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Document conventions

Style	Description	Example
Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.
Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	Notice: If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

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1.Differences between the upgraded SDK and original SDK

The upgraded IoT Platform SDK is provided to resolve prevalent issues in the original SDK. This topic describes the differences between the upgraded SDK and original SDK.

Item	Original SDK	Upgraded SDK
Supported languages	Java, Python, PHP, .NET, and Go	Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET
Sample codes	Fewer sample codes are provided. For more information, see the demos of using IoT Platform SDK.	More sample codes are provided. IoT Platform provides more sample codes for calling API operations in various IoT scenarios. For more information, see IoT Platform Sample Center. The sample center is being continually improved. We also appreciate your contributions to this community. For more information about how to submit sample codes, see Submit Sample Code.
Performance	The performance of some SDKs, such as the SDK for .NET, degrades in high concurrency scenarios.	Asynchronous mode is supported. The SDK for .NET delivers better performance in high concurrency scenarios.
Experience consistency across cloud services	The API style, such as the resource-oriented architecture (ROA) or remote procedure call (RPC), varies with cloud services. As a result, the SDKs of cloud services differ in usage methods.	Upgraded SDKs of all cloud services are used in the same way, ensuring consistent experience.
Accessibility	The original SDK depends on the core library, and the installation is complicated.	SDKs for some languages no longer rely on the core library, making it more convenient to access IoT Platform by API operations.

2.IoT Platform SDK reference (upgraded)

2.1. Download IoT Platform SDKs

IoT Platform SDKs allow you to call API operations to manage IoT Platform resources, including products, devices, topics, data forwarding rules, and messages. This topic describes how to download and use IoT Platform SDKs.

> **Note**
>
> For more information about how to use device SDKs, see What is Link SDK?

Download SDKs

IoT Platform provides SDKs for Java, Python, PHP, C++, Go, TypeScript in Node.js, and .NET.

Click one of the following links to download the source code of IoT Platform SDK for a specific programming language:

- IoT Java SDK
- IoT Python SDK
- IoT PHP SDK
- IoT C++ SDK
- IoT Go SDK
- IoT Node.js SDK
- IoT .NET SDK

Use SDKs

Click one of the following links to obtain instructions on how to use IoT Platform SDK for a specific programming language:

- Use IoT Platform SDK for Java
- Use IoT Platform SDK for Python
- Use IoT Platform SDK for PHP
- Use IoT Platform SDK for .NET
- Use IoT Platform SDK for Go
- Use IoT Platform SDK for C++
- Use IoT Platform SDK for TypeScript in Node.js

Download SDK sample codes

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

2.2. Use IoT Platform SDK for Java

IoT Platform SDK for Java provides a convenient method to manage IoT Platform resources by using Java programs. You can add the SDK as a Maven dependency to your project. You can also download the installation package to a local directory and install the SDK.

Install the SDK

1. Install a Java development environment.

   Download a Java installation package from the official Java website and follow the instructions to install Java. We recommend that you install Java 8 or later.

2. Install IoT Platform SDK for Java.

   i. Visit the official Apache Maven website to download a Maven installation package.

   ii. Add the SDK as a Maven dependency to your project.

   - Maven coordinates of the latest IoT Platform SDK for Java:

     ```
     <!-- https://mvnrepository.com/artifact/com.aliyun/iot20180120 -->
     <dependency>
         <groupId>com.aliyun</groupId>
         <artifactId>iot20180120</artifactId>
         <version>3.0.6</version>
     </dependency>
     ```

   - Maven coordinates of the core Alibaba Cloud SDK for Java:

     ```
     <dependency>
       <groupId>com.aliyun</groupId>
       <artifactId>tea-openapi</artifactId>
       <version>0.2.2</version>
     </dependency>
     ```

For more information about the source code of the SDK for Java, see alibabacloud-java-sdk.

Initialize the SDK

1. Create the **config** object to store SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.

2. Create the **client** instance and call the `com.aliyun.iot20180120.Client(config)` method to load the SDK information from **config**. The SDK is then initialized.

   Request and **Response** parameters for subsequent API calls are obtained from `com.aliyun.iot 20180120.models`.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
Config config = new Config();
// Your AccessKey ID.
config.accessKeyId = "<your accessKey>";
// Your AccessKey secret.
config.accessKeySecret = "<your accessSecret>";
// Your region ID.
config.regionId = "cn-shanghai";
// Initialize the SDK.
Client client = new com.aliyun.iot20180120.Client(config);
```

Parameter	Description
accessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
accessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.
regionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates two classes for each API operation. The class whose name is in the `${API name}+"Request"` format indicates the request, and the class whose name is in the `${API name}+"Response"` format indicates the response.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Call the `set+${Request parameter}` method of the **request** instance to specify the request parameters.
4. Create the **response** instance of the `${API name}+"Response"` class to obtain the response: call the `${API name}(request)` method of the **client** instance to obtain the response to the API request. The response includes the **body** and **headers** returned by the server.

5. Use the **body** object of the **response** instance and call the `get+${Response parameter}` method to obtain the values of response parameters.

   For example, the `response.getbody.getSuccess()` method is called to obtain the value of the **Success** parameter. This parameter is a common response parameter, which indicates whether the call is successful. Common response parameters also include **RequestId**, **ErrorMessage**, and **Code**.

6. Call the `catch()` method to handle exceptions.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

> **Notice**
>
> iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.
>
> For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
PubRequest request = new PubRequest()
    .setIotInstanceId("${iotInstanceId}")
    .setProductKey("${productKey}")
    .setMessageContent(Base64.getEncoder().encodeToString("hello world".getBytes()))
    .setTopicFullName("/${productKey}/${deviceName}/user/get")
    .setQos(0); // QoS0 and QoS1 are supported.
try {
    PubResponse response = client.pub(request);
    // The response that contains the body and headers that are returned by the server.
    // Obtain the requestId of this operation.
    System.out.println(response.getBody().getRequestId());
    // Obtain the operation result.
    System.out.println(response.getBody().getSuccess());

    // The operation succeeds.
    if (response.getBody().getSuccess()) {
        // Obtain the ID of a message from IoT Platform.
        System.out.println(response.getBody().getMessageId());

        // Specify the business logic.

    } else {
    // The operation fails.
        // Obtain the error code.
        System.out.println(response.getBody().getCode());
        // Obtain the error description.
        System.out.println(response.getBody().getErrorMessage());
     }
} catch (TeaException error) {
    // A service exception occurs on the server.
    System.out.println(error.getCode());
    System.out.println(error.getMessage());
} catch (Exception e) {
    // Other runtime exceptions occur.
    e.printStackTrace();
}
```

Sample code

Note

You can replace the parameter values based on your actual use conditions.

```
import com.aliyun.iot20180120.Client;
import com.aliyun.iot20180120.models.PubRequest;
import com.aliyun.iot20180120.models.PubResponse;
import com.aliyun.tea.TeaException;
import com.aliyun.teaopenapi.models.Config;
import java.util.Base64;

public class IotSdkDemo {
    /**
```

```
     * Use your AccessKey ID and AccessKey secret to initialize the client.
     */
    private static Client createClient(String accessKeyId, String accessKeySecret) throws E
xception {
        Config config = new Config();
        config.accessKeyId = accessKeyId;
        config.accessKeySecret = accessKeySecret;
        // Your region ID.
        config.regionId = "cn-shanghai";
        return new Client(config);
    }

    public static void main(String[] args) {
        try {
            Client client = createClient(accessKey, accessKeySecret);
            PubRequest request = new PubRequest()
                .setIotInstanceId("${iotInstanceId}")
                .setProductKey("${productKey}")
                .setMessageContent(Base64.getEncoder().encodeToString("hello world".getByte
s()))
                .setTopicFullName("/${productKey}/${deviceName}/user/get")
                .setQos(0); // QoS0 and QoS1 are supported.

            PubResponse response = client.pub(request);
            // Obtain the requestId of this operation.
      System.out.println(response.getBody().getRequestId());
      // Obtain the operation result.
      System.out.println(response.getBody().getSuccess());

         // The operation succeeds.
       if (response.getBody().getSuccess()) {
          // Obtain the ID of a message from IoT Platform.
          System.out.println(response.getBody().getMessageId());

          // Specify the business logic.
      } else {
       // The operation fails.
          // Obtain the error code.
             System.out.println(response.getBody().getCode());
          // Obtain the error description.
          System.out.println(response.getBody().getErrorMessage());
      }
        } catch (TeaException error) {
            // A service exception occurs on the server.
      System.out.println(error.getCode());
      System.out.println(error.getMessage());
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.3. Use IoT Platform SDK for Python

IoT Platform provides an SDK for Python. This topic describes how to install and configure IoT Platform SDK for Python. This topic also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Install the SDK

1. Install a Python development environment.

   Download a Python installation package from the official Python website and install Python. The SDK for Python requires Python 3.6 or later.

2. Install pip that is used to manage Python packages. If you have installed pip, skip this step.

   Download a pip installation package from the official pip website and install pip.

3. Install IoT Platform SDK for Python.

   Run the following commands as an administrator to install IoT Platform SDK for Python. For more information about how to use the SDK, see alibabacloud-python-sdk.

```
pip3 install alibabacloud_tea_openapi

# Install the latest IoT Platform SDK.
pip3 install alibabacloud_iot20180120
# Install a specific version of the SDK. This example installs SDK version 3.0.6.
pip3 install alibabacloud_iot20180120==3.0.6
```

4. Import the files that are related to IoT Platform SDK for Python to a Python file.

```
from Tea.core import TeaCore
from alibabacloud_iot20180120.client import Client as IotClient
from alibabacloud_tea_openapi import models as open_api_models
from alibabacloud_iot20180120 import models as iot_models
from alibabacloud_tea_console.client import Client as ConsoleClient
from alibabacloud_tea_util.client import Client as UtilClient
...
```

Initialize the SDK

1. Create the **config** object to store SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.

2. Create the **client** instance and call the `IotClient(config)` method to load the SDK information from **config**. The SDK is then initialized.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
config = open_api_models.Config()
# Your AccessKey ID.
config.access_key_id = '<your accessKey>'
# Your AccessKey secret.
config.access_key_secret = '<your accessSecret>'
# Your region ID.
config.region_id = 'cn-shanghai'
client = IotClient(config)
```

Parameter	Description
access_key_id	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
access_key_secret	The **AccessKey secret** of you Alibaba Cloud account.
region_id	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates a class for each API operation. The class name is in the `${API name}+"Request"` format. You can use the class to make API requests.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Call the `"set"+${Request parameter}` method of the **request** instance to specify the request parameters.
4. Call the `${API name with words connected by underscores}(request)` method of the **client** instance to obtain the response. The method with the `_async` suffix indicates an asynchronous method.

   Examples: `invoke_things_service(request)` and `invoke_things_service_async(request)`.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

> **Notice**
>
> iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.
>
> For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
request = iot_models.PubRequest(
    # The ID of the IoT Platform instance.
    iot_instance_id='${iotInstanceId}',
    # The ProductKey of the product.
    product_key='${productKey}',
    # The message body that you want to send. Encode "hello world" in Base64 as a string.
    message_content='eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=',
    # The custom topic that is used to publish the message.
    topic_full_name='/${productKey}/${deviceName}/user/get',
    # The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
    qos=0
)
response = client.pub(request)
print ('response : ' + response)
```

Sample code

> **Note**
>
> You can replace the parameter values based on your actual use conditions.

```
# -*- coding: utf-8 -*-
import sys
from typing import List
from Tea.core import TeaCore
from alibabacloud_iot20180120.client import Client as IotClient
from alibabacloud_tea_openapi import models as open_api_models
from alibabacloud_iot20180120 import models as iot_models
from alibabacloud_tea_console.client import Client as ConsoleClient
from alibabacloud_tea_util.client import Client as UtilClient

class Sample:
    def __init__(self):
        pass

    @staticmethod
    def create_client(
        access_key_id: str,
```

```
        access_key_secret: str,
    ) -> IotClient:
        """
        Use your AccessKey ID and AccessKey secret to initialize the client.
        """
        config = open_api_models.Config()
        # Your AccessKey ID.
        config.access_key_id = access_key_id
        # Your AccessKey secret.
        config.access_key_secret = access_key_secret
        # Your region ID.
        config.region_id = 'cn-shanghai'
        return IotClient(config)

    @staticmethod
    def main(
        args: List[str],
    ) -> None:
        """
        Synchronous call
        """
        try:
            client = Sample.create_client('${accessKey}', '${accessKeySecret}')
            request = iot_models.PubRequest(
                # The ID of the IoT Platform instance.
                iot_instance_id='${iotInstanceId}',
                # The ProductKey of the product.
                product_key='${productKey}',
                # The message body that you want to send. Encode "hello world" in Base64 as
a string.
                message_content='eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=',
                # The custom topic that is used to publish the message.
                topic_full_name='/${productKey}/${deviceName}/user/get',
                # The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
                qos=0
            )
            response = client.pub(request)
            ConsoleClient.log(UtilClient.to_jsonstring(TeaCore.to_map(response)))
        except Exception as error:
            ConsoleClient.log(error.message)

    @staticmethod
    async def main_async(
        args: List[str],
    ) -> None:
        """
        Asynchronous call
        """
        try:
            client = Sample.create_client('${accessKey}', '${accessKeySecret}')
            request = iot_models.PubRequest(
                # The ID of the IoT Platform instance.
                iot_instance_id='${iotInstanceId}',
                # The ProductKey of the product.
                product_key='${productKey}',
```

```
                product_key='${productKey}',
                # The message body that you want to send. Encode "hello world" in Base64 as
a string.
                message_content='eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=',
                # The custom topic that is used to publish the message.
                topic_full_name='/${productKey}/${deviceName}/user/get',
                # The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
                qos=0
            )
            response = await client.pub_async(request)
            ConsoleClient.log(UtilClient.to_jsonstring(TeaCore.to_map(response)))
        except Exception as error:
            ConsoleClient.log(error.message)


if __name__ == '__main__':
    Sample.main(sys.argv[1:])
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.4. Use IoT Platform SDK for PHP

IoT Platform provides an SDK for PHP. This topic describes how to install and configure IoT Platform SDK for PHP. This topic also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Upgraded IoT Platform SDK for PHP allows you to make API requests by installing only IoT Platform SDK instead of depending on the core library. The upgraded SDK can be used to process parameters, assemble requests by specified formats, and process return values. For more information about the upgraded SDK and the original SDK, see SDK information center.

Install the SDK

1. Install PHP 5.6 or later.

   Download a PHP installation package from the official PHP website and install PHP.

2. Install Composer.

   We recommend that you use Composer to manage IoT Platform SDK for PHP. In this case, you must install Composer.

   - For Windows machines, you can download the Composer-Setup.exe program from the getcomposer.org website to install Composer.
   - You can also run the following curl command to install Composer:

```
curl -sS https://getcomposer.org/installer | php
```

> **Note**
>
> If the installation fails due to network exceptions, you can use the full image of Alibaba Cloud Composer.

3. Install Alibaba Cloud SDK for PHP.

   If Composer has been installed for global access in your system (see Globally), run the following command directly in the project directory to install Alibaba Cloud SDK for PHP as a dependency:

```
composer require alibabacloud/darabonba-openapi
```

> **Notice**
>
> The PHP version used to install the SDK must be equal to or lower than the actual version of PHP used to run the SDK.
>
> For example, if you use PHP 7.2 to install the SDK and generate the vendor directory, you must use the SDK in PHP 7.2 or later. If you use the SDK in PHP 5.6, a compatibility issue occurs.

4. Add the following dependency to install IoT Platform SDK for PHP:

```
composer require alibabacloud/iot-20180120
```

   The name of the upgraded SDK is in the format of **alibabacloud/${Product name}-${API version number}**. For more information about the SDK for PHP and user guide, see alibabacloud-php-sdk/iot-20180120/.

Initialize the SDK

1. Create the **$config** object to store SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.
2. Create the **$client** instance. Call the `Iot($iClientProfile)` method to load the SDK information. The SDK is then initialized.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
use AlibabaCloud\SDK\Iot\V20180120\Iot;
$config = new Config([]);
// Your AccessKey ID.
$config->accessKeyId = "<your accessKey>";
// Your AccessKey secret.
$config->accessKeySecret = "<your accessSecret>";
// Your region ID.
$config->regionId = "cn-shanghai";
$client = new Iot($config);
```

Parameter	Description
accessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
accessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.
regionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates a class for each API operation. The class name is in the `${API name}+"Request"` format. You can use the class to make API requests.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **$request** instance of the `${API name}+"Request"` class.
3. Call the **"set"+${Request parameters}** method of the **$request** instance to specify the request parameters.
4. Call the **${API name}($request)** method of the **$client** instance to obtain the response.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

> **Notice**
>
> iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.
>
> For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
$request = new PubRequest([
  // The ID of the IoT Platform instance.
  "iotInstanceId" => "${iotInstanceId}",
  // The ProductKey of the product.
  "productKey" => "${productKey}",
  // The message body that you want to send. Encode "hello world" in Base64 as a string.
  "messageContent" => "eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=",
  // The custom topic that is used to publish the message.
  "topicFullName" => "/${productKey}/${deviceName}/user/get",
  // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
  "qos" => 0
]);
// Call the Pub operation.
$response = $client->pub($request);
print_r($response);
```

Sample code

Note

You can replace the parameter values based on your actual use conditions.

```
<?php
namespace AlibabaCloud\SDK\Sample;

use AlibabaCloud\SDK\Iot\V20180120\Iot;
use AlibabaCloud\Tea\Tea;
use AlibabaCloud\Tea\Utils\Utils;
use AlibabaCloud\Tea\Console\Console;
use \Exception;
use AlibabaCloud\Tea\Exception\TeaError;
use Darabonba\OpenApi\Models\Config;
use AlibabaCloud\SDK\Iot\V20180120\Models\PubRequest;

class Sample {

    /**
     * Use your AccessKey ID and AccessKey secret to initialize the client.
     */
    public static function createClient($accessKeyId, $accessKeySecret){
        $config = new Config([]);
        // Your AccessKey ID.
        $config->accessKeyId = $accessKeyId;
        // Your AccessKey secret.
        $config->accessKeySecret = $accessKeySecret;
        // Your region ID.
        $config->regionId = "cn-shanghai";
        return new Iot($config);
    }

    /**
     * @param string[] $args
```

```
     * @return void
     */
    public static function main($args){
        try {
            $client = self::createClient("${accessKey}", "${accessKeySecret}");
            $request = new PubRequest([
                // The ID of the IoT Platform instance.
                "iotInstanceId" => "${iotInstanceId}",
                // The ProductKey of the product.
                "productKey" => "${productKey}",
                // The message body that you want to send. Encode "hello world" in Base64 a
s a string.
                "messageContent" => "eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=",
                // The custom topic that is used to publish the message.
                "topicFullName" => "/${productKey}/${deviceName}/user/get",
                // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
                "qos" => 0
            ]);
            $response = $client->pub($request);
            Console::log(Utils::toJSONString(Tea::merge($response)));
        }
        catch (Exception $error) {
            if (!($error instanceof TeaError)) {
                $error = new TeaError([], $error->getMessage(), $error->getCode(), $error);
            }
            Console::log($error->message);
        }
    }
}
$path = __DIR__ . \DIRECTORY_SEPARATOR . '..' . \DIRECTORY_SEPARATOR . 'vendor' . \DIRECTOR
Y_SEPARATOR . 'autoload.php';
if (file_exists($path)) {
    require_once $path;
}
Sample::main(array_slice($argv, 1));
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.5. Use IoT Platform SDK for .NET

IoT Platform provides an SDK for .NET. This topic describes how to install and configure IoT Platform SDK for .NET. This topic also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Install the SDK

1. Install a .NET development environment.

   IoT Platform SDK for .NET supports the following development environments:

   - .NET Framework 4.5 and later
   - .NET Standard 2.0 and later
   - C# 4.0 and later
   - Visual Studio 2010 and later

2. Install Alibaba Cloud SDK for .NET.

   - Use .NET command-line interface (CLI) to install the SDK.

     Run the following command to install the latest SDK. If you want to install the SDK of a specified version, add `--version` *`Version number`* to the command.

     ```
     dotnet add package AlibabaCloud.OpenApiClient
     ```

   - After you configure the .csproj file to add the dependency, install the SDK by running a command.

     a. Add the dependency.

     ```
     <PackageReference Include="AlibabaCloud.OpenApiClient" Version="0.0.13" />
     ```

     b. Run the following command to install the SDK.

     ```
     dotnet build
     ```

3. Use NuGet to install the SDK. For more information, see NuGet Packages.

   - Use Visual Studio to install the SDK.

     a. In the **Solution Explorer** pane of Visual Studio, right-click your project and select **Manage NuGet Packages**.

     b. In the **NuGet Package Manager** pane, click the **Browse** tab.

     c. On the Browse tab, enter `AlibabaCloud.SDK` in the search box and select the AlibabaCloud.SDK.Iot20180120 with Authors as aliyun-openapi-sdk from the result list.

     d. Click **Install**.

   - Other installation methods:

     - Use the `dotnet` CLI to install the SDK. For more versions, see IoT Platform SDK Center.

     ```
     # Install the latest SDK.
     dotnet add package AlibabaCloud.SDK.Iot20180120

     # Install a specific version of the SDK. This example installs SDK version 3.0.6.
     dotnet add package AlibabaCloud.SDK.Iot20180120 --version 3.0.6
     ```

- Use an installation package to install the SDK.

```
# Install the latest SDK.
Install-Package AlibabaCloud.SDK.Iot20180120

# Install a specific version of the SDK. This example installs SDK version 3.0.6.
Install-Package AlibabaCloud.SDK.Iot20180120 -Version 3.0.6
```

For information about the source code of the SDK for .NET, see alibabacloud-csharp-sdk.

Initialize the SDK

1. Create the **config** object of the **AlibabaCloud.OpenApiClient.Models.Config** class to store the SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.
2. Create a **client** instance of the **AlibabaCloud.SDK.Iot20180120** class. Call the `AlibabaCloud.SDK.Iot20180120.Client(config)` method to load the SDK information. The SDK is then initialized.

   Request and **Response** parameters are obtained for subsequent API operations from `AlibabaCloud.SDK.Iot20180120.Models`.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
AlibabaCloud.OpenApiClient.Models.Config config = new AlibabaCloud.OpenApiClient.Models.Con
fig();
// Your AccessKey ID.
config.AccessKeyId = "<your-access-key-id>";
// Your AccessKey secret.
config.AccessKeySecret = "<your-access-key-secret>";
// Your region ID.
config.RegionId = "cn-shanghai";
AlibabaCloud.SDK.Iot20180120.Client client = new AlibabaCloud.SDK.Iot20180120.Client(config
);
```

Parameter	Description
AccessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
AccessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.

Parameter	Description
RegionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates two classes for each API operation. The class whose name is in the `${API name}+"Request"` format indicates the request, and the class whose name is in the `${API name}+"Response"` format indicates the response.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Call the **request.${Request parameter}** method of the **request** instance to specify the request parameters.
4. Create the **response** instance of the `${API name}+"Response"` class to obtain the response: call the `${API name}(request)` method of the **client** instance to obtain the response to the API request. The response includes the **body** and **headers** returned by the server.
5. Use the **body** object of the **response** instance and call the `response.body.${Response parameter}` method to obtain the values of response parameters.

   For example, the `response.body.RequestId` method is called to obtain the unique identifier generated by Alibaba Cloud for an API request, where **RequestId** is a common response parameter. Common response parameters also include **Success**, **ErrorMessage**, and **Code**.
6. Call the `catch()` method to handle exceptions.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

Notice

iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.

For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
AlibabaCloud.SDK.Iot20180120.Models.PubRequest request = new AlibabaCloud.SDK.Iot20180120.M
odels.PubRequest
{
   // The ID of the IoT Platform instance.
   IotInstanceId = "${iotInstanceId}",
   // The ProductKey of the product.
   ProductKey = "${productKey}",
   // The message body that you want to send. Encode "hello world" in Base64 as a string.
   MessageContent = Convert.ToBase64String(Encoding.Default.GetBytes("Hello World.")),
   // The custom topic that is used to publish the message.
   TopicFullName = "/${productKey}/${deviceName}/user/get",
   // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
   Qos = 0,
};
// Obtain a response by using the client object.
AlibabaCloud.SDK.Iot20180120.Models.PubResponse response = client.Pub(request);
try
{
   PubResponse response = client.GetAcsResponse(request);
   Console.WriteLine("publish message result: " + response.Success);
   Console.WriteLine(response.body.Code);
   Console.WriteLine(response.body.ErrorMessage);
}
catch (TeaException error)
{
    Console.WriteLine(error.Code);
    Console.WriteLine(error.Message);
}
catch (Exception _error)
{
    e.printStackTrace();
}
```

Sample code

Note

You can replace the parameter values based on your actual use conditions.

```
using System;
using System.Collections;
using System.Collections.Generic;
using System.IO;
using System.Threading.Tasks;
```

```
using Tea;
using Tea.Utils;


namespace AlibabaCloud.SDK.Sample
{
    public class Sample
    {
        /**
         * Use your AccessKey ID and AccessKey secret to initialize the client.
         * @param accessKeyId
         * @param accessKeySecret
         * @param regionId
         * @return Client
         * @throws Exception
         */
        public static AlibabaCloud.SDK.Iot20180120.Client CreateClient(string accessKeyId,
string accessKeySecret)
        {
            AlibabaCloud.OpenApiClient.Models.Config config = new AlibabaCloud.OpenApiClien
t.Models.Config();
            // Your AccessKey ID.
            config.AccessKeyId = accessKeyId;
            // Your AccessKey secret.
            config.AccessKeySecret = accessKeySecret;
            // Your region ID.
            config.RegionId = "cn-shanghai";
            return new AlibabaCloud.SDK.Iot20180120.Client(config);
        }

        public static void Main(string[] args)
        {
            try
            {
                AlibabaCloud.SDK.Iot20180120.Client client = CreateClient("${accessKey}", "
${accessKeySecret}");
                AlibabaCloud.SDK.Iot20180120.Models.PubRequest request = new AlibabaCloud.S
DK.Iot20180120.Models.PubRequest
                {
                    // The ID of the IoT Platform instance.
                    IotInstanceId = "${iotInstanceId}",
                    // The ProductKey of the product.
                    ProductKey = "${productKey}",
                    // The message body that you want to send. Encode "hello world" in Base
64 as a string.
                    MessageContent = Convert.ToBase64String(Encoding.Default.GetBytes("Hell
o World.")),
                    // The custom topic that is used to publish the message.
                    TopicFullName = "/${productKey}/${deviceName}/user/get",
                    // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.

                    Qos = 0,
                };
                AlibabaCloud.SDK.Iot20180120.Models.PubResponse response = client.Pub(reque
```

```
st);
    Console.WriteLine("publish message result: " + response.Success);
                Console.WriteLine(response.body.Code);
        Console.WriteLine(response.body.ErrorMessage);
            }
            catch (TeaException error)
            {
                Console.WriteLine(error.Code);
        Console.WriteLine(error.Message);
            }
            catch (Exception _error)
            {
                e.printStackTrace();
            }
        }
    }
}
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.6. Use IoT Platform SDK for Go

IoT Platform provides an SDK for Go. This topic describes how to install and configure IoT Platform SDK for Go. This topic also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Install the SDK

1. Install Go.

   Go 1.13.0 and later are supported. To obtain a Go installation package, visit the official Go website.

2. After Go is installed, create a system variable named GOPATH and set the value to your code directory.

   To obtain more information about the GOPATH variable, run the `go help gopath` command.

3. Run the following command to install Alibaba Cloud SDK for Go. Use go mod commands to manage dependencies.

> **Note**
>
> - You can install the latest SDK by running the following command. If you want to install a specific version of the SDK, you must add the version number to the end of the command, such as `@v3.0.0`. For historical versions of SDKs for Go, see SDK Code.
>
> For the latest information about the SDK for Go, see alibabacloud-go-sdk.
> - By default, the SDK for Go is installed in **$GOPATH/src/github.com/alibabacloud-go/iot-20180120**. You can run the `go env GOPATH` command to obtain $GOPATH.
>
> If any dependency is missing in the SDK for Go, you can run the `go mod tidy` command to pull dependencies.

```
go get github.com/alibabacloud-go/iot-20180120/v2
```

Initialize the SDK

1. Create the **config** object to store SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.
2. Call the `iot.NewClient(config)` method to load the SDK information and create a client instance. The SDK is then initialized.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
import (
  iot  "github.com/alibabacloud-go/iot-20180120/v2/client"
  openapi  "github.com/alibabacloud-go/darabonba-openapi/client"
  env  "github.com/alibabacloud-go/darabonba-env/client"
  "github.com/alibabacloud-go/tea/tea"
)

func CreateClient (accessKeyId *string, accessKeySecret *string) (_result *iot.Client, _err
error) {
  config := &openapi.Config{}
  // Your AccessKey ID.
  config.AccessKeyId = accessKeyId
  // Your AccessKey secret.
  config.AccessKeySecret = accessKeySecret
  // Your region ID.
  config.RegionId = tea.String("cn-shanghai")
  _result = &iot.Client{}
  _result, _err = iot.NewClient(config)
  return _result, _err
}
```

Parameter	Description
AccessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
AccessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.
RegionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates two classes for each API operation. The class whose name is in the `${API name}+"Request"` format indicates the request, and the class whose name is in the `${API name}+"Response"` format indicates the response.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Call the `request.${Request parameter}` method of the **request** instance to specify the request parameters.
4. Create the **response** instance of the `${API name}+"Response"` class to obtain the response: call the `${API name}(request)` method of the **client** instance to obtain the response to the API request. The response includes the **body** and **headers** returned by the server.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

Notice

iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.

For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
request := &iot.PubRequest{
    // The ID of the IoT Platform instance.
    IotInstanceId: tea.String("${iotInstanceId}"),
    // The ProductKey of the product.
    ProductKey: tea.String("${productKey}"),
    // The message body that you want to send. Encode "hello world" in Base64 as a string.
    MessageContent: tea.String(base64.StdEncoding.EncodeToString([]byte("hello world"))),
    // The custom topic that is used to publish the message.
    TopicFullName: tea.String("/${productKey}/${deviceName}/user/get"),
    // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
      Qos: tea.Int32(0),
}
response, _err := client.Pub(request)
if _err != nil {
  fmt.Print(_err.Error())
}
fmt.Printf("response is %#v\n", response)
```

Sample code

Note

You can replace the parameter values based on your actual use conditions.

```
package main

import (
  "encoding/base64"
  "fmt"
  "os"
  iot  "github.com/alibabacloud-go/iot-20180120/v2/client"
  util  "github.com/alibabacloud-go/tea-utils/service"
  openapi  "github.com/alibabacloud-go/darabonba-openapi/client"
  console  "github.com/alibabacloud-go/tea-console/client"
  "github.com/alibabacloud-go/tea/tea"
)


/**
 * Use your AccessKey ID and AccessKey secret to initialize the client.
 * @param accessKeyId
 * @param accessKeySecret
 * @param regionId
 * @return Client
 * @throws Exception
```

```
 * @throws Exception
 */
func CreateClient (accessKeyId *string, accessKeySecret *string) (_result *iot.Client, _err
error) {
  config := &openapi.Config{}
  // Your AccessKey ID.
  config.AccessKeyId = accessKeyId
  // Your AccessKey secret.
  config.AccessKeySecret = accessKeySecret
  // Your region ID.
  config.RegionId = tea.String("cn-shanghai")
  _result = &iot.Client{}
  _result, _err = iot.NewClient(config)
  return _result, _err
}

func _main (args []*string) (_err error) {
  tryErr := func()(_e error) {
    defer func() {
      if r := tea.Recover(recover()); r != nil {
        _e = r
      }
    }()
    client, _err := CreateClient(tea.String("${accessKey}"), tea.String("${accessKeySecret}
"))
    if _err != nil {
      return _err
    }

    request := &iot.PubRequest{
        // The ID of the IoT Platform instance.
        IotInstanceId: tea.String("${iotInstanceId}"),
        // The ProductKey of the product.
        ProductKey: tea.String("${productKey}"),
        // The message body that you want to send. Encode "hello world" in Base64 as a stri
ng.
        MessageContent: tea.String(base64.StdEncoding.EncodeToString([]byte("hello world"))
),
        // The custom topic that is used to publish the message.
        TopicFullName: tea.String("/${productKey}/${deviceName}/user/get"),
        // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
          Qos: tea.Int32(0),
    }
    response, _err := client.Pub(request)
    if _err != nil {
      fmt.Print(_err.Error())
    }
    console.Log(util.ToJSONString(tea.ToMap(response)))
    return nil
  }()

  if tryErr != nil {
    var error = &tea.SDKError{}
    if _t, ok := tryErr.(*tea.SDKError); ok {
      error = _t
```

```
    } else {
      error.Message = tea.String(tryErr.Error())
    }
    console.Log(error.Message)
  }
  return _err
}


func main() {
  err := _main(tea.StringSlice(os.Args[1:]))
  if err != nil {
    panic(err)
  }
}
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.7. Use IoT Platform SDK for C++

IoT Platform SDK for C++ provides a convenient method to manage IoT Platform resources by using C++ programs. This topic describes how to install and configure IoT Platform SDK for C++. This topic also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Install the SDK

Install the required dependency libraries.

Before you use the SDK for C++ to call API operations of IoT Platform, you must install the following dependencies:

- Boost
- CPPRestSDK
- OpenSSL
- Git
- GCC >=10.0
- CMake >=3.11

You can use one of the following methods to install the dependencies:

- Use Homebrew.

> **Note**
>
> This method is supported only on macOS.

```
brew install boost cpprestsdk openssl
```

- Use YUM.

```
yum install boost-devel openssl-devel
```

- Use apt-get.

```
# install boost
sudo add-apt-repository ppa:mhier/libboost-latest -y
sudo apt-get update
sudo apt-get install libboost-all-dev

sudo apt-get install libcpprest-dev libcurl4-openssl-dev libssl-dev
```

- Use vcpkg.

```
vcpkg install boost openssl-windows cpprestsdk
```

Install IoT Platform SDK for C++.

- Linux:

```
# Pull the source code of the SDK for C++ from the Git repository.
git clone https://github.com/alibabacloud-sdk-cpp/iot-20180120.git

# Run the installation script.
sh iot-20180120/scripts/install.sh
```

- Windows:
  i. Run the following command in git-bash to clone the source code from GitHub:

     ```
     git clone https://github.com/alibabacloud-sdk-cpp/iot-20180120.git
     ```

  ii. Use Visual Studio to compile the code:
     a. Install CMake and Visual Studio.
     b. Create the **cmake_build** folder in the root directory of the project.
     c. Open CMake. Click **Browse Source** and select the source code directory **https://github.com/alibabacloud-sdk-cpp/iot-20180120.git**.
     d. Click **Browse build** and select the build directory **cmake_build**. Click **configure**.
     e. Click **generate** to build a Visual Studio solution.

  iii. Compile and install the SDK for C++:
     a. In the **cmake_build** directory, use Visual Studio to open the **darabonba_core.sln** solution.
     b. Select **Release**, and then select **INSTALL** in the Configuration Manager dialog box.

c. Choose **Build** > **Generate Solution** to complete SDK installation.

For more information about the upgraded SDK, see alibabacloud-cpp-sdk.

Initialize the SDK

1. Create the `Alibabacloud_OpenApi::Config` instance to store the SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.
2. Call the `Alibabacloud_Iot 20180120::Client(config)` method to load the SDK information and create a client instance. The SDK is then initialized.

   Request and **Response** parameters for subsequent API calls are obtained from `Alibabacloud_Iot20180120`.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
#include <alibabacloud/iot_20180120.hpp>
#include <alibabacloud/open_api.hpp>
#include <map>

Alibabacloud_Iot20180120::Client createClient(shared_ptr<string> accessKeyId, shared_ptr<st
ring> accessKeySecret) {
    shared_ptr<Alibabacloud_OpenApi::Config> config = make_shared<Alibabacloud_OpenApi::Con
fig>(map<string, boost::any>({
        // Your AccessKey ID.
        {"accessKeyId", !accessKeyId ? boost::any() : boost::any(*accessKeyId)},
        // Your AccessKey secret.
        {"accessKeySecret", !accessKeySecret ? boost::any() : boost::any(*accessKeySecret)}
    }));
    // Your region ID.
    config->regionId = make_shared<string>("cn-shanghai");
    return Alibabacloud_Iot20180120::Client(config);
}
```

Parameter	Description
accessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
accessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.

Parameter	Description
regionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates two classes for each API operation. The class whose name is in the `${API name}+"Request"` format indicates the request, and the class whose name is in the `${API name}+"Response"` format indicates the response.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Use the **request** instance to specify the request parameters.
4. Create the **response** instance of the `${API name}+"Response"` class to obtain the response: call the `${API name}(request)` method of the **client** instance to obtain the response to the API request. The response includes the **body** and **headers** returned by the server.
5. Use the **body** object of the **response** instance to obtain the values of response parameters.

   For example, you can use `requestId :String requestId = response.body.getRequestId();` to obtain the unique identifier generated by Alibaba Cloud for an API request, where **RequestId** is a common response parameter. Common response parameters also include **Success**, **ErrorMessage**, and **Code**.
6. Call the `catch()` method to handle exceptions.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

> **Notice**
>
> iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.
>
> For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
shared_ptr<Alibabacloud_Iot20180120::Client> client = make_shared<Alibabacloud_Iot20180120:
:Client>(createClient(make_shared<string>("ACCESS_KEY_ID"), make_shared<string>("ACCESS_KEY
_SECRET")));
shared_ptr<Alibabacloud_Iot20180120::PubRequest> request = make_shared<Alibabacloud_Iot2018
0120::PubRequest>(map<string, boost::any>({
    {"iotInstanceId", boost::any(string("${iotInstanceId}"))},
    {"qos", boost::any(0)},
    {"productKey", boost::any(string("${productKey}"))},
    {"messageContent", boost::any(string("eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0"))},
    {"topicFullName", boost::any(string("/${productKey}/${deviceName}/user/get"))}
}));
shared_ptr<Alibabacloud_Iot20180120::PubResponse> response = make_shared<Alibabacloud_Iot20
180120::PubResponse>(client->pub(request));
```

Sample code

Note

You can replace the parameter values based on your actual use conditions.

```
#include <alibabacloud/iot_20180120.hpp>
#include <alibabacloud/open_api.hpp>
#include <boost/any.hpp>
#include <darabonba/console.hpp>
#include <darabonba/util.hpp>
#include <iostream>
#include <map>

using namespace std;

Alibabacloud_Iot20180120::Client createClient(shared_ptr<string> accessKeyId, shared_ptr<st
ring> accessKeySecret) {
  shared_ptr<Alibabacloud_OpenApi::Config> config = make_shared<Alibabacloud_OpenApi::Confi
g>(map<string, boost::any>({
    // Your AccessKey ID.
    {"accessKeyId", !accessKeyId ? boost::any() : boost::any(*accessKeyId)},
    // Your AccessKey secret.
    {"accessKeySecret", !accessKeySecret ? boost::any() : boost::any(*accessKeySecret)}
  }));
  // Your region ID.
  config->endpoint = make_shared<string>("iot.cn-shanghai.aliyuncs.com");
  return Alibabacloud_Iot20180120::Client(config);
}

int main(int argc, char *args[]) {
  args++;
  try {
      shared_ptr<Alibabacloud_Iot20180120::Client> client = make_shared<Alibabacloud_Iot201
80120::Client>(createClient(make_shared<string>("ACCESS_KEY_ID"), make_shared<string>("ACCE
SS_KEY_SECRET")));
      shared_ptr<Alibabacloud_Iot20180120::PubRequest> pubRequest = make_shared<Alibabaclou
d_Iot20180120::PubRequest>(map<string, boost::any>({
        {"iotInstanceId", boost::any(string("${iotInstanceId}"))},
        {"qos", boost::any(0)},
        {"productKey", boost::any(string("${productKey}"))},
        {"messageContent", boost::any(string("eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0"))},
        {"topicFullName", boost::any(string("/${productKey}/${deviceName}/user/get"))}
      }));
      shared_ptr<Alibabacloud_Iot20180120::PubResponse> response = make_shared<Alibabacloud
_Iot20180120::PubResponse>(client->pub(pubRequest));
      Darabonba_Console::Client::log(make_shared<string>(Darabonba_Util::Client::toJSONStri
ng(make_shared<map<string, boost::any>>(resp->toMap()))));
  } catch(exception& e) {
      std::cout << e.what << std::endl;
  }
}
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

2.8. Use IoT Platform SDK for TypeScript in Node.js

IoT Platform provides an SDK for TypeScript in Node.js. This topic describes how to install and configure IoT Platform SDK for TypeScript in Node.js. It also provides sample codes on how to use the SDK to call API operations of IoT Platform.

