

BOSS API Manual

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About This Document

This document is intended for software developers writing code to work with the Baicells Business & Operations Support System (BOSS) using Application Programming Interface (API). BOSS is a CloudCore application for managing broadband wireless access subscribers. Some sections of this document pertain only to Local OMC+BOSS environments, depending on the software version, and are noted as such.

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Support Resources

- **Documentation** - Baicells product data sheets, this document, and other technical manuals may be found at Baicells > Resources > [Documentation](#).
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- **FAQs** - Take advantage of our most frequently asked questions by searching the database under Baicells > Resources > [FAQs](#).
- **Support** - How to open a support ticket or process an RMA, and the Support Forum are at Baicells > [Support](#).

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1. API Overview

The Baicells Application Programming Interface (API) is a Representational State Transfer, or RESTful, API that accepts and receives JavaScript Object Notations (JSON). The API utilizes common Hypertext Transfer Protocol (HTTP) methods such as GET, POST, PATCH, and DELETE.

The Baicells API header is added to the basic HTTP authentication mode via HTTP requests, provided there is prior agreement with partners on a common user name and password. Permissions for the API are inherited from the user account.

When submitting a request using basic HTTP authentication, you must also include a header for “Content-Type” that specifies “application/json”; a header for “cloud_key” that specifies the operator’s cloud_key; and a header for “Authorization” that specifies the encoded value of “username:password” through the base64.

Table 1-1 provides the result_code list for when an operation fails.

Table 1-1: Result_Code List

Code	Message
4000	sub_id field is required
4001	sub_idConflict
4002	Subscribers do not exist
4003	Subscribers do not bind imsi
4004	Subscribers do not bind service plan
4005	Subscribers already exist
4006	Subscriber already binds service plan
4007	Subscriber already binds imsi
4008	Session_id field is required
4009	Subscriber does not match this cloud_key
4010	Sub_id_list field is required
4011	Subscribers do not exist or do not bind imsi and service plan
4012	Number of subscribers is too many
4100	Ip field is required
4101	Ip is not a valid IP address
4102	apn_profile field is required
4103	APN does not exist
4104	APN does not contain this IP address

4105	Bind relation (Subscribers-apn-ip) does not exist
4106	Bind relation already exists
4107	Bind relation does not exist
4108	apn_name is required
4109	Data too long for apn_name
4110	apn_ambr_ul is required
4111	apn_ambr_ul format error
4112	apn_ambr_dl is required
4113	apn_ambr_dl format error
4200	Service_plan_id field is required
4201	Service_plan_id conflict
4202	Service plan does not exist
4203	New_Service_plan_id field is required
4205	Service_plan_name field is required
4206	datanode is required
4207	Service plan does not match this cloud_key
4300	IMSI field is required
4301	IMSI format error
4302	IMSI has been used
4303	Please deactivate the subscriber before unbinding imsi!
4401	Uplink field is required
4402	Downlink field is required
4403	Uplink must be a number
4404	Downlink must be a number
4501	Sub_list field is required
4502	Sub_list format error
4503	Exceeded 200 records limit
4601	Configure 16 IP addresses at most
4602	url field is required
4603	url_ip field is required
4701	Begin time is required
4702	End time is required

4703	Incorrect time format
4704	Query usage by hour size. Time interval should not exceed 31 days.
4705	Query CDR detail. Time interval should not exceed 7 days.
5001	System error
5002	cloud_key is required in request header
5003	cloud_key does not exist
5004	User or password error
5005	User does not match this cloud_key
Code	Message

2. API List

North American CloudCore API URL: <http://baiboss.cloudapp.net:47081/baicellsapi>

2.1 Subscriber Category

2.1.1 Query Subscriber

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/query>

param

Field	Data Type	Description
session_id	String	Business serial number
imsi	String	IMSI

