

SimSun "zh" = 0pt plus 1pt





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## 1.1

readthedocs :

### 1.1.1

todo: ... ..

### 1.1.2

AppWebApp

App <https://modao.cc/app/POxerAK2EbEA7gmDx2GT>

### 1.1.3

<https://github.com/Hesong-OpenSource/sanxin-zhuanhao-service-apidoc>

## 1.2

1. HTTP 1.1 HTTP 2.0 -\_- WebAPI
2. ->
3. Restfule API
4. UTF8 JSON
5. HTTPS

### 1.2.1 HTTP Content

*POST PUT JSON Content-Type* application/json

*Content JSON Content-Type* application/json

*Content JSON* null



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---

```
HTTP/1.1 200 OK
Content-Type: application/json

null
```

## 1.2.2 HTTP Status Code

### 200

API 200 OK

*Content-Type application/json JSON*

### 500

API 500 Internal Server Error

*JSON code text*

```
HTTP/1.1 500 Internal Server Error
Content-Type: application/json

{"code": 10013, "text": "callee not allowed"}
```

```
: JSON
```

### 401

API Status Code

Status Code [RFC 2616](#)

## 1.3

### 1.3.1 User API

APPHTTP URL

**ANY** /api/user/(string: telnum)/\*

APP ACCESS-ID ACCESS-KEY

APP ACCESS-ID ACCESS-KEY

URL

Query Parameters

- **accessid** (string) – ID

- **timestamp** (*string*) – Unix 1445851008

```
: 48
```

- **signature** (*string*) – *url path, telnum, password, token* *POST*  
/api/user/(string: *telnum*)/login,timestamp *accessid accesskey* 7

APP signature SHA1 16

- 1.url path ( / ), telnum, password (MD5HEX) , token, timestamp, accessid, accesskey (MD5HEX) 7
- 2.
- 3.SHA-1 (upper case)

```
: POST /api/user/(string: telnum)/login token
```

13887654321

This\_Is#My&p@ssw0rd

APPIDKEY developer-001 xm90uojWSd34E8y3

token=4C609E5D5D234A406D446EA42898EFAD50E4541C

1407812629434

URL /api/user/13887654321/path/of/the/api

DCE009D2AF85050E249A6511D1C0F0F180EDFA64

url:

```
http://api/user/13887654321/path/of/the/api?accessid=developer-001&timestamp=1407812629434&signature=
```

:

## Java

```
import java.security.MessageDigest;
import java.security.NoSuchAlgorithmException;
import java.util.ArrayList;
import java.util.Collections;

public class Signature {

    public static String byteArrayToHex(byte[] byteArray) {
        char[] hexDigits = { '0', '1', '2', '3', '4', '5', '6', '7', '8', '9',
                              'A', 'B', 'C', 'D', 'E', 'F' };
        char[] resultCharArray = new char[byteArray.length * 2];
        int index = 0;
        for (byte b : byteArray) {
            resultCharArray[index++] = hexDigits[b >>> 4 & 0xf];
            resultCharArray[index++] = hexDigits[b & 0xf];
        }
        return new String(resultCharArray);
    }
}
```

```

    }

    public static String hashStr(String input, String digest)
        throws NoSuchAlgorithmException {
        MessageDigest messageDigest = MessageDigest.getInstance(digest);
        byte[] inputByteArray = input.getBytes();
        messageDigest.update(inputByteArray);
        byte[] resultByteArray = messageDigest.digest();
        return byteArrayToHex(resultByteArray);
    }

    public static String calcSignature() throws NoSuchAlgorithmException {
        String accessid = "developer-001";
        String accesskey = hashStr("xm90uojWSd34E8y3", "MD5");
        String urlpath = "/api/user/13887654321/path/of/the/api";
        String telnum = "13887654321";
        String token = "4C609E5D5D234A406D446EA42898EFAD50E4541C";
        String password = hashStr("This_Is#My&p@ssw0rd", "MD5");
        String timestamp = "1407812629434";

        ArrayList<String> tmpList = new ArrayList<String>();
        tmpList.add(accessid);
        tmpList.add(accesskey);
        tmpList.add(urlpath);
        tmpList.add(telnum);
        tmpList.add(token);
        tmpList.add(password);
        tmpList.add(timestamp);
        Collections.sort(tmpList);

        String result = hashStr(String.join("", tmpList), "SHA1");
        return result;
    }

    public static void main(String[] args) {
        try {
            String sigstr = calcSignature();
            System.out.format("Signature = %s", sigstr);
        } catch (NoSuchAlgorithmException e) {
            e.printStackTrace();
        }
    }
}

