-48)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| txHash | string | 调用合约的交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-48)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractCall",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "icw123456", 0, 200000, 30, "tICWeBaMx2zjgThursB6k9XsST7VvZmr2vB3J", "transfer", null, [ "tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM", "4000" ], "remark-jsonrpc-call", null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-48)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHash" : "1e9d4676e09a7ead64a400971625c0cc0cd0991086bc969fe27a433bb6e6efb9"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-3-%E5%88%A0%E9%99%A4%E5%90%88%E7%BA%A6)**4.3 删除合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractdelete)**Cmd: contractDelete**

****详细描述: 删除合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-49)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| password | string | 交易账户密码 | 是 |
| contractAddress | string | 合约地址 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-49)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| txHash | string | 删除合约的交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-49)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractDelete",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "icw123456", "tICWeBaMx2zjgThursB6k9XsST7VvZmr2vB3J", "delete-remark" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-49)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHash" : "12f521540bc9dba75b4c8fb605bb7387681891748265c0d4b869c64389008fca"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-4-%E5%90%88%E7%BA%A6token%E8%BD%AC%E8%B4%A6)**4.4 合约token转账**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-tokentransfer)**Cmd: tokentransfer**

****详细描述: 合约token转账****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-50)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| fromAddress | string | 转出者账户地址 | 是 |
| password | string | 转出者账户密码 | 是 |
| toAddress | string | 转入者账户地址 | 是 |
| contractAddress | string | token合约地址 | 是 |
| amount | biginteger | 转出的token资产金额 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-50)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| txHash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-50)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "tokentransfer",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "icw123456", "tICWeBaMnrs6JKrCy6TQdzYJZkMZJDng7QAsD", "tICWeBaN7GnASHHfknQ1a9ywiLsNsuim6ASwi", 80, "8个" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-50)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHash" : "f628c9787830ff67fe9a3e423899225d7b975add83f9ee505d4ce9d75a79b1fb"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-5-%E4%BB%8E%E8%B4%A6%E6%88%B7%E5%9C%B0%E5%9D%80%E5%90%91%E5%90%88%E7%BA%A6%E5%9C%B0%E5%9D%80%E8%BD%AC%E8%B4%A6-%E4%B8%BB%E9%93%BE%E8%B5%84%E4%BA%A7-%E7%9A%84%E5%90%88%E7%BA%A6%E4%BA%A4%E6%98%93)**4.5 从账户地址向合约地址转账(主链资产)的合约交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-transfer2contract)**Cmd: transfer2contract**

****详细描述: 从账户地址向合约地址转账(主链资产)的合约交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-51)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| fromAddress | string | 转出者账户地址 | 是 |
| password | string | 转出者账户密码 | 是 |
| toAddress | string | 转入者账户地址 | 是 |
| amount | biginteger | 转出的主链资产金额 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-51)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| txHash | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-51)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "transfer2contract",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "icw123456", "tICWeBaNA4yaXmfaQVXpX3QWPcUaHRRryoXHa", 900000000, "向合约转账" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-51)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHash" : "6a10dea1845b189ff5542939df0ababa5c478fb9414884937212549af1603ad4"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-6-%E8%8E%B7%E5%8F%96%E8%B4%A6%E6%88%B7%E5%9C%B0%E5%9D%80%E7%9A%84%E6%8C%87%E5%AE%9A%E5%90%88%E7%BA%A6%E7%9A%84token%E4%BD%99%E9%A2%9D)**4.6 获取账户地址的指定合约的token余额**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-gettokenbalance)**Cmd: getTokenBalance**

****详细描述: 获取账户地址的指定合约的token余额****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-52)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| contractAddress | string | 合约地址 | 是 |
| address | string | 账户地址 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-52)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| contractAddress | string | 合约地址 |
| name | string | token名称 |
| symbol | string | token符号 |
| amount | string | token数量 |
| decimals | long | token支持的小数位数 |
| blockHeight | long | 合约创建时的区块高度 |
| status | int | 合约状态(0-不存在, 1-正常, 2-终止) |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-52)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getTokenBalance",

"params" : [ 2, "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL", "tICWeBaMnrs6JKrCy6TQdzYJZkMZJDng7QAsD" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-52)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"contractAddress" : "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL",

"name" : "io",

"symbol" : "IO",

"amount" : "80",

"decimals" : 1,

"blockHeight" : 505,

"status" : 1

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-7-%E8%8E%B7%E5%8F%96%E6%99%BA%E8%83%BD%E5%90%88%E7%BA%A6%E8%AF%A6%E7%BB%86%E4%BF%A1%E6%81%AF)**4.7 获取智能合约详细信息**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontract)**Cmd: getContract**

****详细描述: 获取智能合约详细信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-53)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| contractAddress | string | 合约地址 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-53)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| createTxHash | string | 发布合约的交易hash |
| address | string | 合约地址 |
| creater | string | 合约创建者地址 |
| alias | string | 合约别名 |
| createTime | long | 合约创建时间（单位：秒） |
| blockHeight | long | 合约创建时的区块高度 |
| isDirectPayable | boolean | 是否接受直接转账 |
| tokenType | int | token类型, 0 - 非token, 1 - NRC20, 2 - NRC721 |
| isNrc20 | boolean | 是否是NRC20合约 |
| nrc20TokenName | string | NRC20-token名称 |
| nrc20TokenSymbol | string | NRC20-token符号 |
| decimals | long | NRC20-token支持的小数位数 |
| totalSupply | string | NRC20-token发行总量 |
| status | string | 合约状态（not\_found, normal, stop） |
| method | list<object> | 合约方法列表 |
| name | string | 方法名称 |
| desc | string | 方法描述 |
| args | list<object> | 方法参数列表 |
| type | string | 参数类型 |
| name | string | 参数名称 |
| required | boolean | 是否必填 |
| returnArg | string | 返回值类型 |
| view | boolean | 是否视图方法（调用此方法数据不上链） |
| event | boolean | 是否是事件 |
| payable | boolean | 是否是可接受主链资产转账的方法 |
| jsonSerializable | boolean | 方法返回值是否JSON序列化 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-53)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContract",

"params" : [ 2, "tICWeBaNA4yaXmfaQVXpX3QWPcUaHRRryoXHa" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-53)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"createTxHash" : "3a932a0bae1cd78c9e56264824a1ff9c96baf857bd799fe6941d0c4e98c19cf0",

"address" : "tICWeBaNA4yaXmfaQVXpX3QWPcUaHRRryoXHa",

"creater" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG",

"alias" : "offline\_payable\_jr",

"createTime" : 1563270456,

"blockHeight" : 427,

"directPayable" : true,

"nrc20" : false,

"nrc20TokenName" : null,

"nrc20TokenSymbol" : null,

"decimals" : 0,

"totalSupply" : null,

"status" : "normal",

"method" : [ {

"name" : "\_payable",

"desc" : "() return void",

"args" : [ ],

"returnArg" : "void",

"view" : false,

"event" : false,

"payable" : true

}, {

"name" : "<init>",

"desc" : "() return void",

"args" : [ ],

"returnArg" : "void",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "getName",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "getSymbol",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "getDecimals",

"desc" : "() return int",

"args" : [ ],

"returnArg" : "int",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "balance",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "single",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : false

}, {

"name" : "multy",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : true

}, {

"name" : "multyForAddress",

"desc" : "(Address add1, BigInteger add1\_na, Address add2, BigInteger add2\_na, String add3ForString, BigInteger add3\_na) return String",

"args" : [ {

"type" : "Address",

"name" : "add1",

"required" : false

}, {

"type" : "BigInteger",

"name" : "add1\_na",

"required" : false

}, {

"type" : "Address",

"name" : "add2",

"required" : false

}, {

"type" : "BigInteger",

"name" : "add2\_na",

"required" : false

}, {

"type" : "String",

"name" : "add3ForString",

"required" : false

}, {

"type" : "BigInteger",

"name" : "add3\_na",

"required" : false

} ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : true

}, {

"name" : "allInfo",

"desc" : "() return String",

"args" : [ ],

"returnArg" : "String",

"view" : false,

"event" : false,

"payable" : false

} ]