Example request:

```
POST /baicellsapi/customers/query HTTP/1.1
```

```
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "imsi": "460010000000001"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
available	boolean	true:the imsi can be user false:the imsi cannot be user
sub_id	String	The internal ID of the subscriber
sub_name	String	The name of the subscriber
id_num	String	The ID number of the subscriber
phone_number	String	The phone number of the subscriber
email	String	The email address of the subscriber
address	String	The address of the subscriber
service_plan_id	String	The subscriber bound service plan
sub_status	String	The status of the subscriber "0":active "1":deactive

Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "available": false,
  "sub_id": "20161201",
  "sub_name": "test name",
  "id_num": "123456",
  "phone_number": "123456",
  "email": "test@test.com",
  "address": "test address",
  "service_plan_id": "2016001",
  "sub_status": "0"
} or

```



```
{
  "session_id": "2016123456",
  "result_code": "200",
  "available": true
}
```

2.1.2 Create Subscriber

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/create>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
sub_name	String	The name of the subscriber
id_num	String	The ID number of the subscriber
phone_number	String	The phone number of the subscriber
email	String	The email of the subscriber
address	String	The address of the subscriber

Example request:

```
POST /baicellsapi/customers/create HTTP/1.1
```

```
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "sub_name": "test name",
  "id_num": "123456",
  "phone_number": "123456",
  "email": "test@test.com",
  "address": "test address"
}
```

```
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code:4000/4001
message	String	Message: sub_id conflict

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4001",
  "message": "sub_id conflict"
}
```

2.1.3 Bind Service Plan

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/bindservice>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
service_plan_id	String	The internal ID of the service plan

Example request:

POST /baicellsapi/customers/bindservice HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "service_plan_id": "2016001"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code:4000/4002/4200/4202
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002"
  "message": "subscriber dose not exist"
}
```

2.1.4 Bind imsi**1) Detail**

POST <http://ipaddr:port/baicellsapi/customers/bindimsi>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
imsi	String	IMSI

Example request:

```
POST /baicellsapi/customers/bindimsi HTTP/1.1
Content-Type: application/json
{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "imsi": "460010000000001"
```

```
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4002/4300/4301/4302
message	String	Message

Example response

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4301"
  "message": "IMIS formate error"
}
```

2.1.5 Unbind imsi

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/unbindimsi>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

POST /baicellsapi/customers/unbindimsi HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "sub_id": "20161201"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number

result_code	String	Error return code: 4000/4002/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",
  "message": "Subscriber dose not exist"
}
```

2.1.6 Activate Subscriber**1) Detail**

POST http://ipaddr:port/baicellsapi/customers /activate

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

```
POST /baicellsapi/customers /activate HTTP/1.1
Content-Type: application/json
{
  "session_id": "2016123456",
  "sub_id": "20161201"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4002/4003/4004/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",
  "message": "Subscriber dose not exist"
}
```

2.1.7 Deactivate Subscriber**1) Detail**

POST <http://ipaddr:port/baicellsapi/customers/deactivate>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

```
POST /baicellsapi/customers/deactivate HTTP/1.1
```

```
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "sub_id": "20161201"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
```

```
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4002/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
```

```
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "result_code": "4002",
}
```

```

    "message": "Subscriber dose not exist"
  }

```

2.1.8 Change Service Plan

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/update>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
new_service_plan_id	String	The new service plan id

Example request:

POST /baicellsapi/customers/update HTTP/1.1

Content-Type: application/json

```

{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "new_service_plan_id": "2016001"
}

```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```

{
  "session_id": "2016123456",

```

```

    "result_code": "200",
    "message": "Success"
  }

```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4002/4202/5001
message	String	Message

Example response:

```

HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",
  "message": "Subscriber dose not exist"
}

```

2.1.9 Change Speed (Uplink and Downlink)

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/updateuplink>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
uplink	int	Uplink speed.Unit:MB
downlink	int	Downlink speed.Unit:MB

Example request:

```

POST /baicellsapi/customers/updateuplink HTTP/1.1
Content-Type: application/json

```

```
{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "downlink": 5,
  "uplink": 5
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4002/4401/4402/4403/4404/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",

```

```

    "message": "Subscriber dose not exist"
  }

```

2.1.10 Bulk Activate Subscribers

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/bulkactivate>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

POST /baicellsapi/customers/bulkactivate HTTP/1.1

Content-Type: application/json

```

{
  "session_id": "2016123456",
  "data": [
    "20161201",
    "20161202",
    "20161203",
    "20161204"
  ]
}

```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

HTTP/1.1 200 OK

