**CoolKit IoT Cloud API**

**Version：1.1**

**Confidential**

ChangeLog:

|  |  |  |  |
| --- | --- | --- | --- |
| version | change | author | date |
| 1.0 | Creation | Johnson | 2016.4.6 |
| 1.1 | 2.3.4 add timer example  1.1 version changed from 2 to 4  2.2.1 add uiid parameter | Johnson | 2016.7.26 |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |

## Common Constraint

## General

* + - HTTP request header : Content-Type:application/json
    - Character encoding：utf-8
    - HTTP request mandatory parameter in Server REST（put in querystring when use Get method，put in body json when use POST method）：

| **name** | **type** | **comment** |
| --- | --- | --- |
| ts | long | unix timestamp, in seconds from 1970.1.1 |
| appid | string | allocated from CoolKit |
| nonce | string | hex string from 4-byte random integer |
| version | int | 4 protocol version |

* + - Must have signature or access token in HTTP Authorization Header
    - All HTTP and websocket should use SSL/TLS( except device interface)，port is 8080, support SSLv3, TLS 1.1,1.2

## Signature

All interface before login (including login interface) need signature, signature is put in Authorization header, like:

Authorization:Sign bhCQXTVyfj5cmA9uKkPFx1zeOXM=

GET request：

Sort all parameter (except sign) alphabetically, connect with &. like :

appid=7284397484&deviceid=59&nonce=2323dfgh&para=xxxx &ts=1374908054

Using app secret as key，generate signature by HMAC-SHA256 。

Encode signature with BASE64 and put it in Authorization header。

POST request :

The whole body json is as the data to sign, like：

{“appid”:7284397484,”deviceid”:”59”,”nonce”:”232323df”,ts=1374908054}

java example code：



nodejs example code：



## Access token

All interface after login need access token in Authorization header, like:

Authorization: Bearer 1832d4a0f5f5f5845cb1922c1091c8aa5dfe0041

Login interface will return access token if login succeed.

## Error code

0, succeed

400, request parameter error

401, authentication fail

402 , access token expire, should let user login.

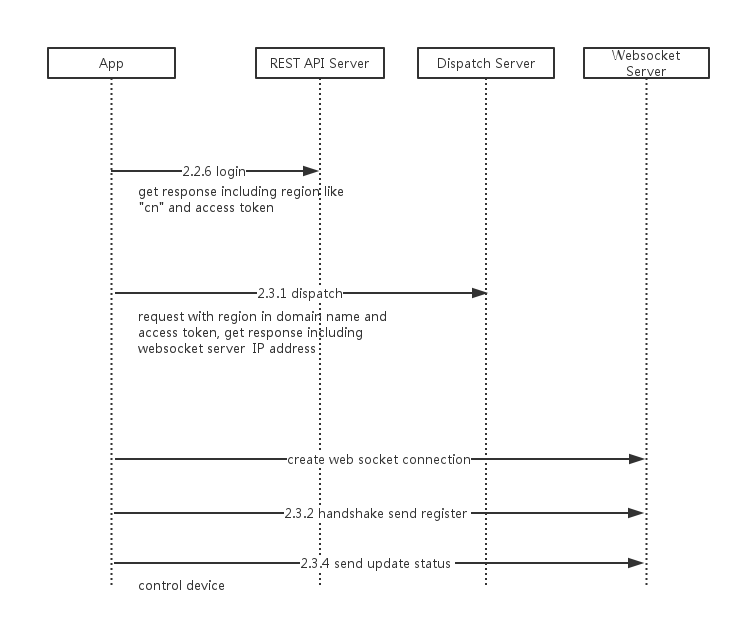
403, no permission to call this interface  
406, an unauthorized connection

500, internal error

## Add device call flow

## C:\01-doc\api-add-device.png

## Build websocket connection flow



## API

## Device

When device in AP pairing mode, its IP address is 10.10.7.1 .