Install the SDK

1. Install a Node.js development environment.

   The upgraded IoT Platform SDK for TypeScript in Node.js is built in the Node.js environment. You must install Node.js 8.x or later.

2. Install Alibaba Cloud SDK for TypeScript in Node.js.

   You can use the npm tool to manage your dependencies. Run the following command to add the dependency to the package.json file:

   ```
   npm install @alicloud/openapi-client -S
   ```

3. Install IoT Platform SDK for TypeScript in Node.js.

   Run the following command to install an SDK of the 3.0.5 version:

   ```
   npm install --save @alicloud/iot20180120@3.0.5
   ```

   For information about the source code of the SDK for TypeScript in Node.js, see alibabacloud-typescript-sdk.

Initialize the SDK

1. Create the **config** object to store SDK initialization information, such as the **AccessKey ID**, **AccessKey secret**, and region ID.

2. Create the **client** instance and call the `Iot(config)` method to load the SDK information from **config**. The SDK is then initialized.

For example, if you want to use the SDK in the China (Shanghai) region, you can use the following code to initialize the SDK. In the production environment, you must select the region where your IoT Platform service resides.

```
import Iot, * as $Iot from '@alicloud/iot20180120';
import OpenApi, * as $OpenApi from '@alicloud/openapi-client';

let config = new $OpenApi.Config({ });
// Your AccessKey ID.
config.accessKeyId = "<your accessKey>";
// Your AccessKey secret.
config.accessKeySecret = "<your accessSecret>";
// Your region ID.
config.regionId = "cn-shanghai";
let client = new Iot(config);
```

Parameter	Description
accessKeyId	The **AccessKey ID** of your Alibaba Cloud account. You can go to the AccessKey Pair page in the Alibaba Cloud Management console to create or view your AccessKey pairs.
accessKeySecret	The **AccessKey secret** of you Alibaba Cloud account.
regionId	The ID of the region where your IoT Platform instance resides, which is used in the endpoint for service access. The endpoint is in the **iot.${RegionId}.aliyuncs.com** format. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates two classes for each API operation. The class whose name is in the `${API name}+"Request"` format indicates the request, and the class whose name is in the `${API name}+"Response"` format indicates the response.

Procedure

1. Initialize the SDK. For more information, see Initialize the SDK.
2. Create an API request by generating a **request** instance of the `${API name}+"Request"` class.
3. Use the **request** instance to specify the request parameters.
4. Create the **response** instance of the `${API name}+"Response"` class to obtain the response: call the `${API name}(request)` method of the **client** instance to obtain the response to the API request. The response includes the **body** and **headers** returned by the server.

5. Use the **body** object of the **response** instance and call the `response.body.${Response parameter}` method to obtain the values of response parameters.

   For example, the `response.body.success` method is called to obtain the **Success** parameter.

   This parameter is a common response parameter, which indicates whether the call is successful. Common response parameters also include **RequestId**, **ErrorMessage**, and **Code**.

6. Call the `catch()` method to handle exceptions.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the request parameters and response parameters of each API operation, see the API reference.

The following example shows how to call the Pub operation to publish a message from a topic. For more information about request parameters, see Pub.

> **Notice**
>
> iotInstanceId is used as the instance ID in the following sample code. For more information about IoT Platform instances, see Overview.
>
> For more information about how to purchase an instance, see Purchase Enterprise Edition instances.

```
try {
    let client = Client.createClient("${accessKey}", "${accessKeySecret}");
    let request = new $Iot.PubRequest({
        // The ID of the IoT Platform instance.
        iotInstanceId: "${iotInstanceId}",
        // The ProductKey of the product.
        productKey: "${productKey}",
        // The message body to be sent. It must be encoded in Base64.
        messageContent: "eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=",
        // The custom topic that is used to publish the message.
        topicFullName: "/${productKey}/${deviceName}/user/get",
        // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
        qos: 0,
    });
    let response = await client.pub(request);
    Console.log(Util.toJSONString($tea.toMap(response)));
} catch (error) {
    Console.log(error.message);
}
```

Sample code

> **Note**
>
> You can replace the parameter values based on your actual use conditions.

```
import Iot, * as $Iot from '@alicloud/iot20180120';
import Util from '@alicloud/tea-util';
```

```
import Env from '@alicloud/darapondpa-env';
import OpenApi, * as $OpenApi from '@alicloud/openapi-client';
import Console from '@alicloud/tea-console';
import * as $tea from '@alicloud/tea-typescript';


export default class Client {
  /**
   * Use your AccessKey ID and AccessKey secret to initialize the client.
   * @param accessKeyId
   * @param accessKeySecret
   * @param regionId
   * @return Client
   * @throws Exception
   */
  static createClient(accessKeyId: string, accessKeySecret: string): Iot {
    let config = new $OpenApi.Config({ });
    // Your AccessKey ID.
    config.accessKeyId = accessKeyId;
    // Your AccessKey secret.
    config.accessKeySecret = accessKeySecret;
    // Your region ID.
    config.regionId = "cn-shanghai";
    return new Iot(config);
  }

  static async main(args: string[]): Promise<void> {
    try {
      let client = Client.createClient("${accessKey}", "${accessKeySecret}");
      let request = new $Iot.PubRequest({
        // The ID of the IoT Platform instance.
        iotInstanceId: "${iotInstanceId}",
        // The ProductKey of the product.
        productKey: "${productKey}",
        // The message body that you want to send. Encode "hello world" in Base64 as a stri
ng.
        messageContent: "eyJ0ZXN0IjoidGFzayBwdWIgYnJvYWRjYXN0In0=",
        // The custom topic that is used to publish the message.
        topicFullName: "/${productKey}/${deviceName}/user/get",
        // The message sending mode. IoT Platform SDK supports QoS 0 and QoS 1.
        qos: 0,
      });
      let response = await client.pub(request);
      Console.log(response.body.success);
      Console.log(response.body.requestId);
    } catch (error) {
      Console.log(error.message);
    }
  }
}

Client.main(process.argv.slice(2));
```

Appendix: Sample code

You can view or download the sample codes of API operations in IoT Platform SDK Sample Center. Sample codes of SDKs for Java, Python, PHP, TypeScript in Node.js, Go, C++, and .NET are available in the sample center.

Alibaba Cloud OpenAPI Explorer provides online debugging tools for API operations. You can use **API Debugging** to search for API operations, call API operations, and generate the sample codes of API operations for different SDKs. On the right part of the page, you can view the sample code of an SDK on the **Sample Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

3.SDK reference

3.1. Download IoT Platform SDKs

IoT Platform SDKs allow you to call API operations. You can use these API operations to manage IoT Platform resources. These resources include products, devices, topics, data forwarding rules, and messages.

> **Note** This article describes how to use IoT Platform SDKs. For information about how to use device SDKs, see Download device SDKs.

Download SDKs

IoT Platform SDKs support the following programming languages: Java, Python, PHP, .NET, and Go.

Click one of the following links to download the source code of the IoT Platform SDK for a specific programming language:

- IoT Java SDK
- IoT Python SDK
- IoT PHP SDK
- IoT .NET SDK
- IoT Go SDK

Use SDKs

Click one of the following links to obtain information about how to use the IoT Platform SDK for a specific programming language:

- Use IoT Platform SDK for Java
- Use IoT Platform SDK for Python
- Use IoT Platform SDK for PHP
- .Use IoT Platform SDK for .NET
- Use IoT Platform SDK for Go

Download the SDK demo

The demo includes the sample code for Java, Python, PHP, .NET, and Go.

3.2. Use IoT Platform SDK for Java

IoT Platform SDK for Java allows you to efficiently manage IoT Platform resources by using Java programs. You can add the SDK as a dependency to your Maven project. You can also download the installation package to an on-premises directory and install the SDK.

Install the SDK

1. Install a Java integrated development environment (IDE).

   Download a Java installation package from the official Java website and follow the instructions to install Java.

2. Install IoT Platform SDK for Java.
   i. Download a Maven installation package from the official Apache Maven website.
   ii. Add the following dependencies to your Maven project:
      - Maven coordinates of IoT Platform SDK for Java of the latest version:

```
<!-- https://mvnrepository.com/artifact/com.aliyun/aliyun-java-sdk-iot -->
<dependency>
    <groupId>com.aliyun</groupId>
    <artifactId>aliyun-java-sdk-iot</artifactId>
    <version>7.40.0</version>
</dependency>
```

      - The dependency for Alibaba Cloud SDK for Java:

```
<dependency>
    <groupId>com.aliyun</groupId>
    <artifactId>aliyun-java-sdk-core</artifactId>
    <version>4.5.6</version>
</dependency>
```

Initialize the SDK

Create the profile object from IClientProfile to store SDK initialization information. Then, create the client instance from DefaultAcsClient. Use the `DefaultAcsClient(profile)` method to load the SDK initialization information.

```
String accessKey = "${accessKey}";
String accessSecret = "${accessSecret}";
IClientProfile profile = DefaultProfile.getProfile("${RegionId}", accessKey, accessSecret);
DefaultAcsClient client = new DefaultAcsClient(profile); // Initializes an SDK client.
```

Parameter	Description
accessKey	The AccessKey ID of your Alibaba Cloud account. You can go to the Alibaba Cloud Management Console to create or view your AccessKey ID.
accessSecret	The AccessKey secret of your Alibaba Cloud account.
profile	The object that is used to store the SDK initialization information. `${RegionId}` specifies the region ID of your IoT Platform service. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

The following example shows how to initialize the SDK if your IoT Platform service is deployed in the China (Shanghai) region:

```
String accessKey = "${accessKey}";
String accessSecret = "${accessSecret}";
IClientProfile profile = DefaultProfile.getProfile("cn-shanghai", accessKey, accessSecret);
DefaultAcsClient client = new DefaultAcsClient(profile);
```

Initiate a request

The SDK encapsulates two classes for each API operation. The class names are in the `${API operation name}+"Request"` and `${API operation name}+"Response"` formats.

- `${API operation name}+"Request"` : This class is used to call an API operation. You can use the `request` instance of this class and call the `set +${request parameters}` method to configure the request parameters.
- `${API operation name}+"Response"` : You can call the `getAcsResponse(request)` method of the client instance that is created from DefaultAcsClient to obtain a response. You can use the `response` instance of of the ${API operation name}+"Response" class and call the `get +${response parameters}` method to obtain the response parameters.

  For example, you can call the `response.getSuccess()` method to obtain the Success parameter. This parameter is a common response parameter, which indicates whether the call is successful. Common response parameters also include the RequestId, ErrorMessage, and Code parameters.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the `request` and `response` parameters of each API operation, see the API documentation.

The following example shows how to call the Pub operation to publish a message to a topic. For more information about request parameters, see Pub.

> **Notice** In the following sample code, iotInstanceId is used as the instance ID. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console.
>
> - If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails.
> - If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter.
>
> For more information about instances, see Overview.

```
PubRequest request = new PubRequest();
request.setIotInstanceId("${iotInstanceId}");
request.setProductKey("${productKey}");
request.setMessageContent(Base64.encodeBase64String("hello world".getBytes()));
request.setTopicFullName("/${productKey}/${deviceName}/user/get");
request.setQos(0); // QoS0 and QoS1 are supported.
try
{
   PubResponse response = client.getAcsResponse(request);
   System.out.println(response.getSuccess());
   System.out.println(response.getCode());
   System.out.println(response.getErrorMessage());
}
catch (ServerException e)
{
   e.printStackTrace();
}
catch (ClientException e)
{
   System.out.println("ErrCode:" + e.getErrCode());
   System.out.println("ErrMsg:" + e.getErrMsg());
   e.printStackTrace();
}
```

Appendix: Sample code

Download the IoT Platform SDK sample code. The sample code for Java, Python, PHP, .NET, and Go is provided.

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use OpenAPI Explorer to search for API operations, call API operations, and dynamically generate SDK sample code. OpenAPI Explorer dynamically generates SDK sample code in different languages based on the parameters that you configured. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

3.3. Use IoT Platform SDK for Python

IoT Platform provides developers with an SDK for Python. This article describes how to install and configure IoT Platform SDK for Python. This article also describes how to use the SDK to call the API operations of IoT Platform.

Install the SDK

1. Install a Python integrated development environment (IDE).

   Download a Python installation package from the official Python website and install Python. Python 2.7.x and 3.x are supported.

2. Install pip that is used to manage Python packages.If you have installed pip, skip this step.

   Download a pip installation package from the official pip website and install pip.

3. Run the following commands as an administrator to install IoT Platform SDK for Python.

   For more information, see IoT Platform SDK for Python.

```
sudo pip install aliyun-python-sdk-core
sudo pip install aliyun-python-sdk-iot
```

4. Import the files that are related to IoT Platform SDK for Python to a Python file.

```
from aliyunsdkcore import client
from aliyunsdkiot.request.v20180120 import RegisterDeviceRequest
from aliyunsdkiot.request.v20180120 import PubRequest
...
```

Initialize the SDK

The following example shows how to initialize the SDK if your IoT Platform service is deployed in the China (Shanghai) region:

Use the `client.AcsClient(accessKeyId, accessKeySecret, 'cn-shanghai')` method to load the SDK initialization information.

```
accessKeyId = '<your accessKey>'
accessKeySecret = '<your accessSecret>'
clt = client.AcsClient(accessKeyId, accessKeySecret, 'cn-shanghai')
```

Parameter	Description
accessKeyId	The AccessKey ID of your Alibaba Cloud account. You can go to the User Management console to create or view your AccessKey ID.
accessKeySecret	The AccessKey secret of you Alibaba Cloud account.
clt	The initialized SDK client. `cn-shanghai` indicates the region ID of your IoT Platform service. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates a class for each API operation. The class name is in the `${Operation name}+"Request"` format. You can use the `request` instance of this class and call the `"set_"+${request parameters}` method to specify the request parameters. You can use the clt client and call the `do_action_with_exception(request)` method to obtain a response.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the `request` and `response` parameters of each API operation, see the API documentation.

The following example shows how to call the Pub operation to publish a message to a topic. For more information about request parameters, see Pub.

Notice In the following sample code, iotInstanceId is used as the instance ID. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console.

- If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails.
- If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter.

For more information about instances, see Overview.

```
request = PubRequest.PubRequest()
request.set_accept_format('json')  # The format in which the response is returned. By defau
lt, the XML format is used. In this example, the JSON format is used.
request.set_IotInstanceId('iotInstanceId')
request.set_ProductKey('productKey')
request.set_TopicFullName('/productKey/deviceName/user/get')  # The full name of the topic
to which the message is sent.
request.set_MessageContent('aGVsbG8gd29ybGQ=')  #hello world Base64 String
request.set_Qos(0)
result = clt.do_action_with_exception(request)
print 'result : ' + result
```

Appendix: Sample code

Download the IoT Platform SDK sample code. The sample code for Java, Python, PHP, .NET, and Go is provided.

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use OpenAPI Explorer to search for API operations, call API operations, and dynamically generate SDK sample code. OpenAPI Explorer dynamically generates SDK sample code in different languages based on the parameters that you configured. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

3.4. Use IoT Platform SDK for PHP

IoT Platform provides developers with an SDK for PHP. This article describes how to install and configure IoT Platform SDK for PHP. This article also describes how to use the SDK to call the API operations of IoT Platform.

Install the SDK

IoT Platform SDK for PHP is part of Alibaba Cloud SDK for PHP. If you have installed Alibaba Cloud SDK for PHP, you do not need to install IoT Platform SDK for PHP.

1. Install PHP.

   PHP 5.5.0 and later are supported. Download a PHP installation package from the official PHP website and install PHP.

2. Install Composer.

   Composer is used to manage IoT Platform SDK for PHP. Therefore, you must install Composer in your system.

   - If you use Windows, you can download the Composer-Setup.exe program from the

getcomposer.org website and install Composer.

- You can also run the following curl command to install Composer:

```
curl -sS https://getcomposer.org/installer | php
```

> **Note** If the installation fails due to network issues, you can use the full image of Alibaba Cloud Composer.

3. Add the following dependency to install IoT Platform SDK for PHP:

```
composer require alibabacloud/iot
```

For more information, see IoT Platform SDK for PHP and Alibaba Cloud SDK for PHP.

Initialize the SDK

The following example shows how to initialize the SDK if your IoT Platform service is deployed in the China (Shanghai) region:

First, create the $iClientProfile object to store SDK initialization information. Then, create the $client instance from DefaultAcsClient. Use the `DefaultAcsClient($iClientProfile)` method to load the SDK initialization information.

```
<?php
include_once 'aliyun-php-sdk-core/Config.php';
use \Iot\Request\V20180120 as Iot;
// Set your AccessKey ID, AccessKey secret, and ProductKey.
$accessKeyId = "";
$accessSecret = "";
$iClientProfile = DefaultProfile::getProfile("cn-shanghai", $accessKeyId, $accessSecret);
$client = new DefaultAcsClient($iClientProfile);
```

Parameter	Description
$accessKeyId	The AccessKey ID of your Alibaba Cloud account. You can go to the User Management console to create or view your AccessKey ID.
$accessSecret	The AccessKey secret of your Alibaba Cloud account.
$iClientProfile	The object that is used to store the SDK initialization information. `cn-shanghai` indicates the region ID of your IoT Platform service. You can view the region in the upper-left corner of the IoT Platform console. For more information about region IDs, see Regions and zones.

Initiate a request

The SDK encapsulates a class for each API operation. The class name is in the `${Operation name}+"Request"` format. You can use the `$request` instance of this class and call the `"set"+${Request parameters}` method to specify the request parameters. Then, you can use the $client instance and call the `getAcsResponse($request)` method to obtain a response.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the `request` and `response` parameters of each API operation, see the API documentation.

The following example shows how to call the Pub operation to publish a message to a topic. For more information about request parameters, see Pub.

> **Notice** In the following sample code, iotInstanceId is used as the instance ID. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console.
>
> - If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails.
> - If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter.
>
> For more information about instances, see Overview.

```
$request = new Iot\PubRequest();
$request->setIotInstanceId("iotInstanceId");
$request->setProductKey("productKey");
$request->setMessageContent("aGVsbG93b3JsZA="); //hello world Base64 String.
$request->setTopicFullName("/productKey/deviceName/user/get"); // The full name of the topi
c to which the message is sent.
$response = $client->getAcsResponse($request);
print_r($response);
```

Appendix: Sample code

Download the IoT Platform SDK sample code. The sample code for Java, Python, PHP, .NET, and Go is provided.

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use OpenAPI Explorer to search for API operations, call API operations, and dynamically generate SDK sample code. OpenAPI Explorer dynamically generates SDK sample code in different languages based on the parameters that you configured. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

3.5. .Use IoT Platform SDK for .NET

IoT Platform providesdevelopers with an SDK for .NET. This article describeshow to install and configure IoT Platform SDK for .NET.This article also describes how to use the SDK to call the API operations of IoT Platform.

Install the SDK

1. Install a.NET development environment.

   IoT Platform SDK for .NET supports the following development environments:

- ..NET Framework 4.5 and later
- ..NET Standard 2.0 and later
- C# 4.0 and later
- Visual Studio 2010 and later

2. Install IoT Platform SDK for .NET by using the NuGet package manager.

   In this example, Visual Studio is used.

   i. In the **Solution Explorer** pane of Visual Studio, right-click your project and select **Manage NuGet Packages**.
   ii. In the **NuGet Package Manager** pane, click the **Browse** tab.
   iii. On the Browse tab, enter *aliyun-net-sdk* in the search box and select the aliyun-net-sdk-iot package that is provided by Alibaba Cloud.
   iv. Click **Install**.

Initialize the SDK

The following example shows how to initialize the SDK if your IoT Platform service is deployed in the China (Shanghai) region:

First, create the clientProfile object to store SDK initialization information. Then, create the client instance from DefaultAcsClient. Use the `DefaultAcsClient(clientProfile)` method to load the SDK initialization information.

```
using Aliyun.Acs.Core;
using Aliyun.Acs.Core.Exceptions;
using Aliyun.Acs.Core.Profile;
IClientProfile clientProfile = DefaultProfile.GetProfile("cn-shanghai", "<your-access-key-id>", "<your-access-key-secret>");
DefaultAcsClient client = new DefaultAcsClient(clientProfile);
```

The clientProfile object is used to store the SDK initialization information.

- `cn-shanghai` : the region ID of your IoT Platform service.

  You can view the region in the upper-left corner of the IoT Platform console.

  For more information about region IDs, see Regions and zones.

- `<your-access-key-id>` and `<your-access-key-secret>` : the AccessKey ID and AccessKey secret of your Alibaba Cloud account.

  You can go to the User Management console to create or view your AccessKey ID.

Initiate a request

The SDK encapsulates two classes for each API operation. The class names are in the `${Operation name}+"Request"` and `${Operation name}+"Response"` formats.

- `${Operation name}+"Request"` : This class is used to call an API operation. You can use the `request` instance of this class and call the `request.${Request parameters}` method to specify the request parameters.
- `${Operation name}+"Response"` : You can use the `GetAcsResponse(request)` method of the client instance that is created from DefaultAcsClient to obtain a response. You can use the `respons`

`e` instance of this class and call the `response.${Response parameters}` method to obtain the response parameters.

For example, the `response.Success()` method is called to obtain the Success parameter. This parameter is a common response parameter, which indicates whether the call is successful. Common response parameters also include RequestId, ErrorMessage, and Code.

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the `request` and `response` parameters of each API operation, see the API documentation.

The following example shows how to call the Pub operation to publish a message to a topic. For more information about request parameters, see Pub.

> **Notice** In the following sample code, iotInstanceId is used as the instance ID. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console.
>
> - If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails.
> - If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter.
>
> For more information about instances, see Overview.

```
PubRequest request = new PubRequest();
request.IotInstanceId = "<iotInstanceId>";
request.ProductKey = "<productKey>";
request.TopicFullName = "/<productKey>/<deviceName>/get";
byte[] payload = Encoding.Default.GetBytes("Hello World.");
String payloadStr = Convert.ToBase64String(payload);
request.MessageContent = payloadStr;
request.Qos = 0;
try
{
   PubResponse response = client.GetAcsResponse(request);
   Console.WriteLine("publish message result: " + response.Success);
   Console.WriteLine(response.ErrorMessage);
}
catch (ServerException e)
{
   Console.WriteLine(e.ErrorCode);
   Console.WriteLine(e.ErrorMessage);
}
catch (ClientException e)
{
   Console.WriteLine(e.ErrorCode);
   Console.WriteLine(e.ErrorMessage);
}
```

Appendix: Sample code

Download the IoT Platform SDK sample code. The sample code for Java, Python, PHP, .NET, and Go is provided.

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use OpenAPI Explorer to search for API operations, call API operations, and dynamically generate SDK sample code. OpenAPI Explorer dynamically generates SDK sample code in different languages based on the parameters that you configured. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

3.6. Use IoT Platform SDK for Go

IoT Platform provides developers with an SDK for Go. This article describes how to install and configure IoT Platform SDK for Go. This article also describes how to use the SDK to call the API operations of IoT Platform.

Install the SDK

1. Install Go.

   Go 1.6 and later are supported. To obtain a Go installation package, visit the official Go website.

2. After Go is installed, create a system variable named *GOPATH* and set the value to your code directory.

   To obtain more information about the *GOPATH* variable, run the `go help gopath` command.

3. Run the following command to install Alibaba Cloud SDK for Go:

   ```
   go get -u github.com/aliyun/alibaba-cloud-sdk-go/sdk
   ```

   For more information, see Alibaba Cloud SDK for Go.

4. Run the following command to import the files that are related to IoT Platform SDK for Go to a Go file:

   ```
   import "github.com/aliyun/alibaba-cloud-sdk-go/services/iot"
   ```

Initialize the SDK

```
package main
import "github.com/aliyun/alibaba-cloud-sdk-go/services/iot"
func main() {
    client, err := sdk.NewClientWithAccessKey("<your regionId>", "<your accessKey>",
                                              "<your accessSecret>")
    if err != nil {
        // Handle exceptions
        panic(err)
    }
}
```

Parameter	Description
regionId	The ID of the region where IoT Platform resides. For example, the ID of the China (Shanghai) region is `cn-shanghai`. For more information, see Regions and zones.

Parameter	Description
accessKey	The AccessKey ID of your Alibaba Cloud account. You can go to the User Management console to create or view your AccessKey ID.
accessSecret	The AccessKey secret that is used in pair with the AccessKey ID. You can go to the User Management console to create or view your AccessKey secret.

Initiate a request

For more information about the API operations of IoT Platform, see List of operations by function. For more information about the `request` and `response` parameters of each API operation, see the API documentation.

The following example shows how to call the Pub operation to publish a message to a topic. For more information about request parameters, see Pub.

> **Notice** In the following sample code, iotInstanceId is used as the instance ID. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console.
>
> - If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails.
> - If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter.
>
> For more information about instances, see Overview.

```
request := iot.CreatePubRequest()
request.AcceptFormat = "json"
request.IotInstanceId = "<your iotInstanceId>"
request.ProductKey = "<your productKey>"
request.TopicFullName = fmt.Sprintf("/%s/%s/user/get", "<your productKey>", "<your deviceNa
me>")
request.MessageContent = base64.StdEncoding.EncodeToString([]byte("hello world"))
request.Qos = "0"
response, err := client.Pub(request)
if err != nil {
    fmt.Print(err.Error())
}
fmt.Printf("response is %#v\n", response)
```

Appendix: Sample code

Download the IoT Platform SDK sample code. The sample code for Java, Python, PHP, .NET, and Go is provided.

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use OpenAPI Explorer to search for API operations, call API operations, and dynamically generate SDK sample code. OpenAPI Explorer dynamically generates SDK sample code in different languages based on the parameters that you configured. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.

4.API reference

4.1. Overview

IoT Platform provides API operations that are used to manage products, devices, groups, topics, rules, and device shadows. It also provides API operations that are used to send messages. To send an IoT Platform API request, you must use IoT Platform SDKs to send a GET or POST request over HTTPS or HTTP to the IoT Platform endpoint. You must add the request parameters that correspond to the API operation being called. IoT Platform handles the request and returns a result.

For more information about how to call an API operation, see the following topics:

- Initiate API requests
- Common parameters
- Error codes

To ensure the security of your Alibaba Cloud account, we recommend that you call API operations as a RAM user.

For information about how to grant a RAM user permissions to call the required API operations, see API permissions.

4.2. List of operations by function

The following tables describe the API operations available in IoT Platform.

Products

API	Description
CreateProduct	Creates a product.
UpdateProduct	Modifies the information about a product.
QueryProductList	Queries products.
QueryProduct	Queries the details of a product.
DeleteProduct	Deletes a product.
CreateProductTags	Creates product tags.
UpdateProductTags	Modifies the tags of a product.
DeleteProductTags	Deletes product tags.
ListProductTags	Queries all tags of a product.
ListProductByTags	Queries products by tag.

API	Description
UpdateProductFilterConfig	Modifies the deduplication rule for property messages that are submitted by devices of a product.
ReleaseProduct	Publishes a product.
CancelReleaseProduct	Unpublishes a product.

Devices

API	Description
RegisterDevice	Registers a device.
QueryClientIds	Queries the ClientIDs of a device. This API operation is applicable for preregistration-free unique-certificate-per-product authentication.
TransformClientId	Specifies a valid ClientID for a device to prevent illegal logons if the device has multiple ClientIDs. This API operation is applicable for preregistration-free unique-certificate-per-product authentication.
DeleteClientIds	Deletes all ClientIDs of a device if the number of ClientIDs exceeds the limit (5). This API operation is applicable for preregistration-free unique-certificate-per-product authentication.
QueryDeviceInfo	Queries the basic information about a device. The information includes the device ID, device certificate, and alias.
QueryDeviceDetail	Queries the details of a device.
BatchQueryDeviceDetail	Queries the details of multiple devices.
QueryDevice	Queries the devices of a product.
DeleteDevice	Deletes a device.
GetDeviceStatus	Queries the status of a device.
BatchGetDeviceState	Queries the statuses of devices.
DisableThing	Disables a device.
EnableThing	Enables a device that has been disabled.
ResetThing	Resets a device.
BatchCheckDeviceNames	Specifies names for devices. IoT Platform checks whether these names are valid.

API	Description
BatchRegisterDeviceWithApplyId	Creates multiple devices by application ID.
BatchRegisterDevice	Registers multiple devices.
QueryBatchRegisterDeviceStatus	Queries the processing status of registration for multiple devices.
QueryPageByApplyId	Queries multiple devices by application ID.
SaveDeviceProp	Creates tags for a device.
QueryDeviceProp	Queries the tags of a device.
DeleteDeviceProp	Deletes the tags of a device.
GetThingTopo	Queries the sub-devices of a gateway device.
NotifyAddThingTopo	Notifies a gateway device to build a topological relationship with a sub-device.
BatchAddThingTopo	Builds topological relationships between multiple sub-devices and a gateway device.
RemoveThingTopo	Removes the topological relationships of a device.
QueryDeviceStatistics	Queries device statistics.
GetGatewayBySubDevice	Queries the information of a gateway device based on sub-device information.
QueryDeviceByTags	Queries devices by tag.
QueryDeviceFileList	Queries the files that are uploaded to IoT Platform from a device.
QueryDeviceFile	Queries the details of a file that is uploaded to IoT Platform from a device.
DeleteDeviceFile	Deletes a file that is uploaded to IoT Platform from a device.
BatchUpdateDeviceNickname	Modifies the aliases of multiple devices.
QueryDeviceByStatus	Queries devices by status.
ListOTAModuleVersionsByDevice	Queries the versions of the over-the-air (OTA) module. The versions are submitted by devices.

Device distribution

API	Description
CreateDeviceDistributeJob	Creates a task to distribute devices. By default, the product to which the devices belong is also distributed.
CreateProductDistributeJob	Creates a task to distribute a product to an instance.
QueryDeviceDistributeDetail	Queries the result of a device distribution task.
QueryDeviceDistributeJob	Queries the details of a device distribution task.
ListDeviceDistributeJob	Queries device distribution tasks.
DeleteDeviceDistributeJob	Deletes a device distribution task.
ListDistributedDevice	Queries distributed devices.
ListDistributedProduct	Queries distributed products.

Device groups

API	Description
CreateDeviceGroup	Createsa device group.
DeleteDeviceGroup	Deletesa device group.
UpdateDeviceGroup	Modifies the information about a device group.
QueryDeviceGroupInfo	Queries the details of a device group.
QueryDeviceGroupList	Queries all device groups.
BatchAddDeviceGroupRelations	Adds devices to a group.
BatchDeleteDeviceGroupRelations	Removes devices from a group.
SetDeviceGroupTags	Creates tags for or updates the tags of a device group.
QueryDeviceGroupTagList	Queries the tags of a device group.
QueryDeviceGroupByDevice	Queries the groups to which a device belongs.
QuerySuperDeviceGroup	Queries the details of a parent group by sub-group ID.
QueryDeviceListByDeviceGroup	Queries devices in a device group.
QueryDeviceGroupByTags	Queries device groups by tag.

Thing Specification Language (TSL) models

API	Description
CreateThingModel	Adds features or extended information to the TSL model of a product.
UpdateThingModel	Modifies a feature or extended information of the TSL model for a product.
QueryThingModel	Queries the details of a TSL model for a product.
CopyThingModel	Copies the TSL model of a product to a destination product.
PublishThingModel	Publishes the TSL model of a product.
DeleteThingModel	Removes a feature from the TSL model of a product.
ListThingTemplates	Queries all product categories that are predefined in IoT Platform.
GetThingTemplate	Queries the standard TSL model information of a category.
ListThingModelVersion	Queries the TSL model versions of a product.
GetThingModelTsl	Queries the TSL model of a product.
ImportThingModelTsl	Imports a TSL model to a product. Extended information cannot be imported.
QueryThingModelPublished	Queries the details of a published TSL model for a product.
GetThingModelTslPublished	Queries the basic information about a published TSL model for a product.
QueryThingModelExtendConfig	Queries the extended information of the TSL model for a product.
QueryThingModelExtendConfigPublished	Queries the extended information of a published TSL model.
CreateThingScript	Submits a data parsing script for a product.
UpdateThingScript	Modifies a data parsing script for a product.
GetThingScript	Queries a data parsing script for a product.

Use of TSL models

API	Description
SetDeviceProperty	Sets properties for a device.
SetDevicesProperty	Sets properties for multiple devices.
InvokeThingService	Calls a service on a device.
InvokeThingsService	Calls a service on multiple devices.
QueryDevicePropertyData	Queries the property records of a device.
QueryDevicePropertiesData	Queries the records of multiple properties of a device.
QueryDeviceEventData	Queries the event records of a device.
QueryDeviceServiceData	Queries the service records of a device.
SetDeviceDesiredProperty	Sets desired property values for a device.
QueryDeviceDesiredProperty	Queries the desired property values of a device.
QueryDevicePropertyStatus	Queries the property snapshots of a device.
QueryDeviceOriginalPropertyStatus	Queries the original property snapshots of a device.
QueryDeviceOriginalPropertyData	Queries the original property records of a device.
QueryDeviceOriginalEventData	Queries the original event records of a device.
QueryDeviceOriginalServiceData	Queries the original service records of a device.

Data forwarding

API	Description
ListRule	Queries rules.
CreateRule	Creates a rule.
CreateDataSourceItem	Adds a topic to a data source in the rules engine.
GetRule	Queries the details of a rule.
UpdateRule	Modifies a rule.
DeleteRule	Deletes a rule.
ListDataSourceItem	Queries the topics of a data source in the rules engine.
ListRuleActions	Queries rule actions.

API	Description
GetRuleAction	Queries the details of a rule action.
CreateRuleAction	Creates a rule action.
UpdateRuleAction	Modifies a rule action.
DeleteRuleAction	Deletes a rule action.
StartRule	Enables a rule.
StopRule	Disables a rule.

Topics

API	Description
CreateProductTopic	Creates a custom topic category for a product.
UpdateProductTopic	Modifies a custom topic category.
QueryProductTopic	Queries the custom topic categories of a product.
DeleteProductTopic	Deletes a custom topic category.
CreateTopicRouteTable	Creates a route table for a topic.
QueryTopicRouteTable	Queries the route table of a topic.
QueryTopicReverseRouteTable	Queries the reverse route table of a topic.
DeleteTopicRouteTable	Deletes the route table of a topic.

Server-side subscription

API	Description
CreateSubscribeRelation	Creates a Message Service (MNS) or Advanced Message Queuing Protocol (AMQP) server-side subscription.
UpdateSubscribeRelation	Modifies an MNS or AMQP server-side subscription.
QuerySubscribeRelation	Queries the details of an MNS or AMQP server-side subscription.
DeleteSubscribeRelation	Deletes an MNS or AMQP server-side subscription.
CreateConsumerGroup	Creates a consumer group for creating an AMQP server-side subscription.
UpdateConsumerGroup	Modifies the name of a consumer group.

API	Description
QueryConsumerGroupByGroupId	Queries the details of a consumer group by consumer group ID.
QueryConsumerGroupList	Queries all consumer groups of an account, or performs a fuzzy search by consumer group name.
QueryConsumerGroupStatus	Queries the status of a consumer group when AMQP server-side subscription is enabled. The status information includes the online client information, message consumption rate, number of accumulated messages, and latest message consumption time.
ResetConsumerGroupPosition	Clears the accumulated messages of a consumer group when an AMQP server-side subscription is enabled.
DeleteConsumerGroup	Deletes a consumer group.
CreateConsumerGroupSubscribeRelation	Adds a consumer group to an AMQP server-side subscription.
DeleteConsumerGroupSubscribeRelation	Removes a consumer group from an AMQP server-side subscription.

Messaging

API	Description
RRpc	Sends a request to a device and synchronously receives a response from the device.
PubBroadcast	Broadcasts a message to all devices of a product or all devices that subscribe to a topic.
Pub	Publishes a message to a device by using a custom topic.
BatchPub	Publishes a message to multiple devices of a product by using a custom topic.
SubscribeTopic	Subscribes to a topic for a device.

Device shadows

API	Description
GetDeviceShadow	Queries the shadow information of a device.
UpdateDeviceShadow	Modifies the shadow information of a device.

OTA updates

API	Description
GenerateOTAUploadURL	Generates the URL and details of an update package to be uploaded to OSS.
GenerateDeviceNameListURL	Generates the URL and details of a device list file to be uploaded to OSS. When you create a static update batch, you can specify devices to be updated in a device list file.
CreateOTAFirmware	Adds an update package.
DeleteOTAFirmware	Removes an update package.
ListOTAFirmware	Queries update packages.
QueryOTAFirmware	Queries the details of an update package.
CreateOTAVerifyJob	Creates a verification batch for an update package.
CreateOTAStaticUpgradeJob	Creates a static update batch.
CreateOTADynamicUpgradeJob	Creates a dynamic update batch.
ListOTAJobByFirmware	Queries the update batches of an update package.
ListOTAJobByDevice	Queries the update batches of an update package by device.
ListOTATaskByJob	Queries the update tasks of a device by update batch.
QueryOTAJob	Queries the details of an update batch.
CancelOTAStrategyByJob	Cancels an update policy that is associated with a dynamic update batch.
CancelOTATaskByDevice	Cancels the pending device update tasks of an update package.
CancelOTATaskByJob	Cancels the device update tasks of an update batch.
CreateOTAModule	Creates an OTA module for a product.
UpdateOTAModule	Modifies the alias and description of an OTA module.
DeleteOTAModule	Removes a custom OTA module.
ListOTAModuleByProduct	Queries the OTA modules of a product.
ConfirmOTATask	Confirms the device update tasks that are in the pending confirmation status.

API	Description
ListOTAUnfinishedTaskByDevice	Queries uncompleted device update tasks of a device.

4.3. Initiate API requests

This article describes the structure of IoT Platform API requests and provides a sample request.

Request structure

You can send HTTP or HTTPS requests to IoT Platform.

A request uses the following syntax:

```
http://Endpoint/?Action=xx&Parameters
```

Parameter	Description
Endpoint	The endpoint of IoT Platform. Format: `iot.${RegionId}.aliyuncs.com`. Replace *${RegionId}* with the ID of the region where you purchased the IoT Platform service. For more information about region IDs, see Regions and zones. Examples: • China (Shanghai): `iot.cn-shanghai.aliyuncs.com` • Singapore: `iot.ap-southeast-1.aliyuncs.com` • US (Silicon Valley): `iot.us-west-1.aliyuncs.com` • Japan (Tokyo): `iot.ap-northeast-1.aliyuncs.com` • Germany (Frankfurt): `iot.eu-central-1.aliyuncs.com`
Action	The operation that you want to perform. For example, to publish a message to a specified topic, you must set the Action parameter to *Pub*.
Parameters	The request parameters of the operation. Separate multiple parameters with ampersands (&). Request parameters include common parameters and operation-specific parameters. Common parameters include the API version number and authentication information.