```
Content-Type: application/json

{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK

Content-Type: application/json

{
  "session_id": "2016123456",
  "result_code": "5001",
  "message": "System error"
}
```

2.1.11 Bulk Deactivate Subscribers**1) Detail**

POST <http://ipaddr:port/baicellsapi/customers/bulkdeactivate>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

```
POST /baicellsapi/customers/bulkdeactivate HTTP/1.1
```

```
Content-Type: application/json
{
  "session_id": "2016123456",
  "data": [
    "20161201",
    "20161202",
    "20161203",
    "20161204"
  ]
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
```

```
{
  "session_id": "2016123456",
  "result_code": "5001",
  "message": "System error"
}
```

2.1.12 Query Subscriber by sub_id

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/querybyid>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The ID number of the subscriber

Example request:

POST /baicellsapi/customers/querybyid HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "sub_id": "20161201"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
imsi	String	imsi
sub_id	String	The internal ID of the subscriber
sub_name	String	The name of the subscriber
id_num	String	The ID number of the subscriber
phone_number	String	The phone of the subscriber
email	String	The email of the subscriber
address	String	The address of the subscriber

service_plan_id	String	The subscriber bound service plan
sub_status	String	The status of the subscriber: "0":active "1":deactive
up_rate	String	Up speed of bind service plan
down_rate	String	Down speed of bind service plan
apn_info_list	JSON String	Bind apn ip information

Example response:

```

HTTP/1.1 200 OK

Content-Type: application/json

{
  "session_id": "2016123456",
  "result_code": "200",
  "imsi": "460010000000001",
  "sub_id": "20161201",
  "sub_name": "test name",
  "id_num": "123456",
  "phone_number": "123456",
  "email": "test@test.com",
  "address": "test address",
  "service_plan_id": "2016001",
  "sub_status": "0",
  "up_rate": "5",
  "down_rate": "10",
  "apn_info_list": [{"apn_name": "apn1", "apn_ambr_ul": 4, "apn_ambr_
dl": 8, "ipv4": "192.168.1.10"}]
}

```

2.1.13 Bind APN & Static IP

NOTE: Not supported in North America CloudCore, but is supported in a Local OMC+BOSS environment

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/bindapnip>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
apn_name	String	Apn name
apn_ambr_ul	int	apn_ambr_ul
apn_ambr_dl	int	apn_ambr_dl
ip_addr	String	Ip addr NOTE: If you do not set a static IP, this parameter should be set to empty or you should delete the parameter.

Example request:

POST /baicellsapi/customers/bindapnip HTTP/1.1

Content-Type: application/json

1.Set static ip addr param:

```
{
  "session_id": "2016123456",
  "sub_id": "2017062201",
  "apn_name": "apn1",
  "apn_ambr_ul": 4,
  "apn_ambr_dl": 8,
  "ip_addr": "192.168.1.10"
}
```

2.Do not set static ip addr param:

```
{
  "session_id": "2016123456",
  "sub_id": "2017062201",
  "apn_name": "apn1",
  "apn_ambr_ul": "4",
  "apn_ambr_dl": "8"
}
```

```
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4108/4109/4110/4111/4112/4113
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4108"
  "message": "apn_name is required"
}
```

2.1.14 Remove APN & Static IP

NOTE: Not supported in North America CloudCore, but is supported in a Local OMC+BOSS environment

1) Detail

POST <http://ipaddr:port/baicellsapi/customers/removeapnip>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
apn_name	String	Apn name
apn_ambr_ul	String	apn_ambr_ul
apn_ambr_dl	String	apn_ambr_dl

Example request:

```
POST /baicellsapi/customers/removeapnip HTTP/1.1
```

```
Content-Type: application/json
```

1.Set static ip addr param:

```
{
  "session_id": "2016123456",
  "sub_id": "2017062201",
  "apn_name": "apn1",
  "apn_ambr_ul": "4",
  "apn_ambr_dl": "8"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4000/4108/
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4108"
  "message": "apn_name is required"
}
```

2.1.15 Modify Subscriber**1) Detail**

POST <http://ipaddr:port/baicellsapi/customers/modify>

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber
sub_name	String	The name of the subscriber

id_num	String	The ID number of the subscriber
phone_number	String	The phone of the subscriber
email	String	The email of the subscriber
address	String	The address of the subscriber

Example request:

POST /baicellsapi/customers/modify HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "sub_id": "20161201",
  "sub_name": "test name",
  "id_num": "123456",
  "phone_number": "123456",
  "email": "test@test.com",
  "address": "test address"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Subscriber does not exist

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code:4000/4002/5001
message	String	Message: sub_id conflict

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",
  "message": "Subscribers dose not exist"
}
```

2.1.16 Delete Subscriber**1) Detail**

POST http://ipaddr:port/baicellsapi/customers/delete

param

Field	Data Type	Description
session_id	String	Business serial number
sub_id	String	The internal ID of the subscriber

Example request:

```
POST /baicellsapi/customers/delete HTTP/1.1
Content-Type: application/json
{
  "session_id":"2016123456",
  "sub_id": "20161201"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number

result_code	String	Successfully create a subscriber return code:200
message	String	Subscriber does not exist

Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}

```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code:4000/4002/5001
message	String	Message: sub_id conflict

Example response:

```

HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4002",
  "message": "Subscribers dose not exist"
}

```

2.1.17 Bulk Create Subscriber**1) Detail**

POST <http://ipaddr:port/baicellsapi/customers/bulkcreate>

param

Field	Data Type	Description
session_id	String	Business serial number
service_plan_id	String	The service of the subscriber
sub_list	list	The collection of user list
sub_id	String	The internal ID of the subscriber
imsi	String	The imsi of the subscriber
id_num	String	The ID number of the subscriber
phone_number	String	The phone number of the subscriber
email	String	The email of the subscriber
address	String	The address of the subscriber

Example request:

POST /baicellsapi/customers/create HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "service_plan_id": "2016001",
  "sub_list": [{
    "sub_id": "20161201",
    "sub_name": "test name",
    "imsi": "860100011223344",
    "id_num": "123456",
    "phone_number": "123456",
    "email": "test@test.com",
    "address": "test address"
  },
  {
    "sub_id": "20161202",
    "sub_name": "test name2",
    "imsi": "860100011223355",
    "id_num": "123457",
    "phone_number": "1234567",
    "email": "test2@test.com",
```

```

    "address": "test2 address"
  }
}

```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success
total	int	The total number of these operations
successful quantity	Int	The number of successes
unsuccessful quantity	int	The number of failures
success_list	list	The list of successes
fail_list	list	The list of failures
sub_id		The internal ID of the subscriber
imsi		The imsi of the subscriber
result_message		Error message

1. Parameters format error returned information:

Example response:

```

HTTP/1.1 422

{
  "session_id": "198575111866",
  "result_code": "4503",
  "message": "exceed 200 records limit."
}

```

2. Parameters format pass, return operations details:

```

HTTP/1.1 200

{
  "session_id": "198575111866",

```

```
"total": 200,
"successful quantity": 29,
"unsuccessful quantity": 171,
"success_list": [
  {
    "sub_id": "66268756728",
    "imsi": "601011010167723"
  },
  {
    "sub_id": "66268751752",
    "imsi": "601011010167747"
  }...
],
"fail_list": [
  {
    "sub_id": "66268766671",
    "imsi": "601011000166666",
    "result_code": "4302",
    "result_message": "imsi has been used."
  }
  {
    "sub_id": "66268866706aa",
    "imsi": "601011000166701",
    "result_code": "5001",
    "result_message": "system error."
  },
  {
    "sub_id": "66268866707",
    "imsi": "601111000167702",
    "result_code": "4001",
    "result_message": "sub_id conflict."
  }...
]
```

}

2.2 Service Plan (Package/Profile) Category

2.2.1 Create Service Plan (Package/Profile)

1) Detail

POST <http://ipaddr:port/baicellsapi/products/create>

param

Field	Data Type	Description
session_id	String	Business serial number
service_plan_id	String	The internal ID of the service plan
service_plan_name	String	The name of the service plan
uplink	int	Uplink speed.Unit:MB
downlink	int	Downlink speed.Unit:MB
comments	String	

Example request:

POST /products/create HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "service_plan_id": "2016001",
  "service_plan_name": "testname",
  "uplink": 5,
  "downlink": 5,
  "comments": "comments"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200

message	String	Message:Success
---------	--------	-----------------

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4200/4201/4401/4402/4403/4404/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "5001",
  "message": "System error"
}
```