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-8-%E8%8E%B7%E5%8F%96%E6%99%BA%E8%83%BD%E5%90%88%E7%BA%A6%E6%89%A7%E8%A1%8C%E7%BB%93%E6%9E%9C)**4.8 获取智能合约执行结果**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontracttxresult)**Cmd: getContractTxResult**

****详细描述: 获取智能合约执行结果****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-54)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| hash | string | 交易hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-54)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| success | boolean | 合约执行是否成功 |
| errorMessage | string | 执行失败信息 |
| contractAddress | string | 合约地址 |
| result | string | 合约执行结果 |
| gasLimit | long | GAS限制 |
| gasUsed | long | 已使用GAS |
| price | long | GAS单价 |
| totalFee | string | 交易总手续费 |
| txSizeFee | string | 交易大小手续费 |
| actualContractFee | string | 实际执行合约手续费 |
| refundFee | string | 合约返回的手续费 |
| value | string | 调用者向合约地址转入的主网资产金额，没有此业务时则为0 |
| stackTrace | string | 异常堆栈踪迹 |
| transfers | list<object> | 合约转账列表（从合约转出主资产） |
| txHash | string | 合约生成交易：合约转账交易hash |
| from | string | 转出的合约地址 |
| value | string | 转账金额 |
| outputs | list<object> | 转入的地址列表 |
| to | string | 转入地址 |
| value | string | 转入金额 |
| orginTxHash | string | 调用合约交易hash（源交易hash，合约交易由调用合约交易派生而来） |
| multyAssetTransfers | list<object> | 合约转账列表（从合约转出其他资产） |
| txHash | string | 合约生成交易：合约转账交易hash |
| from | string | 转出的合约地址 |
| value | string | 转账金额 |
| assetChainId | int | 转账金额资产链ID |
| assetId | int | 转账金额资产ID |
| outputs | list<object> | 转入的地址列表 |
| to | string | 转入地址 |
| value | string | 转入金额 |
| assetChainId | int | 转入金额资产链ID |
| assetId | int | 转入金额资产ID |
| lockTime | long | 转入金额锁定时间 |
| orginTxHash | string | 调用合约交易hash（源交易hash，合约交易由调用合约交易派生而来） |
| events | list<string> | 合约事件列表 |
| debugEvents | list<string> | 调式合约事件列表 |
| tokenTransfers | list<object> | 合约token转账列表 |
| contractAddress | string | 合约地址 |
| from | string | 付款方 |
| to | string | 收款方 |
| value | string | 转账金额 |
| name | string | token名称 |
| symbol | string | token符号 |
| decimals | long | token支持的小数位数 |
| token721Transfers | list<object> | 合约NRC721-token转账列表 |
| contractAddress | string | 合约地址 |
| from | string | 付款方 |
| to | string | 收款方 |
| tokenId | string | tokenId |
| name | string | token名称 |
| symbol | string | token符号 |
| invokeRegisterCmds | list<object> | 合约调用外部命令的调用记录列表 |
| cmdName | string | 命令名称 |
| args | map | 命令参数，参数不固定，依据不同的命令而来，故此处不作描述，结构为 {参数名称=参数值} |
| cmdRegisterMode | string | 注册的命令模式（QUERY\_DATA or NEW\_TX） |
| newTxHash | string | 生成的交易hash（当调用的命令模式是 NEW\_TX 时，会生成交易） |
| contractTxList | list<string> | 合约生成交易的序列化字符串列表 |
| remark | string | 备注 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-54)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContractTxResult",

"params" : [ 2, "b8db1792fbfb6630a5106a1a92ee182aaa694aa1142454e81e4d8286e19ffc11" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-54)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"success" : true,

"errorMessage" : null,

"contractAddress" : "tICWeBaN1rhd9k9eqNkvwC9HXBWLQ79dRuy81",

"result" : "multyForAddress: 888634777633",

"gasLimit" : 200000,

"gasUsed" : 20038,

"price" : 25,

"totalFee" : "5100000",

"txSizeFee" : "100000",

"actualContractFee" : "500950",

"refundFee" : "4499050",

"value" : 10000000000,

"stackTrace" : null,

"transfers" : [ {

"txHash" : "4877f6a865dea5b4ac82a8370d73e62da15bc7acb2145a03822dddfdab329d2b",

"from" : "tICWeBaN1rhd9k9eqNkvwC9HXBWLQ79dRuy81",

"value" : "200000000",

"outputs" : [ {

"to" : "tICWeBaMp9wC9PcWEcfesY7YmWrPfeQzkN1xL",

"value" : "100000000"

}, {

"to" : "tICWeBaMshNPEnuqiDhMdSA4iNs6LMgjY6tcL",

"value" : "100000000"

} ],

"orginTxHash" : "b5473eefecd1c70ac4276f70062a92bdbfe8f779cbe48de2d0315686cc7e6789"

} ],

"multyAssetTransfers" : [ {

"txHash" : "21c7af81c5130f43a363152d3b81f96004fbaaeaeab8e50c988c04015f78770b",

"from" : "tICWeBaN31HBrLhXsWDkSz1bjhw5qGBcjafVJ",

"value" : "200000000",

"assetChainId" : 5,

"assetId" : 1,

"outputs" : [ {

"to" : "tICWeBaMrbMRiFAUeeAt6swb4xVBNyi81YL24",

"value" : "200000000",

"assetChainId" : 5,

"assetId" : 1,

"lockTime" : 0

} ],

"orginTxHash" : "755cdeabb704a77038d44c741b6c2b5635a60ffa58f652162559763f63623176"

} ],

"events" : [ "{\"contractAddress\":\"TTb1LZLo6izPGmXa9dGPmb5D2vpLpNqA\",\"blockNumber\":1343847,\"event\":\"TransferEvent\",\"payload\":{\"from\":\"TTasNs8MGGGaFT9hd9DLmkammYYv69vs\",\"to\":\"TTau7kAxyhc4yMomVJ2QkMVECKKZK1uG\",\"value\":\"1000\"}}" ],

"debugEvents" : [ ],

"tokenTransfers" : [ {

"contractAddress" : "TTb1LZLo6izPGmXa9dGPmb5D2vpLpNqA",

"from" : "TTasNs8MGGGaFT9hd9DLmkammYYv69vs",

"to" : "TTau7kAxyhc4yMomVJ2QkMVECKKZK1uG",

"value" : "1000",

"name" : "a",

"symbol" : "a",

"decimals" : 8

} ],

"token721Transfers" : [ {

"contractAddress" : "ICWd6Hgrsk44itdzFqjgkgAF6nFM82WdpqrQ",

"from" : "ICWd6Hgd3ACi95QvpLBfp3jgJP3YFmEpbgoG",

"to" : "ICWd6HgcbwRjN8AxpPK8TvJWtzBzMQ1zDhVd",

"tokenId" : "13450",

"name" : "nft",

"symbol" : "NFT"

} ],

"invokeRegisterCmds" : [ {

"cmdName" : "cs\_createContractAgent",

"args" : {

"contractBalance" : "2030000000000",

"commissionRate" : "100",

"chainId" : 2,

"deposit" : "2000000000000",

"contractAddress" : "tICWeBaMzZedU4D3xym1JcyNa5sqtuFku8AKm",

"contractNonce" : "0000000000000000",

"blockTime" : 1562564381,

"packingAddress" : "tICWeBaMtEPLXxUgyfnBt9bpb5Xv84dyJV98p",

"contractSender" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG"

},

"cmdRegisterMode" : "NEW\_TX",

"newTxHash" : "a8eae11b52990e39c9d3233ba1d2c8827336d261c0f14aca43dd4f06435dfaba"