### 2.1.1 query device info

Comment: return factory apikey to app

URL: <http://device_ip_address/device>

method: GET

request parameter: None

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | apikey | String | N | factory apikey |
| 2 | deviceid | String | N |  |
| 3 | accept | String | N | post or get |

### 2.1.2 pair

Comment: app post server domain name ,port and wifi ssid, password to device

URL: <http://device_ip_address/ap>

method: POST or GET ( according to 2.1.1 return result , default POST)

request parameter：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | ssid | String | N | wifi ssid |
| 2 | password | String | Y | Wifi password |
| 3 | serverName | String | N | after login, app get region (for example cn) and build domain name like：  cn-disp.coolkit.cc |
| 4 | port | Int | N | server port, default 443 |

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N | 0 is OK  other is error |
| 2 | reason | String | Y |  |

## Server REST

### query user device list

Comment: user device list

URL: <https://region-api.coolkit.cc:8080/api/user/device> (region is cn/eu/us, got from 2.2.6 login interface response )

method: get

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | apikey | | String | | N | | user apikey | |
| 2 | lang | | String | | Y | | cn to get Chinese response  en to get English response | |

response:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | String | | Y | | if no error, will be null | |
| 2 | devices | | [Device] | | N | | device info list | |

Device definition:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | name | | String | | N | | device name | |
| 2 | type | | String | | N | | type | |
| 3 | deviceid | | String | | N | | device ID | |
| 4 | apikey | | String | | N | | user apikey | |
| 5 | extra | | Object | | N | | device factory info | |
| 6 | brandName | | String | | N | | brand name | |
| 7 | productModel | | String | | N | | product model | |
| 8 | groups | | [String] | | Y | | group ids device belong to, could belong to multiple groups | |
| 9 | uiid | | Int | | N | | 1 single channel switch  2 dual channel switch  3 three channel switch  4 four channel switch | |

example:

"extra":{"\_id":"55f280631ed44d9a3a637f51","extra":{"model":"PSB-B04-TS","ui":"four channel ","description":"desc（PSB-B04-TS）","manufacturer":"CK","mac":"0c:c1:00:00:00:78","apmac":"0c:c1:00:00:00:79","modelInfo":"55f280161ed44d9a3a637f47","brandId":"55f27e661ed44d9a3a637f3f"}},"\_\_v":0,"

### add device

Comment: add device to account

URL: https://region-api.coolkit.cc:8080/user/device/add

method: post

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | apikey | | String | | N | | user apikey | |
| 2 | name | | String | | N | |  | |
| 3 | deviceid | | String | | N | |  | |
| 4 | subDeviceId | | ObjectId | | Y | | if isSub is 1, subDeviceId no null | |
| 5 | isSub | | String | | N | | if add sub device  0：no (default)  1：yes | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | devices | | [Object] | | Y | | sub device list | |

### delete device

Comment：delete device from user

URL: https://region-api.coolkit.cc:8080/user/device/:deviceid

method： delete

request parameter：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | apikey | | String | | N | | user apikey | |
| 2 | deviceid | | String | | N | | if isSub is 0, deviceid not null | |
| 3 | subDeviceId | | ObjectId | | N | | if isSub is 1, subDeviceId not null | |
| 4 | isSub | | String | | N | | is sub device  0：no (default)  1：yes | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | devices | | [Object] | | N | | sub device list | |

### query region

Comment: query user region before register

URL: https://api.coolkit.cc:8080/api/user/region

method: get

request parameter:

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | int | | N | | 0: succeed 500: internal error | |
| 1 | region | | String | | N | | region：  cn : Asia  us : America  eu : Europe | |
| 2 | requestid | | String | | Y | | ts+”-”+nonce | |

### register

Comment：register

URL: [https://region-api.coolkit.cc:8080/api/user/register](https://region-api.coolkit.cc/api/user/register) (region is got from 2.2.2)

method: post

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | email | | String | | Y | | if user input email | |
| 2 | phoneNumber | | String | | Y | | if user input phone Number | |
| 3 | verificationCode | | String | | N | | verification code | |
| 4 | password | | String | | N | |  | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | 0: succeed  401: auth fail  500: server error  498: verification code error  409: user already exist | |
| 2 | user | | User | | N | | user info | |
| 3 | at | | String | | N | | Access Token | |
| 4 | rt | | String | | N | | Refresh Token | |
| 5 | region | |  | | N | |  | |

User Definition:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | apikey | | String | | N | | user id | |
| 2 | phoneNumber | | String | | N | |  | |
| 3 | email | | String | | N | |  | |
| 4 | createdAt | | Date | | N | |  | |

### login

Comment: login

URL: [https://api.coolkit.cc:8080/api/user/login](https://api.coolkit.cc/api/user/login)

method: post

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | email | | String | | Y | |  | |
| 2 | phoneNumber | | String | | Y | |  | |
| 3 | password | | String | | N | |  | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | 0:succeed   400: parameter error 301：user not in default region, app need to access region-api.coolkit.cc to login  401: password error  402：mail not activated  404：user not exist  500：server error | |
| 4 | user | | User | | N | |  | |
| 5 | at | | String | | N | | Access Token | |
| 6 | rt | | String | | N | | Refresh Token | |
| 7 | region | |  | | N | |  | |