2.2.2 Modify Service Plan (Package/Profile)**1) Detail**

POST <http://ipaddr:port/baicellsapi/products/modify>

param

Field	Data Type	Description
session_id	String	Business serial number

service_plan_id	String	The internal ID of the service plan
service_plan_name	String	The name of the service plan
uplink	int	Uplink speed.Unit:MB
downlink	int	Downlink speed.Unit:MB
comments	String	Comments

Example request:

POST /products/modify HTTP/1.1

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "service_plan_id": "2016001",
  "service_plan_name": "testname",
  "uplink": 5,
  "downlink": 5,
  "comments": "comments"
}
```

Success 200

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
message	String	Message:Success

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "message": "Success"
}
```

Error 422

Field	Data Type	Description
session_id	String	Business serial number
result_code	String	Error return code: 4200/4201/4401/4402/4403/4404/5001
message	String	Message

Example response:

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "5001",
  "message": "System error"
}
```

2.2.3 Get Service Plan by Uplink**1) Detail**

GET <http://ipaddr:port/baicellsapi/products/querybyuplink/{uplink}>

Success 200

Field	Data Type	Description
state	String	0:active; 1:inactive

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json
[
  {
    "service_plan_id":"T201611220001",
    "service_plan_name":"1M",
    "uplink":"1",
```

```

        "downlink":"1",
        "state":"0"
    },
    {
        "service_plan_id":"T201611220002",
        "service_plan_name":"1M",
        "uplink":"1",
        "downlink":"2",
        "state":"0"
    }
]

```

2.2.4 Get Service Plan by Downlink

1) Detail

GET <http://ipaddr:port/baicellsapi/products/querybydownlink/{downlink}>

Success 200

Field	Data Type	Description
state	String	0:active; 1:inactive

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```

[
    {
        "service_plan_id":"T201611220001",
        "service_plan_name":"2M",
        "uplink":"2",
        "downlink":"2",
        "state":"0"
    },
    {

```



```

    "service_plan_id":"T201611220002",
    "service_plan_name":"2M",
    "uplink":"1",
    "downlink":"2",
    "state":"0"
  }
]

```

2.2.5 Get Service Plan by Uplink and Downlink

1) Detail

GET <http://ipaddr:port/baicellsapi/products/querybylink/{uplink}/{downlink}>

Success 200

Field	Data Type	Description
state	String	0:active; 1:inactive

Example response:

```

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

```

```

[
  {
    "service_plan_id":"T201611220001",
    "service_plan_name":"2M",
    "uplink":"2",
    "downlink":"2",
    "state":"0"
  },
  {
    "service_plan_id":"T201611220002",
    "service_plan_name":"2M",
    "uplink":"2",

```

```

        "downlink":"2",
        "state":"0"
    }
]

```

2.2.6 Get all Service Plan

1) Detail

GET <http://ipaddr:port/baicellsapi/products/queryallplans>

Success 200

Field	Data Type	Description
state	String	0:active; 1:inactive

Example response:

```

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

```

```

[
  {
    "service_plan_id":"T201611220001",
    "service_plan_name":"1M",
    "uplink":"1",
    "downlink":"1",
    "state":"0"
  },
  {
    "service_plan_id":"T201611220002",
    "service_plan_name":"2M",
    "uplink":"2",
    "downlink":"2",
    "state":"0"
  }
]

```

]

2.3 Data Usage

2.3.1 Query Data Usage by Hour Size

NOTE: Not supported in North America CloudCore, but is supported in a Local OMC+BOSS environment

1) Detail

POST <http://ipaddr:port/baicellsapi/usage/querybyhour>

param

Field	Data type	Required	Describe
session_id	String	Yes	Business serial number
imsi	String	No	If the imsi is not empty query the specified IMSI's usage. If imsi is empty query all IMSI's usage.
begin_time	String	Yes	Time interval of queries, Format:yyyy-MM-dd hh:mm:ss The maximum time interval is 31 days.
end_time	String	Yes	Time interval of queries,Format:yyyy-MM-dd hh:mm:ss The maximum time interval is 31 days.

Example request:

POST /baicellsapi/usage/querybyhour HTTP/1.1

Content-Type: application/json