} ],

"contractTxList" : [ "", "12009cbbf25f0037755cdeabb704a77038d44c741b6c2b5635a60ffa58f652162559763f6362317602000265f22046ba64eb216854390877d0f52348ded8be8c011702000265f22046ba64eb216854390877d0f52348ded8be0500010000c2eb0b00000000000000000000000000000000000000000000000000000000080000000000000000000117020001bc9cf2a09f0d1dbe7ab0a7dca2ccb87d12da6a990500010000c2eb0b00000000000000000000000000000000000000000000000000000000000000000000000000", "" ],

"remark" : "call"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-9-%E8%8E%B7%E5%8F%96%E6%99%BA%E8%83%BD%E5%90%88%E7%BA%A6%E6%89%A7%E8%A1%8C%E7%BB%93%E6%9E%9C%E5%88%97%E8%A1%A8)**4.9 获取智能合约执行结果列表**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontracttxresultlist)**Cmd: getContractTxResultList**

****详细描述: 获取智能合约执行结果列表****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-55)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| hashList | list<string> | 交易hash列表 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-55)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash1 or hash2 or hash3... | object | 以交易hash列表中的hash值作为key，这里的key name是动态的 |
| success | boolean | 合约执行是否成功 |
| errorMessage | string | 执行失败信息 |
| contractAddress | string | 合约地址 |
| result | string | 合约执行结果 |
| gasLimit | long | GAS限制 |
| gasUsed | long | 已使用GAS |
| price | long | GAS单价 |
| totalFee | string | 交易总手续费 |
| txSizeFee | string | 交易大小手续费 |
| actualContractFee | string | 实际执行合约手续费 |
| refundFee | string | 合约返回的手续费 |
| value | string | 调用者向合约地址转入的主网资产金额，没有此业务时则为0 |
| stackTrace | string | 异常堆栈踪迹 |
| transfers | list<object> | 合约转账列表（从合约转出主资产） |
| txHash | string | 合约生成交易：合约转账交易hash |
| from | string | 转出的合约地址 |
| value | string | 转账金额 |
| outputs | list<object> | 转入的地址列表 |
| to | string | 转入地址 |
| value | string | 转入金额 |
| orginTxHash | string | 调用合约交易hash（源交易hash，合约交易由调用合约交易派生而来） |
| multyAssetTransfers | list<object> | 合约转账列表（从合约转出其他资产） |
| txHash | string | 合约生成交易：合约转账交易hash |
| from | string | 转出的合约地址 |
| value | string | 转账金额 |
| assetChainId | int | 转账金额资产链ID |
| assetId | int | 转账金额资产ID |
| outputs | list<object> | 转入的地址列表 |
| to | string | 转入地址 |
| value | string | 转入金额 |
| assetChainId | int | 转入金额资产链ID |
| assetId | int | 转入金额资产ID |
| lockTime | long | 转入金额锁定时间 |
| orginTxHash | string | 调用合约交易hash（源交易hash，合约交易由调用合约交易派生而来） |
| events | list<string> | 合约事件列表 |
| debugEvents | list<string> | 调式合约事件列表 |
| tokenTransfers | list<object> | 合约token转账列表 |
| contractAddress | string | 合约地址 |
| from | string | 付款方 |
| to | string | 收款方 |
| value | string | 转账金额 |
| name | string | token名称 |
| symbol | string | token符号 |
| decimals | long | token支持的小数位数 |
| token721Transfers | list<object> | 合约NRC721-token转账列表 |
| contractAddress | string | 合约地址 |
| from | string | 付款方 |
| to | string | 收款方 |
| tokenId | string | tokenId |
| name | string | token名称 |
| symbol | string | token符号 |
| invokeRegisterCmds | list<object> | 合约调用外部命令的调用记录列表 |
| cmdName | string | 命令名称 |
| args | map | 命令参数，参数不固定，依据不同的命令而来，故此处不作描述，结构为 {参数名称=参数值} |
| cmdRegisterMode | string | 注册的命令模式（QUERY\_DATA or NEW\_TX） |
| newTxHash | string | 生成的交易hash（当调用的命令模式是 NEW\_TX 时，会生成交易） |
| contractTxList | list<string> | 合约生成交易的序列化字符串列表 |
| remark | string | 备注 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-55)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContractTxResultList",

"params" : [ 2, [ "c2460b94430074dd98e497ed9d48afb8f44d1323b73ca2086f5abaa0684b760d", "48b2f348f201f9d10848f4031a746919470b679f621327b0e0edf50a339f2e87", "2e99610b7d295790b636fcdb8acf72d70fcae61c873df0984ef248bbbaa6daa2" ] ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-55)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"c2460b94430074dd98e497ed9d48afb8f44d1323b73ca2086f5abaa0684b760d" : {

"success" : true,

"errorMessage" : null,

"contractAddress" : "tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL",

"result" : null,

"gasLimit" : 20000,

"gasUsed" : 13429,

"price" : 30,

"totalFee" : "1300000",

"txSizeFee" : "700000",

"actualContractFee" : "402870",

"refundFee" : "197130",

"value" : "0",

"stackTrace" : null,

"transfers" : [ ],

"multyAssetTransfers" : [ ],

"events" : [ "{\"contractAddress\":\"tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL\",\"blockNumber\":68,\"event\":\"TransferEvent\",\"payload\":{\"from\":null,\"to\":\"tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG\",\"value\":\"800000\"}}" ],

"debugEvents" : [ ],

"tokenTransfers" : [ {

"contractAddress" : "tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL",

"from" : null,

"to" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG",

"value" : "800000",

"name" : "io",

"symbol" : "IO",

"decimals" : 1

} ],

"token721Transfers" : [ ],

"invokeRegisterCmds" : [ ],

"contractTxList" : [ ],

"remark" : "create"

},

"48b2f348f201f9d10848f4031a746919470b679f621327b0e0edf50a339f2e87" : {

"success" : true,

"errorMessage" : null,

"contractAddress" : "tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL",

"result" : "true",

"gasLimit" : 200000,

"gasUsed" : 9444,

"price" : 30,

"totalFee" : "6100000",

"txSizeFee" : "100000",

"actualContractFee" : "283320",

"refundFee" : "5716680",

"value" : "0",

"stackTrace" : null,

"transfers" : [ ],

"multyAssetTransfers" : [ ],

"events" : [ "{\"contractAddress\":\"tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL\",\"blockNumber\":71,\"event\":\"TransferEvent\",\"payload\":{\"from\":\"tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG\",\"to\":\"tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM\",\"value\":\"4000\"}}" ],

"debugEvents" : [ ],

"tokenTransfers" : [ {

"contractAddress" : "tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL",

"from" : "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG",

"to" : "tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM",

"value" : "4000",

"name" : "io",

"symbol" : "IO",

"decimals" : 1

} ],

"token721Transfers" : [ ],

"invokeRegisterCmds" : [ ],

"contractTxList" : [ ],

"remark" : "call"

},

"2e99610b7d295790b636fcdb8acf72d70fcae61c873df0984ef248bbbaa6daa2" : {

"success" : true,

"errorMessage" : null,

"contractAddress" : "tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL",

"result" : "true",

"gasLimit" : 200000,

"gasUsed" : 5836,

"price" : 30,

"totalFee" : "6100000",

"txSizeFee" : "100000",

"actualContractFee" : "175080",

"refundFee" : "5824920",

"value" : "0",

"stackTrace" : null,

"transfers" : [ ],

"multyAssetTransfers" : [ ],

"events" : [ "{\"contractAddress\":\"tICWeBaN5Y2gRias1NMNVmsmXqJbu5Bcp3ZPL\",\"blockNumber\":72,\"event\":\"ApprovalEvent\",\"payload\":{\"owner\":\"tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG\",\"spender\":\"tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM\",\"value\":\"4000\"}}" ],

"debugEvents" : [ ],

"tokenTransfers" : [ ],

"token721Transfers" : [ ],

"invokeRegisterCmds" : [ ],

"contractTxList" : [ ],

"remark" : "call"

