Solarguardian API

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Instructions

Preparation

1.Solarguardian platform account

(1) If you have already registered an account, please log in to the web directly.

(2) If you have not registered an account, please complete the registration on the web page. For Mainland China SolarGuardian,The website link is: https://hncloud.epsolarpv.com/. For International SolarGuardian,it's https://gl.mysolarguardian.com/.

2.Communication between the server and the device is normal.

The account has completed the addition of power stations, gateways, and devices, and the gateways and devices are online. The device data on the web page is obtained normally, which means that the communication between the EPEVER server and the device is normal. Please ignore this step.

If the above situation is not the case, please gradually complete the addition of power stations, gateways, and devices to ensure that the settings are correct and the web device data is obtained normally. For detailed operation steps, please refer to the "Help Center" - "SolarGuardian WEB Operation Manual" on the upper right side of the website, as shown below.
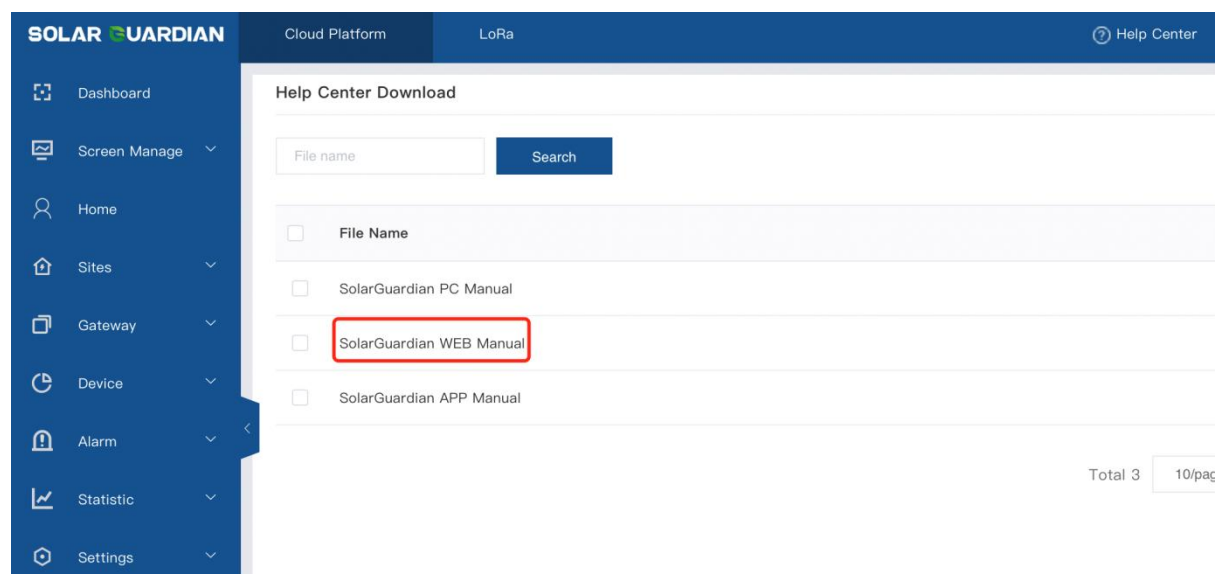
3.Request login credentials for the API used

The user logs in successfully, enters "System Management-Personal Information Management-Open API" and applies for API login credentials (appKey and appSecret), as shown below.

Throttling limits

Obtain user logon credentials interface call is limited 10 times a minute.Other Api calls are limited 30 times a minute , if the number of calls is exceeded, the service rejects the call.

Domain

For Mainland China SolarGuardian,It's **openapi.epsolarpv.com.**

For International SolarGuardian,It's **glapi.mysolarguardian.com.**

Common error codes

Error Codes	Description
200	Successful
500	The server has an internal error and cannot process the user's request.
5002	No parameters found
5004	Insufficient permissions
5017	Parameter error
5106	Incomplete parameters
5126	Too frequent requests
5144	The system automatically triggers the defense mechanism.
5148	The media Type of the message body is content-Type.

User

1. Obtain user logon credentials

1.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/user/getAuthToken
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
appKey	body	true	String	appkey
appSecret	body	true	String	appsecret
Content-Type	Headers	true	String	application/json

1.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information

X-Access-Token	String	the logon credential returned when the logon is successful (note: The validity period of the X-Access-Token is 2 hours and can be reused within 2 hours)

1.4. Sample Requests

```
{
    "appKey":"IkBkUKJ3",
    "appSecret":"r6idnix02feykqvysjejjdetq6klh0tp"
}
```

1.5. Response example

```
{
    "status": 0,
    "data": {
        "X-Access-Token":
"eyJhdGciOiJIUzI1NiJ9.eyJzdWIiOiJ0ZXN0IiwiYXBwS2V5IjoiSWtCa1VLSjIiLCJ1aWQiOjc2NTI3LCJl
eHAiOjE2OTc3OTIzNzIsImlhdCI6MTY5Nzc4NTE3Mn0.0OdQED0E3Cfa_i11D2kh3SJZ9-
pqR2SISSPpSkYc1R4"
    },
    "info": "ok"
}
```

Power Station

1. Query the list of power stations

1.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getPowerStationListPage
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json
powerStationName	body	false	String	name of power station
pageNo	body	true	Integer	page number

pageSize	body	true	Integer	page size

1.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
data	Map	power station list

1.3.1. Response parameters-data

Parameter	Type	Description
total	Integer	the number of entries to return.
data-list	List	response object
pageNum	Integer	page number
pageSize	Integer	page size

1.3.2. Response parameters-data-list

Parameter	Type	Description

id	Integer	primary key id of the power station
powerStationName	String	name of power station
projectId	Integer	organization
projectName	String	organization name
ename	String	organization name English
position	String	longitude and latitude
address	String	address
imagePath	String	image path
imagePathAll	String	full image path
alarmStatus	String	power station status (0: normal 1: alarm;)
equipmentCount	Integer	number of equipments under the power station
equipmentOnlineCount	String	online number of devices under the power station
ownerUid	Integer	registered user ID
ownerUname	String	register a user account

createDt	String	creation time
updateDt	String	modification time
creator	Integer	the id of the creator.
updator	Integer	the id of the modifier.
projectName	String	organization name
ename	String	organization name English
alarmStatus	String	power station status (0: normal 1: alarm;)
equipmentCount	Integer	number of equipments under the power station
equipmentOnlineCount	String	online number of devices under the power station