The following code provides an example on how to call the Pub operation to publish a message to a topic:

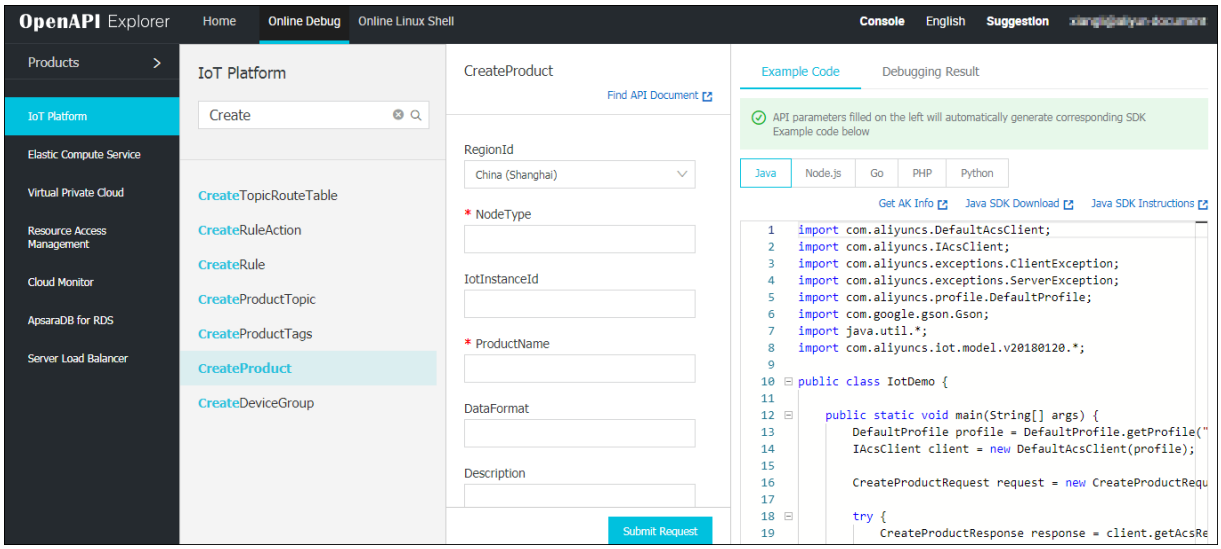
> **Note** In this example, IoT Platform is deployed in the China (Shanghai) region. The code has been formatted for ease of reading. For more information about request parameters, see Common parameters and Pub.

```
https://iot.cn-shanghai.aliyuncs.com/?Action=Pub
&Format=XML
&Version=2018-01-20
&Signature=Pc5WB8gok***1dgI%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&AccessKeyId=LTAI4***iW5j3
&Timestamp=2017-07-19T12:00:00Z
&RegionId=cn-shanghai
...
```

```
https://POP gateway domain name/data/api.json/?Action=Pub
&Format=XML
&Version=2017-04-20
&Signature=Pc5WB8gok***1dgI%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&Timestamp=2017-07-19T12:00:00Z
...
```

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. You can use **OpenAPI Explorer** to search for API operations, call API operations, and dynamically generate the sample code of API operations for different SDKs. On the right side of the page, you can view the sample code of an SDK on the **Example Code** tab. On the **Debugging Result** tab, you can view the actual request URL and response in the JSON format.



API authorization

To ensure the security of your account, we recommend that you call API operations as a Resource Access Management (RAM) user. Before you call an API operation as a RAM user, you must create and attach the required RAM policy to the RAM user.

For more information, see Mapping of IoT Platform operations and RAM policies.

4.4. Common parameters

This article describes the common request parameters and common response parameters that are used in IoT Platform API operations.

Common request parameters

Common request parameters must be included in all IoT Platform API requests.

Parameter	Type	Required	Description
Format	String	No	The format in which to return the response. Valid values: *JSON* and *XML*. Default value: *XML*.
Version	String	Yes	The version number of the API. The value must be in the `YYYY-MM-DD` format. The latest version is `2018-01-20`. Each API has multiple versions.
AccessKeyId	String	Yes	The AccessKey ID provided to you by Alibaba Cloud. To obtain the AccessKey ID, log on to the Alibaba Cloud Management Console, move the pointer over the user profile, and then click **AccessKey Management**. In the **User Management** console, you can view or create AccessKey pairs.
Signature	String	Yes	The signature string of the current request.
SignatureMethod	String	Yes	The encryption method of the signature string. Set the value to *HMAC-SHA1*.

Parameter	Type	Required	Description
Timestamp	String	Yes	The timestamp of the request. Specify the time in the ISO 8601 standard in the `YYYY-MM-ddTHH:mm:ssZ` format. The time must be in UTC. For example, you can set the parameter to `2016-01-04T12:00:00Z`, which indicates January 4, 2016 20:00:00 UTC+8.
SignatureVersion	String	Yes	The version of the signature encryption algorithm. Set the value to 1.0.
SignatureNonce	String	Yes	A unique, random number used to prevent replay attacks. You must use different numbers for different requests.
RegionId	String	Yes	The region where your devices reside. The region you specify must match the region that is specified in the console. Example: cn-shanghai.

Examples

```
https://iot.cn-shanghai.aliyuncs.com/
? Format=XML
&Version=2018-01-20
&Signature=Pc5WB8gokVn0xfeu%2FZV%2BiNM1dgI%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&AccessKeyId=...
&Timestamp=2018-05-20T12:00:00Z
&RegionId=cn-shanghai
```

Common response parameters

API responses use the HTTP response format where a 2XX status code indicates a successful call and a 4XX or 5XX status code indicates a failed call. Responses can be returned in either the JSON or XML format. You can specify the response format in the request. The default response format is XML.

Every response returns a unique

RequestId

regardless of whether the call is successful.

- Sample success responses
  - XML format

```
<? xml version="1.0" encoding="UTF-8"? >
<!--Root node of the response-->
<Operation name+Response>
    <!--Return request tag-->
    <RequestId>4C467B38-3910-447D-87BC-AC049166F216</RequestId>
    <!--Response result data-->
</Operation name+Response>
```

  - JSON format

```
{
    "RequestId": "4C467B38-3910-447D-87BC-AC049166F216"
    /* Response result data */
}
```

- Sample error responses

  If an error occurs when you call an API operation, no result is returned. You can use the error code to identify the cause.

  If an error occurs when you call an API operation, a 4XX or 5XX HTTP status code is returned. The response body contains the specific error code and error message. It also contains a globally unique request ID (

  RequestId

). If you cannot confirm what error occurs, contact Alibaba Cloud customer service or submit a ticket. You must provide your request ID for assistance.

  - XML format

```
<? xml version="1.0" encoding="UTF-8"? >
<Error>
   <RequestId>8906582E-6722-409A-A6C4-0E7863B733A5</RequestId>
   <Code>UnsupportedOperation</Code>
   <Message>The specified action is not supported. </Message>
</Error>
```

  - JSON format

```
{
    "RequestId": "8906582E-6722-409A-A6C4-0E7863B733A5",
    "Code": "UnsupportedOperation",
    "Message": "The specified action is not supported."
}
```

4.5. Request signatures

You must sign all API requests to ensure data security. Alibaba Cloud uses the request signature to verify the identity of the API caller. Therefore, each API request must contain signature information, regardless of whether it is sent over HTTP or HTTPS.

Signature method

IoT Platform implements symmetric encryption with an AccessKey pair to verify the identity of the request sender. An AccessKey pair consists of an AccessKey ID and an AccessKey secret, which you can view in the User Management console. The AccessKey ID is used to verify the identity of the user, while the AccessKey secret is used to encrypt and verify the signature string. You must keep your AccessKey secret strictly confidential.

> **Note** IoT Platform provides SDKs for multiple programming languages, such as Java, Python, and PHP. If you use the SDKs to call API operations, you can skip the signing process. For more information, see Download IoT Platform SDKs and the related SDK documentation.

To sign a request, perform the following steps:

1. Create a canonicalized query string.
   i. Arrange the request parameters.

      Arrange the request parameters in alphabetical order, including all common and operation-specific parameters except the Signature parameter.

      > **Note** If you use the GET method to send a request, the request parameters are included as part of the request URL. The parameters follow the question mark (`?`) and are connected by ampersands (`&`) in the URL.

   ii. Encode the canonicalized query string.

      Use UTF-8 to encode the names and values of the request parameters based on RFC 3986. The encoding format must comply with the following rules:

      - Uppercase letters, lowercase letters, digits, and specific special characters such as hyphens (`-`), underscores (`_`), periods (`.`), and tildes (`~`) do not need to be encoded.
      - Other characters must be percent encoded in the `%XY` format. `XY` represents the ASCII code of the characters in hexadecimal notation. For example, double quotation marks (`"`) are encoded as `%22` .
      - Extended UTF-8 characters are encoded in the `%XY%ZA…` format.
      - Spaces must be encoded as `%20` . Do not encode spaces as plus signs (`+`).

      The preceding encoding method is similar to but slightly different from the `application/x-www-form-urlencoded` MIME encoding algorithm.

      If you use `java.net.URLEncoder` from the Java standard library, use `percentEncode` to encode request parameters and their values. In the encoded query string, replace the plus signs (`+`) with `%20` , asterisks (`*`) with `%2A` , and `%7E` with tildes (`~`). This way, you can obtain an encoded string that matches the preceding encoding rules.

```
private static final String ENCODING = "UTF-8";
private static String percentEncode(String value) throws UnsupportedEncodingExcepti
on {
return value != null ? URLEncoder.encode(value, ENCODING).replace("+", "%20").repla
ce("*", "%2A").replace("%7E", "~") : null;
}
```

iii. Use an equal sign (`=`) to connect the name and value of each encoded request parameter.

iv. Use an ampersand (`&`) to connect the encoded request parameters. These parameters must be arranged in the same order as those in Step i.

Then, the canonicalized query string is created.

2. Create a string-to-sign.

   Create a string-to-sign from the encoded canonicalized query string by using `percentEncode` . The following sample code shows how to create a string-to-sign:

```
StringToSign=
  HTTPMethod + "&" +                      // HTTPMethod: the HTTP method used to send t
he request, such as GET.
  percentEncode("/") + "&" +              // percentEncode("/"): Encode backslashes (/)
as %2F.
  percentEncode(CanonicalizedQueryString) // Encode the canonicalized query string that
is created in Step 1.
```

3. Calculate the HMAC value of the string-to-sign by using the AccessKey secret as the key.

   Calculate the HMAC value of the string-to-sign based on RFC 2104. In this example, the Java Base64 encoding method is used.

```
Signature = Base64( HMAC-SHA1( AccessSecret, UTF-8-Encoding-Of(StringToSign) ) )
```

> **Note** The AccessKey secret appended by an ampersand (`&`) (ASCII code 38) is used as the key for HMAC calculation. The SHA1 algorithm is used to calculate the HMAC value of the string-to-sign.

4. Calculate the signature.

   Encode the HMAC value in Base64 to obtain the signature string.

5. Add the signature.

   Add the signature string to the request as the Signature parameter and perform URL encoding based on RFC 3986.

Example

The following example shows how to sign a request. In this example, the Pub operation of IoT Platform is called. The following parameters are configured in the request URL: `AccessKeyId=testid` , `AccessKeySecret=testsecret` , `ProductKey=12345abcde` , `TopicFullName=/12345abcde/testdevice/user/get` , and `MessageContent=aGVsbG8gd29ybGQ` .

1. Create and encode a canonicalized query string.

```
http://iot.cn-shanghai.aliyuncs.com/?Action=Pub&MessageContent=aGVsbG8gd29ybGQ&Timestam
p=2018-07-31T07:43:57Z&SignatureVersion=1.0&Format=XML&Qos=0&SignatureNonce=3ee8c1b8-83
d3-44af-a94f-4e0ad82fd6cf&Version=2018-01-20&AccessKeyId=testid&SignatureMethod=HMAC-SH
A1&RegionId=cn-shanghai&ProductKey=12345abcde&TopicFullName=/12345abcde/testdevice/user
/get
```

2. Create a string-to-sign from the encoded canonicalized query string.

```
GET&%2F&AccessKeyId%3Dtestid%26Action%3DPub%26Format%3DXML%26MessageContent%3DaGVsbG8gd
29ybGQ%26ProductKey%3D12345abcde%26Qos%3D0%26RegionId%3Dcn-shanghai%26SignatureMethod%3
DHMAC-SHA1%26SignatureNonce%3D3ee8c1b8-83d3-44af-a94f-4e0ad82fd6cf%26SignatureVersion%3
D1.0%26Timestamp%3D2018-07-31T07%253A43%253A57Z%26TopicFullName%3D%252F12345abcde%252Ft
estdevice%252Fuser%252Fget%26Version%3D2018-01-20
```

3. Calculate the signature.

   In this example, the AccessKey secret is `testsecret`. Therefore, the key that is used for HMAC calculation is *testsecret&*. The following code shows the calculated signature string:

```
NUh3otvAoXOZmG/a2gDShh6Ze9w=
```

4. Add the signature string to the request as the Signature parameter. The following code shows the URL of the signed request:

```
http://iot.cn-shanghai.aliyuncs.com/?MessageContent=aGVsbG8gd29ybGQ&Action=Pub&Timestam
p=2018-07-31T07%253A43%253A57Z&SignatureVersion=1.0&Format=XML&Qos=0&SignatureNonce=3ee
8c1b8-83d3-44af-a94f-4e0ad82fd6cf&Version=2018-01-20&AccessKeyId=testid&Signature=NUh3o
tvAoXOZmG%2Fa2gDShh6Ze9w%3D&SignatureMethod=HMAC-SHA1&RegionId=cn-shanghai&ProductKey=1
2345abcde&TopicFullName=%2F12345abcde%2Ftestdevice%2Fuser%2Fget
```

Sample code in Java

The following example shows how to obtain a signature by using Java:

1. Edit the *Config.java* file.

```
/*
 * Copyright © 2018 Alibaba. All rights reserved.
 */
package com.aliyun.iot.demo.sign;
/**
 * The signature configurations for the server API.
 *
 * @author: ali
 * @version: 0.1 2018-08-08 08:23:54
 */
public class Config {
    // Your AccessKey pair.
    public static String accessKey = "1234567890123456";
    public static String accessKeySecret = "12345678901234567890123456789 0";
    public final static String CHARSET_UTF8 = "utf8";
}
```

Parameter	Example	Description

Parameter	Example	Description
accessKey	1234567890123456	Log on to the IoT Platform console, move the pointer over the profile picture, and then click **AccessKey Management** to obtain the AccessKey ID and AccessKey secret. **Note** If you use a RAM user, you must attach the AliyunIOTFullAccess permission policy to the user. This policy allows the user to manage IoT Platform resources. Otherwise, the connection with IoT Platform fails. For more information about how to authorize a RAM user, see RAM user access.
accessKeySecret	1234567890123456789012344567890	

2. Edit the *UrlUtil.java* file.

```
/*
 * Copyright © 2018 Alibaba. All rights reserved.
 */
package com.aliyun.iot.demo.sign;
import java.net.URLEncoder;
import java.util.Map;
import org.apache.commons.lang3.StringUtils;
/**
 * The URL processing class.
 *
 * @author: ali
 * @version: 0.1 2018-06-21 20:40:52
 */
public class UrlUtil {
    private final static String CHARSET_UTF8 = "utf8";
    public static String urlEncode(String url) {
        if (!StringUtils.isEmpty(url)) {
            try {
                url = URLEncoder.encode(url, "UTF-8");
            } catch (Exception e) {
                System.out.println("Url encode error:" + e.getMessage());
            }
        }
        return url;
    }
    public static String generateQueryString(Map<String, String> params, boolean isEnco
deKV) {
        StringBuilder canonicalizedQueryString = new StringBuilder();
        for (Map.Entry<String, String> entry : params.entrySet()) {
            if (isEncodeKV)
                canonicalizedQueryString.append(percentEncode(entry.getKey())).append("
=")
                        .append(percentEncode(entry.getValue())).append("&");
            else
                canonicalizedQueryString.append(entry.getKey()).append("=").append(entr
```

```
y.getValue()).append("&");
        }
        if (canonicalizedQueryString.length() > 1) {
            canonicalizedQueryString.setLength(canonicalizedQueryString.length() - 1);
        }
        return canonicalizedQueryString.toString();
    }
    public static String percentEncode(String value) {
        try {
            // After you use URLEncoder.encode for encoding, replace plus signs (+), as
terisks (*), and %7E with values that conform to the encoding standard that is specifie
d by the API.
            return value == null ? null
                    : URLEncoder.encode(value, CHARSET_UTF8).replace("+", "%20").replac
e("*", "%2A").replace("%7E",
                            "~");
        } catch (Exception e) {
        }
        return "";
    }
}
```

3. Edit the *SignatureUtils.java* file.

```
/*
 * Copyright © 2018 Alibaba. All rights reserved.
 */
package com.aliyun.iot.demo.sign;
import java.io.IOException;
import java.io.UnsupportedEncodingException;
import java.net.URI;
import java.net.URISyntaxException;
import java.net.URLDecoder;
import java.net.URLEncoder;
import java.util.Map;
import java.util.TreeMap;
import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import org.apache.commons.codec.binary.Base64;
import org.apache.commons.lang3.StringUtils;
/**
 * The signature configurations for the server API.
 *
 * @author: ali
 * @version: 0.1 2018-06-21 20:47:05
 */
public class SignatureUtils {
    private final static String CHARSET_UTF8 = "utf8";
    private final static String ALGORITHM = "HmacSHA1";
    private final static String SEPARATOR = "&";
    public static Map<String, String> splitQueryString(String url)
            throws URISyntaxException, UnsupportedEncodingException {
        URI uri = new URI(url);
        String query = uri.getQuery();
        final String[] pairs = query.split("&");
```

```
        TreeMap<String, String> queryMap = new TreeMap<String, String>();
        for (String pair : pairs) {
            final int idx = pair.indexOf("=");
            final String key = idx > 0 ? pair.substring(0, idx) : pair;
            if (!queryMap.containsKey(key)) {
                queryMap.put(key, URLDecoder.decode(pair.substring(idx + 1), CHARSET_UT
F8));
            }
        }
        return queryMap;
    }
    public static String generate(String method, Map<String, String> parameter, String
accessKeySecret)
            throws Exception {
        String signString = generateSignString(method, parameter);
        System.out.println("signString---" + signString);
        byte[] signBytes = hmacSHA1Signature(accessKeySecret + "&", signString);
        String signature = newStringByBase64(signBytes);
        System.out.println("signature----" + signature);
        if ("POST".equals(method))
            return signature;
        return URLEncoder.encode(signature, "UTF-8");
    }
    public static String generateSignString(String httpMethod, Map<String, String> para
meter) throws IOException {
        TreeMap<String, String> sortParameter = new TreeMap<String, String>();
        sortParameter.putAll(parameter);
        String canonicalizedQueryString = UrlUtil.generateQueryString(sortParameter, tr
ue);
        if (null == httpMethod) {
            throw new RuntimeException("httpMethod can not be empty");
        }
        StringBuilder stringToSign = new StringBuilder();
        stringToSign.append(httpMethod).append(SEPARATOR);
        stringToSign.append(percentEncode("/")).append(SEPARATOR);
        stringToSign.append(percentEncode(canonicalizedQueryString));
        return stringToSign.toString();
    }
    public static String percentEncode(String value) {
        try {
            return value == null ? null
                    : URLEncoder.encode(value, CHARSET_UTF8).replace("+", "%20").replac
e("*", "%2A").replace("%7E",
                            "~");
        } catch (Exception e) {
        }
        return "";
    }
    public static byte[] hmacSHA1Signature(String secret, String baseString) throws Exc
eption {
        if (StringUtils.isEmpty(secret)) {
            throw new IOException("secret can not be empty");
        }
        if (StringUtils.isEmpty(baseString)) {
```

```
            return null;
        }
        Mac mac = Mac.getInstance("HmacSHA1");
        SecretKeySpec keySpec = new SecretKeySpec(secret.getBytes(CHARSET_UTF8), ALGORI
THM);
        mac.init(keySpec);
        return mac.doFinal(baseString.getBytes(CHARSET_UTF8));
    }
    public static String newStringByBase64(byte[] bytes) throws UnsupportedEncodingExce
ption {
        if (bytes == null || bytes.length == 0) {
            return null;
        }
        return new String(Base64.encodeBase64(bytes, false), CHARSET_UTF8);
    }
}
```

4. Edit the *Main.java* file.

```
/*
 * Copyright © 2018 Alibaba. All rights reserved.
 */
package com.aliyun.iot.demo.sign;
import java.io.UnsupportedEncodingException;
import java.net.URLEncoder;
import java.util.HashMap;
import java.util.Map;
/**
 * The main entry to the signature tool.
 *
 * @author: ali
 * @version: 0.1 2018-09-18 15:06:48
 */
public class Main {
    // 1. Modify the AccessKey pair in the Config.java file.
    // 2. You must specify all parameters. We recommend that you use Method 2 in the fo
llowing description.
    // 3. The signature that follows "Final signature" is the signature that you want t
o obtain.
    public static void main(String[] args) throws UnsupportedEncodingException {
        // Method 1
        System.out.println("Method 1:");
        String str = "GET&%2F&AccessKeyId%3D" + Config.accessKey
                + "%26Action%3DRegisterDevice%26DeviceName%3D1533023037%26Format%3DJSON
%26ProductKey%3DaxxxUtgaRLB%26RegionId%3Dcn-shanghai%26SignatureMethod%3DHMAC-SHA1%26Si
gnatureNonce%3D1533023037%26SignatureVersion%3D1.0%26Timestamp%3D2018-07-31T07%253A43%2
53A57Z%26Version%3D2018-01-20";
        byte[] signBytes;
        try {
            signBytes = SignatureUtils.hmacSHA1Signature(Config.accessKeySecret + "&",
str.toString());
            String signature = SignatureUtils.newStringByBase64(signBytes);
            System.out.println("signString---" + str);
            System.out.println("signature----" + signature);
            System.out.println("Final signature:" + URLEncoder.encode(signature, Config
```

```
            System.out.println("Final signature:" + URLEncoder.encode(signature, Config
.CHARSET_UTF8));
        } catch (Exception e) {
            e.printStackTrace();
        }
        System.out.println();
        // Method 2
        System.out.println("Method 2:");
        Map<String, String> map = new HashMap<String, String>();
        // The common parameters.
        map.put("Format", "JSON");
        map.put("Version", "2018-01-20");
        map.put("AccessKeyId", Config.accessKey);
        map.put("SignatureMethod", "HMAC-SHA1");
        map.put("Timestamp", "2018-07-31T07:43:57Z");
        map.put("SignatureVersion", "1.0");
        map.put("SignatureNonce", "1533023037");
        map.put("RegionId", "cn-shanghai");
        // The request parameters.
        map.put("Action", "RegisterDevice");
        map.put("DeviceName", "1533023037");
        map.put("ProductKey", "a***UtgaRLB");
        try {
            String signature = SignatureUtils.generate("GET", map, Config.accessKeySecr
et);
            System.out.println("Final signature:" + signature);
        } catch (Exception e) {
            e.printStackTrace();
        }
        System.out.println();
    }
}
```

4.6. Error codes

This topic describes the error codes that may be returned when you call IoT Platform APIs. For more information about how to troubleshoot errors that are related to request parameters, see operation-specific request parameters in the API documentation. These errors include invalid data formats, invalid data length, and invalid values.

System error codes

An error code that starts with `iot.system` or `iot.Sre` indicates a system error.

Error code	Description	Solution
iot.system.SystemException	A system exception occurred.	Try again later. If the issue persists, submit a ticket.

Error code	Description	Solution
iot.system.InstanceNotFound	The specified instance ID does not exist.	Make sure that the request parameters are valid. Try again later.
iot.Sre.IotInstanceNotFound		
iot.system.UidNotFound	The specified Alibaba Cloud account does not exist or IoT Platform is not activated for the account.	Make sure that the specified Alibaba Cloud account is valid and IoT Platform is activated for the account. Try again later.
iot.system.InstanceIdSame	The ID of the specified source instance is the same as that of the specified destination instance.	Make sure that the ID of the specified source instance is different from that of the specified destination instance. Try again later.
Iot.system.BillIsOverDue	The Alibaba Cloud account has overdue payments.	Go to the User Center and add funds to your Alibaba Cloud account.

Common error codes

An error code that starts with `iot.common` or `iot.check` indicates a common error.

Error code	Description	Solution
iot.common.InvalidPageParams	The specified page size or page number is invalid.	Make sure that the specified pagination parameters such as **PageSize** are valid. Try again later. For more information, see the API documentation.
iot.common.InvalidTenant	The specified tenant is invalid.	Specify a valid Alibaba Cloud account and grant the required permissions to the account.

Error code	Description	Solution
iot.common.QueryDeviceActionError	The system failed to obtain the device information.	Make sure that the request parameters are valid. Try again later.
iot.common.QueryDevicePropertyActionError	The system failed to obtain device properties.	
iot.common.QueryProductActionError	The system failed to obtain the product information.	
iot.common.QueryProductCountActionError	The system failed to obtain the total number of products.	
iot.common.RamActionPermissionDeny	The specified Resource Access Management (RAM) user does not have the required permissions.	Use your Alibaba Cloud account to grant the required permissions to the RAM user. For more information, see Grant permissions to a RAM user.
iot.common.AuthActionPermissionDeny	The authentication failed. This error may occur when the specified device information does not match the account.	Make sure that the **AccessKey** pair matches the device information. Try again later.
iot.check.ParameterIsNotLessThanMax	The value of Parameter A must be less than the value of Parameter B. For example, the value of the **startTime** parameter must be less than the value of the **endTime** parameter.	Make sure that the request parameters conform to the preceding rule. Try again later.
iot.common.APINotSupportedInInstance	This API operation is unavailable for the instance. This feature is unavailable for public instances.	Specify an Enterprise Edition instance. Then, call the operation.
iot.common.InvalidFormattedParameter	The parameter format is invalid.	
iot.common.IllegalFileBizCode	The business type of the file is invalid.	

Error code	Description	Solution
iot.common.IllegalFileFormat	The format of the file is invalid.	Make sure that the request parameters are valid. Try again later.
iot.common.FileNotExist	The file does not exist.	
iot.common.UpdateThingModelOverLimit	The number of valid characters in a single Thing Specification Language (TSL) file exceeds the limit, which is 256 KB or 256 × 1024 characters.	Make sure that the number of valid characters in a single TSL file does not exceed the limit.

Product-related error codes

An error code that starts with `iot.prod` indicates a product-related error.

Error code	Description	Solution
iot.prod.AlreadyExistedProductName	The product name already exists. The name of each product in an instance must be unique.	Make sure that the name of each product in an Enterprise Edition instance is unique. Try again later.
iot.prod.CreateProductFailed	The system failed to create the product.	Make sure that the request parameters are valid. Try again later.
iot.prod.CreateProductTopicFailed	The system failed to create the topic category for the product.	
iot.prod.InvalidAliyunCommodityCode	The value of the **AliyunCommodityCode** parameter is invalid.	The valid values for the **AliyunCommodityCode** parameter are *iothub_senior* and *iothub*. Make sure that the **AliyunCommodityCode** parameter is valid. Try again later.

Error code	Description	Solution
iot.prod.InvalidFormattedCatId	The **CategoryId** parameter is invalid.	Make sure that the specified parameters that are related to the **product category** are valid. Try again later.
iot.prod.InvalidFormattedProductkey	The format of the ProductKey parameter value is invalid.	Make sure that the value that you specify for the **ProductKey** parameter is valid. Try again later.
iot.prod.InvalidFormattedProductName	The format of the product name is invalid.	Make sure that the format of the name that you specify for the product is valid. Try again later. For more information about the format of product names, see CreateProduct.
iot.prod.LongProductDesc	The length of the product description exceeds the limit.	The description must be 1 to 100 characters in length. Make sure that the length of the product description does not exceed the limit. Try again later.
iot.prod.InvalidNodeType	The **NodeType** parameter is invalid.	Make sure that the value that you specify for the **NodeType** parameter is valid. Try again later. For more information about the valid values of the NoteType parameter, see CreateProduct.
iot.prod.NotExistedProduct	The specified product does not exist. The value of the **ProductKey** parameter does not exist in the account.	Make sure that the specified **ProductKey** and instance ID are valid. Try again later.

Error code	Description	Solution
iot.prod.NotSeniorProduct	The product does not support TSL models. The TSL model was not enabled for the product when you created the product.	Make sure that the request parameters are valid. Try again later.
iot.prod.NullProductKey	You must specify the **ProductKey** parameter with a valid value.	
iot.prod.NullProductName	You must specify a valid product name.	
iot.prod.ProductCountExceedMax	The total number of products exceeds the limit. You can create up to 1,000 products for an instance.	Delete the products that you no longer use. Try again later.
iot.prod.QueryDeviceCountActionError	The system failed to obtain the number of devices that belong to the product.	Make sure that the request parameters are valid. Try again later.
iot.prod.QueryProductAbilitiesFailed	The system failed to obtain product features.	Make sure that the request parameters such as the **Identifier** parameter are valid. Try again later.
iot.prod.QueryProductAbilityFailed	The system failed to obtain product features.	Make sure that the request parameters such as the **Identifier** parameter are valid. Try again later.
iot.prod.QueryProductListActionError	The system failed to obtain the list of products.	Make sure that the request parameters are valid. Try again later.
iot.prod.UpdateProductFailed	The system failed to update the product information.	
iot.prod.QueryExtendPropertyFailed	The system failed to obtain product tags.	

Error code	Description	Solution
iot.prod.InvalidScriptType	The type of the data parsing script is invalid.	Make sure that the type that you specify for the data parsing script is valid. Try again later.
iot.prod.ThingScriptExisted	The draft of a new data parsing script or the modified draft of an existing script is available for the product.	Check whether the draft of a new data parsing script or the modified draft of an existing script is available for the product. If the draft of a new data parsing script or the modified draft of an existing script is available for the product, you do not need to create the new script or update the existing script again.
iot.prod.ConcurrentScriptOperation	The required operation on the data parsing script failed.	You cannot perform multiple operations in parallel on the data parsing script.
iot.prod.ThingScriptDataFormatError	The type of the data parsing script for the product is invalid.	Make sure that the request parameters are valid. Try again later.
iot.prod.BatchCreateThingModelFailed	The system failed to create the TSL model.	
iot.prod.ThingModelNameDuplicated	Duplicate feature names exist in the TSL model.	Specify a different feature name. Try again later.
iot.Prod.NotProductOwner	The current operator is not the owner of the product.	Make sure that you have the required permissions to access the product. Try again later.
iot.prod.ProductDataFormatIsNull	The data parsing script failed to be submitted. You did not specify a value for the **DataFormat** parameter when you created the product.	Make sure that you specify a data format when you create the product. For more information, see CreateProduct.

Device-related error codes

An error code that starts with `iot.device` or `iot.devicesearch` indicates a device-related error.

Error code	Description	Solution
Iot.Device.NotDeviceOwner	The current operator is not the owner of the device.	Use your Alibaba Cloud account to log on to the IoT Platform console. Then, check whether the device exists in the instance that you want to manage.
iot.device.AddTopoRelationFailed	A topological relationship failed to be added.	Make sure that the request parameters are valid. Try again later.
iot.device.AlreadyExistedDeviceName	The DeviceName already exists. Each DeviceName must be unique in the product.	Specify another DeviceName. Try again later.
iot.device.ApplyManyDevicesFailed	The system failed to create multiple devices at a time.	Make sure that the request parameters are valid. Try again later.
iot.device.CreateDeviceFailed	The system failed to create the device.	
iot.device.CreateDeviceTaskIsRunning	The device creation task is in progress.	The task that is used to create multiple devices at a time is in progress. Try again later.
iot.device.DeviceApplyIsNotFound	The **ApplyId** parameter is invalid.	Make sure that the specified value of the **ApplyId** parameter is the same as the value of the **ApplyId** parameter that is returned by the BatchCheckDeviceNames operation.
iot.device.DeviceCountExceeded	The number of devices that you want to create at a time exceeds the limit. You can create a maximum of 1,000 devices in a single operation.	Reduce the number of devices that you want to create. Try again later.

Error code	Description	Solution
iot.device.DeleteDeviceFailed	The system failed to delete the device.	Make sure that the request parameters are valid. Try again later.
iot.device.DeleteDevicePropertyFailed	The system failed to delete the device property.	
iot.device.DisableDeviceFailed	The system failed to disable the device.	
iot.device.EnableDeviceFailed	The system failed to enable the device.	
iot.device.InactiveDevice	The device is in the inactive state. This indicates that the device has never been connected to IoT Platform.	Log on to the IoT Platform console and check the device status. Make sure that the device is connected.
iot.device.InvalidFormattedApplyId	The **ApplyId** parameter is invalid.	Make sure that the value of the **ApplyId** parameter is the same as the value of the **ApplyId** parameter that is returned from the BatchCheckDeviceNames operation.
iot.device.IncorrentDeviceApplyInfo	The device application information is invalid.	Make sure that the request parameters such as **ApplyId** are valid. Try again later.
iot.device.InvalidFormattedDeviceName	The format of the DeviceName is invalid.	Make sure that the format of the specified DeviceName is valid. Try again later. For more information about the format of DeviceName parameter values, see RegisterDevice.
iot.device.InvalidDeviceNickNameExisted	An invalid device alias exists in the list of DeviceName parameter values. For more information, see the list of returned invalid device aliases.	Make sure that the alias of each device is valid when you create multiple devices at a time.

Error code	Description	Solution
iot.device.InvalidFormattedDevicePropertyKey	The format of the device property identifier is invalid. For more information about the supported formats for device properties, see the API documentation.	Make sure that the format of the specified device property identifier is valid.
iot.device.InvalidFormattedDevicePropertiesString	The format of the device property is invalid.	Make sure that the format of the specified device property is valid. For more information about the supported formats for device properties, see the API documentation.
iot.device.InvalidIoTId	The device ID is invalid.	Log on to the IoT Platform console and query the information about the device. Then, check whether the **IotId** is valid. You can call the QueryDeviceDetail or QueryDevice operation to obtain the **IotId**. You can also replace the **IotId** with a combination of the **ProductKey** and **DeviceName**.
iot.device.InvalidTimeBucket	The specified time range is invalid. Specify a valid value for the parameter. For more information, see the API documentation.	Make sure that the specified start time and end time meet the requirements of the operation.
iot.device.InvokeThingServiceFailed	The system failed to call the service of the device. Check whether the request parameters are valid. For example, you can check the format and value of the **Args** parameter.	Make sure that the request parameters comply with the feature definition of the product. Then, log on to the IoT Platform console and make sure that the device is connected. Try again later.

Error code	Description	Solution
iot.device.LongDevicePropertiesString	The length of the device property exceeds the limit. For more information about limits, see the API documentation.	Reduce the length. Try again later.
iot.device.NoneDeviceNameElement	The DeviceName list is empty.	Make sure that the specified DeviceName is valid. Try again later.
iot.device.NoneDeviceProperties	No valid device properties exist. Check whether the identifier of the property is same as the identifier that is defined in the TSL model.	Make sure that the request parameters are valid. Try again later.
iot.device.NotExistedDevice	The device does not exist. The value of the specified **IotId**, **ProductKey**, or **DeviceName** parameter is invalid. You can call the QueryDeviceDetail or QueryDevice operation to view the correct ProductKey or DeviceName.	Log on to the IoT Platform console and check whether the device exists.
iot.device.NullApplyId	You must specify a valid value for the **ApplyId** parameter.	Make sure that the value of the **ApplyId** parameter is valid. Try again later.
iot.device.NullDeviceName	You must specify a valid name for the device.	Make sure that the request parameters are valid. Try again later.
iot.device.NullDevicePropertyKey	You must specify a valid name for the device property.	
iot.device.NullDevicePropertiesString	You must specify a valid device property in request parameters.	
iot.device.QueryDeviceApplyActionError	The system failed to obtain the application ID.	Make sure that the value of the **ApplyId** parameter is valid. Try again later.

Error code	Description	Solution
iot.device.QueryDeviceAttrDataHistoryFailed	The system failed to obtain the historical records of the device property.	Make sure that the request parameters are valid. Try again later.
iot.device.QueryDeviceAttrStatusFailed	The system failed to obtain the status of the device property.	
iot.device.QueryDeviceEventHistoryFailed	The system failed to obtain invocation records of the device event.	
iot.device.QueryDeviceListActionError	The system failed to obtain the list of devices.	
iot.device.QueryDeviceServiceHistoryFailed	The system failed to obtain the invocation records of the device service.	
iot.device.QueryDeviceStatisticsFailed	The system failed to obtain the statistics of the device.	
iot.device.QueryDeviceStatusFailed	The system failed to obtain the status of the device.	
iot.device.QueryTopoRelationFailed	The system failed to obtain topological relationships. Check whether the request parameters are valid. For example, if the value of the **PageSize** parameter exceeds 50, this error occurs.	
iot.device.RemoveTopoRelationFailed	The system failed to remove the topological relationship.	
iot.device.SaveOrUpdateDevicePropertiesFailed	The system failed to add or modify the device property.	

Error code	Description	Solution
iot.device.SetDevicePropertyFailed	The system failed to set the device property. Check whether the value and format of the **Items** parameter are valid and the specified property is readable or writable.	Make sure that the specified device property complies with the feature definition of the product. Try again later.
iot.device.TooManyDevicePropertiesPerTime	The number of the specified properties exceeds the limit. For more information about limits, see the API documentation.	Check whether the number of the properties that you want to specify exceeds the limit.
iot.device.TopoRelationCountExceeded	The number of the specified topological relationships exceeds the limit. For more information about the limits on the number of gateways or sub-devices, see Limits.	Remove the topological relationships that you no longer use. Try again later.
iot.device.VerifyDeviceFailed	The system failed to authenticate the device.	Make sure that the request parameters such as the parameters about device information are valid. Try again later.
iot.devicesearch.InvalidSQLError	The SQL statement is invalid.	Make sure that the syntax of the SQL statement is valid. Try again later.
iot.devicesearch.InvalidSQLOffsetError	The SQL offset is invalid.	Check the SQL statement and specify a valid offset. Try again later.
iot.devicesearch.InvalidSQLFieldError	The SQL statement includes an invalid field name.	Check the SQL statement and specify a valid field name. Try again later.

Error code	Description	Solution
iot.devicesearch.InvalidSQLConditionError	The number of SQL conjunctions exceeds the limit.	Check the SQL statement and reduce the number of the specified conjunctions. Try again later.
iot.devicesearch.InvalidSQLOrderError	The SQL collation is invalid.	Check the SQL statement and specify a valid SQL collation. Try again later.
iot.devicesearch.InvalidSQLOperatorTypeError	The SQL operator does not match the data type.	Check the SQL statement and specify a valid operator. Try again later.
iot.devicesearch.InvalidSQLParamError	The SQL syntax is invalid.	Check the SQL statement and remove the clause from the invalid syntax. Try again later.
iot.tsl.InvalidIdentifierInEventError	The system failed to obtain the original event records of the device.	Check whether the specified property **identifier** is valid.
InvalidIdentifierInServiceError	The system failed to obtain the original service records of the device.	Check whether the specified property **identifier** is valid.
InvalidIdentifierInPropertyError	The system failed to obtain the original property records of the device.	Check whether the specified property **identifier** is valid.
iot.device.PageTokenIsIllegal	The system failed to obtain the original snapshots, property records, service records, and event records.	Make sure that the value of the **NextPageToken** parameter is valid. Try again later.
iot.device.DeviceHasDistributed	The device was already distributed. Specify another value for the DeviceName parameter. Try again later.	The specified value of the DeviceName parameter is used by an existing device in the product. Specify another valid value. Try again later.

Error code	Description	Solution
iot.device.FuzzyRuntimeSearchMinLengthLimit	The content of a fuzzy match is less than five characters in length.	Increase the length limit of keywords for fuzzy match. Try again later.
iot.device.RegionNotSupportDynamicGroup	The dynamic group feature is not supported in the region. The dynamic group feature is supported only in the China (Shanghai) region.	Make sure that you specify China (Shanghai) for the **region** parameter. Try again later.

Error codes related to device distribution

An error code that starts with `iot.provisioning` indicates a device distribution-related error.

Error code	Description	Solution
iot.provisioning.RunningTaskExceedLimit	The maximum number of concurrent distribution tasks has been reached within the specified Alibaba Cloud account. Each Alibaba Cloud account can create up to 10 tasks to distribute products and devices.	Wait for the running tasks to complete before you add new concurrent tasks.
iot.provisioning.TaskNotFinish	The distribution task is not complete.	Wait until the distribution task is complete.
iot.provisioning.TaskIsProcessing	The distribution task is still in progress.	Wait until the distribution task is complete.
iot.provisioning.DeviceIsInAnotherTask	The device has been added to another distribution task.	If a device is added to multiple distribution tasks at the same time, only one distribution task can be used to distribute the device.
iot.provisioning.TaskNotExist	The distribution task does not exist.	Make sure that the distribution task exists. Try again later.

Error code	Description	Solution
iot.provisioning.TaskAlreadyFinish	The distribution task is complete.	Make sure that the request parameters are valid. Try again later.
iot.provisioning.UidAndTaskNotMatch	The ID of the specified Alibaba Cloud account is different from that of the Alibaba Cloud account that creates the distribution task.	
iot.provisioning.DeviceIsDistributing	The device is being distributed.	Wait until the device is distributed.
iot.provisioning.ProductIsDistributing	The product is being distributed.	The system executes the distribution task that you create only after the task of distributing the product is complete.
iot.provisioning.AccountNotFound	The specified Alibaba Cloud account does not exist.	Make sure that the request parameters are valid. Try again later.
iot.provisioning.TargetAccountParamsError	You must specify valid account information.	
iot.provisioning.CrmServiceError	The specified Alibaba Cloud account is in an abnormal service state.	Try again later.
iot.provisioning.InstanceOperationDeny	The destination instance does not belong to the destination Alibaba Cloud account.	Make sure that the request parameters are valid. Try again later.
iot.provisioning.SourceInstanceNotFound	The ID of the specified source instance does not exist.	
iot.provisioning.TargetInstanceNotFound	The ID of the specified destination instance does not exist.	
iot.provisioning.CaptchaNotNull	No verification code is provided for the operation.	