```
{
  "session_id":"2016123456",
  "imsi":"6000000000000001",
  "begin_time":"2018-11-22 08:00:00",
  "end_time":"2018-11-22 12:00:00"
}
```

Success 200

Field	Data type	Describe
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
usage_infos	JSONArray	Return data list
imsi	String	imsi
total_usage	String	Unit (KB)
up_usage	String	Unit (KB)
down_usage	String	Unit (KB)
usage_time	String	Time of Statistical usage. For example:(2018-11-22 10:00:00) means the usage data from 9 o'clock to 10 o'clock.

Example response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "session_id": "2016123456",
  "result_code": "200",
  "usage_infos": [
    {
      "imsi": "6000000000000001",
      "total_usage": "204800",
      "up_usage": "1000",
      "down_usage": "203800",
      "usage_time": "2018-11-22 10:00:00"
    }
  ]
}
```

Error 422

Field	Data type	Describe
session_id	String	Business serial number
result_code	String	Error return code: 4701/4702/4703/4704

message	String	Message
---------	--------	---------

Example response

```
HTTP/1.1 422 OK
Content-Type: application/json
{
  "session_id": "2016123456",
  "result_code": "4701"
  "message": "begin time is required"
}
```

2.3.2 Query Data Usage CDR Detail

NOTE: Not supported in North America CloudCore, but is supported in a Local OMC+BOSS environment

1) Detail

POST <http://ipaddr:port/baicellsapi/usage/querycdr>

param

Field	Data type	Required	Describe
session_id	String	Yes	Business serial number
imsi	String	No	If the imsi is not empty query the specified IMSI's usage. If imsi is empty query all IMSI's usage.
begin_time	String	Yes	Time interval of queries, Format:yyyy-MM-dd hh:mm:ss The maximum time interval is 7 days.
end_time	String	Yes	Time interval of queries, Format:yyyy-MM-dd hh:mm:ss The maximum time interval is 7 days.

Example request:

```
POST /baicellsapi/usage/querybyhour HTTP/1.1
Content-Type: application/json
{
  "session_id":"2016123456",
```

```

    "imsi":"6000000000000001",
    "begin_time":"2018-11-22 08:00:00",
    "end_time":"2018-11-22 12:00:00"
  }

```

Success 200

Field	Data type	Describe
session_id	String	Business serial number
result_code	String	Successfully create a subscriber return code:200
cdr_infos	JSONArray	Return data list
imsi	String	imsi
total_usage	String	Unit (Byte)
up_usage	String	Unit (Byte)
down_usage	String	Unit (Byte)
duration	String	Unit(second)
cdrdate	String	The time to generate this CDR. Format:yyyy-MM-dd hh:mm:ss

Example response:

```

HTTP/1.1 200 OK

Content-Type: application/json

{
  "session_id": "2016123456",
  "result_code": "200",
  "cdr_infos": [
    {
      "imsi": "6000000000000001",
      "total_usage": "204800",
      "up_usage": "1000",
      "down_usage": "203800",
      "duration": "300",
      "cdrdate": "2018-11-22 12:14:32"
    }
  ]
}

```

```
}
```

Error 422

Field	Data type	Describe
session_id	String	Business serial number
result_code	String	Error return code: 4701/4702/4703/4705
message	String	Message

Example response

```
HTTP/1.1 422 OK
```

```
Content-Type: application/json
```

```
{  
  "session_id": "2016123456",  
  "result_code": "4701"  
  "message": "begin time is required"  
}
```

Appendix: Activate Subscriber & Bind APN IPflow Diagram

Follow the steps below to activate the subscriber and bind the APN IP. Refer to the flow diagram in the figure.

1. Create a subscriber.
2. Bind the service plan for this subscriber. If there is no suitable tariff that can be used, create a new service plan following the information in Section 2.2.1.
3. Bind IMSI for this subscriber.
4. Activate this subscriber.

At this point, the IMSI can access the network.

