API开发说明文档

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# 1 简介

本文旨在详细说明API接口的调用方式和错误处理，错误处理部分正在设计，完成之后会提供详细错误码说明。此API接口是针对证书和私钥等信息让平台代为保管的情形设计的，提供了用户的注册、用户登录、证书获取、资产申请、资产转移、资产的查询等功能。

# 2 错误处理

错误处理方式是采用错误码的方式进行反馈，客户端调用API接口，服务端会回应服务端的处理状况，错误码为10000表示成功、非10000表示失败，具体失败的错误码以及对应错误描述正在设计，响应示例如下：

{

"token": " Xurw3yU9zI0l ",

"err\_code":10000,

"err\_msg": " success "

}

# 3 接口调用

## 3.1 接口调用概述

API接口调用采用的是http请求方式，请求的协议采用的是json格式。

## 3.2 用户注册

用户注册主要指客户端普通用户注册，首先我们会通过线下的方式给客户端管理员一个webadmin1的用户ID和token，然后客户端使用webadmin1的用户ID和token注册新的普通用户，服务端返回token和错误码等信息。

**接口请求说明**

http请求方式：post

http:// localhost:8800/user/registrar

post数据格式：json

post数据示例：

{

"user\_id": "xmyc",

"role":1,

"affiliation":"institution\_a",

"authorization":["deploy"],

"registar\_id": "webadmin1",

" registar\_token":"Xurw3yU9zI0l"

}

请求参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| user\_id | 新普通用户ID |
| role | fabric角色，客户端为1 |
| affiliation | 机构名称 |
| authorization | 权限 |
| registar\_id | 客户端管理员ID |
| registar\_token | 客户端管理员token |

**服务端响应说明**

响应数据格式：json

响应示例：

{

"token": " Xurw3yU9zI0l ",

"err\_code":10000,

"err\_msg": " success "

}

响应参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| token | 用户token用于登录以及资产操作 |
| err\_code | 错误码 |
| err\_msg | 错误信息 |

# 4 管理

## 4.1 部署请求

**接口请求说明**

http请求方式：post

http://localhost:8800/chain/deploy

post数据格式：json

{

"user\_id": "admin",

"user\_token": "Xurw3yU9zI0l",

"path":"github.com/hyperledger/fabric/chaincodecc",

"args":["init"],

"meta":"dummy metadata"

}

请求参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| user\_id | 用户id |
| user\_token | 用户token |
| path | 路径 |
| args | 参数组 |
| meta | 元数据 |

**服务端响应说明**

响应数据格式：json

响应示例：

{

"chain\_id":"4250d938490999459f4567cd587a7bc6b160e405bdad648ef49f7f7d7849d088fbad3f4e2d6a117d7950306942ed8ce85d84de6013915611830c8e2117fe021a",

"err\_code":10000,

"err\_msg": " success "

}

响应参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| chain\_id | Chaincode id |
| err\_code | 错误码 |
| err\_msg | 错误信息 |

## 4.2 invoke请求

**接口请求说明**

http请求方式：post

http://localhost:8800/chain/invoke

post数据格式：json

post数据示例：

{

"user\_id": "admin",

"user\_token": "Xurw3yU9zI0l",

"chain\_id":"4250d938490999459f4567cd587a7bc6b160e405bdad648ef49f7f7d7849d088fbad3f4e2d6a117d7950306942ed8ce85d84de6013915611830c8e2117fe021a",

"args":["invoke", "Pt999", "7.7g"],

"txid":"4250d938490999459f4567cd58",

"meta":"dummy metadata"

}

请求参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| user\_id | 用户id |
| user\_token | 用户token |
| chain\_id | chaincodeID |
| args | 参数组 |
| txid | 交易id |
| meta | 元数据 |

**服务端响应说明**

响应数据格式：json

响应示例：

{

"msg":"3e4cf3fc-d8ed-4f9d-a984-27a0a996706d ",

"err\_code":10000,

"err\_msg": " success "

}

响应参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| msg | 操作返回的交易uuid，通过此uuid可以在区块链上查询对应交易信息 |
| err\_code | 10000 |
| err\_msg | 错误信息 |

## 4.3 query请求

**接口请求说明**

http请求方式：post

http://localhost:8800/chain/query

post数据格式：json

post数据示例：

{

"user\_id": "admin",

"user\_token": "Xurw3yU9zI0l",

"chain\_id":"4250d938490999459f4567cd587a7bc6b160e405bdad648ef49f7f7d7849d088fbad3f4e2d6a117d7950306942ed8ce85d84de6013915611830c8e2117fe021a",

"args":["query", "Pt999"],

"txid":"4250d938490999459f4567cd5811",

"meta":"dummy metadata"

}

请求参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| user\_id | 用户id |
| user\_token | 用户token |
| args | 参数组 |
| txid | 交易id |
| meta | 元数据 |

**服务端响应说明**

响应数据格式：json

响应示例：

{

"msg":"7.7",

"err\_code":10000,

"err\_msg": " success "

}

响应参数说明：

|  |  |
| --- | --- |
| 参数 | 说明 |
| msg | 查询信息 |
| err\_code | 10000 |
| err\_msg | 错误信息 |