Error code	Description	Solution
iot.provisioning.CaptchaNotFound	The verification code is invalid.	
iot.provisioning.SendCaptchaFlowControl	Excessive operation requests are submitted in a short period of time. Try again one minute later.	Try again later. The interval at which the system sends verification code must be greater than one minute.
iot.provisioning.LimitExceeded	The maximum number of distributed devices has been reached.	Reduce the number of devices that you want to distribute. Try again later.
iot.provisioning.FailGetLogLat	The system failed to obtain the longitude and latitude information.	Make sure that the request parameters are valid. Try again later.
iot.provisioning.NotCrossTenantId	This operation cannot be performed across Alibaba Cloud accounts.	This operation cannot be performed across Alibaba Cloud accounts.
iot.provisioning.ErrorStrategy	The distribution policy is not supported.	Specify a valid distribution policy. Try again later.
iot.provisioning.InstanceRegionConflict	Only one instance ID can be selected for each region.	Make sure that the request parameters are valid. Try again later.
iot.provisioning.NotDeviceOwner	The current operator is not the owner of the device.	Only the owner of the device can distribute the device.
iot.provisioning.NextTokenNotNull	The **NextToken** request parameter cannot be empty. For more information, see ListDeviceDistributeJob.	Make sure that the request parameters are valid. Try again later.

Error codes related to device groups

An error code that starts with `iot.group` indicates a device-group-related error.

Error code	Description	Solution
iot.group.NullGroupId	You must specify a valid group ID.	Make sure that the request parameters are valid. Try again later.
iot.group.DeleteGroupFailed	The system failed to delete the group.	
iot.group.SubGroupNotNull	A subgroup exists in the group. You cannot delete a group that has a subgroup. To delete the group, you must first remove all subgroups from the group.	Delete all subgroups and then delete the group.
iot.group.InvalidGroupName	The group name is invalid. The name can contain letters, digits, and underscores (_). The name must be 4 to 30 characters in length.	Make sure that the request parameters are valid. Try again later.
iot.group.GroupNameExisted	The group name already exists.	Specify a valid name for the group. Try again later.
iot.group.QueryGroupInfoFailed	The system failed to obtain the details of the group.	Make sure that the request parameters are valid. Try again later.
iot.group.NotExistedGroup	The group does not exist. Check the value of the **GroupId** parameter.	Log on to the IoT Platform console and make sure that the group exists. Try again later.
iot.group.QueryGroupCountFailed	The system failed to obtain the number of groups.	
iot.group.QueryGroupListFailed	The system failed to obtain the list of groups.	
iot.group.BindGroupRelationFailed	The system failed to establish a relationship between the groups.	

Error code	Description	Solution
iot.group.UpdateGroupFailed	The system failed to modify the information of the group.	Make sure that the request parameters are valid. Try again later.
iot.group.QueryGroupTreeFailed	The system failed to obtain the structure of group relationships.	
iot.group.CreateGroupFailed	The system failed to create the group.	
iot.group.InvalidFormattedTagString	The tag format is invalid.	Tags are in the JSON format. A tag consists of the tagKey and tagValue. You must specify valid tagKey and tagValue for a tag. Separate multiple tags with commas (,). Example: `[{"tagKey":"h1","tagValue":"rr"},{"tagKey":"7h","tagValue":"rr"}]` .
iot.group.TagCountExceedMax	The number of tags exceeds the limit. You can add a maximum of 100 tags to a group.	Delete tags that you no longer use. Try again later.
iot.group.GroupCountExceedMax	The number of groups exceeds the limit. • A group can include a maximum of 100 subgroups. • You can add a device to a maximum of 10 groups.	Delete idle subgroups or idle devices from a group. Try again later.
iot.group.SetGroupTagFailed	The system failed to specify the group tag.	Make sure that the request parameters are valid. Try again later.
iot.group.QueryGroupTagFailed	The system failed to obtain the information of the group tag.	

Error code	Description	Solution
iot.group.LongGroupDescError	The length of the group description exceeds the limit. The description must be 1 to 100 characters in length.	Modify the description of the group. Try again later.
iot.group.QueryGroupRelationFailed	The system failed to obtain the relationships of groups.	Make sure that the request parameters are valid. Try again later.
iot.group.GroupLevelExceedingLimitError	The number of group levels exceeds the limit. Groups can be nested in only three levels. These levels include groups, subgroups, and child-subgroups.	Log on to the IoT Platform console and check the nesting levels of groups.
iot.group.SuperGroupUnsupport	The subgroup cannot be added to the current group.	Log on to the IoT Platform console and check whether the group is a dynamic group. You cannot add a subgroup to a dynamic group.

Message-related error codes

In most cases, error codes that start with `iot.messagebroker` indicate message-related errors. These error codes are returned after you fail to call API operations related to messaging, device shadows, and rules engine. For more information about error codes that are returned by API operations related to the rules engine, see the following section.

Error code	Description	Solution
iot.messagebroker.CreateTopicRouteFailed	The system failed to create message routes between topics.	
iot.messagebroker.CreateTopicTemplateException	An exception occurred while the topic category was being created.	

Error code	Description	Solution
iot.messagebroker.CreateTopicTemplateFailed	The system failed to create the topic category.	Make sure that the request parameters are valid. Try again later.
Iot.MessageBroker.BatchSubTopicFailed	The system failed to subscribe to multiple topics.	
Iot.MessageBroker.EmptySubTopicList	The list of subscribed topics is empty.	Specify valid topics. Try again later.
iot.messagebroker.DeleteTopicTemplateException	An exception occurred while the topic category was being deleted.	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.DeleteTopicTemplateFailed	The system failed to delete the topic category.	
iot.messagebroker.DestTopicNameArraySizeIsLarge	The number of destination topics that you specify for the source topic exceeds the limit.	You can specify a maximum of 100 destination topics for a source topic. Make sure that the related parameters are valid. Try again later.
iot.messagebroker.DeleteTopicRouteFailed	The system failed to delete the message route between the topics.	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.DesireInfoInShadowMessageIsNotJson	The value of the **desire** parameter in the device shadow is not in the JSON format.	Specify a value in the JSON format for the **desire** parameter. Try again later.
iot.messagebroker.DesireValueIsNullInShadowMessage	The value of the **desire** parameter in the device shadow is empty.	Specify a valid value for the **desire** parameter. Try again later.
iot.messagebroker.ElementKeyOrValueIsNullInDesire	The **desire** parameter includes an empty property identifier or property value.	Make sure that the **desire** parameter does not include empty property identifiers or property values. Try again later.

Error code	Description	Solution
iot.messagebroker.ElementKeyOrValueIsNullInReport	The **report** parameter includes an empty property identifier or property value.	Make sure that the **report** parameter does not include empty property identifiers or property values. Try again later.
iot.messagebroker.HALFCONN	The connection fails because the device is in the half-open state.	Make sure that the connection status of the device is normal. Try again later.
iot.messagebroker.InvalidFormattedSrcTopicName	The format of the source topic name is invalid.	Make sure that the format of the topic name is valid. Try again later. You can view the topics of the device on the **Topic List** tab of the Device Details page in the IoT Platform console.
iot.messagebroker.InvalidFormattedTopicName	The format of the topic is invalid. You can view the topics of the device on the **Topic List** tab of the Device Details page in the IoT Platform console.	Make sure that the format of the topic is valid. Try again later. You can view the topics of the device on the **Topic List** tab of the Device Details page in the IoT Platform console.
iot.messagebroker.InvalidFormattedTopicTemplateId	The format of the topic category ID is invalid.	Make sure that the format of the topic category ID is valid. Try again later. You can call the QueryProductTopic operation to query the value of the **TopicId** parameter.
iot.messagebroker.InvalidTimeoutValue	The specified timeout period is invalid.	Make sure that the timeout parameter is valid. Try again later. For more information, see the API documentation.

Error code	Description	Solution
iot.messagebroker.InvalidTopicTemplateOperationValue	The permissions on the topic category are invalid.	Make sure that the permissions on the topic category are valid. Try again later. Valid values: *SUB*: subscribe *PUB*: publish *ALL*: publish and subscribe
iot.messagebroker.InvalidVersionValueInShadowMessage	The value of the **version** parameter in the device shadow is invalid.	Make sure that the value of the **version** parameter in the device shadow is valid.
iot.messagebroker.MethodValueIsNotUpdate	You must set the **method** parameter to *update* in the device shadow.	Make sure that the **method** parameter is set to *update*. Try again later.
iot.messagebroker.MessageContentIsNotBase64Encode	The message content must be encoded in Base64.	Make sure that the message content is encoded in Base64. Try again later.
iot.messagebroker.NoneElementInDesire	No property exists in the **desire** parameter.	Make sure that one or more properties are specified for the **desire** parameter. Try again later.
iot.messagebroker.NoneElementInReport	No property exists in the **report** parameter.	Make sure that one or more properties are specified for the **report** parameter. Try again later.
iot.messagebroker.NoneElementDestTopicNameInArray	No element exists in the destination topic list.	Make sure that one or more elements exist in the destination topic list. Try again later.
iot.messagebroker.NotFoundDesireInShadowMessage	The **desire** parameter does not exist in the **desire** parameter of the device shadow.	Make sure that the **desire** parameter exists in the **state** parameter of the device shadow.
iot.messagebroker.NotFoundMethodInShadowMessage	The **method** parameter does not exist in the device shadow.	Make sure that the **method** parameter exists in the device shadow. Try again later.

Error code	Description	Solution
iot.messagebroker.NotFoundReportInShadowMessage	The **report** parameter does not exist in the device shadow.	Make sure that the **report** parameter exists in the device shadow. Try again later.
iot.messagebroker.NotFoundStateInShadowMessage	The **state** parameter does not exist in the device shadow.	Make sure that the **state** parameter exists in the device shadow. Try again later.
iot.messagebroker.NotFoundVersionOrNullVersionValue	The **version** parameter does not exist or the value of the **version** parameter is empty.	Make sure that the value of the **version** parameter is valid. Try again later.
iot.messagebroker.NotMatchedProductKeyWithSrcTopicOwner	The ProductKey of the source topic does not belong to the current user.	Make sure that the product of the topic belongs to the current user. Try again later.
iot.messagebroker.NullMessageContent	You must specify valid message content.	Make sure that the message content is valid. Try again later.
iot.messagebroker.NullShadowMessage	You must specify valid content of the device shadow.	Make sure that the content that you specify for the device shadow is valid.
iot.messagebroker.NullSrcTopicName	You must specify a valid name for the source topic.	Make sure that the topic name is valid. Try again later.
iot.messagebroker.NullTopicName	You must specify a valid topic.	Make sure that the topic is valid. Try again later.
iot.messagebroker.NullTopicTemplateId	You must specify a valid ID for the topic category.	Make sure that the ID of the topic category is valid. Try again later.
iot.messagebroker.NullTopicTemplateOperation	You must grant valid permissions on the topic category.	Make sure that the permissions on the topic category are valid. Try again later.
iot.messagebroker.OFFLINE	The connection fails because the device is not connected to IoT Platform.	Make sure that the device is connected to IoT Platform and try again.

Error code	Description	Solution
iot.messagebroker.PublishMessageException	An exception occurred in messaging.	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.PublishMessageFailed	The system failed to send the message.	
iot.messagebroker.QueryDeviceShadowActionError	The system failed to query the device shadow.	
iot.messagebroker.QueryProductTopicListActionError	The system failed to obtain the list of topic categories.	
iot.messageborker.QueryTopicReverseRouteTableListActionError	The system failed to obtain the list of source topics.	
iot.messageborker.QueryTopicRouteTableListActionError	The system failed to obtain the list of message routes.	
iot.messagebroker.QueryTopicTemplateActionError	The system failed to obtain the topic category.	
iot.messagebroker.QueryTopicTemplateException	An exception occurred while the topic category was being queried.	
iot.messagebroker.RateLimit	The connection failed due to throttling.	Make sure that the call frequency of the API operation exceeds the limit. Excessive calls may trigger throttling. For more information, see Limits.
iot.messagebroker.ReportInShadowMessageIsNotJson	The value of the **report** parameter in the **state** parameter of the device shadow is not in the JSON format.	Make sure that the value of the **report** parameter in the **state** parameter of the device shadow is in the JSON format. Try again later.

Error code	Description	Solution
iot.messagebroker.RrpcException	An exception occurred while the message was sent by using Revert Remote Procedure Call (RRPC).	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.RrpcFailed	The system failed to send the message by using RRPC.	
iot.messagebroker.ShadowMessageIsNotJson	The device shadow is not in the JSON format.	Make sure that the device shadow is in the JSON format. Try again later.
iot.messagebroker.ShadowMessageLengthIsLarge	The size of the device shadow exceeds the limit.	Make sure that the size of the device shadow does not exceed the limit. Try again later. The maximum size of a device shadow is 16 KB.
iot.messagebroker.TIMEOUT	The connection failed due to a timeout issue.	Try again.
iot.messagebroker.TooManyElementInDesire	The total number of properties that are included in the **desire** parameter exceeds the limit.	Make sure that the number of properties in the **desire** parameter does not exceed the limit. Try again later. A device shadow in the JSON format can include a maximum of 128 properties.
iot.messagebroker.TooManyElementInReport	The total number of properties that are included in the **report** parameter exceeds the limit.	Make sure that the number of properties in the **report** parameter does not exceed the limit. Try again later. A device shadow in the JSON format can include a maximum of 128 properties.
iot.messagebroker.TopicAlreadyFound	The name of the topic category already exists in the product.	Make sure that the name of each topic category in the product is unique. Try again later.

Error code	Description	Solution
iot.messagebroker.TopicTemplateCountExceedMax	The number of topic categories in the product exceeds the limit.	Make sure that the number of topic categories in the product does not exceed the limit. Try again later. You can define a maximum of 50 topic categories for a product.
iot.messagebroker.TopicTemplateIsNotFound	The topic category does not exist.	Make sure that the topic category exists. Try again later. You can call the QueryProductTopic operation to view all the topic categories under the product.
iot.messagebroker.UpdateDeviceShadowMessageFailed	The system failed to update the device shadow.	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.UpdateTopicTemplateException	An error occurred while the topic category was being updated.	
iot.messagebroker.UpdateTopicTemplateFailed	The system failed to update the topic category.	
iot.messagebroker.TooManyUserProperties	The number of custom properties in MQTT 5.0 exceeds 20.	Make sure that the number of custom properties does not exceed the limit. Try again later.
iot.messagebroker.UserPropertyListExceedMaxLength	The total length of custom properties in MQTT 5.0 exceeds 8,192 characters.	Make sure that the total length of custom properties does not exceed the limit. Try again later.
iot.messagebroker.InvalidUserProperty	The format of custom properties in MQTT 5.0 is invalid.	Make sure that the request parameters are valid. Try again later.
iot.messagebroker.CorrelationDataNotBase64Encode	The correlation data in MQTT 5.0 is not encoded in Base64.	Make sure that the correlation data is encoded in Base64. Try again later.
iot.messagebroker.NullCorrelationData	The correlation data in MQTT 5.0 is empty.	Make sure that the correlation data is valid. Try again later.

Error code	Description	Solution
iot.messagebroker.CorrelationDataExceedMaxLength	The length of correlation data in MQTT 5.0 exceeds 128 characters.	Make sure that the length of correlation data does not exceed the limit. Try again later.
iot.messagebroker.InvalidMqttResponseTopic	The response topic in MQTT 5.0 is invalid.	Make sure that the response topic is valid. Try again later.

Error codes related to the rules engine

Error codes that start with `iot.rule` or `iot.ruleng`, and some error codes that start with `iot.messagebroker` indicate rules-engine-related errors.

If an exception or error occurs, check whether the request parameters are valid and try again later.

Error code	Description	Solution
iot.rule.CreateRuleException	The system failed to create the rule.	Make sure that the request parameters are valid. Try again later.
iot.rule.DeleteRuleFailed	The system failed to delete the rule.	
iot.rule.IncorrentRuleActionId	The ID of the rule action is invalid.	Call the ListRuleActions operation to query the ID of the rule action. Make sure that the request parameters are valid. Try again later.
iot.rule.IncorrentRuleActionType	The type of the rule action is invalid.	Make sure that the request parameters are valid. Try again later. For more information, see the description of the Type parameter in the CreateRuleAction topic.

Error code	Description	Solution
iot.rule.NullForwardDestForRule	You must specify a valid data forwarding destination.	Make sure that a valid data forwarding destination is specified for the rule. For more information about how to configure the **Configuration** parameter, see CreateRuleAction.
iot.rule.NullSqlForRule	You must specify a valid SQL statement for the rule.	Make sure that a valid SQL statement is specified for the rule. Try again later.
iot.rule.NotFoundRule	The rule does not exist.	Specify a valid rule ID (**RuleId**). Try again later. Call the ListRule operation to obtain the **IDs** of all rules in the account.
iot.rule.NotFoundRuleAction	The rule action does not exist.	Specify a valid ID for the rule action (**ActionId**). Try again later. Call the ListRuleActions operation to obtain all **action IDs** of a rule.
iot.rule.ParseRuleActionConfigError	The system failed to parse the settings of the rule action.	Make sure that the request parameters are valid. Try again later.
iot.rule.QueryRuleActionListError	The system failed to obtain the list of rule actions.	
iot.rule.QueryRulePageActionError	The system failed to obtain the list of rules by page.	
iot.rule.RuleActionIsAlreadyCreated	The specified rule action already exists.	
iot.rule.RuleCountExceedMax	The total number of rules exceeds the limit.	

Error code	Description	Solution
iot.rule.RuleNameIsAlreadyExisted	The specified rule name already exists.	
iot.rule.StartRuleFailed	The system failed to enable the rule.	Make sure that the rule settings and request parameters are valid. Try again later.
iot.rule.StopRuleFailed	The system failed to disable the rule.	Make sure that the rule settings and request parameters are valid. Try again later.
iot.rule.TooManyRuleAction	The number of rule actions exceeds the limit.	Make sure that the request parameters are valid. Try again later. You can specify a maximum of 10 data forwarding actions in a rule.
iot.rule.UpdateRuleFailed	The system failed to update the rule.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.CreateRuleActionFailed	The system failed to create the rule action.	
iot.ruleng.DeleteRuleActionFailed	The system failed to delete the rule action.	
iot.ruleng.IncorrectActionTypeForError	The rule for error data forwarding is unavailable for the cloud service.	
iot.ruleng.IncorrectRegionName	In the Chinese mainland, data can be forwarded from a region to other regions. Outside the Chinese mainland, Data can be forwarded only in the same region.	

Error code	Description	Solution
iot.ruleng.IncorrectSysTopic	The basic communication topic or TSL communication topic is invalid.	Make sure that the request parameters are valid. Try again later. Specify a valid topic. For more information, see CreateRule.
iot.ruleng.IncorrectType	The topic type of the rule is invalid. Valid values of the **TopicType** parameter: • *0*: a basic communication topic or TSL communication topic. • *1*: a custom topic. • *2*: a device status topic.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.InvalidEndpoint	The endpoint is invalid.	
iot.ruleng.InvalidFormattedTagInConfiguration	The length of the tag in the **Configuration** parameter exceeds the limit.	
iot.ruleng.InvalidRamRole	The RAM role is invalid.	Log on to the RAM console to view the information about the role. Make sure that the request parameters are valid. Try again later.
iot.ruleng.ListInstancesError	The system failed to obtain the list of instances.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.OnlyAllowOneErrorAction	You can specify only one destination to receive error messages for a rule.	
iot.ruleng.QueryInstanceError	The system failed to obtain the details of the instance.	
iot.ruleng.QueryRuleActionFailed	The system failed to obtain the rule action.	

Error code	Description	Solution
iot.ruleng.RegionNotSupportRuleForwardCloudProduct	Data forwarding to the Alibaba Cloud service is not supported in this region.	Make sure that the request parameters are valid. Try again later. For more information about cloud services that are supported by each region, see Regions and zones.
iot.ruleng.RuleActionConfigurationIsNotJson	The Configuration parameter value of the rule action is not in the JSON format. The value of the **Configuration** parameter must be in the JSON format. For more information, see CreateRuleAction.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.RuleAlreadyIsStarted	The rule is in the running state.	
iot.ruleng.NullRamRoleArn	You must specify the **roleArn** parameter.	
iot.ruleng.NullRamRoleName	You must specify the **roleName** parameter.	
iot.ruleng.NullRuleActionConfig	You must specify the **Configuration** parameter for the rule action.	
iot.ruleng.NullRuleActionType	You must specify the **Type** parameter for the rule action.	
iot.ruleng.UpdateRuleActionFailed	The system failed to update the rule action.	
iot.messagebroker.IncorrectRuleSql	The SQL statement of the rule is invalid.	Make sure that the request parameters are valid. Try again later. For more information about how to configure an SQL statement, see CreateRule.

Error code	Description	Solution
iot.messagebroker.QueryRuleConfigActionException	The system failed to obtain the configurations of the rule.	Make sure that the request parameters are valid. Try again later.

The following table describes the error codes that are returned after you fail to set a data forwarding destination.

Error codes returned when you forward data to another topic

Error code	Description	Solution
iot.messagebroker.InvalidFormattedTopicName	The format of the topic is invalid.	View the format of the topic on the **Topic List** tab in the IoT Platform console. Make sure that the request parameters are valid. Try again later.
iot.prod.NotExistedProduct	The specified product does not exist.	Make sure that the specified **ProductKey** is valid, the product belongs to the Alibaba Cloud account, and the request parameters are valid. Try again later.
iot.common.QueryProductActionError	The system failed to query the product.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.IncorrectSysTopic	The basic communication topic or TSL communication topic is invalid. Specify a valid topic. For more information, see CreateRule.	
iot.messagebroker.NullTopicName	You must specify a valid topic name.	

Error codes returned when you forward data to Tablestore

Error code	Description	Solution
iot.ruleng.NullOtsInstanceName	You must specify a valid name for the Tablestore instance.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.NullTableNameInOtsInstance	You must specify a valid name for the table of the Tablestore instance.	
iot.ruleng.NullPrimaryKeyInOtsTable	You must specify a valid primary key for the Tablestore table.	
iot.ruleng.NullPrimaryKeyNameInOts	You must specify a valid name for the primary key.	
iot.ruleng.NullPrimaryKeyTypeInOts	You must specify a valid type for the primary key.	
iot.ruleng.NullPrimaryKeyValueInOts	You must specify a valid value for the primary key.	
iot.ruleng.IncorrectPrimaryKeyValueInOtsTable	The value of the primary key for the Tablestore table is invalid.	View the primary key that you specify when you create the data table in the Tablestore console. Make sure that the request parameters are valid. Try again later.

Error codes returned when you forward data to MNS

Error code	Description	Solution
iot.ruleng.NullTopicNameInMns	You must specify a valid Message Service (MNS) topic.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.NotFoundTopicInMns	The MNS topic does not exist. Check the name of the MNS topic.	Make sure that the request parameters are valid. Try again later.

Error code	Description	Solution
iot.ruleng.QueryMnsTopicListActionError	The system failed to obtain the list of MNS topics.	Make sure that the request parameters are valid. Try again later.

Error codes returned when you forward data to Function Compute

Error code	Description	Solution
iot.ruleng.NullServiceNameInFc	The name of the Function Compute service is invalid.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.NullFunctionNameInFc	You must specify a valid name for the function.	
iot.ruleng.NotFoundServiceInFc	The Function Compute service does not exist.	Obtain the correct name of the Function Compute service in the Function Compute console. Make sure that the request parameters are valid. Try again later.

Error codes returned when you forward data to Message Queue

Error code	Description	Solution
iot.messagebroker.NullTopicName	You must specify a valid Message Queue topic to receive messages.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.InstanceNotFound	The specified instance does not exist.	
iot.ruleng.ListMqTopicsError	The system failed to obtain the Message Queue topic.	
iot.ruleng.TopicIsNotUnique	The specified topic already exists.	
iot.ruleng.TopicNotFound	The specified topic does not exist.	

Error codes returned when you forward data to TSDB

Error code	Description	Solution
iot.ruleng.InvalidFormattedTagNameInHitsdb	The format of the Time Series Database (TSDB) tag is invalid.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.InvalidFormattedTimestampInHitsdb	The format of the timestamp is invalid.	
iot.ruleng.NotBindCustomerVpc	No VPC is attached to the instance.	
iot.ruleng.NullInstanceNameInHitsdb	You must specify a valid name for the TSDB instance.	
iot.ruleng.NullTagNameInHitsdb	You must specify a valid name for the TSDB tag.	
iot.ruleng.NullTagValueInHitsdb	You must specify a valid value for the TSDB tag.	
iot.ruleng.NullTimestampInHitsdb	You must specify a valid tag for the timestamp.	
iot.ruleng.OnlySameRegionHitsdbSupport	Data can be forwarded to only TSDB instances that reside in the same region.	

Error codes returned when you forward data to ApsaraDB RDS

Error code	Description	Solution
iot.ruleng.GrantVpcInstanceFailed	The system failed to authorize the VPC.	
iot.ruleng.InvalidFormattedConnectionIp	The format of the endpoint is invalid.	
iot.ruleng.InvalidFormattedConnectionPort	The format of the port is invalid.	

Error code	Description	Solution
iot.ruleng.InvalidFormattedRdsDatabaseName	The name of the ApsaraDB RDS database is invalid.	Make sure that the request parameters are valid. Try again later.
iot.ruleng.InvalidFormattedRdsTableName	The name of the ApsaraDB RDS table is invalid.	
iot.ruleng.ListRdsAccountError	The system failed to obtain the accounts for the ApsaraDB RDS instance.	
iot.ruleng.NotFoundTable	The ApsaraDB RDS table does not exist.	
iot.ruleng.NotFoundVpcInstance	The VPC does not exist.	
iot.ruleng.NotFoundVpcInstanceConnection	The VPC endpoint of the ApsaraDB RDS instance does not exist.	Make sure that you specify a valid VPC and vSwitch for the ApsaraDB RDS instance. Try again later.
iot.ruleng.NotMatchedField	The specified field does not match the table of the ApsaraDB RDS database.	
iot.ruleng.NullConnectionIp	You must specify a valid endpoint.	
iot.ruleng.NullConnectionPort	You must specify a valid port.	
iot.ruleng.NullRdsInstanceName	You must specify a valid name for the ApsaraDB RDS instance.	
iot.ruleng.NullRdsDatabaseName	You must specify a valid name for the ApsaraDB RDS database.	
iot.ruleng.NullRdsAccountName	You must specify a valid name for the account.	

Error code	Description	Solution
		Make sure that the request parameters are valid. Try again later.
iot.ruleng.NullRdsPassword	You must specify a valid password for the account.	
iot.ruleng.NullRdsTableName	You must specify a valid name for the ApsaraDB RDS table.	
iot.ruleng.NullRdsFieldName	You must specify a valid name for the ApsaraDB RDS field.	
iot.ruleng.NullRdsFieldValue	You must specify a valid value for the ApsaraDB RDS field.	
iot.ruleng.NullVpcInstance	You must specify a valid VPC.	
iot.ruleng.OnlySupportSameRegionRds	Data can be forwarded to ApsaraDB RDS instances that reside in the same region.	
iot.ruleng.QueryServerMappingInfoError	The system failed to obtain the mapping information of the VPC.	

Error codes related to server-side subscription

An error code that starts with `iot.consumer` indicates a server-side subscription-related error.

Error code	Description	Solution
iot.consumer.group.CallbackTypeEmpty	You cannot set the **CallbackType** parameter of all consumer groups to *false*.	
iot.consumer.group.ChangeDefaultConsumerGroupNotAllowed	You cannot change the default consumer group.	
iot.consumer.group.ConsumerGroupExceedsLimit	The number of subscribed consumer groups exceeds the limit.	

Error code	Description	Solution
iot.consumer.group.ConsumerGroupExceedLimit	The number of consumer groups exceeds the limit.	Make sure that the request parameters are valid. Try again later.
iot.consumer.group.ConsumerGroupNameExisted	The name of the consumer group already exists.	
iot.consumer.group.ConsumerGroupNotExist	The consumer group does not exist.	
iot.consumer.group.CreateConsumerGroupFailed	The system failed to add the consumer group.	
iot.consumer.group.DeleteConsumerGroupFailed	The system failed to delete the consumer group.	
iot.consumer.group.InvalidConsumerGroupName	The name of the consumer group is invalid.	
iot.consumer.group.InvalidConsumerGroupId	The ID of the consumer group is invalid.	
iot.consumer.group.InvalidConsumerGroup	The consumer group is invalid.	
iot.consumer.group.InvalidGroupBy	The **groupby** parameter is invalid.	
iot.consumer.group.InvalidSubscribeType	The subscription type is invalid.	
iot.consumer.group.MnsCheckFailed	The system failed to authenticate MNS.	
iot.consumer.group.MnsNotSupport	A product that has a transferred device does not support the MNS server-side subscription.	

Error code	Description	Solution
iot.consumer.group.ProductKeyExceedsLimit	The number of services to which the consumer group subscribes exceeds the limit.	
iot.consumer.group.QueryConsumerGroupStatusFailed	The system failed to obtain the status of the consumer group.	
iot.consumer.group.UpdateConsumerGroupFailed	The system failed to update the consumer group.	
iot.consumer.group.SubscribeNotExist	The MNS or AMQP server-side subscription does not exist.	

Error codes related to OTA updates

An error code that starts with `iot.firmware` or `iot.ota` indicates an over-the-air (OTA) update-related error.

Error code	Description	Solution
iot.firmware.AlreadyExistedFirmwareName	The specified name of the OTA update package already exists.	Specify a valid name for the OTA update package. Try again later.
iot.firmware.AlreadyExistedFirmwareVersion	The version of the OTA update package already exists in the product.	Specify a valid version for the OTA update package. Try again later.
iot.firmware.BadlyFormattedGrayPercent	The format of the update percentage is invalid.	Make sure that the request parameters are valid. Try again later.
iot.firmware.BatchCancelDeviceUpgradeFailed	The system failed to cancel the device update.	Submit a ticket.
iot.firmware.BlankFirmwareName	The update package name contains only spaces.	Make sure that the request parameters are valid. Try again later.

Error code	Description	Solution
iot.firmware.CancelOTAStrategyByJobFailed	The system failed to cancel the update policy that is related to the dynamic update batch.	Submit a ticket.
iot.firmware.CancelOTATaskByJobFailed	The system failed to cancel the device update tasks of the update batch.	
iot.firmware.CancelOptionIsMandatory	You must specify the required parameters.	Make sure that the request parameters are valid. Try again later.
iot.firmware.CancelUpgradeTaskFailed	The system failed to cancel the update batch.	Submit a ticket.
iot.firmware.CreateFirmwareFailure	The system failed to create the OTA update package.	
iot.firmware.CreateOTAUpgradeJobFailure	The system failed to create the update batch.	
iot.firmware.DeleteFirmwareFailure	The system failed to delete the OTA update package.	
iot.firmware.DeviceUpgradeRecordNotFound	The device is not being updated.	Make sure that the update task is running and the request parameters are valid. Try again later.
iot.firmware.DeviceWithDestinationVersionInArray	The device firmware version is the same as the version to which you want the firmware to update.	Check whether a device that is updated exists.
iot.firmware.DynamicGrayNotSupported	You cannot perform a dynamic phased update on the device.	This feature is not supported.
iot.firmware.DynamicSpecificNotSupported	You cannot perform a dynamic specific update on the device.	

Error code	Description	Solution
iot.firmware.EmptyFirmwareFile	The size of the OTA update package is 0.	Make sure that the OTA update package that you upload is valid. Try again later.
iot.firmware.FireTimeMustLargeThanCurrentTime	The scheduled update time must be later than the current time.	Make sure that the request parameters are valid. Try again later.
iot.firmware.FireTimeTooLate	The scheduled update time must be a maximum of seven days later than the current time.	
iot.firmware.FireTimeTooShort	The scheduled update time must be a minimum of 5 minutes later than the current time.	
iot.firmware.FirmwareAndProductKeyMismatch	The OTA update package does not match the ProductKey.	
iot.firmware.FirmwareCountExceedMax	The number of OTA update packages exceeds 500.	Delete OTA update packages that you no longer use. Try again later.
iot.firmware.FirmwareDescriptionExceedMaxLength	The description of the OTA update package exceeds 100 characters in length.	Make sure that the request parameters are valid. Try again later.
iot.firmware.FirmwareNotFound	The OTA update package does not exist.	
iot.firmware.FirmwareNotVerified	You cannot start an update because the OTA update package is not verified.	Make sure that the OTA update package is verified. Try again later.
iot.firmware.GenerateOTAUploadURLFailure	The system failed to generate an upload URL for the update package.	
iot.firmware.GrayAppliesToStaticOnly	Only static update batches support phased updates.	

Error code	Description	Solution
		Make sure that the request parameters are valid. Try again later.
iot.firmware.InProgressDynamicJobExisted	A running dynamic batch already exists.	You can use an OTA update package to create only one dynamic update batch. Cancel the ongoing dynamic update batch and try to create the dynamic update batch again.
iot.firmware.InProgressVerifyJobExisted	A task of verifying the OTA update package is in progress.	Wait for the ongoing verification task to complete before you create a task of verifying the OTA update package.
iot.firmware.IncorrectDeviceUpgradeJobStatus	The status of the device update task to be canceled is invalid.	The device update task cannot be canceled. Check whether the device update task is in progress.
iot.firmware.IncorrectFormattedFirmwareName	The format of the OTA update package name is invalid.	
iot.firmware.IncorrectFormattedFirmwareVersion	The format of the OTA update package version is invalid.	
iot.firmware.IncorrectFormattedModuleName	The format of the module name is invalid.	
iot.firmware.IncorrectFormattedSrcVersion	The format of the source version is invalid.	
iot.firmware.InvalidDynamicMode	The mode of the dynamic update is invalid.	
iot.firmware.InvalidFirmware	The OTA update package is invalid.	

Error code	Description	Solution
iot.firmware.InvalidFirmwareId	The ID of the OTA update package is invalid.	
iot.firmware.InvalidFirmwareSign	The signature of the OTA update package is invalid.	
iot.firmware.InvalidFirmwareSignMethod	The signature algorithm of the OTA update package is invalid.	
iot.firmware.InvalidFirmwareSize	The size of the OTA update package does not meet the requirement.	
iot.firmware.InvalidFirmwareType	The type of the OTA update package is invalid.	
iot.firmware.InvalidFirmwareUrl	The URL of the OTA update package is invalid.	
iot.firmware.InvalidGenerateOTAUploadURLParam	The system failed to generate a URL for the update package because the specified parameters are invalid.	
iot.firmware.InvalidGrayPercent	The update percentage of the phased update is invalid.	
iot.firmware.InvalidMaximumPerMinute	The maximum update rate does not meet the requirement.	
iot.firmware.InvalidOTAJobId	The batch ID is invalid.	
iot.firmware.InvalidOTATaskId	The ID of the update task is invalid.	
iot.firmware.InvalidOverwriteMode	The write mode is invalid.	

Error code	Description	Solution
iot.firmware.InvalidProductKey	The ProductKey is invalid.	Make sure that the request parameters are valid. Try again later.
iot.firmware.InvalidRetryCount	The retry count is invalid.	
iot.firmware.InvalidRetryInterval	The retry interval is invalid.	
iot.firmware.InvalidSelectionType	The specified type is invalid.	
iot.firmware.InvalidTargetSelection	The specified value is invalid.	
iot.firmware.InvalidTaskStatus	The status of the update task is invalid.	
iot.firmware.InvalidTimeoutSetting	The timeout period is invalid.	
iot.firmware.JobAlreadyCanceled	The batch is canceled.	
iot.firmware.JobHasNoScheduleTime	The batch is not a scheduled batch.	
iot.firmware.ListOTAFirmwareFailed	The system failed to obtain the list of OTA update packages.	
iot.firmware.ListOTAJobFailed	The system failed to obtain the list of update batches.	
iot.firmware.ListOTAModuleFailed	The system failed to obtain the list of modules.	
iot.firmware.ListOTAModuleNameByProductFailed	The system failed to obtain the list of modules of the product.	
iot.firmware.ListOTATaskByDeviceFailed	The system failed to obtain the update records of the device.	

Error code	Description	Solution
iot.firmware.ListOTATaskByJobFailed	The system failed to obtain the update records of the batch.	
iot.firmware.MalformedFirmwareUrl	The URL of the OTA update package is invalid.	
iot.firmware.ModuleCountLimitExceeded	The number of modules exceeds the limit.	
iot.firmware.ModuleNameReserved	The module name is reserved. You must specify another valid module name.	
iot.firmware.MoreThanOneSrcVersion	You can specify only one source version when you use the OTA update package for a differential update.	
iot.firmware.NoDeviceCanUpgrade	No device can be updated.	Check whether the device is updated.
iot.firmware.NonVersionedDeviceInArray	A device in the device group does not submit the firmware version or submits an invalid firmware version.	
iot.firmware.NotDynamicJob	You can only cancel the dynamic update policy that is related to a dynamic update batch.	
iot.firmware.NullFirmwareId	You must specify the ID of the OTA update package.	
iot.firmware.NullFirmwareName	You must specify the name of the OTA update package.	
iot.firmware.NullFirmwareUrl	You must specify the URL of the OTA update package.	

Error code	Description	Solution
iot.firmware.NullFirmwareVersion	You must specify the version of the OTA update package.	Make sure that the request parameters are valid. Try again later.
iot.firmware.NullGrayPercent	You must specify a valid update percentage for the phased update.	
iot.firmware.NullOTAJobId	You must specify a valid batch ID.	
iot.firmware.NullSelectionType	You must specify a valid type.	
iot.firmware.NullSrcVersions	You must specify valid firmware versions that you want to update.	
iot.firmware.NullTargetDeviceNames	You must specify a valid device range for the static specific update.	
iot.firmware.NullTargetSelection	You must specify a valid value.	
iot.firmware.NullTaskId	You must specify a valid batch ID.	
iot.firmware.ParameterSizeExceedMax	The number of parameters in the list exceeds the limit.	
iot.firmware.ReUpgradeFailedFirmwareNotVerified	You cannot restart the update because the OTA update package is not verified.	
iot.firmware.ScheduleFinishTimeEarlierThanStartTime	The end time of the scheduled update must be later than the start time.	
iot.firmware.ScheduleFinishTimeTooEarly	The end time of the scheduled update must be a minimum of 60 minutes later than the start time.	

Error code	Description	Solution
iot.firmware.ScheduleFinishTimeTooLate	The end time of the scheduled update must be a maximum of 30 days later than the start time.	
iot.firmware.ScheduleFinishTimeWithoutStartTime	You must specify the start time and end time of a scheduled update at the same time.	
iot.firmware.SrcDestVersionMatched	The source firmware version is the same as the destination firmware version.	
iot.firmware.SrcVersionIsMandatory	You must specify a source version for the differential update package.	
iot.firmware.SrcVersionMismatch	The current firmware version of the device is different from the source version of the OTA update package.	
iot.firmware.SrcVersionsNotAllowed	You cannot specify multiple source firmware versions.	
iot.firmware.SrcVersionsSizeExceedMax	The number of source firmware versions exceeds the limit.	
iot.firmware.SystemBusy	The system is busy. Try again later.	If the issue persists, submit a ticket.
iot.firmware.SystemBusyForScheduleTime	The system is busy. You must specify another time to perform the scheduled update.	
iot.firmware.TargetDeviceNamesNotAllowed	You cannot perform a static specific update on the device.	Make sure that the request parameters are valid. Try again later.
iot.firmware.TooManyDeviceUpgrade	The number of devices that send update requests exceeds the limit. Try again later.	