### send verification code

Comment: send verification code to phone number or email address

URL: https://region -api.coolkit.cc:8080/api/sms

method: post

request parameter:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | | type | allow NULL | comment |
| 1 | | sendType | Int | | N | 0 when register 1 when reset password |
| 2 | | email | String | | Y |  |
| 3 | | to | String | | Y | if mobile phone  format: +8615815725225 |

response：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | name | type | | allow NULL | comment |
| 1 | error | | Int | N | 0:succeed  301：user not in default region, app need to access region-api.coolkit.cc to send verification code 404：account not exist  500：server error  504：send fail |
| 2 | region | |  | N | when error is 301 , will return region |

### reset password

Comment: reset password

URL: https://region -api.coolkit.cc:8080/api/user/reset

method: post

request parameter:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | allow NULL | comment |
| 1 | email | | String | | Y |  |
| 2 | phoneNumber | | String | | Y |  |
| 3 | verificationCode | | String | | N |  |
| 4 | password | | String | | N |  |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | 0:succeed  400: parameter  498：auth fail  500：server error | |

### create group

Comment: create group for device

URL: https://region -api.coolkit.cc:8080/api/group

method: post

request parameter:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID | name | | type | | allow NULL | | comment |
| 1 | apikey |  | |  | |  | |
| 1 | name | String | | N | | group name | |
| 2 | Index | int | | Y | | group position  If index is null, will see as last group, server will give max index value to this group begin from 1.  If index is not null, server will increase group index value that equal and bigger than it. | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | see 1.4 | |
| 2 | groupid | | String | | N | | group ID | |

### modify group

Comment: modify group name, index

URL: https://region -api.coolkit.cc:8080/api/group

method: put

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | id | | String | | N | | group id | |
| 1 | name | | String | | Y | |  | |
| 2 | Index | | index | | Y | |  | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | see 1.4 | |

### delete group

Comment: 跟组分组id删除一个设备分组

URL: https://region -api.coolkit.cc:8080/api/group

method: delete

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | id | | String | | N | | group id | |
| 2 | type | | int | | N | | 0: only delete group  1: delete group and all devices belong to it | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | | see 1.4 | |

### add device to group

Comment: move devices to group

URL: https://region -api.coolkit.cc:8080/api/group/addDevice

method: post

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | deviceinfos | | [Device] | | N | |  | |

Device definition:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | source\_id | | String | | Y | | source group ID | |
| 2 | target\_id | | String | | N | | target group ID | |
| 3 | deviceid | | String | | N | |  | |
| 4 | type | | int | | Y | | 0: only overwrite source group id  1: delete all groups device belong to and set device to target\_id | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | Int | | N | |  | |

### query user group

Comment: query user group

URL: https://region -api.coolkit.cc:8080/api/group

method: get

request parameter:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | apikey | | String | | N | | user apikey | |

response：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | error | | String | | N | |  | |
| 2 | groupinfos | | [GroupInfos] | | Y | |  | |

GroupInfos

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | | name | | type | | allow NULL | | comment |
| 1 | id | | String | | N | | group id | |
| 2 | name | | String | | N | |  | |
| 3 | index | | int | | N | |  | |
| 4 | createdAt | | Date | | N | | create time | |

## Server Websocket

Comment：All based on websocket except dispatch interface.

Client need to keep sending websocket ping according to handshake response to keep connection alive. If client can’t receive server pong response, client need to close connection and create new one.

websocket url: wss://ip\_address:port/api/ws , should customerize SSL certificate verify process to use ip address

### dispatch（HTTP REST）

Comment：App shoud use call this interface to get websocket information like server ip address , port before create websocket connection.