}

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-10-%E8%8E%B7%E5%8F%96%E5%90%88%E7%BA%A6%E4%BB%A3%E7%A0%81%E6%9E%84%E9%80%A0%E5%87%BD%E6%95%B0)**4.10 获取合约代码构造函数**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontractconstructor)**Cmd: getContractConstructor**

****详细描述: 获取合约代码构造函数****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-56)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| contractCode | string | 智能合约代码(字节码的Hex编码字符串) | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-56)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| constructor | object | 合约构造函数详情 |
| name | string | 方法名称 |
| desc | string | 方法描述 |
| args | list<object> | 方法参数列表 |
| type | string | 参数类型 |
| name | string | 参数名称 |
| required | boolean | 是否必填 |
| returnArg | string | 返回值类型 |
| view | boolean | 是否视图方法（调用此方法数据不上链） |
| event | boolean | 是否是事件 |
| payable | boolean | 是否是可接受主链资产转账的方法 |
| jsonSerializable | boolean | 方法返回值是否JSON序列化 |
| isNrc20 | boolean | 是否是NRC20合约 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-56)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContractConstructor",

"params" : [ 2, "" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-56)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"constructor" : {

"name" : "<init>",

"desc" : "(String name, String symbol, BigInteger initialAmount, int decimals) return void",

"args" : [ {

"type" : "String",

"name" : "name",

"required" : true

}, {

"type" : "String",

"name" : "symbol",

"required" : true

}, {

"type" : "BigInteger",

"name" : "initialAmount",

"required" : true

}, {

"type" : "int",

"name" : "decimals",

"required" : true

} ],

"returnArg" : "void",

"view" : false,

"event" : false,

"payable" : false

},

"nrc20" : true

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-11-%E8%8E%B7%E5%8F%96%E5%90%88%E7%BA%A6%E6%96%B9%E6%B3%95%E4%BF%A1%E6%81%AF)**4.11 获取合约方法信息**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontractmethod)**Cmd: getContractMethod**

****详细描述: 获取合约方法信息****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-57)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 方法名称 | 是 |
| methodDesc | string | 方法描述 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-57)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| name | string | 方法名称 |
| desc | string | 方法描述 |
| args | list<object> | 方法参数列表 |
| type | string | 参数类型 |
| name | string | 参数名称 |
| required | boolean | 是否必填 |
| returnArg | string | 返回值类型 |
| view | boolean | 是否视图方法（调用此方法数据不上链） |
| event | boolean | 是否是事件 |
| payable | boolean | 是否是可接受主链资产转账的方法 |
| jsonSerializable | boolean | 方法返回值是否JSON序列化 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-57)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContractMethod",

"params" : [ 2, "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL", "transfer", null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-57)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"name" : "transfer",

"desc" : "(Address to, BigInteger value) return boolean",

"args" : [ {

"type" : "Address",

"name" : "to",

"required" : true

}, {

"type" : "BigInteger",

"name" : "value",

"required" : true

} ],

"returnArg" : "boolean",

"view" : false,

"event" : false,

"payable" : false

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-12-%E8%8E%B7%E5%8F%96%E5%90%88%E7%BA%A6%E6%96%B9%E6%B3%95%E5%8F%82%E6%95%B0%E7%B1%BB%E5%9E%8B)**4.12 获取合约方法参数类型**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getcontractmethodargstypes)**Cmd: getContractMethodArgsTypes**

****详细描述: 获取合约方法参数类型****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-58)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 方法名称 | 是 |
| methodDesc | string | 方法描述 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-58)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 返回值 | list<string> |  |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-58)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getContractMethodArgsTypes",

"params" : [ 2, "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL", "transfer", null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-58)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ "Address", "BigInteger" ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-13-%E9%AA%8C%E8%AF%81%E5%8F%91%E5%B8%83%E5%90%88%E7%BA%A6)**4.13 验证发布合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-validatecontractcreate)**Cmd: validateContractCreate**

****详细描述: 验证发布合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-59)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| gasLimit | long | GAS限制 | 是 |
| price | long | GAS单价 | 是 |
| contractCode | string | 智能合约代码(字节码的Hex编码字符串) | 是 |
| args | object[] | 参数列表 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-59)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| success | boolean | 验证成功与否 |
| code | string | 验证失败的错误码 |
| msg | string | 验证失败的错误信息 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-59)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "validateContractCreate",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", 20000, 30, "", [ ] ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-59)**Example response data:**

[ {

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"success" : true

}}, "校验失败示例请参考[validateContractDelete] - 验证删除合约" ]

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-14-%E9%AA%8C%E8%AF%81%E8%B0%83%E7%94%A8%E5%90%88%E7%BA%A6)**4.14 验证调用合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-validatecontractcall)**Cmd: validateContractCall**

****详细描述: 验证调用合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-60)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| value | biginteger | 调用者向合约地址转入的主网资产金额，没有此业务时填BigInteger.ZERO | 是 |
| gasLimit | long | GAS限制 | 是 |
| price | long | GAS单价 | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 合约方法 | 是 |
| methodDesc | string | 合约方法描述，若合约内方法没有重载，则此参数可以为空 | 否 |
| args | object[] | 参数列表 | 否 |
| multyAssetValues | string[][] | 调用者向合约地址转入的其他资产金额，没有此业务时填空，规则: [[<value>,<assetChainId>,<assetId>]] | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-60)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| success | boolean | 验证成功与否 |
| code | string | 验证失败的错误码 |
| msg | string | 验证失败的错误信息 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-60)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "validateContractCall",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", 80000000000, 200000, 30, "tICWeBaNA4yaXmfaQVXpX3QWPcUaHRRryoXHa", "multyForAddress", null, [ "tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM", "400000000", "tICWeBaMhKaLzhQh1AhhecUqh15ZKw98peg29", "900000000", "tICWeBaMv8q3pWzS7bHpQWW8yypNGo8auRoPf", "800000000" ], null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-60)**Example response data:**

[ {

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"success" : true

}}, "校验失败示例请参考[validateContractDelete] - 验证删除合约" ]

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-15-%E9%AA%8C%E8%AF%81%E5%88%A0%E9%99%A4%E5%90%88%E7%BA%A6)**4.15 验证删除合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-validatecontractdelete)**Cmd: validateContractDelete**

****详细描述: 验证删除合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-61)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| contractAddress | string | 合约地址 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-61)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| success | boolean | 验证成功与否 |
| code | string | 验证失败的错误码 |
| msg | string | 验证失败的错误信息 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-61)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "validateContractDelete",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-61)**Example response data:**

[ {

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"success" : true

}}, {

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"msg" : "Cannot delete contract when balance is not 0;Cannot delete contract when balance is not 0",

"success" : false,

"code" : "sc\_0017"

}} ]

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-16-%E4%BC%B0%E7%AE%97%E5%8F%91%E5%B8%83%E5%90%88%E7%BA%A6%E4%BA%A4%E6%98%93%E7%9A%84gas)**4.16 估算发布合约交易的GAS**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-imputedcontractcreategas)**Cmd: imputedContractCreateGas**

****详细描述: 估算发布合约交易的GAS****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-62)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| contractCode | string | 智能合约代码(字节码的Hex编码字符串) | 是 |
| args | object[] | 参数列表 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-62)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| gasLimit | long | 消耗的gas值，执行失败返回数值1 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-62)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "imputedContractCreateGas",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "", [ "io", "IO", 80000, 1 ] ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-62)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"gasLimit" : 20143

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-17-%E4%BC%B0%E7%AE%97%E8%B0%83%E7%94%A8%E5%90%88%E7%BA%A6%E4%BA%A4%E6%98%93%E7%9A%84gas)**4.17 估算调用合约交易的GAS**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-imputedcontractcallgas)**Cmd: imputedContractCallGas**