Error code	Description	Solution
		Make sure that the request parameters are valid. Try again one minute later.
iot.firmware.TooManyDeviceUpgradeForScheduleTime	The number of devices that send update requests at the scheduled time exceeds the limit. You must specify another time to perform the schedule update.	
iot.firmware.UpgradeSrcVersionMismatch	The source firmware version that you want to update is different from the source version of the differential OTA update package.	Make sure that the request parameters are valid. Try again later.
iot.firmware.VerifyFirmwareFailed	The system failed to verify the OTA update package.	Submit a ticket.
iot.firmware.InvalidOTATaskId	The specified value of the TaskId request parameter does not exist.	
iot.firmware.InvalidTaskStatus	The status of the device update task that corresponds to the TaskId parameter is invalid.	
iot.firmware.JobTagIsTooLong	When you create an update batch, the total number of tag characters exceeds 4,096.	
iot.firmware.JobTagKeyInvalid	When you create an update batch, the tag key is invalid.	
iot.firmware.JobTagValueInvalid	When you create an update batch, the tag value is invalid.	
iot.firmware.JobTagTooMany	When you create an update batch, the number of tags in the `Key:Value` format exceeds 10.	

Error code	Description	Solution
iot.ota.PackageFileAmountExceed	When you create an update package, the number of update package files exceeds 20.	Make sure that the request parameters are valid. Try again later.
iot.ota.PackageFileParamConflict	When you create an update package, a conflict occurs on the parameters of the update package files. You cannot specify single file-related parameters and multiple files-related parameters at the same time.	
iot.ota.PackageFileNameDuplicated	When you create an update package, the names of update package files are duplicate.	
iot.ota.PackageFileUrlDuplicated	When you create an update package, the URLs of update package files are duplicate.	
iot.ota.PackageFileSignDuplicated	When you create an update package, the signature values of update package files are duplicate.	
iot.ota.tag.KeyDuplicated	Duplicate keys exist in the tag list.	
iot.ota.CreateOTAModuleFailure	An error occurred while you created the OTA module.	Submit a ticket.
iot.ota.CreateOTAModuleParamError	The request parameter is invalid when you create the OTA module.	Make sure that the request parameters are valid. Try again later.
iot.ota.CreateOTAModuleExceedLimit	The number of OTA modules for the product exceeds the limit.	Delete modules that you no longer use. Try again later.
iot.ota.CreateOTAModuleNameExist	The name of the OTA module that you want to create already exists.	Specify a valid and unique name for the OTA module. Try again later.

Error code	Description	Solution
iot.ota.UpdateOTAModuleFailure	An error occurred while you updated the OTA module.	Submit a ticket.
iot.ota.UpdateOTAModuleParamError	The request parameter used to update the OTA module is invalid.	Make sure that the request parameters are valid. Try again later.
iot.ota.DeleteOTAModuleParamError	The request parameter used to delete the OTA module is invalid.	
iot.ota.DeleteOTAModuleFailure	An error occurred while you attempted to delete the OTA module.	
iot.ota.DeleteOTAModulePackageExist	You cannot delete the OTA module to which an update package is attached.	
iot.ota.DeleteOtaDefaultModule	You cannot delete the default module.	
iot.ota.ListOTAModuleParamError	The request parameter used to obtain the list of OTA modules is invalid.	
iot.ota.ListOTAModuleFailure	An error occurred while you attempted to obtain the list of OTA modules.	
iot.ota.OTAModuleNotExist	The system failed to delete or update the OTA module because the OTA module did not exist in the product.	
iot.ota.TooManyOtaTask	The number of task IDs that is specified by the **TaskId.N** request parameter exceeds the limit.	

Error code	Description	Solution
iot.ota.TaskIdIsNull	You must specify valid values for the **TaskId.N** parameter.	
iot.ota.ConfirmNotAllowedNow	The device cannot be updated at the current time, and the device update task that is pending confirmation cannot be confirmed.	
iot.ota.EmptyDeviceInfoParams	You must specify the device information.	
iot.ota.InvalidOtaModuleName	The format of the OTA module name is invalid.	
iot.ota.GroupNotExist	The group does not exist. Make sure that the request parameters are valid. Try again later.	
iot.ota.DynamicGroupExpressionInvalid	When you perform an OTA update on a dynamic group, you must specify the module name and module version in the update conditions.	
iot.ota.DynamicGroupTaskCountExceedLimit	The number of update batches for the dynamic group exceeds five.	
iot.ota.UpgradeDeviceCountExceedLimit	The number of devices that send update requests exceeds the limit. For more information, see Limits.	Submit a ticket.
iot.ota.GroupUpgradeTenantInvalid	The group-based update that is initiated by the Alibaba Cloud account is invalid. Make sure that the request parameters are valid. Try again later.	

Error code	Description	Solution
iot.ota.GroupTypeInvalid	The group type that is specified for the group-based update is invalid. Make sure that the request parameters are valid. Try again later.	Make sure that the request parameters are valid. Try again later.
iot.firmware.VerifyFirmwareNoNeed	The current update package does not need to be verified.	
iot.ota.DownloadProtocolInvalid	The protocol that is used to download the update package for the current update batch is invalid.	
iot.ota.DownloadProtocolMqttNotSuitable	You cannot use the MQTT protocol to download the update package for the current update batch.	
iot.ota.DynamicGroupConflict	The values of the **OverwriteMode** and **MultiModuleMode** parameters are inconsistent across new and existing update batches of a dynamic group.	
iot.ota.OverWriteAndMultiModuleConflict	You can set the **OverwriteMode** parameter to *2* or the **MultiModuleMode** parameter to *true*.	
iot.ota.dynamicGroupForbiddenInDefaultInstance	Devices in public instances of the previous version do not support group-based dynamic updates.	Devices in public instances of the previous version do not support the dynamic group feature.
iot.ota.multiModuleModeForbiddenInDefaultInstance	Devices in public instances of the previous version do not support simultaneous updates of multiple modules.	Public instances of the previous version do not support simultaneous updates of multiple modules.

Error code	Description	Solution
iot.ota.InvalidTaskExist	At least one device update task that you specify failed or is canceled.	Make sure that the request parameters are valid. Try again later.
iot.ota.UnmatchedJob	The ID of the update batch does not match the ID of the device update task.	
iot.ota.JobCanceled	The update batch is canceled.	
iot.ota.InvalidJobId	The ID of the update batch does not exist.	
iot.ota.InvalidFirmwareUid	The update package does not exist.	
iot.ota.InvalidTaskId	The ID of the device update task does not exist.	
iot.ota.FailedTaskNotFound	The system did not find a failed or canceled device update task in the update batch.	
iot.ota.DeviceNotReUpgraded	The system did not find a device on which an update can be restarted.	
iot.ota.DeviceNotExist	The device does not exist.	Make sure that the request parameters are valid. Try again later.
iot.ota.FirmwareNotVerified	The OTA update package is being verified. The system cannot restart the update.	Try again after the OTA update package is verified.
iot.ota.NotFirmwareOwner	The current user is not the owner of the update package.	The user does not have permissions to call the operation. Make sure that the request parameters are valid. Try again later.

4.7. Manage products

4.7.1. CreateProduct

Creates a product.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateProduct	The operation that you want to perform. Set the value to CreateProduct.
NodeType	Integer	Yes	0	The node type of the product. Valid values: **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. If you use the device as a sub-device, you must also specify the **ProtocolType** parameter. **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.

Parameter	Type	Required	Example	Description
ProductName	String	Yes	Light	The name of the product. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_). **Note** Each product name must be unique within the current account.
IotInstanceId	String	No	iot-***-v64***	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DataFormat	Integer	No	1	The data format. You must specify this parameter if the **AliyunCommodityCode** parameter is set to **iothub_senior**. Valid values: • **0**: custom data format. • **1**: Alink JSON.
Description	String	No	Product test	The description of the product. The description can be up to 100 characters in length.

Parameter	Type	Required	Example	Description
AliyunCommodityCode	String	No	iothub_senior	The edition of the product. • If you do not specify this parameter, a product of the Basic Edition is created by default. You cannot use a Thing Specification Language (TSL) model to define the product. • If you need to specify this parameter, set the value to **iothub_senior**. In this case, a product that supports TSL models is created. You must also specify the **DataFormat** parameter.
Id2	Boolean	No	false	Specifies whether to enable IoT Internet Device ID. Valid values: • **true**: enables IoT Internet Device ID. • **false**: disables IoT Internet Device ID. Default value: **false**. **Note** IoT Internet Device ID is available only in the China (Shanghai) region. If the Id2 parameter is set to **true** but the **AuthType** parameter is not set to **id2**, the value of the **AuthType** parameter is used.
ProtocolType	String	No	modbus	The protocol that the devices of the product use to connect with the gateway. You must specify this parameter if the **AliyunCommodityCode** parameter is set to **iothub_senior** and a gateway is required to connect the devices of the product to IoT Platform. Valid values: • **modbus**: Modbus. • **opc-ua**: OPC UA. • **customize**: custom protocol. • **ble**: BLE. • **zigbee**: ZigBee.

Parameter	Type	Required	Example	Description
NetType	String	No	WIFI	The network connection method. You must specify this parameter if the **AliyunCommodityCode** parameter is set to **iothub_senior** and the devices of the product are directly connected devices or gateways. Valid values: • **WIFI**: Wi-Fi. • **CELLULAR**: cellular network. • **ETHERNET**: Ethernet. • **LORA** :LoRaWAN. • **OTHER**: other networks. Default value: WIFI.
JoinPermissionId	String	No	8***	The ID of the network access credential. This parameter is required if the **NetType** parameter is set to **LORA**.
ResourceGroupId	String	No	rg-acfmxazb4ph***	The ID of the resource group to which the product belongs. If you specify this parameter, the product is added to the resource group. You can log on to the Resource Management console to view the ID of the resource group.

Parameter	Type	Required	Example	Description
AuthType	String	No	secret	The authentication method that is used to connect the devices of the product to IoT Platform. Valid values: • **secret**: uses DeviceSecrets to authenticate the devices. For more information, see TCP-based MQTT connections. • **id2**: uses IoT Internet Device ID to authenticate the devices. **Note** IoT Internet Device ID is available only in the China (Shanghai) region. IoT Internet Device ID is unavailable if the NetType parameter is set to LORA. If you want to use IoT Internet Device ID, you must activate the service. • **x509**: uses X.509 certificates to authenticate the devices. **Note** X.509 certificates are available only in the China (Shanghai) region. X.509 certificates are unsupported if the NetType parameter is set to LORA. Default value: **secret**.
CategoryKey	String	No	Lighting	The identifier of the product category. If you specify this parameter, a TSL model of the category is used. Otherwise, no TSL model of any category is used. You can call the ListThingTemplates operation to query the details of categories that are predefined by IoT Platform and obtain category keys.

Parameter	Type	Required	Example	Description
PublishAuto	Boolean	No	false	Specifies whether to publish the TSL model after the product is created. • **true**: publishes the TSL model after the product is created. • **false**: does not publish the TSL model after the product is created. Default value: **true**.
ValidateType	Integer	No	1	The level of the data verification. If you do not specify this parameter, a week verification is performed by default. Valid values: • **1**: week verification. IoT Platform verifies only the identifier and dataType fields of the data. All data is forwarded. In the IoT Platform console, the data is displayed on the **TSL Data** tab of the **Device Details** page. The data that fails the verification is not displayed. You can view the data that fails the verification in the **checkFailedData** parameter of the forwarded data. For more information, see Data formats. • **2**: no verification. IoT Platform does not verify the data. All data is forwarded. In the IoT Platform console, the data is not displayed on the **TSL Data** tab of the **Device Details** page.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	200	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Struct		The product information returned if the call is successful.
AliyunCommodityCode	String	iothub_senior	The edition of the product. • **iothub_senior**: A TSL model was used. • **iothub**: No TSL model was used.
AuthType	String	secret	The authentication method that was used to connect the devices of the product to IoT Platform. Valid values: • **secret**: DeviceSecrets were used to authenticate the devices. • **id2**: IoT Internet Device ID was used to authenticate the devices. • **x509**: X.509 certificates were used to authenticate the devices.
DataFormat	Integer	1	The data format. • **0**: custom data format. • **1**: Alink JSON. **Note** This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior.
Description	String	Product test	The description of the product.
Id2	Boolean	false	Indicates whether IoT Internet Device ID was enabled. • **true**: IoT Internet Device ID was enabled. • **false**: IoT Internet Device ID was disabled.

Parameter	Type	Example	Description
NodeType	Integer	0	The node type of the product. Valid values: • **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform. **Note** This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior.
ProductKey	String	a1FlqIQ****	The ProductKey of the product. A ProductKey is a globally unique identifier (GUID) that is issued by IoT Platform to a new product. **Note** Keep the ProductKey confidential. The ProductKey is required when you perform some operations.
ProductName	String	Test	The name of the product.
ProductSecret	String	U5tW7i44uilc****	The ProductSecret of the product.
ProtocolType	String	modbus	The protocol that the devices of the product used to connect with the gateway. **Note** This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
ProductKey	String	a1FlqIQ****	The ProductKey of the product. The ProductKey is the GUID that is issued by IoT Platform to the product.

Parameter	Type	Example	Description
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateProduct
&AliyunCommodityCode=iothub_senior
&AuthType=secret
&DataFormat=1
&Description=Product test
&NodeType=0
&ResourceGroupId=rg-acfmxazb4ph****
&ProductName=Test
&ProtocolType=modbus
&CategoryKey=Lighting
&PublishAuto=false
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateProductResponse>
      <Data>
            <Description>Product test</Description>
            <DataFormat>1</DataFormat>
            <ProtocolType>modbus</ProtocolType>
            <ProductKey>a1FlqIQ****</ProductKey>
            <ProductSecret>U5tW7i44uilc****</ProductSecret>
            <NodeType>0</NodeType>
            <ProductName>Test</ProductName>
            <AliyunCommodityCode>iothub_senior</AliyunCommodityCode>
            <AuthType>secret</AuthType>
            <ResourceGroupId>rg-acfmxazb4ph****</ResourceGroupId>
      </Data>
      <ProductKey>a1FlqIQ****</ProductKey>
      <RequestId>E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565</RequestId>
      <Success>true</Success>
</CreateProductResponse>
```

`JSON` format

```
{
  "Data": {
    "Description": "Product test",
    "DataFormat": 1,
    "ProtocolType": "modbus",
    "ProductKey": "a1FlqIQ****",
    "ProductSecret": "U5tW7i44uilc****",
    "NodeType": 0,
    "ProductName": "Test",
    "AliyunCommodityCode": "iothub_senior",
    "AuthType": "secret",
    "ResourceGroupId": "rg-acfmxazb4ph****"
  },
  "ProductKey": "a1FlqIQ****",
  "RequestId": "E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565",
  "Success": true
}
```

4.7.2. QueryProduct

Queries the details of a product.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryProduct	The operation that you want to perform. Set the value to QueryProduct.

Parameter	Type	Required	Example	Description
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product that you want to query. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The product information returned if the call is successful.

Parameter	Type	Example	Description
AliyunCommodityCode	String	iothub_senior	The type of the product. This parameter indicates whether a Thing Specification Language (TSL) model was used. Valid values: • **iothub_senior**: A TSL model was used. • **iothub**: No TSL model was used.
AuthType	String	secret	The authentication method that was used to connect the devices of the product to IoT Platform. Valid values: • **secret**: DeviceSecrets were used to authenticate the devices. • **id2**: IoT Internet Device ID was used to authenticate the devices. • **x509**: X.509 certificates were used to authenticate the devices.
CategoryKey	String	Lighting	The identifier of the category to which the product belongs. This parameter is returned if the product uses the TSL model of a standard category that is pre-defined by IoT Platform. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior.
CategoryName	String	Street Lamp	The name of the product category. This parameter is returned if the product uses the TSL model of a standard category that is pre-defined by IoT Platform. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior.

Parameter	Type	Example	Description
DataFormat	Integer	1	The data format that was used by a communication protocol to transmit data between the devices and IoT Platform. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior. Valid values: • **0**: custom. A custom serial data format was used. In this case, the device can submit raw data, such as binary data streams. IoT Platform converts the raw data into standard Alink JSON data by using a specified data parsing script. • **1**: Alink JSON. Alink JSON data is transmitted between the devices and IoT Platform. Alink is a data exchange protocol that is pre-defined by IoT Platform.
Description	String	Smart street light	The description of the product.
DeviceCount	Integer	0	The number of devices under the product.
GmtCreate	Long	1581595942000	The time when the product was created. The value is a timestamp in milliseconds.
Id2	Boolean	false	Indicates whether IoT Internet Device ID was enabled. Valid values: • **true**: IoT Internet Device ID was enabled. • **false**: IoT Internet Device ID was disabled.
NetType	Integer	3	The network connection method. Valid values: • **3**: Wi-Fi. • **6**: cellular network (2G/3G/4G/5G). • **7**: Ethernet. • **8**: others.

Parameter	Type	Example	Description
NodeType	Integer	0	The node type of the product. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior. Valid values: • **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.
Owner	Boolean	true	Indicates whether the operation was called by the owner of the product. • **true**: yes. • **false**: no.
ProductKey	String	a1T27vz****	The ProductKey of the product. When you create a product, a ProductKey is the globally unique identifier (GUID) that is issued by IoT Platform to the product.
ProductName	String	Street light	The name of the product.
ProductSecret	String	U5tW7i44uilc****	The ProductSecret of the product.
ProductStatus	String	DEVELOPMENT_STATUS	The status of the product. • **DEVELOPMENT_STATUS**: The product is being developed. • **RELEASE_STATUS**: The product was published.

Parameter	Type	Example	Description
ProtocolType	String	modbus	The type of the protocol that was used by the sub-devices to connect with a gateway. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior and the NodeType parameter is set to 1. Valid values: • **modbus**: Modbus. • **opc-ua**: OPC UA. • **customize**: custom protocol. • **ble**: BLE. • **zigbee**: ZigBee.
ValidateType	Integer	1	The level of the data verification. Valid values: • **2**: no verification. IoT Platform does not verify the data. All data is forwarded. In the IoT Platform console, the data is not displayed on the TSL Data tab of the Device Details page. • **1**: low-level verification. IoT Platform verifies only the identifier and dataType fields of the data. All data is forwarded. • **0**: high-level verification. IoT Platform verifies all fields of the data. Only the data that passes the verification is forwarded. The products that were created before October 14, 2020 support only high-level verification. The products that were created on October 14, 2020 or later support low-level verification or no verification. After verification, you can view the data that passes or fails the verification. • In the IoT Platform console, the data is displayed on the **TSL Data** tab of the **Device Details** page. The data that fails the verification is not displayed. • You can view the data that fails the verification in the **checkFailedData** parameter of the forwarded data. For more information, see Data formats.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	E4F94B97-1D64-4080-BFD2-67461667AA43	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryProduct
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryProductResponse>
  <Data>
        <Owner>true</Owner>
        <CategoryName>Street lighting</CategoryName>
        <DataFormat>1</DataFormat>
        <ProductKey>a1BwAGV****</ProductKey>
        <ProductStatus>DEVELOPMENT_STATUS</ProductStatus>
        <GmtCreate>1581595942000</GmtCreate>
        <ProductSecret>U5tW7i44uilc****</ProductSecret>
        <NodeType>0</NodeType>
        <ProductName>Street light</ProductName>
        <ValidateType>1</ValidateType>
        <DeviceCount>0</DeviceCount>
        <NetType>3</NetType>
        <AuthType>secret</AuthType>
        <CategoryKey>Lighting</CategoryKey>
        <Id2>false</Id2>
        <AliyunCommodityCode>iothub_senior</AliyunCommodityCode>
  </Data>
  <RequestId>DA5A3C45-D457-48ED-9A20-AEDEA8503401</RequestId>
  <Success>true</Success>
</QueryProductResponse>
```

`JSON` format

```
{
    "Data": {
        "Owner": true,
        "CategoryName": "Street lighting",
        "DataFormat": 1,
        "ProductKey": "a1BwAGV****",
        "ProductStatus": "DEVELOPMENT_STATUS",
        "GmtCreate": 1581595942000,
        "ProductSecret": "U5tW7i44uilc****",
        "NodeType": 0,
        "ProductName": "Street light"
        "ValidateType":1,
        "DeviceCount": 0,
        "NetType": 3,
        "AuthType": "secret",
        "CategoryKey": "Lighting",
        "Id2": false,
        "AliyunCommodityCode": "iothub_senior"
    },
    "RequestId": "DA5A3C45-D457-48ED-9A20-AEDEA8503401",
    "Success": true
}
```

4.7.3. QueryProductList

Queries all products.

Limits

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

  Note RAM users of an Alibaba Cloud account share the quota of the account.

- If the value of the **CurrentPage** parameter multiplied by the value of the **PageSize** parameter equals at least 100,000, the QPS of this operation decreases.

  In this case, each Alibaba Cloud account can run a maximum of 2 QPS.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryProductList	The operation that you want to perform. Set the value to QueryProductList.

Parameter	Type	Required	Example	Description
CurrentPage	Integer	Yes	1	The number of the page to return.
PageSize	Integer	No	2	The number of entries to return on each page. Valid values: 1 to 200.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfmxazb4ph****	The ID of the resource group to which the product belongs. You can log on to the Resource Management console to view the details of the resource group. If you do not specify this parameter, the system queries the products of all resource groups within the current account.

Parameter	Type	Required	Example	Description
AliyunCommodityCode	String	No	iothub_senior	The type of the product. Valid values: • **iothub_senior**: A Thing Specification Language (TSL) model is used for the product. • **iothub**: No TSL model is used for the product. **Note** If you do not specify this parameter, all products are returned.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The product information returned if the call is successful. For more information, see the following parameters.
CurrentPage	Integer	1	The page number of the returned page.
List	Array of ProductInfo		The details of the products. **Note** The returned product information is sorted in reverse-chronological order based on the time when the products were created.
ProductInfo			

Parameter	Type	Example	Description
AuthType	String	secret	The authentication method that was used to connect the devices of the product to IoT Platform. Valid values: • **secret**: DeviceSecrets were used to authenticate the devices. • **id2**: IoT Internet Device ID was used to authenticate the devices. • **x509**: X.509 certificates were used to authenticate the devices.
DataFormat	Integer	1	The data format that was used by a communication protocol to transmit data between the devices and IoT Platform. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior. Valid values: • **0**: custom. A custom serial data format is used. In this case, the device can submit raw data, such as binary data streams. IoT Platform converts the raw data into standard Alink JSON data based on the specified data parsing script. • **1**: Alink JSON. Alink JSON data is transmitted between the devices and IoT Platform. Alink is a data exchange protocol that is pre-defined by IoT Platform.
Description	String	This is a test product.	The description of the product.
DeviceCount	Integer	128	The number of devices under the product.
GmtCreate	Long	1581595942000	The creation time of the product. The value is a timestamp in milliseconds.

Parameter	Type	Example	Description
NodeType	Integer	0	The node type of the product. This parameter is available if the AliyunCommodityCode parameter is set to iothub_senior. Valid values: • **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.
ProductKey	String	a1T27vz****	The ProductKey of the product. When you create a product, a ProductKey is the globally unique identifier (GUID) that is issued by IoT Platform to the product.
ProductName	String	Street light	The name of the product.
PageCount	Integer	92	The total number of pages.
PageSize	Integer	2	The number of entries returned per page.
Total	Integer	184	The total number of products.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	4B4ECF2C-6222-42EC-A4B5-C12202E71CEA	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryProductList
&CurrentPage=1
&PageSize=2
&ResourceGroupId=rg-acfmxazb4ph****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryProductListResponse>
  <Data>
        <PageCount>92</PageCount>
        <PageSize>2</PageSize>
        <List>
              <ProductInfo>
                    <DataFormat>1</DataFormat>
                    <ProductKey>a1A0D4t****</ProductKey>
                    <NodeType>0</NodeType>
                    <ProductName>Street light</ProductName>
                    <DeviceCount>1</DeviceCount>
                    <GmtCreate>1569233025000</GmtCreate>
                    <AuthType>secret</AuthType>
              </ProductInfo>
              <ProductInfo>
                    <DataFormat>1</DataFormat>
                    <ProductKey>a1dEvuQ****</ProductKey>
                    <NodeType>0</NodeType>
                    <ProductName>Custom sub-device</ProductName>
                    <DeviceCount>0</DeviceCount>
                    <GmtCreate>1568690432000</GmtCreate>
                    <AuthType>secret</AuthType>
              </ProductInfo>
        </List>
        <CurrentPage>1</CurrentPage>
        <Total>184</Total>
  </Data>
  <RequestId>4B4ECF2C-6222-42EC-A4B5-C12202E71CEA</RequestId>
  <Success>true</Success>
</QueryProductListResponse>
```

`JSON` format

```
{
  "Data": {
    "PageCount": 92,
    "PageSize": 2,
    "List": {
      "ProductInfo": [
        {
          "DataFormat": 1,
          "ProductKey": "a1A0D4t****",
          "NodeType": 0,
          "ProductName": "Street light",
          "DeviceCount": 1,
          "GmtCreate": 1569233025000,
          "AuthType": "secret"
        },
        {
          "DataFormat": 1,
          "ProductKey": "a1dEvuQ****",
          "NodeType": 0,
          "ProductName": <ProductName>Custom sub-device</ProductName>
          "DeviceCount": 0,
          "GmtCreate": 1568690432000,
          "AuthType": "secret"
        }
      ]
    },
    "CurrentPage": 1,
    "Total": 184
  },
  "RequestId": "4B4ECF2C-6222-42EC-A4B5-C12202E71CEA",
  "Success": true
}
```


4.7.4. UpdateProduct

Modifies the information about a product.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateProduct	The operation that you want to perform. Set the value to UpdateProduct.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
ProductName	String	Yes	Street light	The new product name that you want to use. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_). **Note** Each product name must be unique within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Description	String	No	The 2nd generation street light.	The description of the product. The description can be up to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateProduct
&ProductKey=a1BwAGV****
&ProductName=TestProductNew
&Description=new features v2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateProductResponse>
  <RequestId>C4FDA54C-4201-487F-92E9-022F42387458</RequestId>
  <Success>true</Success>
</UpdateProductResponse>
```

`JSON` format

```
{
      "RequestId":"C4FDA54C-4201-487F-92E9-022F42387458",
      "Success":true
  }
```

4.7.5. DeleteProduct

Deletes a product.

Limits

- After a product is deleted, the ProductKey of the product is invalid. The related information about the product is also deleted. You cannot perform the required operations on the product.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteProduct	The operation that you want to perform. Set the value to DeleteProduct.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product that you want to delete. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteProduct
&ProductKey=a1QDKAU****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteDeviceResponse>
        <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
        <Success>true</Success>
  </DeleteDeviceResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.7.6. CreateProductTags

Creates tags for a product.

Limits

- You can create a maximum of 10 tags for a product in a single call.
- Each product can have a maximum of 100 tags.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateProductTags	The operation that you want to perform. Set the value to CreateProductTags.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductTag.N.TagKey	String	No	room	The keys of product tags. Each key must be 1 to 30 characters in length, and can contain letters, digits, and periods (.).
ProductTag.N.TagValue	String	No	TagValue	The values of the product tags. Each tag value must be 1 to 128 characters in length, and can contain letters, digits, underscores (_), and hyphens (-).

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
InvalidProductTags	Array of ProductTag		The invalid product tags returned if the call fails.
ProductTag			
TagKey	String	room	The key of each tag.
TagValue	String	123$	The value of the tag.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. This value indicates that the tags were attached to the product. • **false**: The call failed. This value indicates that the tags failed to be attached to the product.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateProductTags
&ProductKey=a1h7knJ****
&ProductTag.1.TagKey=first
&ProductTag.1.TagValue=value1
&ProductTag.2.TagKey=second
&ProductTag.2.TagValue=value2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateProductTagsResponse>
      <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
      <Success>true</Success>
</CreateProductTagsResponse>
```

`JSON` format

```
{
  "RequestId": "354A4F9B-6B01-4498-8084-867F59720BA5",
  "Success": true
}
```

4.7.7. UpdateProductTags

Updates product tags.

Limits

- You can update a maximum of 10 tags in a single call.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateProductTags	The operation that you want to perform. Set the value to UpdateProductTags.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductTag.N.TagValue	String	No	202	The new values of the product tags. Each tag value must be 1 to 128 characters in length, and can contain letters, digits, underscores (_), and hyphens (-).

Parameter	Type	Required	Example	Description
ProductTag.N.TagKey	String	No	room	The keys of the product tags. Each key must be 1 to 30 characters in length, and can contain letters, digits, and periods (.). **Note** Each tag key that you specify must already exist. Each tag value that you specify must be unique.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
InvalidProductTags	Array of ProductTag		The invalid product tags returned if the call fails. The details are included in the **ProductTag** parameter.
ProductTag			
TagKey	String	room	The key of each tag.
TagValue	String	123	The value of the tag.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateProductTags
&ProductKey=a1h7knJ****
&ProductTag.1.TagKey=first
&ProductTag.1.TagValue=value1
&ProductTag.2.TagKey=second
&ProductTag.2.TagValue=value2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateProductTagsResponse>
      <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
      <Success>true</Success>
</UpdateProductTagsResponse>
```

`JSON` format

```
{
  "RequestId": "92586B4B-FF78-494A-A22C-368E4293FBB7",
  "Success": true
}
```

4.7.8. DeleteProductTags

Deletes the tags of a product.

Limits

- You can delete a maximum of 10 tags in a single call.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteProductTags	The operation that you want to perform. Set the value to DeleteProductTags.

Parameter	Type	Required	Example	Description
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
ProductTagKey.N	RepeatList	Yes	room	The keys of the tags.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteProductTags
&ProductKey=a1h7knJdld1
&ProductTagKey.1=first
&ProductTagKey.2=second
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteProductTagsResponse>
  <RequestId>E7E8456E-EDD7-41D3-83B1-62FF4F5ED6BD</RequestId>
  <Success>true</Success>
</DeleteProductTagsResponse>
```

`JSON` format

```
{
  "RequestId": "E7E8456E-EDD7-41D3-83B1-62FF4F5ED6BD",
  "Success": true
}
```

4.7.9. ListProductTags

Queries all the tags of a product.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListProductTags	The operation that you want to perform. Set the value to ListProductTags.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of ProductTag		The product tags returned if the call succeeds. For more information, see the parameters that are included in the **ProductTag** parameter.

Parameter	Type	Example	Description
ProductTag			
TagKey	String	room	The key of each tag.
TagValue	String	102	The value of the tag.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListProductTags
&ProductKey=a1h7knJ****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListProductTagsResponse>
      <Data>
            <ProductTag>
                  <TagValue>alterTable</TagValue>
                  <TagKey>binary</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>json2</TagValue>
                  <TagKey>extt</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>1234</TagValue>
                  <TagKey>Lock</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>support</TagValue>
                  <TagKey>Lockk</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>reen</TagValue>
                  <TagKey>Reen</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>try</TagValue>
                  <TagKey>Reenn</TagKey>
            </ProductTag>
            <ProductTag>
                  <TagValue>DropTable</TagValue>
                  <TagKey>roc</TagKey>
            </ProductTag>
      </Data>
      <RequestId>7FBE60F8-4AB5-4A8C-AFCB-F4F38851F01F</RequestId>
      <Success>true</Success>
</ListProductTagsResponse>
```

`JSON` format

```
{
  "Data": {
    "ProductTag": [
      {
        "TagValue": "alterTable",
        "TagKey": "binary"
      },
      {
        "TagValue": "json2",
        "TagKey": "extt"
      },
      {
        "TagValue": "1234",
        "TagKey": "Lock"
      },
      {
        "TagValue": "support",
        "TagKey": "Lockk"
      },
      {
        "TagValue": "reen",
        "TagKey": "Reen"
      },
      {
        "TagValue": "try",
        "TagKey": "Reenn"
      },
      {
        "TagValue": "DropTable",
        "TagKey": "roc"
      }
    ]
  },
  "RequestId": "7FBE60F8-4AB5-4A8C-AFCB-F4F38851F01F",
  "Success": true
}
```


4.7.10. ListProductByTags

Queries products by tag.

Limits

- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

  Note RAM users of an Alibaba Cloud account share the quota of the account.

- You can specify a tag key or a tag key-value pair for search.
- If you specify multiple tags, the logical relationship among these tags is **OR**.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListProductByTags	The operation that you want to perform. Set the value to ListProductByTags.
ProductTag.N.TagKey	String	Yes	room	The keys of the product tags.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
CurrentPage	Integer	No	1	The number of the page to return.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 50.
ProductTag.N.TagValue	String	No	102	The values of the product tags.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
ProductInfos	Array of ProductInfo		The details of the products returned if the call is successful. The details are included in the **ProductInfo** parameter. **Note** The returned product information is sorted in reverse-chronological order based on the time when the products were created.
ProductInfo			
CreateTime	Long	1545355537000	The time when the product was created.
Description	String	This is a test product.	The description of the product.
NodeType	Integer	0	The node type of the product. Valid values: • **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.
ProductKey	String	a1BwAGV****	The ProductKey of the product. A ProductKey is a globally unique identifier (GUID) issued by IoT Platform to a new product.
ProductName	String	Street light	The name of the product.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListProductByTags
&CurrentPage=1
&PageSize=10
&ProductTag.1.TagKey=Reen
&ProductTag.1.TagValue=reen
&ProductTag.2.TagKey=Lock
&ProductTag.2.TagValue=1234
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListProductByTagsResponse>
  <RequestId>09AA366E-81EC-4CF0-B49E-61BCD7C95338</RequestId>
  <Success>true</Success>
  <ProductInfos>
        <ProductInfo>
              <ProductKey>a1BwAGV****</ProductKey>
              <NodeType>0</NodeType>
              <CreateTime>1581595942000</CreateTime>
              <ProductName>Street light</ProductName>
        </ProductInfo>
        <ProductInfo>
              <ProductKey>a1PO***</ProductKey>
              <NodeType>0</NodeType>
              <CreateTime>1580898565000</CreateTime>
              <ProductName>Sensor </ProductName>
        </ProductInfo>
  </ProductInfos>
</ListProductByTagsResponse>
```

`JSON` format

```
{
    "RequestId": "09AA366E-81EC-4CF0-B49E-61BCD7C95338",
    "Success": true,
    "ProductInfos": {
        "ProductInfo": [
            {
                "ProductKey": "a1BwAGV****",
                "NodeType": 0,
                "CreateTime": 1581595942000,
                "ProductName": "Street light"
            },
            {
                "ProductKey": "a1PO***",
                "NodeType": 0,
                "CreateTime": 1580898565000,
                "ProductName": "Sensor"
            }
        ]
    }
}
```

4.7.11. UpdateProductFilterConfig

Updates the deduplication rules for property messages that are submitted by the devices of a product. If the call succeeds, the new rules are applied to all the devices of the product.

Message deduplication rules

Based on the rules that you set, IoT Platform determines whether to use the rules engine or server-side subscriptions to forward property data that is submitted by devices to a specified destination.

The triggering conditions of rules are related by the logic AND relation. For example, if you set the PropertyValueFilter=true and PropertyTimestampFilter=true conditions, the rule to remove duplicate messages is triggered only when both of the conditions are met.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateProductFilterConfig	The operation that you want to perform. Set the value to UpdateProductFilterConfig.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
PropertyTimestampFilter	Boolean	Yes	false	Specifies whether to deduplicate messages based on the submission time of each property. Valid values: • **true**: deduplicates property messages that have the same timestamp. • **false**: does not deduplicate messages based on timestamps.
PropertyValueFilter	Boolean	Yes	true	Specifies whether to deduplicate messages based on the value of each property. Valid values: • **true**: deduplicates property messages that have the same property value. • **false**: does not deduplicate messages based on property values.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateProductFilterConfig
&ProductKey=a1duisa****
&PropertyValueFilter=true
&PropertyTimestampFilter=true
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateProductFilterConfigResponse>
  <RequestId>2E19BDAF-0FD0-4608-9F41-82D230CFEE38</RequestId>
  <Success>true</Success>
</UpdateProductFilterConfigResponse>
```

`JSON` format

```
{
  "RequestId": "2E19BDAF-0FD0-4608-9F41-82D230CFEE38",
  "Success": true
}
```

4.7.12. ReleaseProduct

Publishes a product.

Usage notes

- After a product is published, you cannot call the CreateThingModel, UpdateThingModel, ImportThingModelTSL, PublishThingModel, DeleteThingModel, or CopyThingModel operation to edit the Thing Specification Language (TSL) model of the product. To edit the TSL model, you must call the CancelReleaseProduct operation to unpublish the product.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ReleaseProduct	The operation that you want to perform. Set the value to ReleaseProduct.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product to be published.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E4F94B97-1D64-4080-BFD2-67461667AA43	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample request

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=ReleaseProduct
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ReleaseProductResponse>
          <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
          <Success>true</Success>
</ReleaseProductResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.7.13. CancelReleaseProduct

Unpublishes a specified product.