1.4. Sample Requests

```
{
  "powerStationName": "",
  "total": 0,
  "pageNo": 1,
  "pageSize": 10
}
```

1.5. Response example

```json
{
  "status": 0,
  "data": {
    "total": 31,
    "list": [
      {
        "id": 16215,
        "pageNo": 1,
        "pageSize": 10,
        "powerStationName": "Organization Power Station",
        "area": "",
        "ownerName": "",
        "ownerPhone": "",
        "ownerUnit": "",
        "description": "",
        "imagePath": "",
        "positon":"" ,
        "address": "",
        "projectId": 66394,
        "ownerUid": 76535,
        "configurationId": 148965,
        "defaultFlag": 0,
        "createDt": 1694662905000,
        "updateDt": 1694662905000,
        "creator": 76535,
        "old": 0,
        "updator": 76535,
        "projectName": "Organization",
        "ename": "Default Group",
        "alarmStatus": 0,
        "equipmentCount": 0,
        "equipmentOnlineCount": 0,
        "link": "XoyfHaix3SAT",
        "model": 0,
        "type": 0
      }
    ]
  }
```

```
}
```

2. Query power station details

2.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getPowerStation
Transport Protocol	HTTPS

2.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.
Content-Type	headers	true	String	application/json
id	body	true	Integer	primary key id of the power station

2.3. Response parameters

Parameter	Type	Description
Request method	Integer	result status
Request address	String	response Information
Transport Protocol	Map	power station list

2.3.1. Response parameters-data

Parameter	Type	Description
id	Integer	primary key id of the power station
powerStationName	String	name of power station
projectId	Integer	organization
ename	Integer	organization English
projectName	String	organization name
description	String	description of Power Station
position	String	longitude and latitude

address	String	address
imagePath	String	image path
imagePathAll	String	full image path
powerConsumptionTotal	String	cumulative power consumption
powerGenerationTotal	String	cumulative power generation
ownerUid	Integer	registered user ID
ownerUname	String	register a user account

2.4. Sample Requests

```
{
    "id":1
}
```

2.5. Response example

```
{
  "status": 0,
  "data": {
    "id": 31696,
    "pageNo": 1,
    "pageSize": 10,
    "powerStationName": "lixl Enterprise_1698309023140",
    "area": "1",
    "ownerName": "",
```

```
        "ownerPhone": "",
        "ownerUnit": "",
        "position": "117.130339,36.675857",
        "address": "",
        "projectId": 66388,
        "ownerUid": 76562,
        "configurationId": 268695,
        "defaultFlag": 0,
        "createDt": 1698309029000,
        "updateDt": 1698309029000,
        "creator": 76562,
        "old": 0,
        "updator": 76562,
        "creatorName": "lixl Enterprise",
        "updatorName": "lixl Enterprise",
        "projectName": "Default Organization",
        "ename": "Default Group",
        "ownerUname": "lixl Enterprise",
        "equipmentCount": 0,
        "powerGenerationTotal": "0.00",
        "powerConsumptionTotal": "0.00",
        "link": "NSBzgFOnyeov",
        "model": 0,
        "type": 0
    },
    "info": "ok",
    "account": "lixl Enterprise"
}
```

Gateway

1. Query gateways

1.1. Interface prototype

Request method	POST

Request address	https://{Domain}/epCloud/vn/openApi/getDevs
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
search_param	body	true	String	search parameters (SN or name)
searchByDeviceStatus	body	true	String	gateway status (0: offline, 1: Online)
page_param	body	true	String	pagination parameters
X-Access-Token	Headers	true	String	the logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json

1.3. Response parameters

Parameter	Type	Description

status	Integer	result status
info	String	response Information
data	List	gateway array

1.3.1. Response parameters-data

Parameter	Type	Description
id	Integer	the primary key id of the gateway.
powerStationName	String	name of power station
projectId	Integer	organization
ename	Integer	organization English
projectName	String	organization name
devid	String	gateway SN
name	String	gateway name
address	String	address
imagePath	String	image path
imagePathAll	String	full image path

position	String	longitude and latitude
onlineOffline	String	gateway status
ownerUid	Integer	registered user ID

1.4. Sample Requests

```json
{
  "search_param": "",
  "searchByDeviceStatus": "",
  "page_param": {
    "offset": 0,
    "limit": 10
  }

}
```

1.5. Response example

```json
{

  "status": 0,

  "data": {

    "dev": [

      {

        "ename": "Default Group",

        "old": 0,

        "deviceType": 0,

        "dtype": 0,
```

"powerStationId": 16214,

"accessMode": 172,

"powerStationName": "New Site",

"accessModeName": "EPEVER TCP 306",

"id": 217229,

"devid": "2023021512345678900001",

"name": "TCP306",

"pass": "12345678",

"dictRegion": 1,

"dictType": "3",

"imgFull": "https://hncloud.epsolarpv.com/uploads/dictionary/1697629569863_0039.jpg",

"type": 10,

"createTime": 1686219035,

"updateTime": 1702029422,

"protocol": 101,

"position": "116.25245277747,40.217927178864",

"address": "Beijing",

"onlineStatus": 1,

"status": 1,

"sn": "2023021512345678900001",

"productModel": 0,

"templateId": 176354,

"weight": 0,

"templateName": "undefine_2023-06-08 18:10:35",

```json
        "verifyCode": "64la17ok",

        "positionType": 1,

        "virtual": 0,

        "projectId": 66397,

        "projectName": "Default group",

        "mac": "2023021512345678900001",

        "imei": "2023021512345678900001",

        "funcCloud": 1,

        "funcMonitor": 0,

        "deviceStatus": {

            "deviceId": "2023021512345678900001",

            "onlineOffline": 1,

            "sync": 0,

            "datapointAlarm": 0

        },

        "isBindAlarmConfig": 0,

        "configurationDto": {

            "id": 185924,

            "uid": 76571,

            "pageNo": 1,

            "pageSize": 10,

            "link": "6AywiQUuknIC",

            "name": "undefine_configuration_2023-06-08 18:10:35",

            "model": 0,
```

```json
                "thumbnail": "scada/icon_configuration_white_big_temp.png",

                "thumbnailFull":
"http://hncloud.epsolarpv.com/uploads/scada/icon_configuration_white_big_temp.png",

                "compatibleType": 1,

                "hasContent": 1,

                "hasScreenContent": 1,

                "projectId": 66397,

                "ownerUid": 76571,

                "isOnlyShowOwn": 0,

                "isPcOrAndroid": 0,

                "configurationUserIsolation": false,

                "onlySimpleInfo": false
            },

            "configurationId": 185924,

            "isTransProtocol": 0,

            "loraDeviceType": 0,

            "webConfig": 0,

            "smokeProtocolDevice": false
        }
}]
}
```