****详细描述: 估算调用合约交易的GAS****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-63)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| value | biginteger | 调用者向合约地址转入的主网资产金额，没有此业务时填BigInteger.ZERO | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 合约方法 | 是 |
| methodDesc | string | 合约方法描述，若合约内方法没有重载，则此参数可以为空 | 否 |
| args | object[] | 参数列表 | 否 |
| multyAssetValues | string[][] | 调用者向合约地址转入的其他资产金额，没有此业务时填空，规则: [[<value>,<assetChainId>,<assetId>]] | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-63)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| gasLimit | long | 消耗的gas值，执行失败返回数值1 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-63)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "imputedContractCallGas",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", 80000000000, "tICWeBaNA4yaXmfaQVXpX3QWPcUaHRRryoXHa", "multyForAddress", null, [ "tICWeBaMtkzQ1tH8JWBGZDCmRHCmySevE4frM", "400000000", "tICWeBaMhKaLzhQh1AhhecUqh15ZKw98peg29", "900000000", "tICWeBaMv8q3pWzS7bHpQWW8yypNGo8auRoPf", "8045645645" ], null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-63)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"gasLimit" : 44691

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-18-%E8%B0%83%E7%94%A8%E5%90%88%E7%BA%A6%E4%B8%8D%E4%B8%8A%E9%93%BE%E6%96%B9%E6%B3%95)**4.18 调用合约不上链方法**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-invokeview)**Cmd: invokeView**

****详细描述: 调用合约不上链方法****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-64)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| contractAddress | string | 合约地址 | 是 |
| methodName | string | 合约方法 | 是 |
| methodDesc | string | 合约方法描述，若合约内方法没有重载，则此参数可以为空 | 否 |
| args | object[] | 参数列表 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-64)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| result | string | 视图方法的调用结果 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-64)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "invokeView",

"params" : [ 2, "tICWeBaMvkanBqyWF1h7MuQ22Pq3JkL8FTfsL", "balanceOf", null, [ "tICWeBaMnrs6JKrCy6TQdzYJZkMZJDng7QAsD" ] ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-64)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"result" : "80"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-19-%E7%A6%BB%E7%BA%BF-%E5%8F%91%E5%B8%83%E5%90%88%E7%BA%A6%E4%BA%A4%E6%98%93)**4.19 离线 - 发布合约交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractcreateoffline)**Cmd: contractCreateOffline**

****详细描述: 离线 - 发布合约交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-65)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| senderBalance | biginteger | 账户余额 | 是 |
| nonce | string | 账户nonce值 | 是 |
| alias | string | 合约别名 | 是 |
| contractCode | string | 智能合约代码(字节码的Hex编码字符串) | 是 |
| gasLimit | long | 设置合约执行消耗的gas上限 | 是 |
| args | object[] | 参数列表 | 否 |
| argsType | string[] | 参数类型列表 | 否 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-65)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |
| contractAddress | string | 生成的合约地址 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-65)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractCreateOffline",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "999999998523475", "9c0aea02bed90ddd", "off\_nrc20", "", 20245, [ "air", "AIR", 10000, 2 ], [ "String", "String", "BigInteger", "int" ], "offline create" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-65)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"contractAddress" : "tICWeBaMxHqD1Vdcmyx4P43GMCPGcRiFzqjie",

"hash" : "2ca7d4e9f2ffcb92e1d134ea4a544ffb947f4c9154ff73223834d87bba9734ba"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-20-%E7%A6%BB%E7%BA%BF-%E8%B0%83%E7%94%A8%E5%90%88%E7%BA%A6)**4.20 离线 - 调用合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractcalloffline)**Cmd: contractCallOffline**

****详细描述: 离线 - 调用合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-66)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| senderBalance | biginteger | 账户余额 | 是 |
| nonce | string | 账户nonce值 | 是 |
| value | biginteger | 调用者向合约地址转入的主网资产金额，没有此业务时填BigInteger.ZERO | 是 |
| contractAddress | string | 合约地址 | 是 |
| gasLimit | long | 设置合约执行消耗的gas上限 | 是 |
| methodName | string | 合约方法 | 是 |
| methodDesc | string | 合约方法描述，若合约内方法没有重载，则此参数可以为空 | 否 |
| args | object[] | 参数列表 | 否 |
| argsType | string[] | 参数类型列表 | 否 |
| remark | string | 交易备注 | 否 |
| multyAssetValues | string[][] | 调用者向合约地址转入的其他资产金额，没有此业务时填空，规则: [[<value>,<assetChainId>,<assetId>,<nonce>]] | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-66)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-66)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractCallOffline",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "999999998523475", "9c0aea02bed90ddd", 0, "tICWeBaMwYiR4p1X9xNJPiyJfrXjr4KgkcFjG", 14166, "transfer", null, [ "tICWeBaMnrs6JKrCy6TQdzYJZkMZJDng7QAsD", 3800 ], [ "Address", "BigInteger" ], "remark\_call\_test", null ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-66)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "1000f22d375d1072656d61726b5f63616c6c5f7465737497020001f7ec6473df12e751d64cf20a8baa7edd50810f810200020d2f73cb93099a8cfd0cbdd060155abfe2f50917000000000000000000000000000000000000000000000000000000000000000056370000000000001900000000000000087472616e7366657200020126744e554c536542614d6e7273364a4b724379365451647a594a5a6b4d5a4a446e673751417344010433383030480117020001f7ec6473df12e751d64cf20a8baa7edd50810f810200010006ee060000000000000000000000000000000000000000000000000000000000089c0aea02bed90ddd000000",

"hash" : "b5d6e09a8ecee2c1e4fd1d9c6a9704fb84a9fbe1bd069762d684c7b29b1e4668"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-21-%E7%A6%BB%E7%BA%BF-%E5%88%A0%E9%99%A4%E5%90%88%E7%BA%A6)**4.21 离线 - 删除合约**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-contractdeleteoffline)**Cmd: contractDeleteOffline**

****详细描述: 离线 - 删除合约****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-67)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| sender | string | 交易创建者账户地址 | 是 |
| senderBalance | biginteger | 账户余额 | 是 |
| nonce | string | 账户nonce值 | 是 |
| contractAddress | string | 合约地址 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-67)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-67)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "contractDeleteOffline",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "999999998523475", "9c0aea02bed90ddd", "tICWeBaMxyMyafiQjq1wCW7cQouyEhRL8njtu", "delete contract" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-67)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "1100462e375d0f64656c65746520636f6e74726163742e020001f7ec6473df12e751d64cf20a8baa7edd50810f81020002245bcd36879bc30bfc719a417939b3aa924247ca480117020001f7ec6473df12e751d64cf20a8baa7edd50810f8102000100a086010000000000000000000000000000000000000000000000000000000000089c0aea02bed90ddd000000",

"hash" : "79c7385eb8a538ed770cca5eea015e05cb602b1ccb2c9694ea6dbba32b781df4"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-22-%E7%A6%BB%E7%BA%BF-%E5%90%88%E7%BA%A6token%E8%BD%AC%E8%B4%A6)**4.22 离线 - 合约token转账**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-tokentransferoffline)**Cmd: tokentransferOffline**

****详细描述: 离线 - 合约token转账****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-68)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| fromAddress | string | 转出者账户地址 | 是 |
| senderBalance | biginteger | 转出者账户余额 | 是 |
| nonce | string | 转出者账户nonce值 | 是 |
| toAddress | string | 转入者账户地址 | 是 |
| contractAddress | string | token合约地址 | 是 |
| gasLimit | long | 设置合约执行消耗的gas上限 | 是 |
| amount | biginteger | 转出的token资产金额 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-68)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-68)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "tokentransferOffline",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "999999998523475", "9c0aea02bed90ddd", "tICWeBaMnrs6JKrCy6TQdzYJZkMZJDng7QAsD", "tICWeBaN3MH7HX8kXzKw4X9tLKQ991X1GiAbK", 14166, 10, "1个" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-68)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "1000b32e375d0431e4b8aa95020001f7ec6473df12e751d64cf20a8baa7edd50810f810200026b8d9b09ed5c1a692a6109c5ee99ccb6177b13a1000000000000000000000000000000000000000000000000000000000000000056370000000000001900000000000000087472616e7366657200020126744e554c536542614d6e7273364a4b724379365451647a594a5a6b4d5a4a446e67375141734401023130480117020001f7ec6473df12e751d64cf20a8baa7edd50810f810200010006ee060000000000000000000000000000000000000000000000000000000000089c0aea02bed90ddd000000",