Usage notes

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CancelReleaseProduct	The operation that you want to perform. Set the value to CancelReleaseProduct.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to be unpublished.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=CancelReleaseProduct
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CancelReleaseProductResponse>
    <RequestId>5573D217-8E3E-47AD-9331-2083B88E64B2</RequestId>
    <Success>true</Success>
</CancelReleaseProductResponse>
```

`JSON` format

```
{
  "RequestId": "5573D217-8E3E-47AD-9331-2083B88E64B2",
  "Success": true
}
```

4.8. Manage devices

4.8.1. RegisterDevice

Registers a device under a product.

Usage notes

If you call this operation to register a device under a product, the device is added to the product in the IoT Platform console. After the device is registered, IoT Platform issues the IotId parameter to the device. This parameter is a globally unique identifier (GUID) of the device. To perform operations on a device, you must use the IotId parameter to identify the device.

You can also use a combination of the ProductKey and DeviceName parameters to identify a device. A ProductKey is issued by IoT Platform to a product when you create the product. A DeviceName is specified or randomly generated when you create a device. The IotId parameter has a higher priority than a combination of the ProductKey and DeviceName parameters.

For information about how to register multiple devices under a product at the same time, see BatchRegisterDeviceWithApplyId.

Limits

Each Alibaba Cloud account can run a maximum of 30 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	RegisterDevice	The operation that you want to perform. Set the value to RegisterDevice.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the device belongs. A ProductKey is a GUID that is issued by IoT Platform to a product. You can use the IoT Platform console or call the QueryProductList operation to view the information about all products within the current account.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceName	String	No	light	The DeviceName of the device. The name must be 4 to 32 characters in length, and can contain letters, digits, hyphens (-), underscores (_), at signs (@), periods (.), and colons (:). You can use a combination of the DeviceName and ProductKey parameters to identify a device. **Note** If you do not specify this parameter, IoT Platform randomly generates a DeviceName.

Parameter	Type	Required	Example	Description
DevEui	String	No	e8SDdgeIlk3nED*****	The DevEUI of the LoRaWAN device. This parameter is required when you create a LoRaWAN device.
Nickname	String	No	Campus light	The alias of the device. The alias must be 4 to 64 characters in length, and can contain letters, digits, and underscores (_). **Note** If you do not specify this parameter, IoT Platform does not generate an alias for the device.
PinCode	String	No	DIe80dfeg*****	The PIN code of the LoRaWAN device. This parameter is used to verify the DevEUI. When you create a LoRaWAN device, set **LoraNodeType** to **ALIYUNDEFINED**. This parameter is required.
JoinEui	String	No	Ede4tde8erth****	The JoinEUI of the LoRaWAN device. When you create a LoRaWAN device, set **LoraNodeType** to **USERDEFINED**. This parameter is required.
AppKey	String	No	674f***	The AppKey of the LoRaWAN device. When you create a LoRaWAN device, set **LoraNodeType** to **USERDEFINED**. This parameter is required.
LoraNodeType	String	No	ALIYUNDEFINED	The type of the LoRaWAN device. Valid values: • **ALIYUNDEFINED**: The device is issued by Alibaba Cloud. You must specify **DevEui** and **PinCode**. • **USERDEFINED**: The device is user-defined. You must specify **DevEui**, **JoinEui**, and **AppKey**.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The device information returned if the call is successful.
DevEui	String	e8SDdgeIlk3nED****	The DevEUI of the LoRaWAN device. This parameter is returned only when you create a LoRaWAN device.
DeviceName	String	light	The DeviceName of the device. Notice Keep the information confidential.
DeviceSecret	String	mz2Canp4GB7qRVf1OYPNtRqB2anu****	The DeviceSecret of the device. Notice Keep the information confidential.
IotId	String	1O4YPNtRqB2anumz2Canp4GB7q****	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device. Notice Keep the information confidential.
JoinEui	String	Ede4tde8erth****	The JoinEUI of the LoRaWAN device. This parameter is returned only when you create a LoRaWAN device.
Nickname	String	Campus light	The alias of the device. If you do not specify an alias for the device, this parameter is empty.
ProductKey	String	a1BwAGV****	The ProductKey of the product to which the device belongs.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=RegisterDevice
&ProductKey=a1rYuVF****
&DeviceName=device1
&Nickname=detectors_in_beijing
&<Common request parameters>
```

Sample success responses

`XML` format

```
<RegisterDeviceResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
  <Data>
        <DeviceName>device1</DeviceName>
        <ProductKey>a1rYuVF****</ProductKey>
        <DeviceSecret>tXHf4ezGEHcwdyMwoCDHGBmk9avi****</DeviceSecret>
        <IotId>CqXL5h5ysRTA4NxjABjj0010fa****</IotId>
        <Nickname>detectors_in_beijing</Nickname>
  </Data>
</RegisterDeviceResponse>
```

`JSON` format

```
{
    "RequestId": "57b144cf-09fc-4916-a272-a62902d5b207",
    "Success": true,
    "Data": {
        "DeviceName": "device1",
        "ProductKey": "a1rYuVF****",
        "DeviceSecret": "tXHf4ezGEHcwdyMwoCDHGBmk9avi****",
        "IotId": "CqXL5h5ysRTA4NxjABjj0010fa****",
        "Nickname": "detectors_in_beijing"
    }
}
```

4.8.2. QueryClientIds

Queries the ClientIDs of a device. This API operation applies to preregistration-free unique-certificate-per-product authentication.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryClientIds	The operation that you want to perform. Set the value to QueryClientIds.
IotId	String	Yes	y4u2weAlrpp****WHMle1234	The ID of the device. You can call the QueryDeviceInfo operation to query the **IotId** parameter.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-a****13l	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	Success	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The ClientIDs returned if the call is successful. For more information, see **DynamicRegClientIds**.
DynamicRegClientIds	Array of DynamicRegClientId		The list of ClientIDs.
ClientId	String	9rSzYt4js92********f000112	The ClientID of the device.
CreateTime	Long	1636514022424	The time when the ClientID was created.
IotId	String	y4u2weAI********HMle1234	The ID of the device.
ErrorMessage	String	request parameter error	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	89F22330-BAEE-****-****-41BA46D6E267	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=QueryClientIds
&IotId=y4u2weAIrpp****WHMle1234
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryClientIdsResponse>
  <RequestId>CA991E7C-BDE7-5887-B3B7-E08C68C0D346</RequestId>
  <Data>
        <IotId>kRLP***0000</IotId>
        <DynamicRegClientIds>
              <CreateTime>1635847637823</CreateTime>
              <ClientId>K19uYV***000100</ClientId>
        </DynamicRegClientIds>
        <DynamicRegClientIds>
              <CreateTime>1635846982286</CreateTime>
              <ClientId>bpQwyW***000100</ClientId>
        </DynamicRegClientIds>
        <DynamicRegClientIds>
              <CreateTime>1635847426368</CreateTime>
              <ClientId>ntnIvez***000100</ClientId>
        </DynamicRegClientIds>
  </Data>
  <Success>true</Success>
</QueryClientIdsResponse>
```

`JSON` format

```
{
    "RequestId": "CA991E7C-BDE7-5887-B3B7-E08C68C0D346",
    "Data": {
        "IotId": "kRLP***0000",
        "DynamicRegClientIds": [
            {
                "CreateTime": 1635847637823,
                "ClientId": "K19uYV***000100"
            },
            {
                "CreateTime": 1635846982286,
                "ClientId": "bpQwyW***000100"
            },
            {
                "CreateTime": 1635847426368,
                "ClientId": "ntnIvez***000100"
            }
        ]
    },
    "Success": true
}
```

4.8.3. TransformClientId

Specifies a valid ClientID for a device to prevent illegal logons if the device contains multiple ClientIDs. This API operation applies to preregistration-free unique-certificate-per-product authentication.

Usage notes

You can call the QueryClientIds operation to view the ClientIDs of a device.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	TransformClientId	The operation that you want to perform. Set the value to TransformClientId.

Parameter	Type	Required	Example	Description
ClientId	String	Yes	9rSz********UNMWj33f000112	The ClientID of the device.
IotId	String	Yes	BXPV9Ks3bxwM9fD****0000101	The ID of the device.
IotInstanceId	String	No	iot-02****43	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	Success	The response code. The value Success indicates that the call was successful. Other values indicate that errors occurred. For more information about error codes, see Error codes.
ErrorMessage	String	request parameter error	The error message returned if the call fails.
RequestId	String	89F22330-BAEE-****-****-41BA46D6E267	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=TransformClientId
&ClientId=9rSz********UNMWj33f000112
&IotId=BXPV9Ks3bxwM9fD****0000101
&<Common request parameters>
```

Sample success responses

`XML` format

```
<TransformClientIdResponse>
  <RequestId>89F22330-BAEE-****-****-41BA46D6E267</RequestId>
  <Code>Success</Code>
  <Success>true</Success>
</TransformClientIdResponse>
```

`JSON` format

```
{
    "RequestId": "89F22330-BAEE-****-****-41BA46D6E267",
    "Code": "Success",
    "Success": true
}
```

4.8.4. DeleteClientIds

Deletes all ClientIDs of a device if the number of ClientIDs exceeds the limit 5. This API operation applies to preregistration-free unique-certificate-per-product authentication.

Usage notes

- You can call the QueryClientIds operation to view the ClientIDs of a device and obtain the number of ClientIDs.
- After you call the DeleteClientIds operation, all ClientIDs of the device are deleted and cannot be resumed. To obtain a new ClientID, you can register the device again.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteClientIds	The operation that you want to perform. Set the value to DeleteClientIds.
IotId	String	Yes	BXPV9Ks3bxwM9fD****0000101	The ID of the device.
IotInstanceId	String	No	iot-12****78	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	Success	The response code. The value Success indicates that the call was successful. Other values indicate that errors occurred. For more information about error codes, see Error codes.
ErrorMessage	String	request parameter error	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	89F22330-BAEE-****-****-41BA46D6E267	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=DeleteClientIds
&IotId=BXPV9Ks3bxwM9fD****0000101
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteClientIdsResponse>
  <RequestId>89F22330-BAEE-****-****-41BA46D6E267</RequestId>
  <Code>Success</Code>
  <Success>true</Success>
</DeleteClientIdsResponse>
```

`JSON` format

```
{
    "RequestId": "89F22330-BAEE-****-****-41BA46D6E267",
    "Code": "Success",
    "Success": true
}
```

4.8.5. QueryDeviceInfo

Queries the basic information about a specified device. The information includes the device ID, device certificate, and alias.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceInfo	The operation that you want to perform. Set the value to QueryDeviceInfo.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Notice** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Notice** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. **Notice** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The information about the device returned if the call is successful.
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	mz2Canp4GB7qRVf1OYPNtRqB2anu****	The DeviceSecret of the device.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.
Nickname	String	detectors_in_beijing	The alias of the device.
ProductKey	String	a1rYuVF****	The ProductKey of the product to which the device belongs.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceInfo
&ProductKey=a1rYuVF****
&DeviceName=light
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceInfoResponse>
  <RequestId>E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565</RequestId>
  <Data>
        <IotId>Q7uOhVRdZRRlDnTLv****00100</IotId>
        <DeviceSecret>mz2Canp4GB7qRVf1OYPNtRqB2anu****</DeviceSecret>
        <ProductKey>a1rYuVF****</ProductKey>
        <Nickname>detectors_in_beijing</Nickname>
        <DeviceName>light</DeviceName>
  </Data>
  <Success>true</Success>
</QueryDeviceInfoResponse>
```

`JSON` format

```
{
    "RequestId": "E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565",
    "Data": {
        "IotId": "Q7uOhVRdZRRlDnTLv****00100",
        "DeviceSecret": "mz2Canp4GB7qRVf1OYPNtRqB2anu****",
        "ProductKey": "a1rYuVF****",
        "Nickname": "detectors_in_beijing",
        "DeviceName": "light"
    },
    "Success": true
}
```

4.8.6. QueryDeviceDetail

Queries the details of a device.

QPS limits

Each Alibaba Cloud account can run up to 50 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceDetail	The operation that you want to perform. Set the value to QueryDeviceDetail.
IotInstanceId	String	No	iot-v64***	The ID of the instance. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails. • If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify a value for this parameter, you must also specify a value for the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify a value for this parameter, you must also specify a value for the **ProductKey** parameter.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. **Note** If you specify a value for this parameter, you do not need to specify a value for the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a globally unique identifier (GUID) for the device. The value of the IotId parameter corresponds to a combination of the values of the **ProductKey** and **DeviceName** parameters. If you specify a value for the **IotId** parameter and values for the **ProductKey** and **DeviceName** parameters, the value of the **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Struct		The device details returned if the call is successful.
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	mz2Canp4GB7qRVf1OYPNtRqB2anu****	The DeviceSecret of the device.
FirmwareVersion	String	V1.0.0.0	The version number of the default OTA module of the device. If you want to query the version information about other OTA modules, call the ListOTAModuleVersionsByDevice operation. The version information is submitted by the device.
GmtActive	String	2018-08-06 10:48:41	The time when the device was activated. The time is in the GMT format.
GmtCreate	String	2018-08-06 10:47:50	The time when the device was created. The time is in the GMT format.
GmtOnline	String	2018-08-06 13:43:12	The most recent time when the device was online. The time is in the GMT format.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.
IpAddress	String	10.0.0.1	The IP address of the device.
Nickname	String	detectors_in_beijing	The alias of the device.

Parameter	Type	Example	Description
NodeType	Integer	0	The type of the node. Valid values: • **0**: device. Sub-devices cannot be attached to a device. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.
Owner	Boolean	true	Indicates whether the operation is called by the owner of the device.
ProductKey	String	a1rYuVF****	The ProductKey of the product to which the device belongs.
ProductName	String	test	The name of the product to which the device belongs.
Region	String	cn-shanghai	The ID of the region where the device resides. The region is the same as the region where IoT Platform resides. You can view the region in the IoT Platform console.
Status	String	ONLINE	The device status. Valid values: Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
UtcActive	String	2018-08-06T02:48:41.000Z	The time when the device was activated. The time is in the UTC format.
UtcCreate	String	2018-08-06T02:47:50.000Z	The time when the device was created. The time is in the UTC format.
UtcOnline	String	2018-08-06T05:43:12.000Z	The most recent time when the device was online. The time is in the UTC format.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceDetail
&ProductKey=a1rYuVF****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceDetailResponse>
  <Data>
        <Owner>true</Owner>
        <GmtActive>2020-01-16 13:33:37</GmtActive>
        <DeviceName>Humidity</DeviceName>
        <ProductKey>a1ttsqu****</ProductKey>
        <DeviceSecret>sLefbFmN9SYfnWLJTePG893XNuRV****</DeviceSecret>
        <IpAddress>42.120.75.144</IpAddress>
        <GmtCreate>2020-01-08 14:47:08</GmtCreate>
        <UtcCreate>2020-01-08T06:47:08.000Z</UtcCreate>
        <IotId>dwnS41bhNxjslDAIF****00100</IotId>
        <Status>OFFLINE</Status>
        <UtcOnline>2020-01-17T08:19:11.091Z</UtcOnline>
        <Region>cn-shanghai</Region>
        <UtcActive>2020-01-16T05:33:37.830Z</UtcActive>
        <Nickname>Temperature and humidity</Nickname>
        <NodeType>0</NodeType>
        <GmtOnline>2020-01-17 16:19:11</GmtOnline>
        <ProductName>Light, temperature, and humidity sensor
  </Data>
  <RequestId>D2D2DE90-DD0F-44EA-9F56-63F07A59F65B</RequestId>
  <Success>true</Success>
</QueryDeviceDetailResponse>
```

`JSON` format

```
{
 "Data": {
  "Owner": true,
  "GmtActive": "2020-01-16 13:33:37",
  "DeviceName": "Humidity",
  "ProductKey": "a1ttsqu****",
  "DeviceSecret": "sLefbFmN9SYfnWLJTePG893XNuRV****",
  "IpAddress": "42.120.75.144",
  "GmtCreate": "2020-01-08 14:47:08",
  "UtcCreate": "2020-01-08T06:47:08.000Z",
  "IotId": "dwnS41bhNxjslDAIF****00100",
  "Status": "OFFLINE",
  "UtcOnline": "2020-01-17T08:19:11.091Z",
  "Region": "cn-shanghai",
  "UtcActive": "2020-01-16T05:33:37.830Z",
  "NickName": "Temperature and humidity",
  "NodeType": 0,
  "GmtOnline": "2020-01-17 16:19:11",
  "ProductName": "Light, temperature, and humidity sensor"
 },
 "RequestId": "D2D2DE90-DD0F-44EA-9F56-63F07A59F65B",
 "Success": true
}
```


4.8.7. BatchQueryDeviceDetail

Queries the details of multiple devices under a product.

Limits

- You can query a maximum of 100 devices in a single call.
- You can query the details of devices that belong only to the current Alibaba Cloud account. If you specify a device that does not belong to the current account, an error message is returned.
- If you specify multiple devices and some devices do not exist, only the details of existing devices are returned.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchQueryDeviceDetail	The operation that you want to perform. Set the value to BatchQueryDeviceDetail.
DeviceName.N	RepeatList	Yes	light	The DeviceNames of the devices. You can specify a maximum of 100 DeviceNames. **Note** The specified devices must belong to the same product.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product to which the devices specified by the **DeviceName.N** parameter belong.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of Data		The device details returned if the call is successful.

Parameter	Type	Example	Description
Data			
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	mz2Canp4GB7qRVf1OYPNtRqB2anu****	The DeviceSecret of the device.
FirmwareVersion	String	V1.0.0.0	The firmware version number of the device.
GmtActive	String	2019-06-21 20:33:00	The activation time of the device. The time is displayed in UTC.
GmtCreate	String	2019-06-21 20:31:42	The creation time of the device. The time is displayed in UTC.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The unique ID of the device. The device ID is issued by IoT Platform.
Nickname	String	Smart street light	The alias of the device.
NodeType	Integer	0	The type of the node. Valid values: • **0**: device. Sub-devices cannot be mounted on a gateway. A device can connect to IoT Platform directly or as a sub-device of a gateway. • **1**: gateway. Sub-devices can be attached to a gateway. A gateway can manage sub-devices, maintain the topological relationships with sub-devices, and synchronize the topological relationships to IoT Platform.
ProductKey	String	a1BwAGV****	The **ProductKey** of the product to which the device belongs.
ProductName	String	Street light	The name of the product to which the device belongs.
Region	String	cn-shanghai	The ID of the region where the device resides. The region is the same as the region where IoT Platform resides. You can view the region in the IoT Platform console.

Parameter	Type	Example	Description
Status	String	ONLINE	The status of the device. Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
UtcActive	String	2019-06-21T12:31:42.000Z	The activation time of the device. The time is displayed in UTC.
UtcCreate	String	2019-06-21T12:31:42.000Z	The creation time of the device. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchQueryDeviceDetail
&ProductKey=a1fce6J****
&DeviceName.1=firstDeviceName
&DeviceName.2=secondDeviceName
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchQueryDeviceDetailResponse>
  <Data>
        <Data>
              <DeviceName>Humidity</DeviceName>
              <GmtActive>2020-01-16 13:33:37</GmtActive>
              <ProductKey>a1ttsqu****</ProductKey>
              <DeviceSecret>sLefbFmN9SYfnWLJTePG893XNuRV****</DeviceSecret>
              <GmtCreate>2020-01-08 14:47:08</GmtCreate>
              <UtcCreate>2020-01-08T06:47:08.000Z</UtcCreate>
              <IotId>dwnS41bhNxjslDAIF****00100</IotId>
              <Status>OFFLINE</Status>
              <UtcActive>2020-01-08T06:47:08.000Z</UtcActive>
              <Region>cn-shanghai</Region>
              <NickName>Temperature and humidity</NickName>
              <NodeType>0</NodeType>
              <ProductName>Light, temperature, and humidity sensor</ProductName>
        </Data>
        <Data>
              <Status>OFFLINE</Status>
              <GmtActive>2020-01-17 16:23:15</GmtActive>
              <DeviceName>TH_sensor</DeviceName>
              <Region>cn-shanghai</Region>
              <UtcActive>2020-01-17T03:39:14.000Z</UtcActive>
              <ProductKey>a1ttsqu****</ProductKey>
              <NodeType>0</NodeType>
              <DeviceSecret>dCYdTU3gw5Z77bsHjPk6lPHPVnBT****</DeviceSecret>
              <ProductName>Light, temperature, and humidity sensor</ProductName>
              <GmtCreate>2020-01-17 11:39:14</GmtCreate>
              <UtcCreate>2020-01-17T03:39:14.000Z</UtcCreate>
              <IotId>RKYkCRstfGBh5SZXL****00100</IotId>
        </Data>
  </Data>
  <RequestId>D4C12DD8-4390-4877-B1DC-4049CF4868BC</RequestId>
  <Success>true</Success>
</BatchQueryDeviceDetailResponse>
```

`JSON` format

```
{
    "Data": {
        "Data": [
            {
                "DeviceName": "Humidity",
                "GmtActive": "2020-01-16 13:33:37",
                "ProductKey": "a1ttsqu****",
                "DeviceSecret": "sLefbFmN9SYfnWLJTePG893XNuRV****",
                "GmtCreate": "2020-01-08 14:47:08",
                "UtcCreate": "2020-01-08T06:47:08.000Z",
                "IotId": "dwnS41bhNxjslDAIF****00100",
                "Status": "OFFLINE",
                "UtcActive": "2020-01-08T06:47:08.000Z",
                "Region": "cn-shanghai",
                "Nickname": "Temperature and humidity",
                "NodeType": 0,
                "ProductName": "Light, temperature, and humidity sensor"
            },
            {
                "Status": "OFFLINE",
                "GmtActive": "2020-01-17 16:23:15",
                "DeviceName": "TH_sensor",
                "Region": "cn-shanghai",
                "UtcActive": "2020-01-17T03:39:14.000Z",
                "ProductKey": "a1ttsqu****",
                "NodeType": 0,
                "DeviceSecret": "dCYdTU3gw5Z77bsHjPk6lPHPVnBT****",
                "ProductName": "Light, temperature, and humidity sensor",
                "GmtCreate": "2020-01-17 11:39:14",
                "UtcCreate": "2020-01-17T03:39:14.000Z",
                "IotId": "RKYkCRstfGBh5SZXL****00100"
            }
        ]
    },
    "RequestId": "D4C12DD8-4390-4877-B1DC-4049CF4868BC",
    "Success": true
}
```


4.8.8. QueryDevice

Queries all the devices of a product.

Limits

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

  Note RAM users of an Alibaba Cloud account share the quota of the account.

- If the value of the **CurrentPage** parameter multiplied by the value of the **PageSize** parameter equals at least 100,000, the QPS of this operation decreases.

  In this case, each Alibaba Cloud account can run a maximum of 2 QPS.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDevice	The operation that you want to perform. Set the value to QueryDevice.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 50. Default value: 10.
CurrentPage	Integer	No	1	The number of the page to return. Default value: 1.

Parameter	Type	Required	Example	Description
NextToken	String	No	TGlzdFJlc291cm***	The token that is used to retrieve the next page of results. You do not need to specify this parameter for the first query. You must specify the token that is obtained from the previous query as the value of the **NextToken** parameter. If the value of the **PageSize** parameter multiplied by the value of the **CurrentPage** parameter is greater than 10,000, you must specify the **NextToken** parameter. Otherwise, data cannot be returned. **Notice** If you specify the **NextToken** parameter, the value of the **PageSize** parameter multiplied by the value of the **CurrentPage** parameter must be less than 500,000. Otherwise, data cannot be returned.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of DeviceInfo		The device information returned if the call is successful. The details of the devices are included in the **DeviceInfo** parameter. **Note** The returned device information is sorted in reverse chronological order based on the time when the devices were created.
DeviceInfo			

Parameter	Type	Example	Description
DeviceId	String	dwnS41bhNxjslDAI****	The ID of the device (expired). **Note** This parameter is deprecated. Do not use this to identify a device. You can use the **IotId** parameter or a combination of the **ProductKey** and **DeviceName** parameters to identify a device.
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	sLefbFmN9SYfnWLJTePG893XNuRV****	The DeviceSecret of the device.
DeviceStatus	String	ONLINE	The status of the device. Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
DeviceType	String	Lighting	The category of the product to which the device belongs. **Note** This parameter is not returned.
GmtCreate	String	Wed, 20-Feb-2019 02:16:09 GMT	The time when the device was created. The time is displayed in UTC.
GmtModified	String	Wed, 20-Feb-2019 02:16:09 GMT	The last time when the device information was updated. The time is displayed in UTC.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is the unique identifier that IoT Platform generated for the device.
Nickname	String	Smart light	The alias of the device.
ProductKey	String	a1BwAGV****	The ProductKey of the product to which the device belongs.

Parameter	Type	Example	Description
UtcCreate	String	2019-02-20T02:16:09.000Z	The time when the device was created. The time is displayed in UTC.
UtcModified	String	2019-02-20T02:16:09.000Z	The time when the device information was last updated. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
NextToken	String	TGlzdFJlc291cm***	The token that is used to retrieve the next page of results. You can specify this parameter in the next query to obtain the next page of results. If the **NextToken** parameter is empty, no next page exists.
Page	Integer	1	The page number of the returned page.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	2	The total number of devices.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDevice
&ProductKey=aldafD****
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceResponse>
  <PageCount>1</PageCount>
  <NextToken>TGlzdFJlc291cm***</NextToken>
  <Data>
        <DeviceInfo>
              <DeviceId>Av8NGHGtwPrH9BYG****</DeviceId>
              <DeviceName>Av8NGHGtwPrH9BYGLMBi</DeviceName>
              <ProductKey>a1dafDE****</ProductKey>
              <DeviceSecret>d7GYhf5hfcPHDe1bXSd3n9MjO1G3****</DeviceSecret>
              <UtcModified>2019-02-20T02:16:09.000Z</UtcModified>
              <GmtCreate>Wed, 20-Feb-2019 02:16:09 GMT</GmtCreate>
              <UtcCreate>2019-02-20T02:16:09.000Z</UtcCreate>
              <GmtModified>Wed, 20-Feb-2019 02:16:09 GMT</GmtModified>
              <IotId>Av8NGHGtwPrH9BYGLMBi00****</IotId>
              <DeviceStatus>UNACTIVE</DeviceStatus>
              <Nickname>SensorInShanghai</Nickname>
        </DeviceInfo>
        <DeviceInfo>
              <DeviceId>zNIcSmWQ9BPJlmkj****</DeviceId>
              <DeviceName>zNIcSmWQ9BPJlmkjn3H1</DeviceName>
              <ProductKey>a1dafDE****</ProductKey>
              <DeviceSecret>C27XXmC18yLIEDXvUj6FSlvgO7ag****</DeviceSecret>
              <UtcModified>2019-02-20T02:16:09.000Z</UtcModified>
              <GmtCreate>Wed, 20-Feb-2019 02:16:09 GMT</GmtCreate>
              <UtcCreate>2019-02-20T02:16:09.000Z</UtcCreate>
              <GmtModified>Wed, 20-Feb-2019 02:16:09 GMT</GmtModified>
              <IotId>zNIcSmWQ9BPJlmkjn3H100****</IotId>
              <DeviceStatus>UNACTIVE</DeviceStatus>
              <Nickname>DriverInShanghai</Nickname>
        </DeviceInfo>
  </Data>
  <Page>1</Page>
  <PageSize>10</PageSize>
  <RequestId>CD9E5F99-A095-4A05-9256-D924EA3075E8</RequestId>
  <Success>true</Success>
  <Total>2</Total>
</QueryDeviceResponse>
```

`JSON` format

```
{
  "PageCount": 1,
  "NextToken":"TGlzdFJlc291cm***",
  "Data": {
    "DeviceInfo": [
      {
        "DeviceId": "Av8NGHGtwPrH9BYG****",
        "DeviceName": "Av8NGHGtwPrH9BYGLMBi",
        "ProductKey": "a1dafDE****",
        "DeviceSecret": "d7GYhf5hfcPHDe1bXSd3n9MjO1G3****",
        "UtcModified": "2019-02-20T02:16:09.000Z",
        "GmtCreate": "Wed, 20-Feb-2019 02:16:09 GMT",
        "UtcCreate": "2019-02-20T02:16:09.000Z",
        "GmtModified": "Wed, 20-Feb-2019 02:16:09 GMT",
        "IotId": "Av8NGHGtwPrH9BYGLMBi00****",
        "DeviceStatus": "UNACTIVE",
        "Nickname": "SensorInShanghai"
      },
      {
        "DeviceId": "zNIcSmWQ9BPJlmkj****",
        "DeviceName": "zNIcSmWQ9BPJlmkjn3H1",
        "ProductKey": "a1dafDE****",
        "DeviceSecret": "C27XXmC18yLIEDXvUj6FSlvgO7ag****",
        "UtcModified": "2019-02-20T02:16:09.000Z",
        "GmtCreate": "Wed, 20-Feb-2019 02:16:09 GMT",
        "UtcCreate": "2019-02-20T02:16:09.000Z",
        "GmtModified": "Wed, 20-Feb-2019 02:16:09 GMT",
        "IotId": "zNIcSmWQ9BPJlmkjn3H100****",
        "DeviceStatus": "UNACTIVE",
        "Nickname": "DriverInShanghai"
      }
    ]
  },
  "Page": 1,
  "PageSize": 10,
  "RequestId": "CD9E5F99-A095-4A05-9256-D924EA3075E8",
  "Success": true,
  "Total": 2
}
```


4.8.9. DeleteDevice

Deletes a device.

Limits

- After you delete a device, the ID of the device is invalid. The information that is related to the device is deleted. You cannot perform an operation on the device.
- You must specify the IotId parameter or a combination of the ProductKey and DeviceName parameters to identify a device.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteDevice	The operation that you want to perform. Set the value to DeleteDevice.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1FlqIQ****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	MpEKNuEUJzIORNANAWJX0010929900*****	The ID of the device. **Note** If you set this parameter, you do not need to set **ProductKey** and **DeviceName** parameters. The IotId parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**.J If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.prod.NullProductKey	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	The product ID is invalid.	The error message returned if the call fails.
RequestId	String	57b144cf-09fc-4916-a272-a62902d5b207	The ID of the request.
Success	Boolean	false	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteDevice
&ProductKey=a1rYuVF****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteDeviceResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</DeleteDeviceResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.8.10. GetDeviceStatus

Queries the status of a device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetDeviceStatus	The operation that you want to perform. Set the value to GetDeviceStatus.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The device status returned if the call is successful.
Status	String	ONLINE	The status of the device. Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
Timestamp	Long	1557062301656	The time when the device status changed.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetDeviceStatus
&ProductKey=a1rYuVF****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetDeviceStatusResponse>
  <RequestId>E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565</RequestId>
  <Data>
        <Status>ONLINE</Status>
        <Timestamp>1557062301656</Timestamp>
  </Data>
  <Success>true</Success>
</GetDeviceStatusResponse>
```

`JSON` format

```
{
    "RequestId": "E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565",
    "Data": {
        "Status": "ONLINE",
        "Timestamp": 1557062301656
    },
    "Success": true
}
```

4.8.11. BatchGetDeviceState

Queries the statuses of multiple devices under a product.

Limits

- You can call this operation to query the statuses of multiple devices under a product. You can query a maximum of 50 devices in a single call.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchGetDeviceState	The operation that you want to perform. Set the value to BatchGetDeviceState.
DeviceName.N	RepeatList	No	light	The DeviceNames of the devices. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the devices belong. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
IotId.N	RepeatList	No	Q7uOhVRdZRRlDnTLv****00100	The IDs of the devices. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
DeviceStatusList	Array of DeviceStatus		The details of device statuses returned if the call is successful. For more information, see the **DeviceStatus** parameter.
DeviceStatus			
AsAddress	String	192.0.2.1	The IP address of each device.
DeviceId	String	dwnS41bhNxjslDAI****	The ID of the device (expired). **Note** This parameter is no longer used. Do not use this parameter to identify a device. You can use the **IotId** parameter or a combination of the **ProductKey** and **DeviceName** parameters to identify a device.
DeviceName	String	light	The DeviceName of the device.

Parameter	Type	Example	Description
IotId	String	dwnS41bhNxjslDAI****000100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.
LastOnlineTime	String	2020-01-17 16:19:11	The time when the device was last online.
Status	String	OFFLINE	The status of the device. Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchGetDeviceState
&productKey=a1BwAGV****
&DeviceName.1=device1
&DeviceName.2=device2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchGetDeviceStateResponse>
  <DeviceStatusList>
        <DeviceStatus>
              <Status>OFFLINE</Status>
              <DeviceId>dwnS41bhNxjslDAI****</DeviceId>
              <DeviceName>Humidity</DeviceName>
              <AsAddress>192.0.2.1</AsAddress>
              <LastOnlineTime>2020-01-17 16:19:11</LastOnlineTime>
              <IotId>dwnS41bhNxjslDAI****000100</IotId>
        </DeviceStatus>
  </DeviceStatusList>
  <RequestId>3258D872-EDC5-4039-B564-C27ED7176741</RequestId>
  <Success>true</Success>
</BatchGetDeviceStateResponse>
```

`JSON` format

```
{
    "DeviceStatusList": {
        "DeviceStatus": [
            {
                "Status": "OFFLINE",
                "DeviceId": "dwnS41bhNxjslDAI****",
                "DeviceName": "Humidity",
                "AsAddress": "192.0.2.1",
                "LastOnlineTime": "2020-01-17 16:19:11",
                "IotId": "dwnS41bhNxjslDAI****000100"
            }
        ]
    },
    "RequestId": "3258D872-EDC5-4039-B564-C27ED7176741",
    "Success": true
}
```

4.8.12. DisableThing

Disables a device.

Limits

- After a device is disabled, you cannot connect the device to IoT Platform. You can perform device-specific operations on the device. However, the information about the device is still retained in IoT Platform. You can use the EnableThing API operation to connect the disabled device to IoT Platform again.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DisableThing	The operation that you want to perform. Set the value to DisableThing.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DisableThing
&ProductKey=a1rYuVF****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DisableThingResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</DisableThingResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.8.13. EnableThing

Enables a device that has been disabled.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	EnableThing	The operation that you want to perform. Set the value to EnableThing.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you provide this parameter, you do not need to provide the **ProductKey** or **DeviceName** parameters. As the GUID of the device, **IotId** corresponds to the combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=EnableThing
&productKey=a1BwAGV****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<EnableThingResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</EnableThingResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.8.14. ResetThing

Resets the unique-certificate-per-product authentication status of a device that is directly connected to IoT Platform, and deletes the current topological relationship of the device.

Usage notes

You cannot use dynamic registration to retrieve the device certificate information after a device that is directly connected to IoT Platform is activated. In this case, you can call the ResetThing operation to reset the device. Then, use dynamic registration to retrieve the new certificate information. The device certificate information includes ProductKey, DeviceName, and DeviceSecret.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ResetThing	The operation that you want to perform. Set the value to ResetThing.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1KiV******	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	device1	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
IotId	String	No	SR8FiTu1R9tlUR2V1bmi0010a5****	The ID of the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	57b144cf-09fc-4916-a272-a62902d5b207	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. **true** indicates that the call was successful. **false** indicates that the call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ResetThing
&IotId=MpEKNuEUJzIORNANAWJX0010929900*****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ResetThingResponse>
      <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
      <Success>true</Success>
</ResetThingResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.8.15. BatchCheckDeviceNames

Creates multiple custom DeviceNames under a specified product. IoT Platform checks the validity of these DeviceNames.

API usage

You can call this operation with the **BatchRegisterDeviceWithApplyId** operation to register multiple devices under a product. Each device carries a unique DeviceName.

Procedure:

1. Call this operation to specify the DeviceNames of the devices to be registered. IoT Platform returns an application ID (**ApplyId**). A successful response indicates that the request to verify the DeviceNames is submitted. The actual registration process is asynchronously implemented and takes some minutes.
2. Call the QueryBatchRegisterDeviceStatus operation to query the name setting result.
3. Call the BatchRegisterDeviceWithApplyId operation to register multiple devices.
4. Optional. Call the QueryBatchRegisterDeviceStatus operation to view the registration result.
5. Call the QueryPageByApplyId operation to query the information about the registered devices.

Limits

- You can specify a maximum of 10,000 DeviceNames in a single call.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchCheckDeviceNames	The operation that you want to perform. Set the value to BatchCheckDeviceNames.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the devices belong.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceName.N	RepeatList	No	light	The DeviceName of the device. The DeviceName must be unique within the product. The name must be 4 to 32 characters in length, and can contain letters, digits, hyphens (-), underscores (_), periods (.), at signs (@), and colons (:). You must specify this parameter or the **DeviceNameList.N.DeviceName** parameter. If you specify this parameter and the **DeviceNameList.N.DeviceName** parameter at the same time, the **DeviceNameList.N.DeviceName** parameter is used by default. **Note** You can specify up to 10,000 DeviceNames in a single call. If the size of a message exceeds this limit, the message is discarded.

Parameter	Type	Required	Example	Description
DeviceNameList.N.DeviceName	String	No	light1	The DeviceName of the device. The DeviceName must be unique within the product. The name must be 4 to 32 characters in length, and can contain letters, digits, hyphens (-), underscores (_), periods (.), at signs (@), and colons (:). You must specify this parameter or the **DeviceName.N** parameter. If you specify this parameter and the **DeviceName.N** parameter at the same time, this parameter is used by default. **Note** You can specify up to 10,000 DeviceNames in a single call. If the size of a message exceeds this limit, the message is discarded.
DeviceNameList.N.DeviceNickname	String	No	Smart light 1	The alias of the device. The alias must be 4 to 64 characters in length, and can contain letters, digits, and underscores (_). If this parameter is specified, you must specify the **DeviceNameList.N.DeviceName** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The returned data.

Parameter	Type	Example	Description
ApplyId	Long	1295006	The application ID (ApplyId) returned if the call is successful. When you call the BatchRegisterDeviceWithApplyId operation to register the devices, this parameter is required.
InvalidDeviceNameList	List	{ "InvalidDeviceName": ["APT$", "aw"] }	The list of invalid DeviceNames returned if the call fails.
InvalidDeviceNicknameList	List	{ "InvalidDeviceNickname": ["APT$", "aw"] }	The list of invalid device aliases returned if the call fails.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchCheckDeviceNames
&productKey=a1BwAGV****
&DeviceNameList.1.DeviceName=light1
&DeviceNameList.2.DeviceName=light2
&DeviceNameList.3.DeviceName=light3
&DeviceNameList.3.DeviceNickname=Smart light 3
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchCheckDeviceNamesResponse>
  <Data>
        <ApplyId>1234567</ApplyId>
  </Data>
  <RequestId>E976E36B-6874-4FA4-8BC0-55F9BEC5E2EF</RequestId>
  <Success>true</Success>
</BatchCheckDeviceNamesResponse>
```

`JSON` format

```
{
    "Data": {
        "ApplyId": 1234567
    },
    "RequestId": "E976E36B-6874-4FA4-8BC0-55F9BEC5E2EF",
    "Success": true
}
```

4.8.16. BatchRegisterDeviceWithApplyId

Registers multiple devices by using an application ID.

Restrictions and guidelines

You can use one of the following methods to register multiple devices:

- Call the BatchRegisterDevice operation to generate random DeviceNames.
- Call the BatchRegisterDeviceWithApplyId and **BatchCheckDeviceNames** operations to specify custom DeviceNames.

Procedure:

1. Call BatchCheckDeviceNames to set the DeviceNames of the devices that you want to register. If these DeviceNames are valid, IoT Platform returns an application ID that is indicated by the **ApplyId** parameter. You can query the DeviceName setting results, registration results of devices, and details of devices by **ApplyId**.

2. Call QueryBatchRegisterDeviceStatus to query the DeviceName setting result.

3. Call BatchRegisterDeviceWithApplyId to register multiple devices. The success result returned by this operation only indicates that the registration application has been submitted. The registration process takes some minutes.

4. (Optional.) Call QueryBatchRegisterDeviceStatus to query the device registration result.

5. Call QueryPageByApplyId to query the information about the registered devices.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchRegisterDeviceWithApplyId	The operation that you want to perform. Set the value to BatchRegisterDeviceWithApplyId.
ApplyId	Long	Yes	1295006	The ID of the application. The application ID is returned by the BatchCheckDeviceNames operation.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful. For more information, see the following parameters.

Parameter	Type	Example	Description
ApplyId	Long	1295006	The ID of the application.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchRegisterDeviceWithApplyId
&ProductKey=alNdd3i****
&ApplyId=1234567
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchRegisterDeviceWithApplyIdResponse>
  <Data>
        <ApplyId>1234567</ApplyId>
  </Data>
  <RequestId>82C16DC1-41B5-45F8-9AFD-1FB42448D405</RequestId>
  <Success>true</Success>
</BatchRegisterDeviceWithApplyIdResponse>
```

`JSON` format

```
{
    "Data": {
        "ApplyId": 1234567
    },
    "RequestId": "82C16DC1-41B5-45F8-9AFD-1FB42448D405",
    "Success": true
}
```

4.8.17. BatchRegisterDevice

Registers multiple devices under a product. The DeviceNames of these devices are randomly generated.

Usage notes

You can use one of the following methods to register multiple devices:

- If you want to generate random DeviceNames, call the BatchRegisterDevice operation.

  Perform the following steps to register devices and view the result:

  1. Call the BatchRegisterDevice operation to register multiple devices. A successful response indicates that the registration request is submitted. The actual registration process is asynchronously implemented and takes some minutes.

  2. Call the QueryBatchRegisterDeviceStatus operation to query the device registration result.

  3. Call the QueryPageByApplyId operation to view the details of registered devices. The details include the DeviceName, DeviceSecret, and IotId parameters.

- If you want to specify custom DeviceNames, call the BatchRegisterDeviceWithApplyId operation. For more information, see BatchRegisterDeviceWithApplyId.

Limits

- You can create a maximum of 10,000 devices in a single call.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchRegisterDevice	The operation that you want to perform. Set the value to BatchRegisterDevice.
Count	Integer	Yes	100	The number of devices to be registered. **Note** You can register up to 10,000 devices in a single call.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the devices belong.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.
ApplyId	Long	1295006	The application ID (ApplyId) returned for the request if the call is successful.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchRegisterDevice
&ProductKey=a1BwAGV****
&Count=10
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchRegisterDeviceResponse>
  <Data>
        <ApplyId>12345678</ApplyId>
  </Data>
  <RequestId>92C67DC1-41B5-45F8-9AFD-1FB42448D405</RequestId>
  <Success>true</Success>
</BatchRegisterDeviceResponse>
```

`JSON` format

```
{
    "Data": {
        "ApplyId": 12345678
    },
    "RequestId": "92C67DC1-41B5-45F8-9AFD-1FB42448D405",
    "Success": true
}
```

4.8.18. BatchUpdateDeviceNickname

Modifies the aliases of multiple devices.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchUpdateDeviceNickname	The operation that you want to perform. Set the value to BatchUpdateDeviceNickname.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceNicknameInfo.N.ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceNicknameInfo.N.DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
DeviceNicknameInfo.N.Nickname	String	No	AliyunDataCenter	The new alias of the device. The alias must be 4 to 32 characters in length, and can contain letters, digits, and underscores (_). Each Chinese character is counted as two characters. **Note** If you do not specify this parameter, the original alias of the device will be deleted.