2. Query gateway details

2.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getDevice
Transport Protocol	HTTPS

2.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	The logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json
deviceId	body	false	String	gateway serial number

2.3. Response parameters

Parameter	Type	Description
status	Integer	result status

info	String	response Information
data	Map	gateway Information

2.3.1. Response parameters data-device

Parameter	Type	Description
name	String	gateway name
deviceId	String	gateway SN
imei	String	imei
address	String	device address
projectName	String	organization name
ename	String	organization name
projectId	Integer	organization Id
onlineOffline	Integer	gateway online status: 1 Online 0 offline
powerStationName	String	name of power station
powerStationId	Integer	the id of the power station.
accessMode	Integer	The id of the access

		method.
accessModeName	String	The name of the access method.
address	String	gateway address

2.4. Sample Requests

```
{
    "deviceId": "000000000000000200020",
}
```

2.5. Response example

```
{
    "status": 0,
    "data": {
        "device": {
            "old": 0,
            "ename": "Default Group",
            "dtype": 0,
            "deviceType": 0,
            "powerStationName": "Real Device Monitoring",
            "accessModeName": "EPEVER-WIFI-2.4G-PCB-D",
            "powerStationId": 20675,
            "accessMode": 218,
            "id": 258265,
            "deviceId": "000000000000000200020",
            "ownerUid": 76562,
            "name": "Shenzhen WiFi",
            "pass": "icJGLqZD",
            "type": 10,
            "protocol": 101,
            "position": ",",
```

```json
          "address": "",
          "account": "lixl Enterprise",
          "onlineStatus": 1,
          "status": 1,
          "sn": "0000000000000000200020",
          "productModel": 0,
          "templateId": 235068,
          "weight": 0,
          "templateName": "Unnamed_2023-10-30 10:25:14",
          "positionType": 1,
          "virtual": 0,
          "projectId": 66388,
          "projectName": "Default Organization",
          "mac": "202308011424248",
          "imei": "202308011424248",
          "funcCloud": 1,
          "funcMonitor": 0,
          "deviceStatus": {
              "deviceId": "0000000000000000200020",
              "onlineOffline": 1,
              "sync": 0,
              "datapointAlarm": 0
          },
          "dictRegion": 0,
          "dictType": "0"
      },
      "slaveTotal": 1
  },
  "info": "ok",
  "account": "lixl Enterprise"
}
```

Device

1. Query device list

1.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getEquipmentList
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	The logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json
equipmentName	body	false	String	appsecret
powerStationId	body	false	Integer	the id of the power station.
gatewayId	body	false	Integer	The id of the Gateway.

pageNo	body	false	Integer	Page number
pageSize	body	false	Integer	page number

1.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
data	List	device Array

1.3.1. Response parameters data-list

Parameter	Type	Description
id	Integer	device primary key id
equipmentName	String	custom Device Name
equipmentNo	String	device serial number
trafficStationNo	String	device communication station number
powerStationId	Integer	the id of the power station.

powerStationName	String	name of power station
gatewayId	String	the sn code of the gateway.
gatewayName	String	gateway name
productId	Integer	product Series id
productName	String	product Series name
projectId	Integer	organization id
projectName	String	organization name
ename	String	organization name English
ownerUid	Integer	registered user ID
ownerUname	String	register a user account
createDt	String	creation time
updateDt	String	modification time
creator	Integer	the id of the creator.
updator	Integer	The id of the modifier.
creatorName	String	Creator account
updatorName	String	modify user account

address	String	device address
status	Integer	device status 0: offline, 1: online
datapointAlarm	Integer	alarm status 0: alarm, 1: normal

1.4. Sample Requests

```
{
  "equipmentName": "",
  "status": "",
  "powerStationId": "",
  "gatewayId": "",
  "projectId": null,
  "pageNo": 1,
  "pageSize": 9
}
```

1.5. Response example

```
{
  "status": 0,
  "data": {
    "total": 31,
    "list": [
      {
        "id": 24569,
        "pageNo": 1,
        "pageSize": 10,
        "type": 0,
        "equipmentName": "Equipment060801",
        "equipmentNo": "0000000001686214008515",
        "trafficStationNo": "1",
```

```
        "powerStationId": 920,
        "gatewayId": "05083586094N32TM-00198",
        "productId": 478,
        "projectId": 66358,
        "ownerUid": 76535,
        "createDt": 1686214029000,
        "updateDt": 1698819895000,
        "creator": 76535,
        "updator": 76535,
        "creatorName": "lixl Enterprise",
        "updatorName": "lixl Enterprise",
        "powerStationName": "Power Station0608",
        "gatewayName": "Gateway0608",
        "productName": "Adjustable Default Value for Lithium Battery Type Support",
        "productNameE": "Adjustable Default Value for Lithium Battery Type Support",
        "projectName": "Default Organization",
        "ename": "Default Group",
        "ownerUname": "lixl Enterprise",
        "address": "Beijing",
        "status": 1,
        "datapointAlarm": 0,
        "imagePath": "series/1698201266402_0784.png",
        "imagePathAll": "http://x.x.x.x/uploads/series/1698201266402_0784.png",
        "statusPoint": "1",
        "actionInstructionList": [],
        "infoFlag": 0
      }
    ]
  }
}
```

2. Query device details

2.1. Interface prototype

Request method	POST

Request address	https://{Domain}/epCloud/vn/openApi/getEquipmentNoVariable
Transport Protocol	HTTPS

2.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.
Content-Type	headers	true	String	application/json
Id	body	true	Integer	primary key id of the power station

2.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
data	Map	device Details

2.3.1. Response parameters data

Parameter	Type	Description
id	Integer	device primary key id
equipmentName	String	custom device name
equipmentNo	String	device serial number
trafficStationNo	String	device communication station number
powerStationId	Integer	the id of the power station.
powerStationName	String	name of power station
gatewayId	String	the sn code of the gateway.
gatewayName	String	gateway name
productId	Integer	product Series id
productName	String	product Series name
projectId	Integer	organization id
projectName	String	organization name
ename	String	organization name English

ownerUid	Integer	registered user ID
ownerUname	String	register a user account
createDt	String	creation time
updateDt	String	modification time
creator	Integer	the id of the creator.
updator	Integer	the id of the modifier.
creatorName	String	creator account
updatorName	String	modify user account
address	String	device address
status	Integer	device status 0: offline, 1: online
datapointAlarm	Integer	alarm status 0: no alarm, 1: normal