"hash" : "9f09e5719624727c4bff3bc6f690cc0866238c0205551c7d57a93f49afbb9596"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_4-23-%E7%A6%BB%E7%BA%BF-%E4%BB%8E%E8%B4%A6%E6%88%B7%E5%9C%B0%E5%9D%80%E5%90%91%E5%90%88%E7%BA%A6%E5%9C%B0%E5%9D%80%E8%BD%AC%E8%B4%A6-%E4%B8%BB%E9%93%BE%E8%B5%84%E4%BA%A7-%E7%9A%84%E5%90%88%E7%BA%A6%E4%BA%A4%E6%98%93)**4.23 离线 - 从账户地址向合约地址转账(主链资产)的合约交易**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-transfer2contractoffline)**Cmd: transfer2contractOffline**

****详细描述: 离线 - 从账户地址向合约地址转账(主链资产)的合约交易****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-69)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链id | 是 |
| fromAddress | string | 转出者账户地址 | 是 |
| senderBalance | biginteger | 转出者账户余额 | 是 |
| nonce | string | 转出者账户nonce值 | 是 |
| toAddress | string | 转入的合约地址 | 是 |
| gasLimit | long | 设置合约执行消耗的gas上限 | 是 |
| amount | biginteger | 转出的主链资产金额 | 是 |
| remark | string | 交易备注 | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-69)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-69)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "transfer2contractOffline",

"params" : [ 2, "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "999999998523475", "9c0aea02bed90ddd", "tICWeBaMxyMyafiQjq1wCW7cQouyEhRL8njtu", 25896, "400000000", "离线向合约转账" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-69)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "ea3d34129992757e7e7b032c8b5b0ad2b9bc6823592bd83814c3e92d0221417d"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-1-%E5%88%9B%E5%BB%BA%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.1 创建共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createagent)**Cmd: createAgent**

****详细描述: 创建共识节点****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-70)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| CreateAgentForm | createagentform | 创建共识节点表单 | 是 |
| agentAddress | string | 节点地址 | 是 |
| packingAddress | string | 节点出块地址 | 是 |
| rewardAddress | string | 奖励地址，默认节点地址 | 否 |
| commissionRate | int | 佣金比例 | 是 |
| deposit | string | 抵押金额 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-70)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-70)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createAgent",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "tICWeBaMhbVDg6CpiWx2jzExLFarBr6vJ6aSF", "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", 10, "2000000000000", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-70)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "157ad5e8061328c764090b85b60624d461d1815357c22f2910506a3cdcbbb6d5"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-2-%E6%B3%A8%E9%94%80%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.2 注销共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-stopagent)**Cmd: stopAgent**

****详细描述: 注销共识节点****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-71)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| StopAgentForm | stopagentform | 注销共识节点表单 | 是 |
| address | string | 共识节点地址 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-71)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-71)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "stopAgent",

"params" : [ 2, "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-71)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "fcaf8c92a0eafd2ca57744c165e1a955edcbfde98248494937200cc30d524e2e"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-3-%E5%A7%94%E6%89%98%E5%8F%82%E4%B8%8E%E5%85%B1%E8%AF%86)**5.3 委托参与共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-deposittoagent)**Cmd: depositToAgent**

****详细描述: 委托参与共识****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-72)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| DepositForm | depositform | 委托参与共识表单 | 是 |
| address | string | 参与共识账户地址 | 是 |
| agentHash | string | 共识节点hash | 是 |
| deposit | string | 参与共识的金额 | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-72)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-72)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "depositToAgent",

"params" : [ 2, "tICWeBaMhcccH1KeXhMpH5y3pvtRzatAiuMJk", "157ad5e8061328c764090b85b60624d461d1815357c22f2910506a3cdcbbb6d5", "200000000000", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-72)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "4a1177e2a738f72ba5063a8667a81e10bd7523f91ea08b2aa3fb851ca8dc8b07"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-4-%E9%80%80%E5%87%BA%E5%85%B1%E8%AF%86)**5.4 退出共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-withdraw)**Cmd: withdraw**

****详细描述: 退出共识****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-73)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| WithdrawForm | withdrawform | 退出共识表单 | 是 |
| address | string | 节点地址 | 是 |
| txHash | string | 加入共识时的交易hash | 是 |
| password | string | 密码 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-73)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| value | string | 交易hash |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-73)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "withdraw",

"params" : [ 2, "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "4ae333f8bf821884d0f589f35516c8bdd9661dbd8a7009b063ac862eeefc10f6", "abcd1234" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-73)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : "13a0e252bf05ec02f3ae0a84fc3b8183dbfc0e16c562b20b8e28b73b139f2c0e"}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-5-%E6%9F%A5%E8%AF%A2%E8%8A%82%E7%82%B9%E7%9A%84%E5%A7%94%E6%89%98%E5%85%B1%E8%AF%86%E5%88%97%E8%A1%A8)**5.5 查询节点的委托共识列表**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getdepositlist)**Cmd: getDepositList**

****详细描述: 查询节点的委托共识列表****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-74)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| agentHash | string | 创建共识节点的交易hash | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-74)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| deposit | string | 委托金额 |
| agentHash | string | 节点hash |
| address | string | 账户地址 |
| time | long | 委托时间 |
| txHash | string | 委托交易hash |
| blockHeight | long | 委托时的区块高度 |
| delHeight | long | 退出委托的区块高度 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-74)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getDepositList",

"params" : [ 2, "786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-74)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ {

"deposit" : "200000000000",

"agentHash" : "786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd",

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"time" : 1563277510,

"txHash" : "bd93cf73331c0d9986cb90922d2eec785ea9eda3da85cd9d629b5a4c7f36c452",

"blockHeight" : 462,

"delHeight" : -1

}, {

"deposit" : "200000000000",

"agentHash" : "786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd",

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"time" : 1563277712,

"txHash" : "be5257bc0814cbda61378ff2afa81e98cae0018cd7d78b8d1ca9812c66d27e84",

"blockHeight" : 482,

"delHeight" : -1

} ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-6-%E6%A0%B9%E6%8D%AE%E6%9C%80%E5%A4%A7%E9%AB%98%E5%BA%A6%E5%92%8C%E5%8E%9F%E5%A7%8B%E7%A7%8D%E5%AD%90%E4%B8%AA%E6%95%B0%E7%94%9F%E6%88%90%E4%B8%80%E4%B8%AA%E9%9A%8F%E6%9C%BA%E7%A7%8D%E5%AD%90%E5%B9%B6%E8%BF%94%E5%9B%9E)**5.6 根据最大高度和原始种子个数生成一个随机种子并返回**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getrandomseedbycount)**Cmd: getRandomSeedByCount**

****详细描述: 包括最大高度往后退1000个区块，在这个区块区间内找到指定个数的原始种子，汇总生成一个随机种子并返回****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-75)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| height | long | 最大高度 | 是 |
| count | int | 原始种子个数 | 是 |
| algorithm | string | 算法标识：SHA3, KECCAK, MERKLE | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-75)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| seed | string | 生成的随机种子 |
| algorithm | string | 算法标识 |
| count | int | 原始种子个数 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-75)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getRandomSeedByCount",

"params" : [ 2, 15, 9, "sha3" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-75)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"seed" : "39348806759173754289552718450552160894738020452243263500745175936916037359443",

"algorithm" : "SHA3",

"count" : 9

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-7-%E6%A0%B9%E6%8D%AE%E9%AB%98%E5%BA%A6%E5%8C%BA%E9%97%B4%E7%94%9F%E6%88%90%E4%B8%80%E4%B8%AA%E9%9A%8F%E6%9C%BA%E7%A7%8D%E5%AD%90%E5%B9%B6%E8%BF%94%E5%9B%9E)**5.7 根据高度区间生成一个随机种子并返回**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getrandomseedbyheight)**Cmd: getRandomSeedByHeight**