Parameter	Type	Required	Example	Description
DeviceNicknameInfo.N.IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchUpdateDeviceNickname
&DeviceNicknameInfo.1.ProductKey=a1rYuVF****
&DeviceNicknameInfo.1.DeviceName=SR8FiTu1R9tlUR2V1bmi
&DeviceNicknameInfo.1.Nickname=airconditioning_type1
&DeviceNicknameInfo.2.ProductKey=a1yrZMH****
&DeviceNicknameInfo.2.DeviceName=RkQ8CFtNpDok4BEunymt
&DeviceNicknameInfo.2.Nickname=airconditioning_type2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchUpdateDeviceNicknameResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</BatchUpdateDeviceNicknameResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true
}
```

4.8.19. QueryBatchRegisterDeviceStatus

Queries the processing status and result of device registration for multiple devices.

Limits

Each Alibaba Cloud account can run a maximum of 30 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryBatchRegisterDeviceStatus	The operation that you want to perform. Set the value to QueryBatchRegisterDeviceStatus.

Parameter	Type	Required	Example	Description
ApplyId	Long	Yes	1295006	The ID of the application. The application ID is in the result of BatchRegisterDeviceWithApplyId or BatchRegisterDevice when they are successfully called.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes. **Note** X.509 certificates are available only for devices in the China (Shanghai) region. If devices do not reside in the China (Shanghai) region, you cannot generate X.509 certificates for these devices and the iot.device.RegionNotSupportX509 error code is returned.
Data	Struct		The status information returned if the call is successful.
InvalidList	List	{ "Name": [] }	• If the value of the **Status** parameter is **CHECK_FAILED** or **CREATE_FAILED**, the DeviceNames of the devices that fail to be created are returned. • If the value of the **Status** parameter is **CHECK_SUCCESS** or **CREATE_SUCCESS**, this parameter includes an empty array.

Parameter	Type	Example	Description
Status	String	CREATE_SUCCESS	The processing status and result. Valid values: • **CHECK**: The system is verifying DeviceNames. • **CHECK_SUCCESS**: All devices in the application form are verified. • **CHECK_FAILED**: All devices in the application form fail to be verified. • **CREATE**: The system is creating devices. • **CREATE_SUCCESS**: All devices in the application form are created. **Note** If the authentication type of the product to which the devices belong is X.509 certificate, all devices are created along with the related X.509 certificates. • **CREATE_FAILED**: All devices in the application form fail to be created. **Note** If a device or X.509 certificate fails to be created in the current batch when the authentication type is X.509 certificate, all devices fail to be created.
ValidList	List	{ "Name": [] }	• If the value of the **Status** parameter is **CHECK_SUCCESS** or **CREATE_SUCCESS**, the DeviceNames of the created devices are returned. • If the value of the **Status** parameter is **CHECK_FAILED** or **CREATE_FAILED**, this parameter includes an empty array.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryBatchRegisterDeviceStatus
&ProductKey=a1BwAGV****
&ApplyId=1234567
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryBatchCheckDeviceNamesStatusResponse>
  <Data>
        <Status>CREATE_SUCCESS</Status>
        <ValidList></ValidList>
        <InvalidList></InvalidList>
  </Data>
  <RequestId>F731C7F3-A86C-4039-9FCA-5F802F3C59A1</RequestId>
  <Success>true</Success>
</QueryBatchCheckDeviceNamesStatusResponse>
```

`JSON` format

```
{
    "Data": {
        "Status": "CREATE_SUCCESS",
        "ValidList": {
            "Name": []
        },
        "InvalidList": {
            "Name": []
        }
    },
    "RequestId": "F731C7F3-A86C-4039-9FCA-5F802F3C59A1",
    "Success": true
}
```

4.8.20. QueryPageByApplyId

Queries the information of multiple devices that you have registered.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryPageByApplyId	The operation that you want to perform. Set the value to QueryPageByApplyId.
ApplyId	Long	Yes	1295006	The ID of the application. You can view the application ID in the response of the BatchRegisterDeviceWithApplyId or BatchRegisterDevice operation.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 50. Default value: 10.
CurrentPage	Integer	No	1	The number of the page to return. Default value: 1.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
ApplyDeviceList	Array of ApplyDeviceInfo		The registered device list information returned if the call succeeds. The **ApplyDeviceInfo** parameter includes the details of the registered devices.
ApplyDeviceInfo			
DeviceId	String	gQG2GJ2y10m6hIk8*****	The ID of the device (expired). **Note** This parameter is no longer used. Do not use this parameter to identify a device. You can use the **IotId** parameter or a combination of the **ProductKey** and **DeviceName** parameters to identify a device.
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	SkfeXXKrTgp1DbDxYr74mfJ5cnui****	The DeviceSecret of the device.
IotId	String	vWxNur6BUApsqjv9*****000100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The page number of the returned page.
PageCount	Integer	1	The total number of pages.

Parameter	Type	Example	Description
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	2	The total number of devices.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryPageByApplyId
&ApplyId=1234567
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryPageByApplyIdResponse>
  <PageCount>1</PageCount>
  <ApplyDeviceList>
        <ApplyDeviceInfo>
              <DeviceId>vWxNur6BUApsqjv9****</DeviceId>
              <DeviceName>APItest</DeviceName>
              <DeviceSecret>tXXEtily4XuV7WS1fosJoDkhRIIU****</DeviceSecret>
              <IotId>vWxNur6BUApsqjv****4000100</IotId>
        </ApplyDeviceInfo>
        <ApplyDeviceInfo>
              <DeviceId>hoiwszKPYmHk074H****</DeviceId>
              <DeviceName>awfg</DeviceName>
              <DeviceSecret>BYpg1b2nmuq21BO7fxOogYQQZd9z****</DeviceSecret>
              <IotId>hoiwszKPYmHk074HA****000100</IotId>
        </ApplyDeviceInfo>
  </ApplyDeviceList>
  <Page>1</Page>
  <PageSize>10</PageSize>
  <RequestId>762F7AAD-8B87-4C65-BBF3-4575B002B384</RequestId>
  <Success>true</Success>
  <Total>2</Total>
</QueryPageByApplyIdResponse>
```

`JSON` format

```
{
    "PageCount": 1,
    "ApplyDeviceList": {
        "ApplyDeviceInfo": [
            {
                "DeviceId": "vWxNur6BUApsqjv9****",
                "DeviceName": "APItest",
                "DeviceSecret": "tXXEtily4XuV7WS1fosJoDkhRIIU****",
                "IotId": "vWxNur6BUApsqjv****4000100"
            },
            {
                "DeviceId": "hoiwszKPYmHk074H****",
                "DeviceName": "awfg",
                "DeviceSecret": "BYpg1b2nmuq21BO7fxOogYQQZd9z****",
                "IotId": "hoiwszKPYmHk074HA****000100"
            }
        ]
    },
    "Page": 1,
    "PageSize": 10,
    "RequestId": "762F7AAD-8B87-4C65-BBF3-4575B002B384",
    "Success": true,
    "Total": 2
}
```

4.8.21. GetGatewayBySubDevice

Queries the information of a gateway based on sub-device information.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetGatewayBySubDevice	The operation that you want to perform. Set the value to GetGatewayBySubDevice.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the sub-device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the sub-device. The ID is a unique identifier that is issued by IoT Platform to the sub-device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The gateway details returned if the call is successful.
DeviceName	String	gateway	The DeviceName of the gateway.
DeviceSecret	String	dCYdTU3gw5Z77bsHjPk6lPHPVnBT****	The DeviceSecret of the gateway.
FirmwareVersion	String	V1.0.1	The firmware version number of the device.
GmtActive	String	2019-12-18 23:25:30	The activation time of the gateway. The time is displayed in GMT. The time is the local time of the region where the gateway resides.

Parameter	Type	Example	Description
GmtCreate	String	2019-12-18 16:58:33	The creation time of the gateway. The time is displayed in GMT. The time is the local time of the region where the gateway resides.
GmtOnline	String	2020-01-20 17:41:04	The last online time of the gateway. The time is displayed in GMT. The time is the local time of the region where the gateway resides.
IpAddress	String	106.**.1**.**	The IP address of the gateway.
NodeType	String	1	The node type. The value 1 indicates that the device is a gateway.
ProductKey	String	a1BwAGV****	The **ProductKey** of the product to which the gateway belongs.
ProductName	String	LinkIoT	The name of the product to which the gateway belongs.
Status	String	online	The status of the gateway device. Valid values: • **online**: The device is online. • **offline**: The device is offline. • **unactive**: The device is not activated. • **disable**: The device is disabled.
UtcActive	String	2019-12-18T15:25:30.176Z	The activation time of the gateway. The time is displayed in UTC. The actual time of the region where the gateway resides is calculated based on the time zone of the region.
UtcCreate	String	2019-12-18T08:58:33.000Z	The creation time of the gateway. The time is displayed in UTC. The actual time of the region where the gateway resides is calculated based on the time zone of the region.

Parameter	Type	Example	Description
UtcOnline	String	2020-01-20T09:41:04.879Z	The last online time of the gateway. The time is displayed in UTC. The actual time of the region where the gateway resides is calculated based on the time zone of the region.
iotId	String	WuyjPSDQE1L22z1d****000100	The ID of the gateway device. The ID is the unique identifier that is issued by IoT Platform to the device.
region	String	cn-shanghai	The region where the gateway resides. This region corresponds to the region that is displayed in the IoT Platform console.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetGatewayBySubDevice
&ProductKey=a1BwAGV****
&DeviceName=XTzosqEOgxFXKPRgd8zl
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetGatewayBySubDeviceResponse>
  <Data>
        <region>cn-shanghai</region>
        <DeviceName>gateway_04</DeviceName>
        <GmtActive>2019-12-18 23:25:30</GmtActive>
        <ProductKey>a1vL7cp****</ProductKey>
        <IpAddress>106.**.1**.**</IpAddress>
        <GmtCreate>2019-12-18 16:58:33</GmtCreate>
        <UtcCreate>2019-12-18T08:58:33.000Z</UtcCreate>
        <UtcOnline>2020-01-20T09:41:04.879Z</UtcOnline>
        <UtcActive>2019-12-18T15:25:30.176Z</UtcActive>
        <Status>online</Status>
        <NodeType>1</NodeType>
        <GmtOnline>2020-01-20 17:41:04</GmtOnline>
        <ProductName>LinkIoTEdge_Gateway</ProductName>
        <iotId>WuyjPSDQE1L22z1****000100</iotId>
  </Data>
  <RequestId>0377D5A9-BDE1-48C2-96C9-BDC048899186</RequestId>
  <Success>true</Success>
</GetGatewayBySubDeviceResponse>
```

`JSON` format

```
{
    "Data": {
        "region": "cn-shanghai",
        "DeviceName": "gateway_04",
        "GmtActive": "2019-12-18 23:25:30",
        "ProductKey": "a1vL7cp****",
        "IpAddress": "106.**.1**.**",
        "GmtCreate": "2019-12-18 16:58:33",
        "UtcCreate": "2019-12-18T08:58:33.000Z",
        "UtcOnline": "2020-01-20T09:41:04.879Z",
        "UtcActive": "2019-12-18T15:25:30.176Z",
        "Status": "online",
        "NodeType": 1,
        "GmtOnline": "2020-01-20 17:41:04",
        "ProductName": "LinkIoTEdge_Gateway",
        "iotId": "WuyjPSDQE1L22z1****000100"
    },
    "RequestId": "0377D5A9-BDE1-48C2-96C9-BDC048899186",
    "Success": true
}
```

4.8.22. QueryDeviceProp

Queries the tags of a device.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceProp	The operation that you want to perform. Set the value to QueryDeviceProp.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is issued by IoT Platform. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Props	String	null	A JSON string returned if the call is successful. The JSON string includes the details of the device tags.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceProp
&ProductKey=a1BwAGV****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDevicePropResponse>
  <RequestId>D8CEF5E7-1484-4164-A242-C06BA3A54E0F</RequestId>
  <Props>{"coordinate":"104.07086:30.549169"}</Props>
  <Success>true</Success>
</QueryDevicePropResponse>
```

`JSON` format

```
{
    "RequestId": "D8CEF5E7-1484-4164-A242-C06BA3A54E0F",
    "Props": "{\"coordinate\":\"104.07086:30.549169\"}",
    "Success": true
}
```

4.8.23. SaveDeviceProp

Specifies a tag for a device.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	SaveDeviceProp	The operation that you want to perform. Set the value to SaveDeviceProp.

Parameter	Type	Required	Example	Description

Props	String	Yes	{"color":"red"}	The device tag that you want to set. You can set multiple tags.
				
				Set device tags by using the JSON format. The format of each tag is **Key:Value**. **Key** indicates the tag name and **Value** indicates the tag value.
				
				Separate multiple tags with commas (,), such as **Props={"color":"red","shape":"round"}**.
				
				Note
				• The maximum size of the **Props** parameter is 5 KB.
				  ○ Each device can have a maximum of 100 tags.
				  ○ You can modify or add a maximum of 100 tags at a time.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=SaveDeviceProp
&ProductKey=a1BwAGV****
&DeviceName=device1
&Props=%7B%22color%22%3A%22red%22%7D
&<Common request parameters>
```

Sample success responses

`XML` format

```
<SaveDevicePropResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</SaveDevicePropResponse>
```

`JSON` format

```
{
    "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
    "Success": true
}
```

4.8.24. DeleteDeviceProp

Deletes a tag from a device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteDeviceProp	The operation that you want to perform. Set the value to DeleteDeviceProp.
PropKey	String	Yes	room	The key of the tag. **Note** IoT Platform searches for the specified tag key and then deletes the tag. If no result is found, no operation is performed.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteDeviceProp
&ProductKey=aladIwW****
&DeviceName=device1
&PropKey=temperature
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteDevicePropResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
</DeleteDevicePropResponse>
```

`JSON` format

```
{
    "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
    "Success": true
}
```

4.8.25. QueryDeviceByTags

Queries devices by tag.

Limits

- You can specify a maximum of 10 tags in a single call.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceByTags	The operation that you want to perform. Set the value to QueryDeviceByTags.
Tag.N.TagKey	String	Yes	room	The key of the device tag.
Tag.N.TagValue	String	Yes	101	The value of the device tag.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
CurrentPage	Integer	No	1	The number of the page to return. Default value: 1.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 50. Default value: 10.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of SimpleDeviceInfo		The device information returned if the call succeeds. The **SimpleDeviceInfo** parameter includes the details of the devices.
SimpleDeviceInfo			
DeviceName	String	light1	The DeviceName of the device.

Parameter	Type	Example	Description
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.
ProductKey	String	a1BwAGV****	The ProductKey of the product to which the device belongs.
ProductName	String	lamp	The name of the product.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The page number of the returned page.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned on each page.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	1	The total number of records.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceByTags
&CurrentPage=1
&PageSize=10
&Tag.1.TagKey=room
&Tag.1.TagValue=101
&Tag.2.TagKey=city
&Tag.2.TagValue=hangzhou
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceByTags>
  <PageCount>1</PageCount>
  <Data>
        <SimpleDeviceInfo>
              <DeviceName>1102jichu02</DeviceName>
              <ProductKey>a1SM5S1****</ProductKey>
              <IotId>GookTiUcwqRbHosp9Ta10****3a00</IotId>
              <ProductName>TEST</ProductName>
        </SimpleDeviceInfo>
  </Data>
  <PageSize>10</PageSize>
  <Page>1</Page>
  <RequestId>2B5091E4-32D5-4884-A5B2-2E8E713D84AF</RequestId>
  <Success>true</Success>
  <Total>1</Total>
</QueryDeviceByTags>
```

`JSON` format

```
{
    "PageCount": 1,
    "Data": {
        "SimpleDeviceInfo": [
            {
                "DeviceName": "1102jichu02",
                "ProductKey": "a1SM5S1****",
                "IotId": "GookTiUcwqRbHosp9Ta10****3a00",
                "ProductName": "TEST"
            }
        ]
    },
    "PageSize": 10,
    "Page": 1,
    "RequestId": "2B5091E4-32D5-4884-A5B2-2E8E713D84AF",
    "Success": true,
    "Total": 1
}
```

4.8.26. GetThingTopo

Queries the sub-devices of a specified gateway device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetThingTopo	The operation that you want to perform. Set the value to GetThingTopo.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 50.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the gateway device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the gateway device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
PageNo	Integer	No	1	The number of the page to return. The total number of entries cannot exceed 10,000. The value of the **PageNo** parameter cannot exceed the total number of pages on which the entries are displayed.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the gateway device. The ID is the unique identifier that is issued by IoT Platform to the gateway device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.
NextToken	String	No	TGlzdFJlc291***	The token that is used to retrieve the next page of results. You do not need to specify this parameter for the first query.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful. For more information, see the following parameters.
CurrentPage	Integer	1	The number of the returned page.

Parameter	Type	Example	Description
List	Array of deviceInfo		The details of the sub-device. The details of the sub-device are included in the **deviceInfo** parameter.
deviceInfo			
DeviceName	String	light	The DeviceName of the sub-device.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the sub-device. The ID is the unique identifier that is issued by IoT Platform to the sub-device.
ProductKey	String	a1BwAGV****	The ProductKey of the product to which the sub-device belongs.
NextToken	String	TGlzdFJlc291***	The token that is used to retrieve the next page of results. You can specify this parameter in the next query to obtain the next page of results. If the return value is empty, no next page exists.
PageCount	Long	1	The total number of pages.
PageSize	Integer	10	The number of entries returned on each page.
Total	Long	1	The total number of returned entries.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetThingTopo
&ProductKey=a1BwAGV****
&DeviceName=device1
&PageSize=10
&PageNo=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetThingTopoResponse>
  <Data>
        <PageCount>1</PageCount>
        <PageSize>2</PageSize>
        <CurrentPage>1</CurrentPage>
        <NextToken>TGlzdFJlc291***</NextToken>
        <List>
              <deviceInfo>
                    <DeviceName>APItest</DeviceName>
                    <ProductKey>a1T27vz****</ProductKey>
                    <IotId>vWxNur6BUApsqjv****000100</IotId>
              </deviceInfo>
        </List>
        <Total>1</Total>
  </Data>
  <RequestId>93F05C63-9FD1-4CC8-B0FF-6D6C1A6632D1</RequestId>
  <Success>true</Success>
</GetThingTopoResponse>
```

`JSON` format

```
{
    "Data": {
        "PageCount": 1,
        "PageSize": 2,
        "CurrentPage": 1,
        "NextToken":"TGlzdFJlc291***",
        "List": {
            "deviceInfo": [
                {
                    "DeviceName": "APItest",
                    "ProductKey": "a1T27vz****",
                    "IotId": "vWxNur6BUApsqjv****000100"
                }
            ]
        },
        "Total": 1
    },
    "RequestId": "93F05C63-9FD1-4CC8-B0FF-6D6C1A6632D1",
    "Success": true
}
```

4.8.27. NotifyAddThingTopo

Notifies a gateway to add topological relationships.

Usage notes

A successful response indicates that the command to add topological relationships is sent to the gateway. It does not indicate that the topological relationships are added.

When you develop the gateway, you must subscribe to the topic that is used to send notifications when you add topological relationships. For more information about the topic and message format, see Manage topological relationships.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	NotifyAddThingTopo	The operation that you want to perform. Set the value to NotifyAddThingTopo.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceListStr	String	No	[{"productKey":"a1BwAGV****","deviceName":"device1"},{"IotId":"Q7uOhVRdZRRlDnTLv****00100"}]	A JSON array of the sub-device identity information. You can use a combination of **ProductKey** and **DeviceName** or only **IotId** to specify a device, such as **[{"productKey":"a1BwAGxxx","deviceName":"device1"},{"IotId":"Q7uOhxxx"}]**.

Parameter	Type	Required	Example	Description
GwIotId	String	No	vWxNur6BUApsqjv****4000100	The ID of the gateway device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.
GwProductKey	String	No	a1T27vz****	The ProductKey of the product to which the gateway belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
GwDeviceName	String	No	gateway	The DeviceName of the gateway. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.

Parameter	Type	Example	Description
MessageId	String	5443123	The ID of the message that IoT Platform sends to the gateway. The message is used to notify the gateway to add a topology.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=NotifyAddThingTopo
&GwProductKey=aldnfald7a
&GwDeviceName=gateway
&DeviceListStr=[{"productKey":"alabcabcab","deviceName":"device1"},{"IotId":"edAjkIeBSsdfad
jjllja***"}]
&<Common request parameters>
```

Sample success responses

`XML` format

```
<NotifyAddThingTopoResponse>
  <RequestId>419A3FC1-B517-4958-9414-5546765FA51F</RequestId>
  <Success>true</Success>
  <Data>
        <MessageId>2345123</MessageId>
  </Data>
</NotifyAddThingTopoResponse>
```

`JSON` format

```
{
  "RequestId":"419A3FC1-B517-4958-9414-5546765FA51F",
  "Success": true,
  "Data": {
     "MessageId": "2345123"
  }
}
```

4.8.28. BatchAddThingTopo

Establishes multiple topological relationships at a time.

Usage notes

- You can attach up to 10 sub-devices to a gateway in a single call.
- The API operation caller must be the gateway owner.
- If you specify a sub-device that is already attached to a gateway, the original gateway is replaced with the specified gateway.
- If one of the specified sub-devices fails to establish a topological relationship with the gateway, the system rolls back and all sub-devices fail to establish topological relationships with the gateway.
- After you call this operation to establish a topological relationship between a sub-device and the gateway, IoT Platform uses the `/sys/${productKey}/${deviceName}/thing/topo/change` topic to push information that includes the result of this operation to the gateway. For more information, see Notify gateways of changes of topological relationships.

QPS limits

Each Alibaba Cloud account can run up to 10 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchAddThingTopo	The operation that you want to perform. Set the value to BatchAddThingTopo.
GwDeviceName	String	Yes	gateway	The DeviceName of the gateway device.
GwProductKey	String	Yes	a1vL7cp****	The key of the product to which the gateway belongs.
TopoAddItem.N.DeviceName	String	Yes	light	The name of each sub-device.

Parameter	Type	Required	Example	Description
TopoAddItem.N.ProductKey	String	Yes	a1BwAGV****	The key of the product to which the sub-device belongs.
TopoAddItem.N.Sign	String	Yes	C1C1606D61884C5F16C9EA6622E5****	The signature of the sub-device. Set the Sign parameter to the result of the **SignMethod(deviceSecret,content)** function. To obtain the **content** parameter, sort all sub-device parameters submitted to the server (excluding the Sign and SignMethod parameters) in alphabetical order, and splice the parameters and values in sequence. No splicing symbol is required to separate these parameters and values. For example, if you specify **ClientId=868575026974305, DeviceName=868575026974305, ProductKey=a1PB5fp1234, SignMethod=hmacmd5, timestamp=1646277090411, and deviceSecret=1234** for a sub-device, the signature function is `hmacmd5(1234, clientId868575026974305deviceName868575026974305productKeya1PB5fpX1234timestamp1646277090411)`. The calculation result is `3BA0DFA4C477B40C007D84D30D6466CC`. **Note** In the preceding example, **ClientId** specifies the client ID of the device. You can specify a custom client ID. For more information about how to obtain the signature parameters, see How do I obtain signature parameters for authentication?

Parameter	Type	Required	Example	Description
TopoAddItem.N.SignMethod	String	Yes	hmacMd5	The signature algorithm. Valid values: **hmacSha1**, **hmacSha256**, **hmacMd5**, and **Sha256**. The value is case-insensitive.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the **ID** of the instance on the **Instance Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails. • If no **Instance Overview** page or ID is generated for your instance, you do not need to configure this parameter. For more information, see Overview.
TopoAddItem.N.Timestamp	String	No	1579335899000	The timestamp in the UTC format. This parameter is optional. If you specify a value for this parameter, you must use the value to calculate the signature.
TopoAddItem.N.ClientId	String	No	a1BwAGV****device1	The ID of the device. The ID can be the serial number (SN) or MAC address of the device. This parameter is optional. If you specify a value for this parameter, you must use the value to calculate the signature.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchAddThingTopo
&GwProductKey=a1duisa****
&GwDeviceName=tydhnay16shc6
&TopoAddItem.1.ProductKey=a1rYuVF****
&TopoAddItem.1.DeviceName=SR8FiTu1R9tlUR2V1bmi
&TopoAddItem.1.Sign=dgj1609rD6IUGFCRkJKKdNKAE67h8****
&TopoAddItem.1.SignMethod=hmacMd5
&TopoAddItem.2.ProductKey=a1yrZMH****
&TopoAddItem.2.DeviceName=RkQ8CFtNpDok4BEunymt
&TopoAddItem.2.Sign=C1C1606D61884C5F16C9EA6622E5****
&TopoAddItem.2.SignMethod=hmacMd5
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchAddThingTopoResponse>
  <RequestId>2E19BDAF-0FD0-4608-9F41-82D230CFEE38</RequestId>
  <Success>true</Success>
</BatchAddThingTopoResponse>
```

`JSON` format

```
{
  "RequestId": "2E19BDAF-0FD0-4608-9F41-82D230CFEE38",
  "Success": true
}
```

4.8.29. RemoveThingTopo

Deletes the topological relationships between a gateway and all attached sub-devices, or the topological relationship between a sub-device and the gateway to which the sub-device is attached.

Usage notes

- If you specify a gateway, this operation removes the topological relationships between the gateway and all attached sub-devices.
- If you specify a sub-device, this operation removes the topological relationship between the sub-device and the gateway to which the sub-device is attached.

QPS limits

Each Alibaba Cloud account can run up to 500 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	RemoveThingTopo	The operation that you want to perform. Set the value to RemoveThingTopo.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails. • If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify a value for this parameter, you must also specify a value for the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify a value for this parameter, you must also specify a value for the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify a value for this parameter, you do not need to specify a value for the **ProductKey** or **DeviceName** parameter. The IotId parameter specifies a globally unique identifier (GUID) for the device. The value of the **IotId** parameter corresponds to a combination of the values of the **ProductKey** and **DeviceName** parameters. If you specify a value for the **IotId** parameter and values for the **ProductKey** and **DeviceName** parameters, the value of the **IotId** parameter takes precedence.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Boolean	true	Indicates whether the topological relationship was deleted. • **true**: The topological relationship was deleted. • **false**: The topological relationship failed to be deleted.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
JobId	String	450407b***	The ID of the device job.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=RemoveThingTopo
&ProductKey=a1bPo9p****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<RemoveThingTopoResponse>
  <Data>true</Data>
  <RequestId>098BEEF4-58F4-4181-A891-5D37DB6C4C3B</RequestId>
  <Success>true</Success>
</RemoveThingTopoResponse>
```

`JSON` format

```
{
    "Data": true,
    "RequestId": "098BEEF4-58F4-4181-A891-5D37DB6C4C3B",
    "Success": true
}
```

4.8.30. QueryDeviceStatistics

Queries the statistics of devices, including the number of online devices, the number of activated devices, and the total number of created devices.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceStatistics	The operation that you want to perform. Set the value to QueryDeviceStatistics.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the devices belong. • If you specify this parameter, the statistics of the devices under the product is returned. If you also specify **GroupId**, the statistics of the devices that are created under the product and added to the group is returned. • If you do not specify this parameter and **GroupId**, the statistics of all devices within the current account is returned.

Parameter	Type	Required	Example	Description
GroupId	String	No	W16X8Tvdosec****	The ID of the group to which the devices belong. • If you specify this parameter, the statistics of the devices that are added to the group is returned. If you also specify **ProductKey**, the statistics of the devices that are created under the product and added to the group is returned. • If you do not specify this parameter and **ProductKey**, the statistics of all devices within the current account is returned.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The device statistics returned if the call is successful.
activeCount	Long	10	The number of activated devices.
deviceCount	Long	100	The total number of devices.
onlineCount	Long	10	The number of online devices.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceStatistics
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceStatisticsResponse>
  <Data>
        <deviceCount>2</deviceCount>
        <activeCount>2</activeCount>
        <onlineCount>0</onlineCount>
  </Data>
  <RequestId>8AC026D2-6F16-4719-A396-969D63DCA138</RequestId>
  <Success>true</Success>
</QueryDeviceStatisticsResponse>
```

`JSON` format

```
{
    "Data": {
        "deviceCount": 2,
        "activeCount": 2,
        "onlineCount": 0
    },
    "RequestId": "8AC026D2-6F16-4719-A396-969D63DCA138",
    "Success": true
}
```

4.8.31. QueryDeviceFileList

Queries information about all files that are uploaded to IoT Platform from a device.

Limits

- The returned file information for this operation call does not contain download URLs. To obtain the download URL of a file, call QueryDeviceFile.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceFileList	The operation that you want to perform. Set the value to QueryDeviceFileList.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 200. Default value: 10.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is issued by IoT Platform. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.
CurrentPage	Integer	No	1	The number of the page to return. Pages start from page 1. Default value: 1.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The number of the returned page.
Data	Array of FileSummary		The file list information returned if the call succeeds.
FileSummary			

Parameter	Type	Example	Description
FileId	String	xL0G67MBLBDtkR7GCfT******	The ID of each file. The ID is the unique identifier for the file.
Name	String	testFile2.txt	The name of the file.
Size	String	1024000	The size of the file. Unit: KB.
UtcCreatedOn	String	2019-03-21T08:45:42.000Z	The time when the file was created.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	2	The total number of files.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceFileList
&ProductKey=a1BwAGV****
&DeviceName=deviceName1
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceFileListResponse>
  <PageCount>1</PageCount>
  <Data>
        <FileStoreSummary>
              <Name>testFile2.txt</Name>
              <FileId>xL0G67MBLBDtkR7GCfT******</FileId>
              <UtcCreatedOn>2019-03-21T08:45:42.000Z</UtcCreatedOn>
              <Size>102400</Size>
        </FileStoreSummary>
        <FileStoreSummary>
              <Name>testFile3.txt</Name>
              <FileId>6UCo1SqbqnQEoh9aKqD******</FileId>
              <UtcCreatedOn>2019-03-21T08:45:42.000Z</UtcCreatedOn>
              <Size>102400</Size>
        </FileStoreSummary>
        <FileStoreSummary>
              <Name>testFile1.txt</Name>
              <FileId>IhXXww3Eeu6uzSOSCyu******</FileId>
              <UtcCreatedOn>2019-03-21T08:45:40.000Z</UtcCreatedOn>
              <Size>102400</Size>
        </FileStoreSummary>
  </Data>
  <PageSize>10</PageSize>
  <RequestId>7C7BA526-826D-46AA-A45E-55D21E6D1583</RequestId>
  <CurrentPage>1</CurrentPage>
  <Success>true</Success>
  <Total>3</Total>
</QueryDeviceFileListResponse>
```


`JSON` format

```
{
  "PageCount": 1,
  "Data": {
    "FileStoreSummary": [
      {
        "Name": "testFile2.txt",
        "FileId": "xL0G67MBLBDtkR7GCfT******",
        "UtcCreatedOn": "2019-03-21T08:45:42.000Z",
        "Size": "102400"
      },
      {
        "Name": "testFile3.txt",
        "FileId": "6UCo1SqbqnQEoh9aKqD******",
        "UtcCreatedOn": "2019-03-21T08:45:42.000Z",
        "Size": "102400"
      },
      {
        "Name": "testFile1.txt",
        "FileId": "IhXXww3Eeu6uzSOSCyu******",
        "UtcCreatedOn": "2019-03-21T08:45:40.000Z",
        "Size": "102400"
      }
    ]
  },
  "PageSize": 10,
  "RequestId": "7C7BA526-826D-46AA-A45E-55D21E6D1583",
  "CurrentPage": 1,
  "Success": true,
  "Total": 3
}
```


4.8.32. QueryDeviceFile

Queries the information about a file that is uploaded to IoT Platform from a device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceFile	The operation that you want to perform. Set the value to QueryDeviceFile.
FileId	String	Yes	xL0G67MBLBDtkR7GCfT******	The ID of the file. You can call the QueryDeviceFileList operation and view the file ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is issued by IoT Platform. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The file information returned if the call succeeds.

Parameter	Type	Example	Description
DownloadUrl	String	http://iotx-file-store.oss-cn-shanghai.aliyuncs.com/device_file/A849E4E5CFF64804A18D9384AC9D****/aGEKIpp5NAGxdP2oo90000****/testFile3.txt?Expires=1553162075&OSSAccessKeyId=LTAIYLScbHiV****&Signature=%2F88xdEFPukJ****%2F8****%2Bdv3io%3D	The download URL of the file.
FileId	String	6UCo1SqbqnQEoh9aKqDQ01****	The ID of the file.
Name	String	testFile3.txt	The name of the file.
Size	String	102400	The size of the file. Unit: KB.
UtcCreatedOn	String	2019-03-21T08:45:42.000Z	The time when the file was created.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceFile
&ProductKey=a1BwAGV****
&DeviceName=deviceName1
&FileId=6UCo1SqbqnQEoh9aKqD******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceFileResponse>
  <RequestId>93C5276D-5C8A-40D9-BFD6-4BD5B8C1A08F</RequestId>
  <Data>
        <Name>testFile3.txt</Name>
        <DownloadUrl>http://iotx-file-store.oss-cn-shanghai.aliyuncs.com/device_file/A849E4
E5CFF64804A18D9384AC9D****/aGEKIpp5NAGxdP2oo90000****/testFile3.txt?Expires=1553162075&amp;
OSSAccessKeyId=LTAIYLScbHiV****&amp;Signature=%2F88xdEFPukJ****%2F8****%2Bdv3io%3D</Downloa
dUrl>
        <FileId>6UCo1SqbqnQEoh9aKqDQ01****</FileId>
        <UtcCreatedOn>2019-03-21T08:45:42.000Z</UtcCreatedOn>
        <Size>102400</Size>
  </Data>
  <Success>true</Success>
</QueryDeviceFileResponse>
```

`JSON` format

```
{
  "RequestId": "93C5276D-5C8A-40D9-BFD6-4BD5B8C1A08F",
  "Data": {
    "Name": "testFile3.txt",
    "DownloadUrl": "http://iotx-file-store.oss-cn-shanghai.aliyuncs.com/device_file/A849E4E
5CFF64804A18D9384AC9D****/aGEKIpp5NAGxdP2oo90000****/testFile3.txt?Expires=1553162075&OSSAc
cessKeyId=LTAIYLScbHiV****&Signature=%2F88xdEFPukJ****%2F8****%2Bdv3io%3D",
    "FileId": "6UCo1SqbqnQEoh9aKqDQ01****",
    "UtcCreatedOn": "2019-03-21T08:45:42.000Z",
    "Size": "102400"
  },
  "Success": true
}
```

4.8.33. DeleteDeviceFile

Deletes a file that is uploaded to IoT Platform from a device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteDeviceFile	The operation that you want to perform. Set the value to DeleteDeviceFile.
FileId	String	Yes	6UCo1SqbqnQEoh9aK4561****	The ID of the file. You can call the QueryDeviceFileList operation and view the file ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteDeviceFile
&ProductKey=aliYSO1****
&DeviceName=deviceName1
&FileId=6UCo1SqbqnQEoh9aK4561****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteDeviceFileResponse>
  <RequestId>C25255EA-9F6E-4E04-85FE-AC1E9C136EBB</RequestId>
  <Success>true</Success>
</DeleteDeviceFileResponse>
```

`JSON` format

```
{
    "RequestId": "C25255EA-9F6E-4E04-85FE-AC1E9C136EBB",
    "Success": true
}
```

4.8.34. QueryDeviceByStatus

Queries devices by status.

Limits

- After the status of a device changes, the new status is applied within 10 seconds. After the new status is applied, you can search for the device by using the new status. Before the new status is applied, you can search for the device by using the previous status.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceByStatus	The operation that you want to perform. Set the value to QueryDeviceByStatus.
Status	Integer	Yes	1	The status of the devices. Valid values: • **0**: inactive • **1**: online • **3**: offline • **3**: offline
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs.
CurrentPage	Integer	No	1	The number of the page to return.
PageSize	Integer	No	10	The number of entries to return on each page. Valid values: 1 to 50.

Parameter	Type	Required	Example	Description
ResourceGroupId	String	No	rg-acfm4l5tcwd***	The ID of the resource group to which the product belongs. You can view the resource group ID in the IoT Platform console. **Note** If you specify this parameter, the system returns devices of the specified status in the resource group. If you do not specify this parameter, the system returns all devices of the specified status in the current account.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of SimpleDeviceInfo		The device list information returned if the call succeeds. The **SimpleDeviceInfo** parameter includes the details of the devices.
SimpleDeviceInfo			
DeviceName	String	light	The DeviceName of the device.
DeviceSecret	String	sLefbFmN9SYfnWLJTePG893XNuRV****	The secret of the device.
GmtCreate	String	2021-02-18 10:46:32	The time when the device was created. The time is displayed in UTC.
GmtModified	String	2021-02-18 10:46:32	The time when the device information was last modified. The time is displayed in UTC.
IotId	String	Av8NGHGtwPrH9BYGLMBi00****	The ID of the device.