2.4. Sample Requests

```
{

"id": 24569

}
```

2.5. Response example

```json
{
    "status": 0,
    "data": {
        "id": 24569,
        "pageNo": 1,
        "pageSize": 10,
        "type": 0,
        "equipmentName": "Device060801",
        "equipmentNo": "0000000001686214008515",
        "trafficStationNo": "1",
        "powerStationId": 920,
        "gatewayId": "05083586094N32TM-00198",
        "productId": 478,
        "projectId": 66358,
        "ownerUid": 76535,
        "createDt": 1686214029000,
        "updateDt": 1698819895000,
        "creator": 76535,
        "updator": 76535,
        "creatorName": "lixl Enterprise",
        "updatorName": "lixl Enterprise",
        "powerStationName": "Power Station0608",
        "gatewayName": "Gateway0608",
        "productName": "Supports adjustable default values for lithium battery types",
        "productNameE": "Supports adjustable default values for lithium battery types",
        "projectName": "Default Organization",
        "ename": "Default Group",
        "ownerUname": "lixl Enterprise",
        "address": "Beijing",
        "status": 1,
        "datapointAlarm": 0,
        "imagePath": "series/1698201266402_0784.png",
        "imagePathAll": "http://x.x.x.x/uploads/series/1698201266402_0784.png",
        "infoFlag": 0,
        "protocolType": "2"
    },
    "info": "ok",
    "account": "lixl"
```

```
}
```

Organization

1. Query organization list

1.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/queryOrganizationList
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json
isTree	body	true	String	Is it a tree structure

1.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
id	Integer	organization id
parentId	Integer	parent organization id
projectName	String	organization name
ename	String	organization name
level	Integer	organization level

1.4. Sample Requests

```
{
  "isTree": 1


}
```

1.5. Response example

```
{
  "status": 0,
  "data": [
    {
      "id": 66358,
```

```json
        "children": [
          {
            "id": 66375,
            "parentId": 66358,
            "children": [
              {
                "id": 66394,
                "parentId": 66375,
                "projectName": "Organization011111",
                "ename": "Organization01",
                "createTime": "2022-10-12 18:11:23",
                "ownerUid": 76535,
                "parentIds": ",66358,66375,",
                "level": 3,
                "remarks": ""
              },
              {
                "id": 66459,
                "parentId": 66375,
                "projectName": "Organization02",
                "ename": "Organization02",
                "createTime": "2023-05-24 12:16:03",
                "ownerUid": 76535,
                "parentIds": ",66358,66375,",
                "level": 3,
                "remarks": ""
              }
            ],
            "childrenCount": 2,
            "projectName": "Organization1",
            "ename": "Organization1",
            "createTime": "2022-09-05 17:42:29",
            "ownerUid": 76535,
            "parentIds": ",66358,",
            "level": 2,
            "remarks": ""
          }
        ],
        "childrenCount": 5,
        "projectName": "Default Organization",
```

```
        "ename": "Default Group",
        "createTime": "2022-08-02 09:19:40",
        "ownerUid": 76535,
        "level": 1
      }
    ],
    "info": "ok",
    "account": "lixl Enterprise"
}
```

Data

1. Query all parameters under the device

1.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getEquipment
Transport Protocol	HTTPS

1.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.

Content-Type	headers	true	String	application/json
id	body	true	Integer	device primary key id

1.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
data	Map	device Details

1.3.1. Response parameters-data

Parameter	Type	Description
id	Integer	device primary key id
equipmentName	String	custom device Name
equipmentNo	String	device serial number
trafficStationNo	String	device communication station number
powerStationId	Integer	the id of the power station.

powerStationName	String	name of power station
gatewayId	Integer	the sn code of the gateway.
gatewayName	String	gateway name
productId	Integer	product series id
productName	String	product series name
projectId	Integer	organization id
projectName	String	organization name
ownerUid	Integer	registered user ID
ownerUname	String	register a user account
variableGroupList	List	list of variable groups

1.3.2. Response parameters-data-variableGroupList

Parameter	Type	Description
id	Integer	parameter group primary key ID
productId	Integer	product family primary key ID

variableGroupNameC	String	parameter group name
variableGroupNameE	String	the English name of the parameter group.
showSetting	String	Is it displayed?
variableList	List	Variable Set

1.3.3. Response parameters-data-variableGroupList-variableList

Parameter	Type	Description
id	Integer	parameter primary key id
productId	Integer	product Family primary key ID
groupId	Integer	parameter Group primary key ID
variableNameC	String	parameter name
variableNameE	String	parameter name
unit	String	unit
dataIdentifier	String	parameter identifier
register	String	register

address	String	address (separated by commas)
bit1	String	start address of multiple parameters
bit2	String	end address of multiple parameters
dataFormat	String	data format
decimal	String	decimal point
samplingFrequency	String	acquisition frequency
mode	String	read/write mode (0: Read-only; 1: read/write; 2: write only)
boundUp	String	parameter upper limit
boundDown	String	parameter lower limit
listShow	String	whether the list is displayed (0: No; 1: yes)
chartShow	String	whether the chart is displayed (0: No; 1: yes)
acquisitionFormula	String	collection formula
controlFormula	String	control Formula

translationChild	List	parameter value translation set
dataPointId	Integer	parameter point id
deviceNo	String	gateway sn
slaveIndex	String	slave serial number
itemId	String	parameter sequence number
componentType	String	parameter type (0: Numeric type; 1: switch type; 4: character type; 6: timestamp type; 8: positioning type)

* Note: the upper and lower limits of parameters are boundUp (upper limit of parameters) and boundDown (lower limit of parameters)。

1.3.4. Response parameters-data-variableGroupList-variableList-translationChild

Parameter	Type	Description
id	Integer	parameter value translation primary key id
variableId	Integer	parameter primary key id

value	String	parameter value
result	String	translation results
resultE	String	translation results

1.4. Sample Requests

```
{
    "id": 24569
}
```

1.5. Response example

```
{
    "status": 0,
    "data": {
        "id": 24569,
        "pageNo": 1,
        "pageSize": 10,
        "type": 0,
        "equipmentName": "Device060801",
        "equipmentNo": "00000000001686214008515",
        "trafficStationNo": "1",
        "powerStationId": 920,
        "gatewayId": "05083586094N32TM-00198",
        "productId": 478,
        "projectId": 66358,
        "ownerUid": 76535,
        "createDt": 1686214029000,
        "updateDt": 1698819895000,
        "creator": 76535,
        "updator": 76535,
        "creatorName": "lixl Enterprise",
        "updatorName": "lixl Enterprise",
```