****详细描述: 在这个区块区间内找到所有有效的原始种子，汇总生成一个随机种子并返回****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-76)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| startHeight | long | 起始高度 | 是 |
| endHeight | long | 截止高度 | 是 |
| algorithm | string | 算法标识：SHA3, KECCAK, MERKLE | 否 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-76)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| seed | string | 生成的随机种子 |
| algorithm | string | 算法标识 |
| count | int | 原始种子个数 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-76)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getRandomSeedByHeight",

"params" : [ 2, 7, 15, "sha3" ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-76)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"seed" : "32532675763615856265810357233291461242017048552507569663816339711779497299975",

"algorithm" : "sha3",

"count" : 9

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-8-%E6%A0%B9%E6%8D%AE%E6%9C%80%E5%A4%A7%E9%AB%98%E5%BA%A6%E5%92%8C%E5%8E%9F%E5%A7%8B%E7%A7%8D%E5%AD%90%E4%B8%AA%E6%95%B0%E6%9F%A5%E6%89%BE%E5%8E%9F%E5%A7%8B%E7%A7%8D%E5%AD%90%E5%88%97%E8%A1%A8%E5%B9%B6%E8%BF%94%E5%9B%9E)**5.8 根据最大高度和原始种子个数查找原始种子列表并返回**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getrandomrawseedsbycount)**Cmd: getRandomRawSeedsByCount**

****详细描述: 包括最大高度往后退1000个区块，在这个区块区间内找到指定个数的原始种子并返回****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-77)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| height | long | 最大高度 | 是 |
| count | int | 原始种子个数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-77)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 原始种子列表 | list<string> |  |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-77)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getRandomRawSeedsByCount",

"params" : [ 2, 15, 9 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-77)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ "-29372401885335809343334881114861862848664228571153431589582614750707853803688", "-12374588462997313588598897726376463898687300536133622323300129617802447843663", "35414850206903943716465298994826456060042987072617525631637631635987014797108", "-57234933950614201812269794723322473738769164815685574368298879134983145932442", "-36943716549467048219120901994813656501647327407366907446161430460954253977405", "30934978871350238591664023000030597630129456116167320700551408944317816121383", "-40719234813631611496719465228844846754749045533296280679027880790124492776813", "-9760170464524872943819135990753457668421091036911187432097064247132004006726", "8470565416062428412592833383521885451190767259837871270725993030997862574316" ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-9-%E6%A0%B9%E6%8D%AE%E9%AB%98%E5%BA%A6%E5%8C%BA%E9%97%B4%E6%9F%A5%E6%89%BE%E5%8E%9F%E5%A7%8B%E7%A7%8D%E5%AD%90%E5%88%97%E8%A1%A8%E5%B9%B6%E8%BF%94%E5%9B%9E)**5.9 根据高度区间查找原始种子列表并返回**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-getrandomrawseedsbyheight)**Cmd: getRandomRawSeedsByHeight**

****详细描述: 在这个区块区间内找到所有有效的原始种子并返回****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-78)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| startHeight | long | 起始高度 | 是 |
| endHeight | long | 截止高度 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-78)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| 原始种子列表 | list<string> |  |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-78)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "getRandomRawSeedsByHeight",

"params" : [ 2, 7, 15 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-78)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : [ "8470565416062428412592833383521885451190767259837871270725993030997862574316", "-9760170464524872943819135990753457668421091036911187432097064247132004006726", "-40719234813631611496719465228844846754749045533296280679027880790124492776813", "30934978871350238591664023000030597630129456116167320700551408944317816121383", "-36943716549467048219120901994813656501647327407366907446161430460954253977405", "-57234933950614201812269794723322473738769164815685574368298879134983145932442", "35414850206903943716465298994826456060042987072617525631637631635987014797108", "-12374588462997313588598897726376463898687300536133622323300129617802447843663", "-29372401885335809343334881114861862848664228571153431589582614750707853803688" ]}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-10-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%88%9B%E5%BB%BA%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.10 离线组装 - 创建共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-createagentoffline)**Cmd: createAgentOffline**

****详细描述: 参与共识所需资产可通过查询链信息接口获取(agentChainId和agentAssetId)****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-79)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| ConsensusDto | consensusdto | 离线创建共识节点表单 | 是 |
| agentAddress | string | 节点创建地址 | 是 |
| packingAddress | string | 节点出块地址 | 是 |
| rewardAddress | string | 获取共识奖励地址 | 是 |
| commissionRate | int | 节点佣金比例 | 是 |
| deposit | biginteger | 创建节点保证金 | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-79)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-79)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "createAgentOffline",

"params" : [ 2, "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "tICWeBaMvEtDfvZuukDf2mVyfGo3DdiN8KLRG", "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", 10, "2000000000000", {

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "2000001000000",

"nonce" : "63ac862eeefc10f6"

} ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-79)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "7a5c405239c742d0253a4067dd7df94b0bd4103b0edc4d3226575b5176a07ad0"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-11-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E6%B3%A8%E9%94%80%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.11 离线组装 - 注销共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-stopagentoffline)**Cmd: stopAgentOffline**

****详细描述: 组装交易的StopDepositDto信息，可通过查询节点的委托共识列表获取，input的nonce值可为空****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-80)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| StopConsensusDto | stopconsensusdto | 离线注销共识节点表单 | 是 |
| agentHash | string | 创建节点的交易hash | 是 |
| agentAddress | string | 节点地址 | 是 |
| deposit | biginteger | 创建节点的保证金 | 是 |
| price | biginteger | 手续费单价 | 否 |
| depositList | list<object> | 停止委托列表 | 是 |
| depositHash | string | 委托共识的交易hash | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-80)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-80)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "stopAgentOffline",

"params" : [ 2, "786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd", "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "2000000000000", "100000", [ {

"depositHash" : "bd93cf73331c0d9986cb90922d2eec785ea9eda3da85cd9d629b5a4c7f36c452",

"input" : {

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "200000000000",

"nonce" : ""

}

}, {

"depositHash" : "be5257bc0814cbda61378ff2afa81e98cae0018cd7d78b8d1ca9812c66d27e84",

"input" : {

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "200000000000",

"nonce" : ""

}

} ] ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-80)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "15e9f16c7b430ea217408ae63dd6e90739bc0a5f0f6b3c0907b4689d02dc744a"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-12-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%A7%94%E6%89%98%E5%8F%82%E4%B8%8E%E5%85%B1%E8%AF%86)**5.12 离线组装 - 委托参与共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-deposittoagentoffline)**Cmd: depositToAgentOffline**

****详细描述: 参与共识所需资产可通过查询链信息接口获取(agentChainId和agentAssetId)****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-81)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| DepositDto | depositdto | 离线委托参与共识表单 | 是 |
| address | string | 账户地址 | 是 |
| deposit | biginteger | 委托金额 | 是 |
| agentHash | string | 共识节点hash | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-81)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-81)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "depositToAgentOffline",

"params" : [ 2, "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "200000000000", "786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd", {

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : "200010000000",

"nonce" : "7a1f080d3dd30dcd"

} ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-81)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "0500c6b82d5d005700d0ed902e000000000000000000000000000000000000000000000000000000020001efa328e600912da9872390a675486ab9e8ec2114786402b17649b968e4643cb52fa30225645b0dc7b8761b047a1f080d3dd30dcd8c0117020001efa328e600912da9872390a675486ab9e8ec211402000100806686912e000000000000000000000000000000000000000000000000000000087a1f080d3dd30dcd000117020001efa328e600912da9872390a675486ab9e8ec21140200010000d0ed902e000000000000000000000000000000000000000000000000000000ffffffffffffffff00",