## 4.4 查询集群

**接口请求说明**

http请求方式：get

[http://localhost:8800/](http://localhost:8800/asset/query)monitor/network

**服务端响应说明**

{http://tool.oschina.net/tools/json_format/Expanded.gif

"peers": [http://tool.oschina.net/tools/json_format/Expanded.gif

{http://tool.oschina.net/tools/json_format/Expanded.gif

"ID": {http://tool.oschina.net/tools/json_format/Expanded.gif

"name": "ln0"

},

"address": "192.168.0.3:4000",

"type": 2,

"pkiID": "aJ7VpDbTLf85ej2V7jEHlo6o4i8lg0tHzIwkXpO8VC8="

},

{http://tool.oschina.net/tools/json_format/Expanded.gif

"ID": {http://tool.oschina.net/tools/json_format/Expanded.gif

"name": "vp1"

},

"address": "192.168.0.5:3001",

"type": 1,

"pkiID": "l22AI8KtN8chFxoVwf3DOuBgDeoPEC6BafKxBl5nZx8="

},

{http://tool.oschina.net/tools/json_format/Expanded.gif

"ID": {http://tool.oschina.net/tools/json_format/Expanded.gif

"name": "vp2"

},

"address": "192.168.0.6:3002",

"type": 1,

"pkiID": "EePaeddMRikWErjmx5KG8fETlEHb2xxnY+K3gRcNddU="

},

{http://tool.oschina.net/tools/json_format/Expanded.gif

"ID": {http://tool.oschina.net/tools/json_format/Expanded.gif

"name": "vp3"

},

"address": "192.168.0.7:3003",

"type": 1,

"pkiID": "CcN+93ahiPuqTYjrHRlcKUmGhVa+vd0V7rB9fewTazg="

},

{http://tool.oschina.net/tools/json_format/Expanded.gif

"ID": {http://tool.oschina.net/tools/json_format/Expanded.gif

"name": "vp0"

},

"address": "192.168.0.4:3000",

"type": 1,

"pkiID": "P3GOxZz9dgmp6AIzgtI/vdtuydkjoT0aNEX5VH/youk="

}

]

}

## 4.5 查询chain

**接口请求说明**

http请求方式：get

[http://localhost:8800/](http://localhost:8800/asset/query)chain

**服务端响应说明**

{http://tool.oschina.net/tools/json_format/Expanded.gif

"height": 9,

"currentBlockHash": "ktwdKuCquJrhrAZEXEAN3jGVQXTRC8zom6RNomFi+vqY7y3AxOKHsn1x1XVX8pkD1gK7nQYLA0hEcYNUYgDHTg==",

"previousBlockHash": "OTpQ21Bnpg/uS73zrj7p78JdJBx7htTwx3qxknqIimrvXGMQ1wsO9NFX6bXa6CwLxkCfRmfR/S68XsI+7bd9ow=="

}

**4.6 查询区块**

**接口请求说明**

http请求方式：get

[http://localhost:8800/](http://localhost:8800/asset/query)chain/blocks/1

**服务端响应说明**

{http://tool.oschina.net/tools/json_format/Expanded.gif

"transactions": [http://tool.oschina.net/tools/json_format/Expanded.gif

{http://tool.oschina.net/tools/json_format/Expanded.gif

"type": 1,

"chaincodeID": "BPL8ec+vPPWUI29x/ZRbXxqTXdgC6tsKvOTOcat9nMsQIiyNzR8QdVH3QlQHu28o78Nb+NQLaUB1KjHahYx5MyBhoa2yv9p1uMj6/aKM0AfnHwBDmAZN1sD6+NkRUvbCAtB9PBrv94HRRQDg/RJB6gwYrgZ/T7c2nUJ4WVrqAM4tPM8j2RTH7CYFj9+3V4EMXGzrYnLBTOlhS6NEIGHvACSAP91UJA8pcjpYo7AtCOA5bGA=",

"metadata": "BFrHOoFTwaVwSRhbGM5gRGN4GrkzcaMHWi9TQfIOlITd3A1n/96iS+N4HLYJPmdk3HcxCl+q15MoLPL30aD1FdxxJXC5oEXuqiwToOZI/Lk7e1Mqx8VwxM6W/0rm92EkXNpamHp2QhmhtjlwzDF7es07sovtIrbEQg==",

"txid": "a1a3f8cad1878f90602e47a6b51a0f1d85c033cb2afcc566d3942cffeb9034b2",

"timestamp": {http://tool.oschina.net/tools/json_format/Expanded.gif

"seconds": 1482832824

},

"confidentialityLevel": 1,

"confidentialityProtocolVersion": "1.2",

"nonce": "OtShAvHEwRaZH0geukMapv/uZHumO888",

"toValidators": "BApbG3MT/QoyBF3CkwhzhFXqlY0/kJLgjs0WZcg5UByEz9BHtisCdoHBklM7JyNHYlU/epC19R+8sW4SSkTQVaOUueDxdkn4CowTbXBRntTZ4S7ag5l5+EDqK170pV+qm9uhcnJsucSbtciowXjh4OdZAUk5SKcxquN2mvxYRmiD7pYYqDahdrdE/r2+NoMGbDs+ozVG6Wd3dT35vhhmMTlv2IqAkMZt3s/iP+C1yso2+fAwtcXUYzWMRJ92WU9n/V3BDgR1DaDqww==",