```

## NodeJs

```

var crypto = require('crypto');

(function () {
    let hashStr = function (input, algorithm) {
        let hasher = crypto.createHash(algorithm);
        hasher.update(input);
        return hasher.digest('hex').toUpperCase();
    }
}

```

```

let accessid = "developer-001";
let accesskey = hashStr("xm90uojWSd34E8y3", "md5");
let urlpath = "/api/user/13887654321/path/of/the/api";
let telnum = "13887654321";
let token = "4C609E5D5D234A406D446EA42898EFAD50E4541C";
let password = hashStr("This_Is#My&p@ssw0rd", "md5");
let timestamp = "1407812629434";

let tmpList = [accessid,accesskey, urlpath, telnum, token, password, timestamp];
tmpList.sort();
let signature = hashStr(tmpList.join(''), 'sha1');

console.log("signature = " + signature);
})();

```

## Php

```

<?php
$accessid = 'developer-001';
$accesskey = strtoupper(md5('xm90uojWSd34E8y3'));
$url_path = '/api/user/13887654321/path/of/the/api';
$telnum = '13887654321';
$token = '4C609E5D5D234A406D446EA42898EFAD50E4541C';
$password = strtoupper(md5('This_Is#My&p@ssw0rd'));
$timestamp = '1407812629434';
$tmp_arr = array($accessid, $accesskey, $url_path, $telnum, $token, $password, $timestamp);
sort($tmp_arr, SORT_STRING);
$signature = strtoupper(sha1(implode($tmp_arr)));
echo(signature);

```

## Python

### Python 3.0+

```

from hashlib import sha1, md5
accessid = b'developer-001'
accesskey = bytes(md5(b'xm90uojWSd34E8y3').hexdigest().upper(), 'ascii')
url_path = b'/api/user/13887654321/path/of/the/api'
telnum = b'13887654321'
token = b'4C609E5D5D234A406D446EA42898EFAD50E4541C'
password = bytes(md5(b'This_Is#My&p@ssw0rd').hexdigest().upper(), 'ascii')
timestamp = b'1407812629434'
signature = sha1(b''.join(sorted([accessid, accesskey, url_path, telnum, token, password, timestamp])))
print(signature)

```

## Unix

Unix :

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---

## C

```
#include <time.h>          /* time_t, struct tm, time ... */

/// ... ..
time_t val = time(NULL);
int ts = (int) val;

/// ... ..
```

## C#

```
int tx = (Int32) (DateTime.UtcNow.Subtract (new DateTime(1970, 1, 1))).TotalSeconds;
```

## Java

```
long ts = System.currentTimeMillis()/1000L;
```

## Javascript

```
var ts = Math.floor(Date.now()/1000);
```

## Php

```
<?php
$ts = time();
```

## Python

```
import time
ts = int(time.time())
```

## 1.3.2 CTI API

**ANY** /api/cti/\*  
CTIWebAPPAPI

Web CTI

1.SSL

WebCTISSLSSTHTTP [nginx SSL http://nginx.org/en/docs/http/nginx\\_http\\_ssl\\_module.html](http://nginx.org/en/docs/http/nginx_http_ssl_module.html)

2.HTTP

WebCTIHTTPHTTP

## 1.4

### 1.4.1

**POST** /api/user/(string: telnum)/login  
telnum

#### Request JSON Object

- **password** (string) – MD5

#### Response JSON Object

- **token** (string) – ANY /api/user/(string: telnum)/\*

```
: token
```

### 1.4.2

**POST** /api/user/(string: telnum)/logout  
telnum

## 1.5

API

```
: ID
```

### 1.5.1

**GET** /api/user/(string: telnum)  
telnum

#### Response JSON Object

- **telnum** (string) –
- **name** (string) –
- **createtime** (string) – ISO
- **avatar** (string) – BASE64

### 1.5.2

**POST** /api/user

#### Request JSON Object

- **telnum** (string) – ()
- **name** (string) – ()
- **avatar** (string) – BASE64 ()