        "powerStationName": "Power Station0608",

        "gatewayName": "Gateway0608",

        "productName": "Adjustable Default Value for Lithium Battery Type Support",

        "productNameE": "Adjustable Default Value for Lithium Battery Type Support",

        "projectName": "Default Organization",

        "ename": "Default Group",

        "ownerUname": "lixl Enterprise",

        "address": "Beijing",

        "status": 1,

        "datapointAlarm": 0,

        "imagePath": "series/1698201266402_0784.png",

        "imagePathAll": "http://x.x.x.x/uploads/series/1698201266402_0784.png",

        "variableGroupList": [

          {

                "id": 6483,

                "pageNo": 1,

                "pageSize": 10,

                "productId": 478,

                "variableGroupNameC": "Product Information",

                "variableGroupNameE": "Product Information",

                "showSetting": "1",

                "type": "7",

                "sort": "3.00",

                "createDt": 1698201885000,

                "updateDt": 1698201885000,

                "creator": 76431,

                "updator": 76431,

                "creatorName": "huineng",

                "updatorName": "huineng",

                "imagePath": "",

                "status": "0",

                "variableList": [

                  {

                        "id": 82137,

                        "pageNo": 1,

                        "pageSize": 10,

                        "productId": 478,

                        "groupId": 6483,

                        "type": "0",

                        "variableNameC": "Current Rated Voltage Level",

                    "variableNameE": "Current Rated Voltage Level",
                    "unit": "V",
                    "dataIdentifier": "crtrattedbatvolt",
                    "register": "3",
                    "address": "12574",
                    "bit1": "",
                    "bit2": "",
                    "dataFormat": "ushort",
                    "decimal": "0",
                    "samplingFrequency": "60",
                    "mode": "0",
                    "listShow": "0",
                    "chartShow": "0",
                    "acquisitionFormula": "%s/100",
                    "controlFormula": "%s*100",
                    "sort": "0.00",
                    "pageShowConfig": "4",
                    "createDt": 1698201885000,
                    "updateDt": 1698397867000,
                    "creator": 76431,
                    "updator": 76431,
                    "creatorName": "huineng",
                    "updatorName": "huineng",
                    "bitmap": "",
                    "platformShowConfig": "0",
                    "platformEditConfig": "",
                    "variableType": "8",
                    "translationChild": [],
                    "dataPointId": 6917307,
                    "deviceNo": "05083586094N32TM-00198",
                    "slaveIndex": "10",
                    "itemId": "0",
                    "componentType": "0",
                    "relevanceFlag": 0
                },
                {
                    "id": 82138,
                    "pageNo": 1,
                    "pageSize": 10,
                    "productId": 478,

```json
              "groupId": 6483,
              "type": "0",
              "variableNameC": "Battery Rated Voltage",
              "variableNameE": "Battery Rated Voltage",
              "unit": "V",
              "dataIdentifier": "VLEVELFilter",
              "register": "3",
              "address": "12293",
              "dataFormat": "ushort",
              "decimal": "0",
              "samplingFrequency": "600",
              "mode": "0",
              "acquisitionFormula": "%s/100",
              "controlFormula": "",
              "sort": "1.00",
              "pageShowConfig": "4",
              "createDt": 1698201885000,
              "updateDt": 1698201885000,
              "creator": 76431,
              "updator": 76431,
              "creatorName": "xx",
              "updatorName": "xxx",
              "bitmap": "",
              "platformShowConfig": "0",
              "platformEditConfig": "",
              "variableType": "8",
              "translationChild": [],
              "dataPointId": 6917309,
              "deviceNo": "05083586094N32TM-00198",
              "slaveIndex": "10",
              "itemId": "2",
              "componentType": "0",
              "relevanceFlag": 0
            }
          ]
        }
      ],
      "statusPoint": "1",
      "infoFlag": 0,
      "protocolType": "2"
```

```
  },
  "info": "ok",
  "account": "lixl Enterprise"
}
```

2. Query the history of a parameter under a device

2.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getDeviceDataPointHistory
Transport Protocol	HTTPS

2.2. Call limit

- The number of single queries shall not exceed 10
- The historical records of a single parameter in a single query shall not exceed 5,000

2.3. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.

Content-Type	Headers	true	String	application/json
devDatapoints	body	true	String	parameter point list
deviceNo	body	true	String	gateway SN
slaveIndex	body	true	String	device communication ID
itemId	body	true	String	parameter ID
dataPointId	body	true	Integer	parameter primary key id
start	body	true	Long	start time
end	body	true	Long	end time
pageNo	body	true	Integer	page number
pageSize	body	true	Integer	page size

2.4. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information

data	List	parameter list
deviceNo	String	gateway SN
slaveIndex	String	device Communication ID
dataPointId	Integer	parameter primary key id
list	List	the historical value of the current parameter.
time	Long	parameter working time
value	String	parameter value
pageSize	Integer	page size
pageNum	Integer	page number
total	Integer	total number of entries

2.5. Sample Requests

Step 1： Call the interface（query all parameters under the device） to obtain key parameters: deviceNo，slaveIndex，itemId，dataPointId

Step 2: Call this interface, enter the time period to be queried, and get the history record.

POST ∨ https://openapi.epsolarpv.com/epCloud/vn/openApi/getDeviceDataPointHistory

Params   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings

● none   ● form-data   ● x-www-form-urlencoded   ● raw   ● binary   ● GraphQL   JSON ∨

```
1   {
2       "devDatapoints": [
3           {
4               "deviceNo": "05160386093PBKME-00831",
5               "slaveIndex": "1",
6               "itemId": "6",
7               "dataPointId": 101342216
8           }
9       ],
10      "pageNo": 1,
11      "start": 1703558833000,
12      "end": 1703562433000,
13      "pageSize": 1,
14      "timeSort": "desc"
15  }
```

Body   Cookies   Headers (5)   Test Results

Pretty   Raw   Preview   Visualize   JSON ∨

```
1   {
2       "status": 0,
3       "data": {
4           "list": [
5               {
6                   "deviceNo": "05160386093PBKME-00831",
7                   "dataPointId": 101342216,
8                   "total": 6,
9                   "list": [
10                      {
11                          "value": "1.0",
12                          "time": 1703561102535
13                      }
14                  ]
15              }
16          ],
17          "total": 6,
18          "pageNum": 1,
19          "pageSize": 1
```

```
{
    "devDatapoints": [
        {
            "deviceNo": "05083586094N32TM-00198",
            "slaveIndex": "10",
            "itemId": "2",
            "dataPointId": 6917309
        }
    ],
    "pageNo": 1,
    "start": 1509452562000,
    "end": 1509456852000,
    "pageSize": 1,
    "timeSort": "desc"
```

```
}
```