"cert": "",

"signature": "MEUCIGKmXnSk3KiCXgD2rIo6oYBlsj/yJ71ZNBpPZ0ADHruTAiEA1slJ0yCOU2hhuC7tjdHeEa8tGilHLVRNU4eLw+wtFDo="

}

],

"stateHash": "abIVF0nz7erRYi59j5uQl+NxX0wjLCI+CKMI62Pboq2Z6DnXhp0w1vC7bHyP9oUN3kmOHgtV0WnZJozrbbXWeQ==",

"previousBlockHash": "RrndKwuojRMjOz/rdD7rJD/NUupiuBuCtQwnZG7Vdi/XXcTd2MDyAMsFAZ1ntZL2/IIcSUeatIZAKS6ss7fEvg==",

"consensusMetadata": "CAE=",

"nonHashData": {http://tool.oschina.net/tools/json_format/Expanded.gif

"localLedgerCommitTimestamp": {http://tool.oschina.net/tools/json_format/Expanded.gif

"seconds": 1482832859,

"nanos": 165964778

},

"chaincodeEvents": [http://tool.oschina.net/tools/json_format/Expanded.gif

{ }

]

}

}

## 4.7查询交易

**接口请求说明**

http请求方式：get

[http://localhost:8800/](http://localhost:8800/asset/query)chain/transactions/1c3800a3-d19b-408e-8077-6eaeeaefeb21

**服务端响应说明**

{http://tool.oschina.net/tools/json_format/Expanded.gif

"type": 2,

"chaincodeID": "BA7ArTCAoAZ1tpsE/Um6MA6FTvkDqy2Yjr7bYNqIOeA2y0NIHnUhruhuKKH9qwyyC+LaqqvlRIdwwTBmWCOV9SaS27FXa3rD612Enns+VSKIb9M7j6m44ShbZShi+f2E/+hFZ8Q9rWXnoBs2lS7fOEEAYp5R0kL/2GJh2mVaOf96Ghd3Il2JcCyyaOnhrv//3NnrTQib0TzFyXnti3zaMO1fe1BKrocIP9YPL31JNgU5BIc=",

"payload": "BLNW6kzdgiDVHwAuFE+PBTnfugtubUK3JIT2tYa+wDdlk85VAqqE9Kg7h0WFIFgRGzzAONJp6PYbsqp1B4RDLZwsa6twaUEKjJeO05nG7qMsGMsc7ANNTgM59V53eLwjf8wwLhQhFYbKNeW1yY/vO6AzeR4RT+caStydkMQ2zK3AT9CBeX5DJCInYkTpVJtpvwdLIW54ysryeb3IUtgk3BBtLK3J9TK4AziCgxIVDSljW/C1ARL5kRc17JTD0lCxSnUiNVfJwrpanNbQRgK9dvraX+mz2rmGbSGdcwf4OVfb4I+aV0LRT8JP6s9KmcTNNOJ5JsbvEf8t3mk0nkvA4g==",

"metadata": "BLHmF5C4fBR0FBC87VEgDmyc2owEXSM4vsHl+B9O3Z5dLk0CumWHemG6L0xSiuEN73ZWPlvOIjlx/JKrMsA9miYZULM3bs3x5/eVEw4vRFyNmHOp4TU8Goj9/gTOVztYACN2Pu2e1ExNOcfcTljH6+vBMjIE2XpBpr/yG0WACK5JxSgNRBEVl0MaDKysc4cB5cPDnSBQxv3Y9XAdG6qgQoOt/7WLClNbB3eKqun6rh107HWesO1dQQ==",

"txid": "1c3800a3-d19b-408e-8077-6eaeeaefeb21",

"timestamp": {http://tool.oschina.net/tools/json_format/Expanded.gif

"seconds": 1482832966

},

"confidentialityLevel": 1,

"confidentialityProtocolVersion": "1.2",

"nonce": "HfVivC+Ars9/8rJ2FPOmxkHcdz5jAZUu",

"toValidators": "BATxJEbujzSLdv14SY3S1uAQdxD9ifZDy3MOYOmpfi2Rm+nLpKebQcBqIh3Uhox4AudaeRoIDs05xA0xwYqGF16MmtDfr/PUyewVe2oQAqQG5FjJTiAA34EdpTZTPCMrfmTZ7x8ncbSE/XUx5tl7HT0KqBIEcDx2IroNDX4pGSS7/ig8zgjx7pSg43E5B40BLSZ2+I/ttLcbCvGFdy32/81rQt9R5GPKqcs=",

"cert": "",

"signature": "MEUCIC8vHnsFnC1/7BND+iVMN35mO6Of6L2YgjSVgOnVDJNKAiEArgPFuWQ8goLGPpIDwLbUEv11jPcFvqRVss1O88oIkdw="

}