### 1.5.3

**PUT** /api/user/(string: telnum)  
*telnum*

#### Request JSON Object

- **name** (*string*) –
- **avatar** (*string*) – BASE64

---

: JSON *null*

---

### 1.5.4

**DELETE** /api/user/(string: telnum)  
*telnum*

## 1.6

API

### 1.6.1

**GET** /api/user/(string: telnum)/vtelnum  
*telnum*

#### Query Parameters

- **page** (*int*) – 11
- **perPage** (*int*) –

#### Response Headers

- *X-Pagination-Current-Page* –
- *X-Pagination-Per-Page* – 1
- *X-Pagination-Totle-Pages* –
- *X-Pagination-Totle-Entries* –

#### Response JSON Object

- **vtelnum** (*string*) –

(*telnum*) 123 53~4

#### Request

```
GET /api/user/123/vtelnum?page=2&perPage=2 HTTP/1.1
Host: example.com
```

**Response**

```

HTTP/1.1 200 OK
Content-Type: application/json
X-Pagination-Current-Page: 2
X-Pagination-Per-Page: 2
X-Pagination-Totle-Pages: 3
X-Pagination-Totle-Entries: 5

[{"vtelnum": "10003"}, {"vtelnum": "10004"}]

```

**1.6.2**

**GET** /api/user/(string: telnum)/availablevtelnum  
*telnum*

**Query Parameters**

- **page** (*int*) – 11
- **perPage** (*int*) –

**Response Headers**

- *X-Pagination-Current-Page* –
- *X-Pagination-Per-Page* – 1
- *X-Pagination-Totle-Pages* –
- *X-Pagination-Totle-Entries* –

**Response JSON Object**

- **vtelnum** (*string*) –

**1.6.3**

**POST** /api/user/(string: telnum)/vtelnum  
*telnum*

**Request JSON Object**

- **vtelnum** (*string*) –

**1.6.4**

**DELETE** /api/user/(string: telnum)/vtelnum/(string: vtelnum)  
*telnum*

**1.6.5**

**POST** /api/user/(string: telnum)/vtelnum/(string: vtelnum)/replace  
*telnum*

**Request JSON Object**



- **vtelnum** (*string*) –

## 1.7

### 1.7.1

**POST** /api/user/(string: telnum)/makecall  
*telnum*

#### Request JSON Object

- **caller** (*string*) –
- **callee** (*string*) –

#### Response JSON Object

- **callid** (*string*) – ID

---

: API *telnum*

**2** *telnum caller caller callee*

---

:

: (POST /api/user/(string: telnum)/cancelcall) *telnum caller*

*1001 2001 3001*

#### Request

```
POST /api/user/1001/makecall HTTP/1.1
Host: example.com
Content-Type: application/json

{"caller": "2001", "callee": "3001"}
```