2.6. Response example

```
{
    "status": 0,
    "data": {
        "list": [
            {
                "deviceNo": "05083586094N32TM-00198",
                "slaveIndex": "10",
                "itemId": "2",
                "dataPointId": 6917309,
                "total": 862,
                "list": [
                    {
                        "value": "24.0",
                        "time": 1699319814503
                    }
                ]
            }
        ],
        "total": 862,
        "pageNum": 1,
        "pageSize": 1
    },
    "info": "",
    "account": "lixl"
}
```

3. Obtain the latest historical data

3.1. Interface prototype

Request method	POST

Request address	https://{Domain}:7002/history/lastDatapoint
Transport Protocol	HTTPS

3.2. Request parameters

Parameter	Location	Required	Type	Remarks
X-Access-Token	headers	true	String	The logon credential returned when the logon is successful.
Content-Type	headers	true	String	application/json
dataPoints	body	true	list	Parameter list

Request parameters（dataPoints）

Parameter	Required	Type	Remarks
deviceNo	true	String	Gateway sn
dataPointId	true	Integer	Parameter id

3.3. Response parameters

Parameter	Required	Remarks
status	Integer	Result status
info	String	Response Information
dataPointId	Integer	Parameter id
deviceNo	String	Gateway sn
value	String	parameter
time	String	Parameter point reporting time
error	Integer	Error code

3.4. Sample Requests

Step 1： Call the interface（<u>query all parameters under the device</u>） to obtain key

parameters: deviceNo，dataPointId

Step 2: Set dataPoint Data in the body.

```
{

    "devDatapoints":[

        {

            "dataPointId": 101754260,

            "deviceNo": "20230215123456789000001"

        },

        {

            "deviceNo": "20230215123456789000001",

            "dataPointId": 101754282

        }

    ]

}
```

3.5. Response example

```
{

  "data": {

    "list": [

        {

            "slaveName": "XTRA-N-10",

            "deviceName": "TCP 306",
```

```
        "dataPointName": "Daily Generation",

        "dataPointId": 101754260,

        "deviceNo": "2023021512345678900001",

        "error": 0,

        "templateDataPointId": 102804581,

        "value": "0.00",

        "time": 1705479748496

    },

    {

        "slaveName": "XTRA-N-10",

        "deviceName": "TCP 306",

        "dataPointName": "Monthly Generation",

        "dataPointId": 101754282,

        "deviceNo": "2023021512345678900001",

        "error": 0,

        "templateDataPointId": 102804603,

        "value": "0.00",

        "time": 1705479748496

    }

  ]

},

"info": "",
```

```
    "status": 0

}
```

4. Alarm records

4.1. Interface prototype

Request method	POST
Request address	https://{Domain}/epCloud/vn/openApi/getAlarmHistory
Transport Protocol	HTTPS

4.2. Request parameters

Parameter	Location	Must Pass	Type	Remarks
X-Access-Token	headers	true	String	the logon credential returned when the logon is successful.
Content-Type	Headers	true	String	application/json
controlDeviceName	body	false	String	device/product series name
datapointName	body	false	String	variable name
timeStart	body	false	Long	start timestamp
timeEnd	body	false	Long	end timestamp

alarmType	body	false	Integer	alarm status: 0: normal 1: Alarm
status	body	false	Integer	processing Status: 0: unprocessed 1: False positive 2: confirm processing (completed)
pageNo	body	false	Integer	page count
pageSize	body	false	Integer	number of Entries
equipmentId	body	false	Integer	device Id

4.3. Response parameters

Parameter	Type	Description
status	Integer	result status
info	String	response Information
hid	String	unique primary key
deviceName	String	gateway name
dataid	Integer	data point Id
content	String	alarm content

contentEn	String	alarm content in English
createTime	Long	creation time
equipmentName	String	device Name
equipmentId	String	device id
maintenance	String	cause
maintenanceE	String	alarm due to English
powerStationId	Integer	the Id of the power station.
powerStationName	String	Name of power station
pointEnName	String	parameter name
triggerName	String	trigger Chinese name
triggerNameE	String	trigger name
translationName	String	parameter translation value name
translationNameE	String	parameter translation value English name

4.4. Sample Requests

```json
{
  "alarmType": 0,
  "controlDeviceName": "",
  "equipmentId": "",
  "datapointName": "",
  "alarmState": "",
  "status": "",
  "pageSize": 10,
  "pageNo": 1,
  "timeStart": 1696695179,
  "timeEnd": 1699287179,
  "loraFlag": 0
}
```

4.5. Response example

```json
{
  "status": 0,
  "data": {
    "total": 88,
    "list": [
      {
        "id": 0,
        "hid": "BMNAcIsB5UnwviZk-Hm7",
        "did": "05020316094BYKSS-00171",
        "deviceName": "Test Device",
        "dataid": 7967264,
        "datapointName": "Load Switch Control",
        "value": 1.0,
        "content": "1",
        "contentEn": "1",
        "createTime": 1698395387,
        "generateTime": 1698395387,
        "alarmState": 1,
        "status": 0,
```

```json
            "description": "",
            "processTime": 0,
            "slaveIndex": "1",
            "slaveName": "Test Device",
            "handleMode": "",
            "handle": 0,
            "uid": 76535,
            "triggerid": 39831,
            "alarmType": 0,
            "controlTemplateName": "",
            "triggerName": "Unnamed_Custom Alarm_67",
            "triggerType": 3,
            "sceneId": 0,
            "pointEnName": "Load ON/OFF",
            "triggerNameE": "Unnamed_Custom Alarm_67",
            "translationName": "Load Switch On",
            "maintenanceE": "Switch ON",
            "translationNameE": "Load Switch On",
            "sceneName": "",
            "dataSourceName": "",
            "dataSourceId": "",
            "controlSceneId": 0,
            "controlSceneName": "",
            "controlDataSourceName": "",
            "controlDataSourceId": "",
            "equipmentId": 84164,
            "equipmentName": "Test Device",
            "alarmNoticeManages": "[]",
            "maintenance": "Switch ON",
            "powerStationId": 920,
            "powerStationName": "Power Station0608"
        }
    ],
    "pageNum": 1,
    "pageSize": 10,
    "size": 0,
    "startRow": 0,
    "endRow": 0,
    "pages": 9,
    "prePage": 0,
```

```
    "nextPage": 2,
    "isFirstPage": true,
    "isLastPage": false,
    "hasPreviousPage": false,
    "hasNextPage": true,
    "navigatePages": 8,
    "navigatepageNums": [1, 2, 3, 4, 5, 6, 7, 8],
    "navigateFirstPage": 1,
    "navigateLastPage": 8,
    "firstPage": 1,
    "lastPage": 8
  },
  "info": "ok",
  "account": "lixl Enterprise"
}
```