Attention： access token should be in HTTP Authorization header

URL: https://region-disp.coolkit.cc:8080/dispatch/app

method: post

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | accept | String | N | only support ws now  could be：  mqtt,ws |
| 2 | version | int | N | 2 |
| 3 | imei | String | Y | if mobile phone app, provide imei/meid |
| 4 | appid | String | N |  |
| 5 | ts | int | N | timestamp |
| 6 | nonce | String | N |  |
| 7 | model | String | Y | if mobile phone app, provide phone model |
| 8 | os | String | Y | android  ios  or other |
| 9 | romVersion | String | y | android or ios version |

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N | see 1.4 |
| 2 | reason | String | Y | error reason |
| 3 | requestid | String | Y | ts+”-”+nonce |
| 4 | IP | String | N | websocket server IP |
| 5 | port | Int | N | websocket server port |
| 6 | domain | String | Y | websocket server domain |

### handshake

Comment：

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | action | String | N | userOnline |
| 2 | version | int | N | 2 |
| 3 | imei | String | N |  |
| 4 | ts | int | N |  |
| 5 | model | String | Y |  |
| 6 | os | String | Y | android  ios  or other |
| 7 | romVersion | String | Y |  |
| 8 | at | String | N | access token |
| 10 | userAgent | String | N | app |
| 11 | apikey | String | N | user apikey |
| 12 | appid | String | N |  |
| 13 | nonce | String | N |  |
| 14 | sequence | long | N | current milliseconds |

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N |  |
| 2 | apikey | String | Y |  |
| 3 | config | PARAMS | Y |  |

PARAMS定义：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | hb | Int | Y | heartbeat switch  0 off  1 on  if off, client don’t need to send ping. default is on. |
| 2 | hbInterval | Int | Y | heartbeat interval in seconds.  client need to use this value plus 7 as interval to send ping.  If null, use 12 seconds as default. |

### device online/offline

Comment：notify device online/offline to app

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | action | String | N | sysmsg |
| 2 | apikey | int | N | user apikey |
| 3 | deviceid | String | N |  |
| 4 | params | PARAMS | N |  |

PARAMS定义

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | online | String | N | true: online  false:offline |

### update device status

Comment： update status of device

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | action | String | N | update |
| 2 | apikey | int | N | user apikey |
| 3 | deviceid | String | N |  |
| 4 | userAgent | String | N | should be app |
| 5 | selfApiKey | String | Y | current user’s apikey . if the device is shared by other. |
| 6 | sequence | String | Y |  |
| 7 | params | PARAMS | N | device protocol. according to device’s ui type. |

PARAMS ：

switch on/off example：

single channel switch：

"params":{

"switch":"on"

}

multiple channel switch：

"params": {

"switches": [

{

"switch": "off",

"outlet": 0

},

{

"switch": "off",

"outlet": 1

},

{

"switch": "off",

"outlet": 2

},

{

"switch": "off",

"outlet": 3

}

]

}

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N | 503 Device Offline  504 Request Timeout |
| 2 | apikey | int | N | user apikey |
| 3 | deviceid | String | N |  |
| 4 | sequence |  |  |  |

### query device status

Comment：query device stutus

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | action | String | N | query |
| 2 | apikey | int | N | user apikey |
| 3 | deviceid | String | N |  |
| 4 | userAgent | String | N | app: app |
| 6 | params | [String] | N | query keys |

params example：

 [ "switch" ,  " timers"]

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N |  |
| 2 | apikey | int | N | user apikey |
| 3 | deviceid | String | N |  |
| 4 | params | PARAM |  | query result |

example 1, return switch status：

{ "error": 0, "apikey": "123e4567­e89b­12d3­a456­426655440000",  "deviceid": "01ad0253f2", "params": { "switch": "on" } }

example 2, no query result:

{ "error": 0, "apikey": "123e4567­e89b­12d3­a456­426655440000",  "deviceid": "01ad0253f2", "params": { } }

### share

Comment：share to other people

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | apikey | String | N |  |
| 2 | deviceid | String | N |  |
| 3 | action | String | N | share |
| 4 | userAgent | String | N | app |
| 5 | params | ShareParam | N |  |
| 6 | sequence | String | N |  |

ShareParam definition：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | uid | String | Y | email or phone number |
| 2 | deviceName | String | Y |  |
| 3 | userName | String | Y |  |

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N |  |
| 2 | result | int | Y | 0 target offline, fail  1 account not exist  2 user accept share  3 user decline share  4 already shared  5 timeout (3 miniutes) |
| 2 | apikey | String |  |  |
| 3 | deviceid | String |  |  |
| 4 | sequence | String |  |  |

### cancel share

Comment： cancel share

request parameter:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | apikey | String | N |  |
| 2 | deviceid | String | N |  |
| 3 | action | String | N | cancelShare |
| 4 | userAgent | String | N | app |
| 5 | params | ShareParam | N |  |
| 6 | sequence | String | N |  |

ShareParam定义：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | uid | String | Y | email or phone number |

response：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | name | type | allow NULL | comment |
| 1 | error | Int | N |  |
| 2 | sequence | String | N |  |