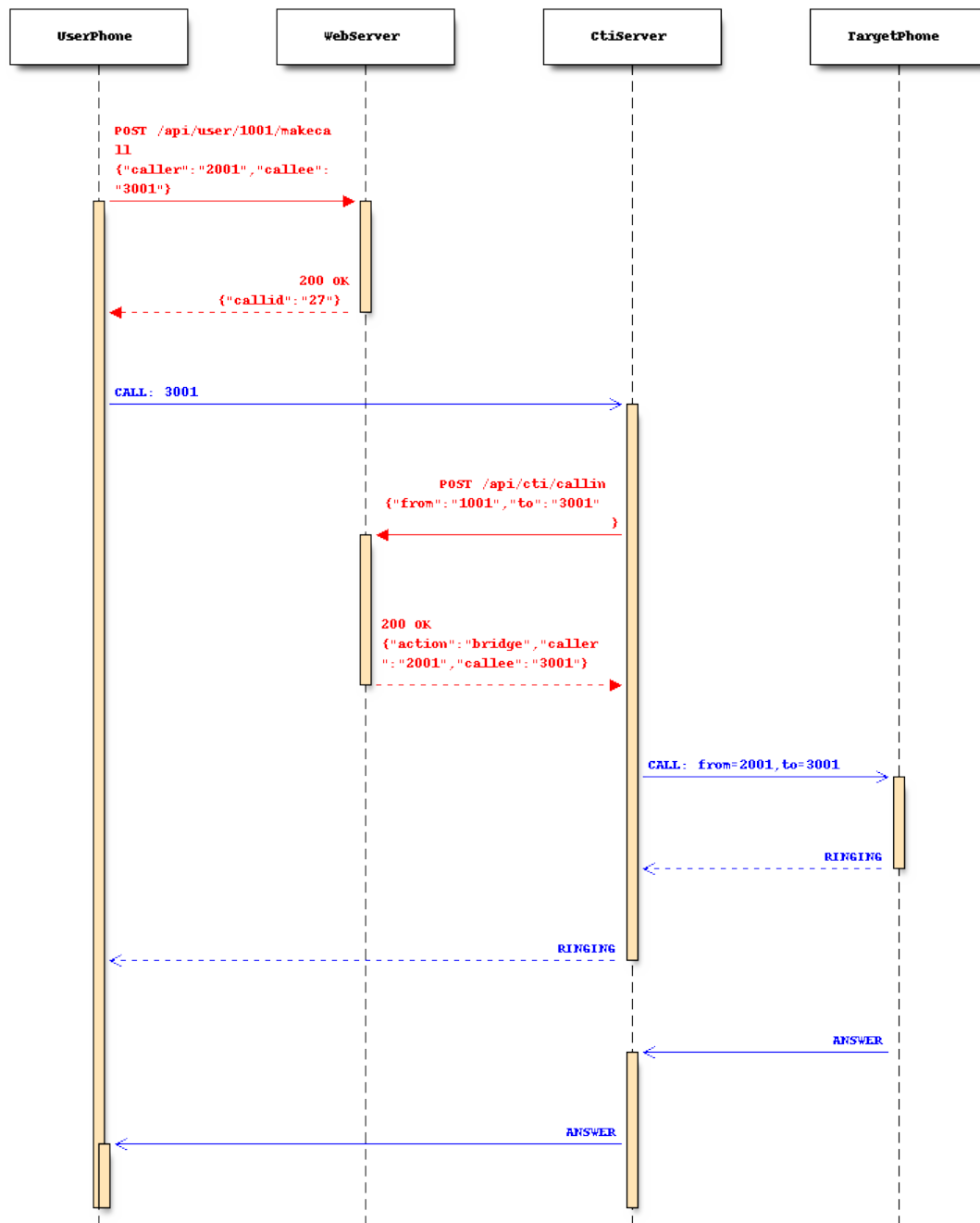
#### Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{"callid": "12870498123"}
```

*1001 2001 3001*

WebAPI



## 1.7.2

`POST /api/user/(string: telnum)/cancelcall`

## 1.8

(CTI)Web

: HTTP

### 1.8.1

**POST** `/api/cti/callin`  
(CTI)API WebAPICTI

#### Request JSON Object

- **from** (*string*) –
- **to** (*string*) –

#### Response JSON Object

- **action** (*string*) – CTI
  - *bridge* :
  - *refuse* :

- **caller** (*string*) –

: *action* “*bridge*”

- **callee** (*string*) –

: *action* “*bridge*”

*1001 2001 3001*

APP (*POST* `/api/user/(string: telnum)/makecall`) APP *2001* CTIWebWebCTI *2001 3001 1001 3001*

#### Request

```
POST /api/cti/callin HTTP/1.1
Host: example.com
Content-Type: application/json

{"from": "1001", "to": "2001"}
```

#### Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{"action": "bridge", "caller": "2001", "callee": "3001"}
```

- 
- 
- search
  - routingtable



## /api

```
GET /api/user/(string: telnum),9
GET /api/user/(string:
    telnum)/availablevtelnum,11
GET /api/user/(string:
    telnum)/vtelnum,10
POST /api/cti/callin,14
POST /api/user,9
POST /api/user/(string:
    telnum)/cancelcall,13
POST /api/user/(string:
    telnum)/login,9
POST /api/user/(string:
    telnum)/logout,9
POST /api/user/(string:
    telnum)/makecall,12
POST /api/user/(string:
    telnum)/vtelnum,11
POST /api/user/(string:
    telnum)/vtelnum/(string:
    vtelnum)/replace,11
PUT /api/user/(string: telnum),10
DELETE /api/user/(string: telnum),10
DELETE /api/user/(string:
    telnum)/vtelnum/(string:
    vtelnum),11
ANY /api/cti/*,8
ANY /api/user/(string: telnum)/*,4
```