5. Obtain the command issuing address

5.1. Brief description

Send the address according to the get Command

5.2. Request URL

https://{Domain}/epCloud/vn/ucloudSdk/getCommandAddress

5.3. Request method

POST

5.4. Request parameters

Name	Required/optional	Type	Location	Description

X-Access-Token	Required	String	Header	The logon credential returned when the logon is successful.
Content-Type	required	String	Header	The media type of the message body, which must be"application/json"

5.5. Response parameters

Name	Type	Description
data	JSONObject	command delivery address
info	String	prompt message
status	Integer	return code

Response Data（data）

Name	Type	Description
commandServerAddr	String	command delivery address

5.6. Response description

Return code	description

0	Successful
1526	failed to obtain the token.

5.7. Sample Requests

```
POST https://{Domain}/epCloud/vn/ucloudSdk/getCommandAddress
Content-Type: application/json


{


}
```

5.8. Response example

```
Content-Type: application/json


{
    "status": 0,
    "data": {
        "commandServerAddr": "https://xxx.xxx.xxx:xxx"
    },
    "info": "ok"
}
```

6. Command issuing

6.1. Overview

Users can send data to devices through http requests. Currently, only data points and passthrough data are supported.Each user can send up to 10 pieces of data per second. The server does not process the excess data and returns an error code.

6.2. Procedure

1. Obtain X-Access-Token

2. obtain the pushed url. For more information, see documentation. **Obtain the command issuing address** , note: this interface has a frequency limit. It can be reused after being obtained once without frequent acquisition.

3. Push command data according to interface specifications (as follows)

4. Type：post ；Protocol Type：https

6.3. http interface specifications

Field		Description
URL	{url}/v1.0/{type}/{deviceId}	**url**: Obtain the command issuing address **type**: Enumeration， type is datapoint **deviceId**:gateway sn Example： http://8.140.24.94:8001/v1.0/dataPoint/0123456789abc
header		As follows
	X-Access-Token	Located in the header and obtained through interface Obtain X-Access-Token
	Content-Type	application/json
body		Json Format

5.

6.4. Parameter settings

Type	Content		Type	Description
body	setDataPoint		array	the content is as follows:
		slaveName	string	Device Name
		dataPointId	string	Parameter Id
		value	string	data

Response example:

Step 1: Obtain X-Access-Token

Step 2:Obtain the command issuing address,get the command issuing address :
http://8.140.24.94:8001.
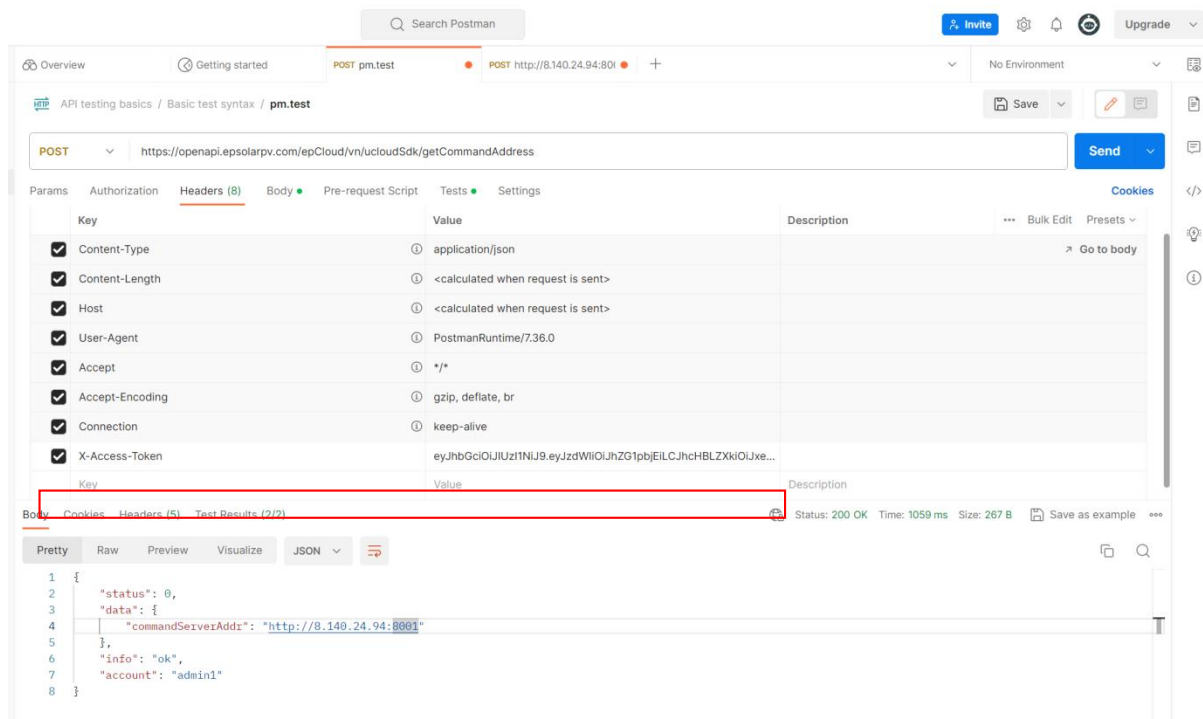
Step 3:get deviceId(gateway SN).

Option 1：In the Gateway list, see the SNs of all gateways. Get the SN of the gateway corresponding to the device.