"hash" : "bd93cf73331c0d9986cb90922d2eec785ea9eda3da85cd9d629b5a4c7f36c452"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-13-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E9%80%80%E5%87%BA%E5%85%B1%E8%AF%86)**5.13 离线组装 - 退出共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-withdrawoffline)**Cmd: withdrawOffline**

****详细描述: 离线组装 - 退出共识****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-82)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| WithDrawDto | withdrawdto | 离线退出共识表单 | 是 |
| address | string | 地址 | 是 |
| depositHash | string | 委托共识交易的hash | 是 |
| price | biginteger | 手续费单价 | 否 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-82)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-82)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "withdrawOffline",

"params" : [ 2, "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG", "be5257bc0814cbda61378ff2afa81e98cae0018cd7d78b8d1ca9812c66d27e84", "1000000", {

"address" : "tICWeBaMujLBcZWfE2wHKnZo7PGvqvNrt6yWG",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 200000000000,

"nonce" : ""

} ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-82)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "060031bb2d5d0020be5257bc0814cbda61378ff2afa81e98cae0018cd7d78b8d1ca9812c66d27e848c0117020001efa328e600912da9872390a675486ab9e8ec21140200010000d0ed902e000000000000000000000000000000000000000000000000000000081ca9812c66d27e84ff0117020001efa328e600912da9872390a675486ab9e8ec211402000100c08dde902e000000000000000000000000000000000000000000000000000000000000000000000000",

"hash" : "bad82cb423722793a77d729444fee0c1a99a679c8ab0a2cb5ccc10be584c7726"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-14-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7%E5%88%9B%E5%BB%BA%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.14 离线组装 - 多签账户创建共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-multisigncreateagentoffline)**Cmd: multiSignCreateAgentOffline**

****详细描述: 参与共识所需资产可通过查询链信息接口获取(agentChainId和agentAssetId)****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-83)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| MultiSignConsensusDto | multisignconsensusdto | 多签账户离线创建共识节点表单 | 是 |
| agentAddress | string | 节点创建地址 | 是 |
| packingAddress | string | 节点出块地址 | 是 |
| rewardAddress | string | 获取共识奖励地址 | 是 |
| commissionRate | int | 节点佣金比例 | 是 |
| deposit | biginteger | 创建节点保证金 | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-83)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-83)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "multiSignCreateAgentOffline",

"params" : [ 2, "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy", "tICWeBaMowgMLTbRUngAuj2BvGy2RmVLt3okv", "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy", 10, 2000000000000, {

"address" : "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 2000001000000,

"nonce" : "0000000000000000"

}, [ "0377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db", "03f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-83)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "4b0aa8c126bf314dbc7d42dc94127064392643b33e194cfa050884a38557392c"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-15-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7%E6%B3%A8%E9%94%80%E5%85%B1%E8%AF%86%E8%8A%82%E7%82%B9)**5.15 离线组装 - 多签账户注销共识节点**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-multisignstopagentoffline)**Cmd: multiSignStopAgentOffline**

****详细描述: 组装交易的StopDepositDto信息，可通过查询节点的委托共识列表获取，input的nonce值可为空****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-84)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| MultiSignStopConsensusDto | multisignstopconsensusdto | 多签账户离线注销共识节点表单 | 是 |
| agentHash | string | 创建节点的交易hash | 是 |
| agentAddress | string | 节点地址 | 是 |
| deposit | biginteger | 创建节点的保证金 | 是 |
| price | biginteger | 手续费单价 | 否 |
| depositList | list<object> | 停止委托列表 | 是 |
| depositHash | string | 委托共识的交易hash | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-84)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-84)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "multiSignStopAgentOffline",

"params" : [ 2, "e67ed0f09cea8bd4e2ad3b4b6d83a39841f9f83dd2a9e5737b73b4d5ad203537", "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy", 2000000000000, 1000000, [ {

"depositHash" : "d4a9404a823ea533d1c7fba34470970ac499a974f35172bb8a717b0d6c4d4cbe",

"input" : {

"address" : "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 200000000000

}

} ], [ "0377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db", "03f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-84)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "fb7f4d0e078b0eba8e89e22faccab54af18eab73858fb0d1c8bddbf6c771f1e3"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-16-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7%E5%A7%94%E6%89%98%E5%8F%82%E4%B8%8E%E5%85%B1%E8%AF%86)**5.16 离线组装 - 多签账户委托参与共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-multisigndeposittoagentoffline)**Cmd: multiSignDepositToAgentOffline**

****详细描述: 参与共识所需资产可通过查询链信息接口获取(agentChainId和agentAssetId)****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-85)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| MultiSignDepositDto | multisigndepositdto | 多签账户离线委托参与共识表单 | 是 |
| address | string | 账户地址 | 是 |
| deposit | biginteger | 委托金额 | 是 |
| agentHash | string | 共识节点hash | 是 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-85)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-85)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "multiSignDepositToAgentOffline",

"params" : [ 2, "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy", 200000000000, "e67ed0f09cea8bd4e2ad3b4b6d83a39841f9f83dd2a9e5737b73b4d5ad203537", {

"address" : "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 2000001000000,

"nonce" : "0000000000000000"

}, [ "0377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db", "03f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-85)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "afa774c23dc75dd61356135407959385728c34f358017842d9da090c1d9d08ec"

}}

### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "_5-17-%E7%A6%BB%E7%BA%BF%E7%BB%84%E8%A3%85-%E5%A4%9A%E7%AD%BE%E8%B4%A6%E6%88%B7%E9%80%80%E5%87%BA%E5%85%B1%E8%AF%86)**5.17 离线组装 - 多签账户退出共识**

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "cmd-multisignwithdrawoffline)**Cmd: multiSignWithdrawOffline**

****详细描述: 离线组装 - 多签账户退出共识****

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E5%8F%82%E6%95%B0%E5%88%97%E8%A1%A8-86)**参数列表**

| **参数名** | **参数类型** | **参数描述** | **是否必填** |
| --- | --- | --- | --- |
| chainId | int | 链ID | 是 |
| MultiSignWithDrawDto | multisignwithdrawdto | 多签账户离线退出共识表单 | 是 |
| address | string | 地址 | 是 |
| depositHash | string | 委托共识交易的hash | 是 |
| price | biginteger | 手续费单价 | 否 |
| input | object | 交易输入信息 | 是 |
| address | string | 账户地址 | 是 |
| assetChainId | int | 资产的链id | 是 |
| assetId | int | 资产id | 是 |
| amount | biginteger | 资产金额 | 是 |
| nonce | string | 资产nonce值 | 是 |
| pubKeys | list<string> | 公钥集合 | 是 |
| minSigns | int | 最小签名数 | 是 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "%E8%BF%94%E5%9B%9E%E5%80%BC-86)**返回值**

| **字段名** | **字段类型** | **参数描述** |
| --- | --- | --- |
| hash | string | 交易hash |
| txHex | string | 交易序列化字符串 |

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-request-data-86)**Example request data:**

{

"jsonrpc" : "2.0",

"method" : "multiSignWithdrawOffline",

"params" : [ 2, "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy", "e67ed0f09cea8bd4e2ad3b4b6d83a39841f9f83dd2a9e5737b73b4d5ad203537", 1000000, {

"address" : "tICWeBaNTcZo37gNC5mNjJuB39u8zT3TAy8jy",

"assetChainId" : 2,

"assetId" : 1,

"amount" : 200000000000

}, [ "0377a7e02381a11a1efe3995d1bced0b3e227cb058d7b09f615042123640f5b8db", "03f66892ff89daf758a5585aed62a3f43b0a12cbec8955c3b155474071e156a8a1" ], 2 ],

"id" : 1234}

#### [#](https://docs.nuls.io/zh/Docs/i_nuls-api_JSONRPC.html" \l "example-response-data-86)**Example response data:**

{

"jsonrpc" : "2.0",

"id" : "1234",

"result" : {

"txHex" : "",

"hash" : "ac7d378ffcc7d7688e16f5916d177ffae992f62cdd0718594308bde445f31b9c"

}}