Option 2：

Step 4：Splice out the URL and set the header.
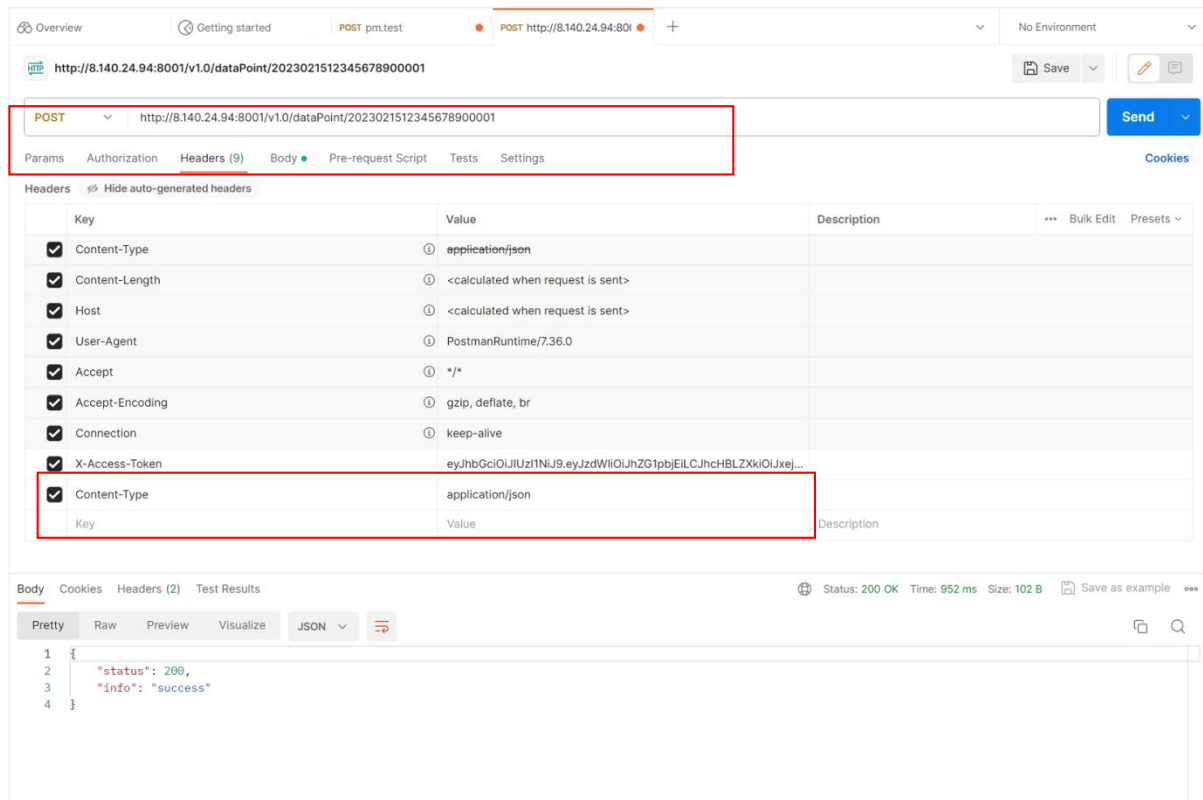
Step 5:get slaveName (device name).

In the Device list, see all devices and get the device name.

Step 6:get dataPointId (Parameter Id).

In the device list, click the Overview of the device to enter the device data page and find the parameter ID corresponding to the parameter that needs to be set.

Step 7: Set parameters in the Body of the interface

```
{
    "setDataPoint": [
        {
            "slaveName": "TRACER-AN",
            " dataPointId ":"101443681",
            "value": "190"
        }   ]
}
```

Step 8: Request the interface and set the Battery Capacity to 190Ah.

Request the interface and set the Battery Capacity to 190Ah. The returned status is 200, indicating that the setting is successful. If the status returns other values, please refer to the error code table to find the reason.
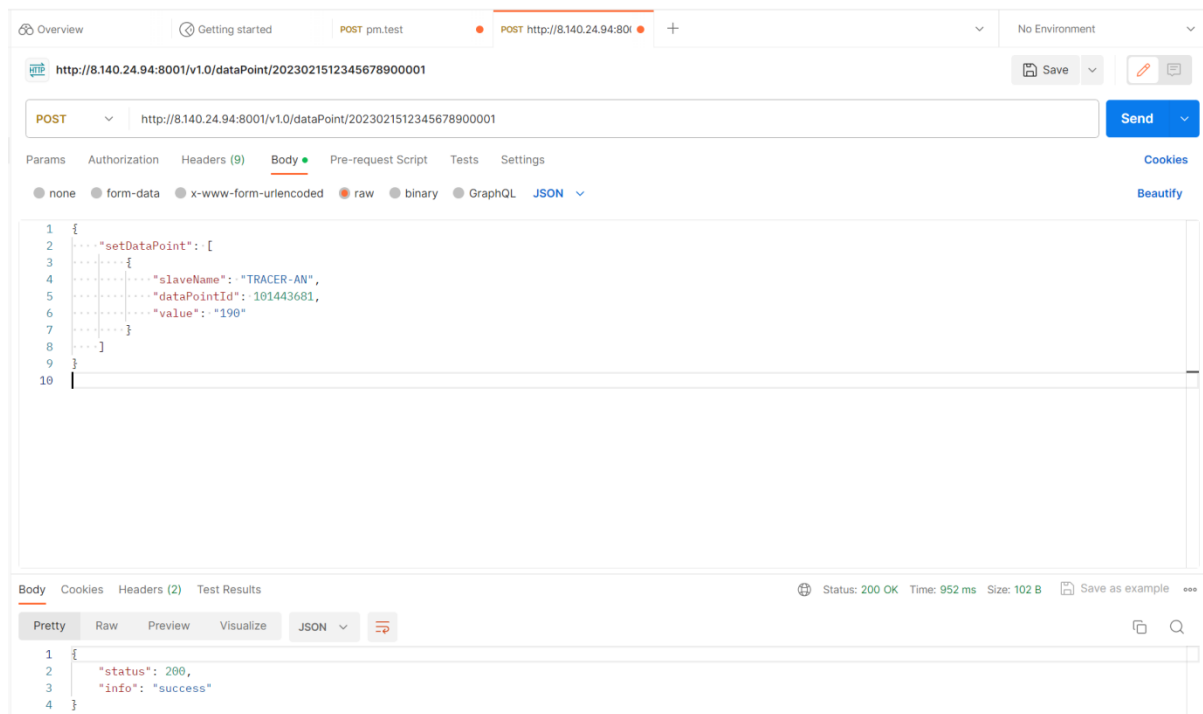
6.5. Error Codes

http response code	error Codes	description	description
404		page not found	The page cannot be found.
500	500	Internal server error	Internal Server Error
429	10001	Frequency out of limit	the frequency exceeds the limit.
401	10003	authorized failed	Permission verification failed.
413	10004	too large content	The data content is too large.
400	10005	param format error	The parameter format is incorrect.