Parameter	Type	Example	Description
Nickname	String	SensorInShanghai	The alias of the device.
ProductKey	String	a1BwAGV****	The ProductKey of the product to which the device belongs.
Status	String	ONLINE	The status of the device. Valid values: • **UNACTIVE**: The device is not activated. • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **DISABLE**: The device is disabled.
UtcCreate	String	2021-02-18T02:46:32.000Z	The time when the device was created. The time is displayed in UTC.
UtcModified	String	2021-02-18T02:46:32.000Z	The time when the device information was last modified. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The number of the returned page.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	2	The total number of devices returned.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceByStatus
&ProductKey=aldafD****
&Status=0
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceByStatusResponse>
      <RequestId>CD9E5F99-A095-4A05-9256-D924EA3075E8</RequestId>
      <Success>true</Success>
      <CurrentPage>1</CurrentPage>
      <PageSize>10</PageSize>
      <TotalPageCount>1</TotalPageCount>
      <TotalCount>2</TotalCount>
      <Data>
            <SimpleDeviceInfo>
                  <IotId>Av8NGHGtwPrH9BYGLMBi00****</IotId>
                  <DeviceName>Av8NGHG***</DeviceName>
                  <ProductKey>a1dafDE****</ProductKey>
                  <DeviceSecret>d7GYhf5hfcPHDe1bXSd3n9MjO1G3****</DeviceSecret>
                  <UtcModified>2021-02-18T02:46:32.000Z</UtcModified>
                  <GmtCreate>2021-02-18 10:46:32</GmtCreate>
                  <UtcCreate>2021-02-18T02:46:32.000Z</UtcCreate>
                  <GmtModified>2021-02-18 10:46:32</GmtModified>
                  <Status>UNACTIVE</Status>
                  <Nickname>SensorInShanghai</Nickname>
            </SimpleDeviceInfo>
            <SimpleDeviceInfo>
                  <IotId>zNIcSmWQ9BPJlmkjn3H100****</IotId>
                  <DeviceName>zNIcSmWQ***</DeviceName>
                  <ProductKey>a1dafDE****</ProductKey>
                  <DeviceSecret>C27XXmC18yLIEDXvUj6FSlvgO7ag****</DeviceSecret>
                  <UtcModified>2021-02-09T09:44:55.000Z</UtcModified>
                  <GmtCreate>2021-02-09 17:44:55</GmtCreate>
                  <UtcCreate>2021-02-09T09:44:55.000Z</UtcCreate>
                  <GmtModified>2021-02-09 17:44:55</GmtModified>
                  <DeviceStatus>UNACTIVE</DeviceStatus>
                  <Nickname>DriverInShanghai</Nickname>
            </SimpleDeviceInfo>
      </Data>
</QueryDeviceByStatusResponse>
```

`JSON` format

```
{
  "RequestId": "CD9E5F99-A095-4A05-9256-D924EA3075E8",
  "Success": true,
  "CurrentPage": 1,
  "PageSize": 10,
  "TotalPageCount": 1,
  "TotalCount": 2,
  "Data": {
    "SimpleDeviceInfo": [
      {
        "IotId": "Av8NGHGtwPrH9BYGLMBi00****",
        "DeviceName": "Av8NGHG***",
        "ProductKey": "a1dafDE****",
        "DeviceSecret": "d7GYhf5hfcPHDe1bXSd3n9MjO1G3****",
        "UtcModified": "2021-02-18T02:46:32.000Z",
        "GmtCreate": "2021-02-18 10:46:32",
        "UtcCreate": "2021-02-18T02:46:32.000Z",
        "GmtModified": "2021-02-18 10:46:32",
        "Status": "UNACTIVE",
        "Nickname": "SensorInShanghai"
      },
      {
        "IotId": "zNIcSmWQ9BPJlmkjn3H100****",
        "DeviceName": "zNIcSmWQ***",
        "ProductKey": "a1dafDE****",
        "DeviceSecret": "C27XXmC18yLIEDXvUj6FSlvgO7ag****",
        "UtcModified": "2021-02-09T09:44:55.000Z",
        "GmtCreate": "2021-02-09 17:44:55",
        "UtcCreate": "2021-02-09T09:44:55.000Z",
        "GmtModified": "2021-02-09 17:44:55",
        "DeviceStatus": "UNACTIVE",
        "Nickname": "DriverInShanghai"
      }
    ]
  }
}
```


4.8.35. QueryDeviceBySQL

Queries devices by executing an SQL-like statement. The operation returns the devices that meet the conditions that you specify in the SQL-like statement.

Usage notes

You can call this operation to query the devices in an IoT Platform instance that is of the Enterprise Edition and resides only in the China (Shanghai), China (Beijing), China (Shenzhen), or Japan (Tokyo) region.

Limit for QPS

Each Alibaba Cloud account can run up to 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceBySQL	The operation that you want to perform. Set the value to QueryDeviceBySQL.
SQL	String	Yes	SELECT * FROM device where product_key = "a1*********" limit 100, 20	The SQL-like statement that you want to use to query devices. For more information about specific requirements and examples, see the following section.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the **ID** of an instance on the **Instance Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. Otherwise, the call fails. • If no **Instance Overview** page or ID is generated for your instance, you do not need to configure this parameter. For more information, see Instance overview.

When you call the QueryDeviceBySQL operation to query devices, you must specify an SQL-like statement. The SQL-like statement must contain a SELECT clause and a WHERE clause. The statement can also contain an ORDER BY clause and a LIMIT clause. Each statement cannot exceed 400 characters in length.

Example:

```
SELECT * FROM device WHERE product_key = "a1*********" order by active_time limit 0,10
```

SELECT clause

```
SELECT [field]/[count(*)] FROM device
```

The field parameter specifies the fields that you want to obtain. The following table describes the fields. If you want to obtain all fields, you can specify an asterisk (*).

If you want to obtain the number of rows that match the specified conditions, specify count(*).

WHERE clause

```
WHERE [condition1] AND [condition2]
```

You can specify up to five conditions. Nesting is not supported. The following table describes the fields and operators.

You can use the AND or OR logical operator to connect conditions. You can use up to five logical operators.

ORDER BY clause (optional)

The ORDER BY clause is used to sort fields. The following fields can be sorted: gmt_create, gmt_modified, and active_time.

You can leave this clause unspecified. If you do not specify this clause, the results are sorted in a random manner.

LIMIT clause (optional)

The LIMIT clause specifies the maximum number of rows to return on each page and the total number of rows to return. You can specify a LIMIT clause in one of the following types of syntax:

- limit k

  The value of k must be less than or equal to 50, which specifies that the number of rows to return on each page cannot exceed 50. Example: `SELECT * FROM device WHERE product_key = "a1*****" limit 10`.

- limit n,k

  The sum of the value of n and the value of k must be less than or equal to 10,000 and the value of k must be less than or equal to 50. This specifies that the total number of rows to return cannot exceed 10,000 and the maximum number of rows to return on each page cannot exceed 50. Example: `SELECT * FROM device WHERE product_key = "a1*****" limit 40,10`.

If you do not specify a LIMIT cause, limit 20 is specified by default.

Fields

Field	Type	Description
product_key	text	The ProductKey of the product to which the device belongs.
iot_id	text	The ID of the device. By default, iot_id is returned.

Field	Type	Description
name	text	The DeviceName of the device.
active_time	date	The time when the device was activated. The time is in the yyyy-MM-dd HH:mm:ss.SSS format and is accurate to the millisecond.
nickname	text	The alias of the device.
gmt_create	date	The time when the device was created. The time is in the yyyy-MM-dd HH:mm:ss.SSS format and is accurate to the millisecond.
gmt_modified	date	The time when the device information was last updated. The time is in the yyyy-MM-dd HH:mm:ss.SSS format and is accurate to the millisecond.
status	text	The status of the device. Valid values: ONLINE: The device is online. OFFLINE: The device is offline. UNACTIVE: The device is not activated. DISABLE: The device is disabled.
group.group_id	text	The ID of the device group.
tag.tag_name	text	The tag key of the device.
tag.tag_value	text	The value of the device tag.

Field	Type	Description
ota_module.module_name	text	The name of the OTA module. We recommend that you use this field together with the ota_module.firmware_version field to specify the OTA module that corresponds to the current OTA version number of the device. If you do not specify the ota_module.firmware_version field, you cannot query devices by OTA module name.
ota_module.firmware_version	text	The firmware version of the OTA module.

Operators

Operator	Supported data type
=	number, date, and text
!=	number, date, and text
>	number and date
<	number and date
LIKE	text

Description:

- = and !=: If you use these operators, the values of the fields that you want to query can be null.
- LIKE: If you use this operator, only prefix match is supported. The prefix must be at least 4 characters and cannot contain any special characters, such as backslashes (\), forward slashes (/), ampersands (&), plus signs (+), hyphens (-), exclamation points (!), parentheses (), colons (:), tildes (~), braces {}, asterisks (*), and question marks (?). The prefix must end with a percent sign (`%`).

  Example: `SELECT * FROM device where product_key = "a1*********" and name LIKE "test%" limit 10` .

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of SimpleDeviceSearchInfo		The device information returned if the call was successful.
ActiveTime	String	2020-04-04 16:38:18.607	The time when the device was activated. The time is in the GMT format.
DeviceName	String	light	The DeviceName of the device.
GmtCreate	String	2020-04-04 16:38:17.000	The time when the device was created. The time is in the GMT format.
GmtModified	String	2020-04-04 16:38:19.000	The time when the device information was last updated. The time is in the GMT format.
Groups	Array of SimpleDeviceGroupInfo		The information about the groups to which the device belongs.
GroupId	String	a1d21d2fas	The ID of each group.
IotId	String	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device.
Nickname	String	Smart light	The alias of the device.
OTAModules	Array of OTAModuleInfo		The information about the firmware of each device module.
FirmwareVersion	String	a1-dads2-dad2	The version number of each OTA module.
ModuleName	String	SomeSampleModule	The name of the OTA module.

Parameter	Type	Example	Description
ProductKey	String	a1BwAGV****	The **ProductKey** of the product to which the device belongs.
Status	String	ONLINE	The device status. Valid values: Valid values: • **ONLINE**: The device is online. • **OFFLINE**: The device is offline. • **UNACTIVE**: The device is not activated. • **DISABLE**: The device is disabled.
Tags	Array of TagInfo		The information about device tags.
TagName	String	Color	The key of each tag.
TagValue	String	Red	The value of the tag.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
TotalCount	Long	100	If you specify `SELECT count(*) FROM device` in the SQL-like statement, the number of rows that match the specified conditions is returned.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceBySQL
&IotInstanceId=iot-cn-0pp1n8t****
&SQL=SELECT * FROM device where product_key = "a1*********" limit 100, 20
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceBySQLResponse>
  <RequestId>501CFABA-2C48-468D-B88C-3AA8E3B3A8F3</RequestId>
  <Data>
        <Status>OFFLINE</Status>
        <IotId>ii1*******</IotId>
        <GmtCreate>2020-04-04 16:38:17.000</GmtCreate>
        <ActiveTime>2020-04-04 16:38:18.607</ActiveTime>
        <GmtModified>2020-04-04 16:38:19.000</GmtModified>
        <ProductKey>a1*********</ProductKey>
        <DeviceName>testDevcieae7f3a</DeviceName>
  </Data>
  <Data>
        <Status>UNACTIVE</Status>
        <IotId>5wt*******</IotId>
        <GmtCreate>2020-04-04 16:37:32.000</GmtCreate>
        <Groups>
              <GroupId>Ix4*******</GroupId>
        </Groups>
        <Groups>
              <GroupId>Xrn*******</GroupId>
        </Groups>
        <Groups>
              <GroupId>J9l*******</GroupId>
        </Groups>
        <OTAModules>
              <ModuleName>SomeSampleModule</ModuleName>
              <FirmwareVersion>a1-dads2-dad2</FirmwareVersion>
        </OTAModules>
        <OTAModules>
              <ModuleName>SampleModule</ModuleName>
              <FirmwareVersion>a1-dads2-dad1</FirmwareVersion>
        </OTAModules>
        <GmtModified>2020-04-04 16:37:32.000</GmtModified>
        <ProductKey>a1*********</ProductKey>
        <DeviceName>testDevcie676a22</DeviceName>
  </Data>
  <Success>true</Success>
</QueryDeviceBySQLResponse>
```

`JSON` format

```
{
    "RequestId": "501CFABA-2C48-468D-B88C-3AA8E3B3A8F3",
    "Data": [
        {
            "Status": "OFFLINE",
            "IotId": "ii1*******",
            "GmtCreate": "2020-04-04 16:38:17.000",
            "ActiveTime": "2020-04-04 16:38:18.607",
            "GmtModified": "2020-04-04 16:38:19.000",
            "ProductKey": "a1*********",
            "DeviceName": "testDevcieae7f3a"
        },
        {
            "Status": "UNACTIVE",
            "IotId": "5wt*******",
            "GmtCreate": "2020-04-04 16:37:32.000",
            "Groups": [
                {
                    "GroupId": "Ix4*******"
                },
                {
                    "GroupId": "Xrn*******"
                },
                {
                    "GroupId": "J9l*******"
                }
            ],
            "OTAModules": [
                {
                    "ModuleName": "SomeSampleModule",
                    "FirmwareVersion": "a1-dads2-dad2"
                },
                {
                    "ModuleName": "SampleModule",
                    "FirmwareVersion": "a1-dads2-dad1"
                }
            ],
            "GmtModified": "2020-04-04 16:37:32.000",
            "ProductKey": "a1*********",
            "DeviceName": "testDevcie676a22"
        }
    ],
    "Success": true
}
```


4.8.36. ListOTAModuleVersionsByDevice

Queries the version information of the over-the-air (OTA) modules that are submitted by a device.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAModuleVersionsByDevice	The operation that you want to perform. Set the value to ListOTAModuleVersionsByDevice.
CurrentPage	Integer	Yes	1	The number of the page to return. Default value: 1.
PageSize	Integer	Yes	10	The number of entries to return on each page. A maximum of 200 entries can be displayed on each page.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	aluctKe****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	newdevice	The DeviceName of the device to be queried. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is issued by IoT Platform. **Note** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The current page number.

Parameter	Type	Example	Description
Data	Array of SimpleOTAModuleInfo		The module version information returned if the call is successful. The information was submitted by the device. For more information, see the **SimpleOTAModuleInfo** parameter in this table.
SimpleOTAModuleInfo			
DeviceName	String	newDevice	The DeviceName of the device.
IotId	String	QjlFT***000101	The ID of the device.
ModuleName	String	barcodeScanner	The name of the OTA module.
ModuleVersion	String	1.0	The module version that was submitted by the device.
ProductKey	String	aluctKe****	The **ProductKey** of the product to which the device belongs.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	1	The total number of pages returned.
PageSize	Integer	10	The number of module versions returned on each page.
RequestId	String	291438BA-6E10-4C4C-B761-243B9A0D324F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	10	The total number of module versions that was submitted by the device.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAModuleVersionsByDevice
&CurrentPage=1
&PageSize=10
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTAModuleVersionsByDeviceResponse>
  <requestId>67AF7881-704C-40CC-B296-72F91380A117</requestId>
  <success>true</success>
  <code></code>
  <errorMessage></errorMessage>
  <PageSize>10</PageSize>
  <PageCount>1</PageCount>
  <CurrentPage>1</CurrentPage>
  <Total>1</Total>
  <Data>
        <SimpleOTAModuleInfo>
              <IotId>QjIFT***000101</IotId>
              <ModuleVersion>1.6940.1</ModuleVersion>
              <ModuleName>default</ModuleName>
              <ProductKey>a14***S</ProductKey>
              <DeviceName>newDevice</DeviceName>
        </SimpleOTAModuleInfo>
  </Data>
</ListOTAModuleVersionsByDeviceResponse>
```

`JSON` format

```
{
    "requestId": "67AF7881-704C-40CC-B296-72F91380A117",
    "success": true,
    "code": "",
    "errorMessage": null,
    "PageSize": 10,
    "PageCount": 1,
    "CurrentPage": 1,
    "Total": 1,
    "Data": {
        "SimpleOTAModuleInfo": [
            {
                "IotId": "QjIFT***000101",
                "ModuleVersion": "1.6940.1",
                "ModuleName": "default",
                "ProductKey": "a14***S",
                "DeviceName": "newDevice"
            }
        ]
    }
}
```

4.9. Manage device groups

4.9.1. CreateDeviceGroup

Creates a group.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateDeviceGroup	The operation that you want to perform. Set the value to CreateDeviceGroup.

Parameter	Type	Required	Example	Description
GroupName	String	Yes	grouptest	The name of the group. The alias must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_).
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
SuperGroupId	String	No	SuperGroupId1	The ID of the parent group. If you need to create a first-level group, do not specify this parameter.
GroupDesc	String	No	Group test	The description of the group. The description must be 1 to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The group information returned if the call succeeds.

Parameter	Type	Example	Description
GroupDesc	String	Group test	The description of each group.
GroupId	String	HtMLECKbdJQL****	The ID of the group. The ID is the globally unique identifier (GUID) that the system generates for the group.
GroupName	String	grouptest	The name of the group.
UtcCreate	String	2018-10-17T11:19:31.000Z	The time when the group was created.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	4D6D7F71-1C94-4160-8511-EFF4B8F0634D	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateDeviceGroup
&GroupDesc=Group test
&GroupName=grouptest
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateDeviceGroupResponse>
      <Data>
            <GroupDesc>Group test</GroupDesc>
            <GroupName>grouptest</GroupName>
            <UtcCreate>2018-10-17T11:19:31.000Z</UtcCreate>
            <GroupId>HtMLECKbdJQL****</GroupId>
      </Data>
      <RequestId>4D6D7F71-1C94-4160-8511-EFF4B8F0634D</RequestId>
      <Success>true</Success>
</CreateDeviceGroupResponse>
```

`JSON` format

```
{
    "Data":{
        "GroupDesc":"Group test",
        "GroupName":"grouptest",
        "UtcCreate":"2018-10-17T11:19:31.000Z",
        "GroupId":"HtMLECKbdJQL****"
    },
    "RequestId":"4D6D7F71-1C94-4160-8511-EFF4B8F0634D",
    "Success":true
}
```

4.9.2. UpdateDeviceGroup

Modifies the information of a group.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateDeviceGroup	The operation that you want to perform. Set the value to UpdateDeviceGroup.
GroupId	String	Yes	W16X8Tvdosec****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
GroupDesc	String	No	test2	The description of the group. The description must be 1 to 100 characters in length.
GroupType	String	No	LINK_PLATFORM_DYNAMIC	The type of the group. If you set the value to **LINK_PLATFORM_DYNAMIC**, a dynamic group is queried. If you do not specify this parameter, a static group is queried by default.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	B78B4FD1-AE89-417B-AD55-367EBB0C6759	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateDeviceGroup
&GroupId=W16X8Tvdosec****
&GroupDesc=test2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateDeviceGroupResponse>
      <RequestId>B78B4FD1-AE89-417B-AD55-367EBB0C6759</RequestId>
      <Success>true</Success>
</UpdateDeviceGroupResponse>
```

`JSON` format

```
{
    "RequestId":"B78B4FD1-AE89-417B-AD55-367EBB0C6759",
    "Success":true
}
```

4.9.3. DeleteDeviceGroup

Deletes a group.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteDeviceGroup	The operation that you want to perform. Set the value to DeleteDeviceGroup.
GroupId	String	Yes	tDQvBJqbUyHs****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	B78B4FD1-AE89-417B-AD55-367EBB0C6759	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteDeviceGroup
&GroupId=tDQvBJqbUyHs****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteDeviceGroupResponse>
      <RequestId>B78B4FD1-AE89-417B-AD55-367EBB0C6759</RequestId>
      <Success>true</Success>
</DeleteDeviceGroupResponse>
```

`JSON` format

```
{
    "RequestId":"B78B4FD1-AE89-417B-AD55-367EBB0C6759",
    "Success":true
}
```

4.9.4. BatchAddDeviceGroupRelations

Adds one or more devices to a group.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchAddDeviceGroupRelations	The operation that you want to perform. Set the value to BatchAddDeviceGroupRelations.

Parameter	Type	Required	Example	Description
Device.N.DeviceName	String	Yes	ZHuPo6sZzv7pOzYh****	The names of the devices to be added. You can specify a maximum of 200 devices.
Device.N.ProductKey	String	Yes	a1kORrK****	The ProductKeys of the products to which the devices belong. You can specify a maximum of 200 ProductKeys.
GroupId	String	Yes	6VfhebLg5iUe****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
AlreadyRelatedGroupDeviceCount	Integer	0	The number of devices that exist in the group.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
ExceedTenGroupDeviceCount	Integer	0	The number of the specified devices that are added to 10 or more groups. You can add a device to a maximum of 10 groups.
RequestId	String	671D0F8F-FDC7-4B12-93FA-336C079C965A	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
SuccessAddedDeviceCount	Integer	2	The number of devices that are added to the group.
ValidDeviceCount	Integer	2	The number of valid devices that you specified.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchAddDeviceGroupRelations
&Device.1.DeviceName=ZHuPo6sZzv7pOzYh****
&Device.1.ProductKey=a1kORrK****
&Device.2.DeviceName=rB4V9PDW2FCPmwuf****
&Device.2.ProductKey=a1kORrK****
&GroupId=6VfhebLg5iUe****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchAddDeviceGroupRelationsResponse>
      <SuccessAddedDeviceCount>2</SuccessAddedDeviceCount>
      <ExceedTenGroupDeviceCount>0</ExceedTenGroupDeviceCount>
      <ErrorMessage>2 devices have been added, and 0 devices failed to be added.</ErrorMess
age>
      <ValidDeviceCount>2</ValidDeviceCount>
      <AlreadyRelatedGroupDeviceCount>0</AlreadyRelatedGroupDeviceCount>
      <RequestId>671D0F8F-FDC7-4B12-93FA-336C079C965A</RequestId>
      <Success>true</Success>
</BatchAddDeviceGroupRelationsResponse>
```

`JSON` format

```
{
    "SuccessAddedDeviceCount":2,
    "ExceedTenGroupDeviceCount":0,
    "ErrorMessage":"2 devices have been added, and 0 devices failed to be added.",
    "ValidDeviceCount":2,
    "AlreadyRelatedGroupDeviceCount":0,
    "RequestId":"671D0F8F-FDC7-4B12-93FA-336C079C965A",
    "Success":true
}
```

4.9.5. BatchDeleteDeviceGroupRelations

Removes multiple devices from a specified group. You can call this operation to delete only the relationships between the devices and the group. These devices are not deleted.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchDeleteDeviceGroupRelations	The operation that you want to perform. Set the value to BatchDeleteDeviceGroupRelations.
Device.N.DeviceName	String	Yes	ZHuPo6sZzv7pOzYh****	The names of the devices to be removed. You can specify a maximum of 200 devices.
Device.N.ProductKey	String	Yes	a1kORrK****	The ProductKeys of the products to which the devices belong. You can specify a maximum of 200 ProductKeys.

Parameter	Type	Required	Example	Description
GroupId	String	Yes	W16X8Tvdosec****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
AlreadyRelatedGroupDeviceCount	Integer	2	The number of devices that exist in the group.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	8739385E-143F-4389-B900-B7DF9174CE0D	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Parameter	Type	Example	Description
SuccessDeviceCount	Integer	2	The number of devices that are removed from the group.
ValidDeviceCount	Integer	2	The number of valid devices that you specified.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=BatchDeleteDeviceGroupRelations
&Device.1.DeviceName=ZHuPo6sZzv7pOzYh****
&Device.1.ProductKey=a1kORrK****
&Device.2.DeviceName=rB4V9PDW2FCPmwuf****
&Device.2.ProductKey=a1kORrK****
&GroupId=W16X8Tvdosec****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchDeleteDeviceGroupRelationsResponse>
      <SuccessDeviceCount>2</SuccessDeviceCount>
      <ValidDeviceCount>2</ValidDeviceCount>
      <AlreadyRelatedGroupDeviceCount>2</AlreadyRelatedGroupDeviceCount>
      <RequestId>8739385E-143F-4389-B900-B7DF9174CE0D</RequestId>
      <Success>true</Success>
</BatchDeleteDeviceGroupRelationsResponse>
```

`JSON` format

```
{
    "SuccessDeviceCount":2,
    "ValidDeviceCount":2,
    "AlreadyRelatedGroupDeviceCount":2,
    "RequestId":"8739385E-143F-4389-B900-B7DF9174CE0D",
    "Success":true
}
```

4.9.6. QueryDeviceGroupInfo

Queries the details of a group.

Limits

Each Alibaba Cloud account can run a maximum of 30 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceGroupInfo	The operation that you want to perform. Set the value to QueryDeviceGroupInfo.
GroupId	String	Yes	tDQvBJqbUyHs****	The ID of the group. The ID is the globally unique identifier (GUID) for the group. You can call the QueryDeviceGroupList operation to query the **GroupId** parameter.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
GroupType	String	No	LINK_PLATFORM_DYNAMIC	The type of the group. Set the value to **LINK_PLATFORM_DYNAMIC**. This value indicates a dynamic group. If you do not specify this parameter, a static group is queried by default.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The group details returned if the call succeeds. This parameter includes the following parameters.
DeviceActive	Integer	1	The number of activated devices.
DeviceCount	Integer	10	The total number of devices.
DeviceOnline	Integer	0	The number of online devices.
DynamicGroupExpression	String	product_key = "a1***" and name LIKE "test%"	The rule of the dynamic group. This parameter is returned if a dynamic group is queried.
GroupDesc	String	usefulGroup	The description of the group.
GroupId	String	tDQvBJqbUyHs****	The ID of the group.
GroupName	String	aliyun	The name of the group.
UtcCreate	String	2018-09-14T14:35:51.000Z	The time when the group was created.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	7411716B-A488-4EEB-9AA0-6DB05AD2491F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceGroupInfo
&GroupId=tDQvBJqbUyHs****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceGroupInfoResponse>
<RequestId>7411716B-A488-4EEB-9AA0-6DB05AD2491F</RequestId>
<Data>
    <GroupName>aliyun</GroupName>
    <UtcCreate>2021-10-14T14:35:51.000Z</UtcCreate>
    <DeviceOnline>0</DeviceOnline>
    <GroupDesc>usefulGroup</GroupDesc>
    <DeviceActive>1</DeviceActive>
    <DynamicGroupExpression>product_key = "a1***" and name LIKE "test%"</DynamicGroupExpres
sion>
    <DeviceCount>10</DeviceCount>
    <GroupId>tDQvBJqbUyHs****</GroupId>
</Data>
<Success>true</Success>
<QueryDeviceGroupInfoResponse>
```

`JSON` format

```
{
    "RequestId": "7411716B-A488-4EEB-9AA0-6DB05AD2491F",
    "Data": {
        "GroupName": "aliyun",
        "UtcCreate": "2021-10-14T14:35:51.000Z",
        "DeviceOnline": 0,
        "GroupDesc": "usefulGroup",
        "DeviceActive": 1,
        "DynamicGroupExpression": "product_key = \"a1***\" and name LIKE \"test%\"",
        "DeviceCount": 10,
        "GroupId": "tDQvBJqbUyHs****"
    },
    "Success": true
}
```

4.9.7. QueryDeviceGroupList

Queries groups by page.

Limits

Each Alibaba Cloud account can run a maximum of 100 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceGroupList	The operation that you want to perform. Set the value to QueryDeviceGroupList.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of the entries to return on each page. Maximum value: 200. Default value: 10.
SuperGroupId	String	No	8vDubXr4nUvZkNgk9mle010200	The ID of the parent group. If you need to query the subgroups of a parent group, specify this parameter.

Parameter	Type	Required	Example	Description
GroupName	String	No	GroupName1	The name of the group. • If you specify this parameter, the system queries groups by group name. You can perform a fuzzy search by group name. • If you do not specify this parameter, the system queries all groups.
CurrentPage	Integer	No	1	The number of the page to return. Default value: 1.
GroupTypes.N	RepeatList	No	LINK_PLATFORM_DYNAMIC	The type of the group to be queried. Set the value to **LINK_PLATFORM_DYNAMIC**. This value indicates a dynamic group. If you do not specify this parameter, a static group is queried by default.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The page number of the returned page.
Data	Array of GroupInfo		The group information returned if the call succeeds. For more information, see the GroupInfo parameter. **Note** The returned group information is sorted in reverse chronological order in which the groups are created.
GroupInfo			
GroupDesc	String	usefulGroup	The description of the group.

Parameter	Type	Example	Description
GroupId	String	Kzt9FD8wje8o****	The ID of the group.
GroupName	String	test1	The name of the group.
GroupType	String	LINK_PLATFORM_DYNAMIC	The type of the group.
UtcCreate	String	2018-10-09T02:58:34.000Z	The time when the group was created.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	3	The total number of pages.
PageSize	Integer	10	The number of entries return on each page.
RequestId	String	BEFCA316-D6C7-470C-81ED-1FF4FFD4AA0D	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	24	The total number of records that were returned.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceGroupList
&PageSize=10
&CurrentPage=1
&GroupTypes.1=LINK_PLATFORM_DYNAMIC
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceGroupListResponse>
  <PageCount>3</PageCount>
  <Data>
        <GroupInfo>
```

```
            <GroupName>test1</GroupName>
            <UtcCreate>2021-10-01T02:58:34.000Z</UtcCreate>
            <GroupId>Kzt9FD8wje8o***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>test2</GroupName>
            <UtcCreate>2021-10-01T02:56:40.000Z</UtcCreate>
            <GroupId>0ayrSQ3DSd7***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupDesc>Test</GroupDesc>
            <GroupName>test3</GroupName>
            <UtcCreate>2021-10-01T05:38:27.000Z</UtcCreate>
            <GroupId>oWXlIQeFZtzC***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>ylv0915</GroupName>
            <UtcCreate>2021-10-01T04:51:56.000Z</UtcCreate>
            <GroupId>SfEiVapLPUjB***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>ydlv</GroupName>
            <UtcCreate>2021-10-01T14:35:51.000Z</UtcCreate>
            <GroupId>z2S2h9NsDTZm***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>ldh_group_3</GroupName>
            <UtcCreate>2021-10-01T12:26:20.000Z</UtcCreate>
            <GroupId>chn5fkjin***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupDesc>ddd</GroupDesc>
            <GroupName>ylvgisbim</GroupName>
            <UtcCreate>2021-10-01T11:41:20.000Z</UtcCreate>
            <GroupId>ncUZ8DjWYaB9***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>abc</GroupName>
            <UtcCreate>2021-10-01T09:14:30.000Z</UtcCreate>
            <GroupId>zpdvwxzBdt4F***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
        <GroupInfo>
            <GroupName>test11</GroupName>
            <UtcCreate>2021-10-01T07:22:39.000Z</UtcCreate>
            <GroupId>BTaudF16X2xK***</GroupId>
            <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
```

```
        </GroupInfo>
        <GroupInfo>
              <GroupName>testy</GroupName>
              <UtcCreate>2021-10-01T01:58:06.000Z</UtcCreate>
              <GroupId>PrTm3VOeggPw***</GroupId>
              <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
  </Data>
  <PageSize>10</PageSize>
  <RequestId>BEFCA316-D6C7-470C-81ED-1FF4FFD4AA0D</RequestId>
  <CurrentPage>1</CurrentPage>
  <Success>true</Success>
  <Total>24</Total>
</QueryDeviceGroupListResponse>
```

`JSON` format

```
{
    "PageCount":3,
    "Data":{
        "GroupInfo":[
            {
                "GroupName":"test1",
                "UtcCreate":"2021-10-01T02:58:34.000Z",
                "GroupId":"Kzt9FD8wje8o***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"test2",
                "UtcCreate":"2021-10-01T02:56:40.000Z",
                "GroupId":"0ayrSQ3DSd7***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupDesc":"Test",
                "GroupName":"test3",
                "UtcCreate":"2021-10-01T05:38:27.000Z",
                "GroupId":"oWXlIQeFZtzC***",
                "GroupType":"LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"ylv0915",
                "UtcCreate":"2021-10-01T04:51:56.000Z",
                "GroupId":"SfEiVapLPUjB***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"ydlv",
                "UtcCreate":"2021-10-01T14:35:51.000Z",
                "GroupId":"z2S2h9NsDTZm***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"ldh_group_3",
```

```
                "UtcCreate":"2021-10-01T12:26:20.000Z",
                "GroupId":"chn5fkjin***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupDesc":"ddd",
                "GroupName":"ylvgisbim",
                "UtcCreate":"2021-10-01T11:41:20.000Z",
                "GroupId":"ncUZ8DjWYaB9***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"abc",
                "UtcCreate":"2021-10-01T09:14:30.000Z",
                "GroupId":"zpdvwxzBdt4F***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"test11",
                "UtcCreate":"2021-10-01T07:22:39.000Z",
                "GroupId":"BTaudF16X2xK***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            },
            {
                "GroupName":"testy",
                "UtcCreate":"2021-10-01T01:58:06.000Z",
                "GroupId":"PrTm3VOeggPw***",
                "GroupType": "LINK_PLATFORM_DYNAMIC"
            }
        ]
    },
    "PageSize":10,
    "RequestId":"BEFCA316-D6C7-470C-81ED-1FF4FFD4AA0D",
    "CurrentPage":1,
    "Success":true,
    "Total":24
}
```


4.9.8. SetDeviceGroupTags

Adds, updates, or deletes group tags.

Limits

- Each group can have a maximum of 100 tags.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	SetDeviceGroupTags	The operation that you want to perform. Set the value to SetDeviceGroupTags.
GroupId	String	Yes	W16X8Tvdosec****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
TagString	String	No	[{"tagKey":"h1","tagValue":"rr"},{"tagKey":"7h","tagValue":"rr"}]	The tag data in the JSON format. Each tag consists of the **tagKey** and **tagValue** parameters. You must specify the **tagKey** and **tagValue** parameters for each tag. • **tagKey**: the tag key. The key must be 2 to 30 characters in length, and can contain letters, digits, and periods (.). • **tagValue**: the tag value. The value can contain letters, digits, underscores (_), and hyphens (-). The value must be 1 to 128 characters in length. Separate multiple tags with commas (,). Example: `[{"tagKey":"h1","tagValue":"rr"},{"tagKey":"7h","tagValue":"rr"}]`. If you need to update an existing tag, specify a new value for the tag. The new value overwrites the previous value. If you need to delete a tag, do not specify a key or value for the tag.
GroupType	String	No	LINK_PLATFORM_DYNAMIC	The type of the group. If you set the value to **LINK_PLATFORM_DYNAMIC**, a dynamic group is queried. If you do not specify this parameter, a static group is queried by default.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	12CFDAF1-99D9-42E0-8C2F-F281DA5E8953	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=SetDeviceGroupTags
&GroupId=W16X8Tvdosec****
&TagString=[{"tagKey":"h1","tagValue":"rr"},{"tagKey":"7h","tagValue":"rr"}]
&<Common request parameters>
```

Sample success responses

`XML` format

```
<SetDeviceGroupTagsResponse>
      <RequestId>12CFDAF1-99D9-42E0-8C2F-F281DA5E8953</RequestId>
      <Success>true</Success>
</SetDeviceGroupTagsResponse>
```

`JSON` format

```
{
    "RequestId":"12CFDAF1-99D9-42E0-8C2F-F281DA5E8953",
    "Success":true
}
```

4.9.9. QueryDeviceGroupTagList

Queries the tags of a group.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceGroupTagList	The operation that you want to perform. Set the value to QueryDeviceGroupTagList.
GroupId	String	Yes	W16X8Tvdosec****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
GroupType	String	No	LINK_PLATFORM_DYNAMIC	The type of the group. If you set the value to **LINK_PLATFORM_DYNAMIC**, a dynamic group is queried. If you do not specify this parameter, a static group is queried by default.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of GroupTagInfo		The tag information returned if the call succeeds. For more information, see the following **GroupTagInfo** parameter.
GroupTagInfo			
TagKey	String	room1	The key of the tag.
TagValue	String	bulb	The value of the tag.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	214154FF-9D47-4E3F-AAAD-F4CE67F41060	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceGroupTagList
&GroupId=W16X8Tvdosec****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceGroupTagListResponse>
      <Data>
            <GroupTagInfo>
                  <TagValue>bulb</TagValue>
                  <TagKey>room1</TagKey>
            </GroupTagInfo>
      </Data>
      <RequestId>214154FF-9D47-4E3F-AAAD-F4CE67F41060</RequestId>
      <Success>true</Success>
</QueryDeviceGroupTagListResponse>
```

`JSON` format

```
{
    "Data":{
        "GroupTagInfo":[
            {
                "TagValue":"bulb",
                "TagKey":"room1"
            }
        ]
    },
    "RequestId":"214154FF-9D47-4E3F-AAAD-F4CE67F41060",
    "Success":true
}
```

4.9.10. QueryDeviceGroupByDevice

Queries groups to which a device belongs.

Limits

- You can add a device to a maximum of 10 groups.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceGroupByDevice	The operation that you want to perform. Set the value to QueryDeviceGroupByDevice.
DeviceName	String	Yes	test456	The DeviceName of the device.
ProductKey	String	Yes	a1SKk9K****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
GroupInfos	Array of GroupInfo		The group information returned if the call succeeds. For more information, see the following GroupInfo parameter.
GroupInfo			
GroupDesc	String	father desc	The description of the group.
GroupId	String	6a3FF2XE2BKa****	The ID of the group.
GroupName	String	father1543152336554	The name of the group.
GroupType	String	LINK_PLATFORM_DYNAMIC	The type of the group.
UtcCreate	String	2018-11-25T13:25:37.000Z	The time when the group was created.
RequestId	String	7941C8CD-7764-4A94-8CD9-E2762D4A73AC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceGroupByDevice
&DeviceName=test456
&ProductKey=a1SKk9K****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceGroupByDeviceResponse>
  <RequestId>7941C8CD-7764-4A94-8CD9-E2762D4A73AC</RequestId>
  <GroupInfos>
        <GroupInfo>
              <GroupDesc>father desc</GroupDesc>
              <GroupName>father1543152336554</GroupName>
              <UtcCreate>2018-11-25T13:25:37.000Z</UtcCreate>
              <GroupId>6a3FF2XE2BKa***</GroupId>
              <GroupType>LINK_PLATFORM_DYNAMIC</GroupType>
        </GroupInfo>
  </GroupInfos>
  <Success>true</Success>
</QueryDeviceGroupByDeviceResponse>
```

`JSON` format

```
{
  "RequestId": "7941C8CD-7764-4A94-8CD9-E2762D4A73AC",
  "GroupInfos": {
    "GroupInfo": [
      {
        "GroupDesc": "father desc",
        "GroupName": "father1543152336554",
        "UtcCreate": "2018-11-25T13:25:37.000Z",
        "GroupId": "6a3FF2XE2BKa***",
        "GroupType":"LINK_PLATFORM_DYNAMIC"
      }
    ]
  },
  "Success": true
}
```

4.9.11. QuerySuperDeviceGroup

Queries the information of a parent group by subgroup ID.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QuerySuperDeviceGroup	The operation that you want to perform. Set the value to QuerySuperDeviceGroup.
GroupId	String	Yes	DMoI2Kby5m62****	The ID of the subgroup. The ID is the globally unique identifier (GUID) for the group.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Array of GroupInfo		The parent group information returned if the call succeeds. For more information, see the following **GroupInfo** parameter.
GroupInfo			
GroupDesc	String	A test	The description of the parent group.
GroupId	String	tDQvBJqbUyHskDse	The ID of the parent group.
GroupName	String	IOTTEST	The name of the parent group.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	7411716B-A488-4EEB-9AA0-6DB05AD2491F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QuerySuperDeviceGroup
&GroupId=DMoI2Kby5m62****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QuerySuperDeviceGroupResponse>
      <Data>
            <GroupName>IOTTEST</GroupName>
            <GroupId>tDQvBJqbUyHskDse</GroupId>
            <GroupDesc>A test.</GroupDesc>
      </Data>
      <RequestId>7411716B-A488-4EEB-9AA0-6DB05AD2491F</RequestId>
      <Success>true</Success>
</QuerySuperDeviceGroupResponse>
```

`JSON` format

```
{
    "Data":{
        "GroupName":"IOTTEST",
        "GroupId":"tDQvBJqbUyHskDse",
    "GroupDesc":"A test."
    },
    "RequestId":"7411716B-A488-4EEB-9AA0-6DB05AD2491F",
    "Success":true
}
```

4.9.12. QueryDeviceListByDeviceGroup

Queries the devices of a group.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceListByDeviceGroup	The operation that you want to perform. Set the value to QueryDeviceListByDeviceGroup.
GroupId	String	Yes	7DIgqIl1Ijnh****	The ID of the group. The ID is the globally unique identifier (GUID) for the group.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of entries to return on each page.
CurrentPage	Integer	No	1	The number of the page to return.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of SimpleDeviceInfo		The device list information returned if the call succeeds. For more information, see the following **SimpleDeviceInfo** parameter.
SimpleDeviceInfo			
DeviceName	String	ios_1207_08	The name of each device.
IotId	String	TfmUAeJjQQhCPH84UVNn0010c6****	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device.

Parameter	Type	Example	Description
ProductKey	String	a1hWjHD****	The ProductKey of the product to which the device belongs.
ProductName	String	WIFIdevice	The ProductName of the product to which the device belongs.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The number of the returned page.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	B1A921D9-1061-4D45-9F12-EA6B0FDEDE30	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	3	The total number of devices.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceListByDeviceGroup
&GroupId=7DIgqIl1Ijnh****
&CurrentPage=1
&PageSize=10
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceListByDeviceGroupResponse>
      <PageCount>1</PageCount>
      <Data>
            <SimpleDeviceInfo>
                  <DeviceName>ios_1207_08</DeviceName>
                  <ProductKey>a1hWjHD****</ProductKey>
                  <ProductName>WIFIdevice</ProductName>
                  <IotId>TfmUAeJjQQhCPH84UVNn0010c6****</IotId>
            </SimpleDeviceInfo>
            <SimpleDeviceInfo>
                  <DeviceName>ios_1207_07</DeviceName>
                  <ProductKey>a1hWjHD****</ProductKey>
                  <ProductName>WIFIgateway</ProductName>
                  <IotId>wVPeAksaboXBlRgvZNHQ001031****</IotId>
            </SimpleDeviceInfo>
            <SimpleDeviceInfo>
                  <DeviceName>E1IPK25iL4CTOwnuI2yt</DeviceName>
                  <ProductKey>a1mV8bK****</ProductKey>
                  <ProductName>yanlv</ProductName>
                  <IotId>E1IPK25iL4CTOwnuI2yt001059****</IotId>
            </SimpleDeviceInfo>
      </Data>
      <PageSize>10</PageSize>
      <Page>1</Page>
      <RequestId>B1A921D9-1061-4D45-9F12-EA6B0FDEDE30</RequestId>
      <Success>true</Success>
      <Total>3</Total>
</QueryDeviceListByDeviceGroupResponse>
```

`JSON` format

```
{
  "PageCount": 1,
  "Data": {
    "SimpleDeviceInfo": [
      {
        "DeviceName": "ios_1207_08",
        "ProductKey": "a1hWjHD****",
        "ProductName": "WIFIdevice",
        "IotId": "TfmUAeJjQQhCPH84UVNn0010c6****"
      },
      {
        "DeviceName": "ios_1207_07",
        "ProductKey": "a1hWjHD****",
        "ProductName": "WIFIgateway",
        "IotId": "wVPeAksaboXBlRgvZNHQ001031****"
      },
      {
        "DeviceName": "E1IPK25iL4CTOwnuI2yt",
        "ProductKey": "a1mV8bK****",
        "ProductName": "yanlv",
        "IotId": "E1IPK25iL4CTOwnuI2yt001059****"
      }
    ]
  },
  "PageSize": 10,
  "Page": 1,
  "RequestId": "B1A921D9-1061-4D45-9F12-EA6B0FDEDE30",
  "Success": true,
  "Total": 3
}
```


4.9.13. QueryDeviceGroupByTags

Queries device groups by tag.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceGroupByTags	The operation that you want to perform. Set the value to QueryDeviceGroupByTags.
Tag.N.TagKey	String	Yes	group	The key of each tag.
Tag.N.TagValue	String	Yes	tag	The value of the tag.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
CurrentPage	Integer	No	1	The number of the page to return. Default value: 1.
PageSize	Integer	No	10	The number of entries to return on each page. Default value: 10.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of DeviceGroup		The group information returned if the call succeeds.

Parameter	Type	Example	Description
DeviceGroup			
GroupId	String	Z0ElGF5aqc0t****	The ID of the group.
GroupName	String	test11	The name of the group.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The number of the returned page.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned on each page.
RequestId	String	9599EE98-1642-4FCD-BFC4-039E458A4693	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	1	The total number of records.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceGroupByTags
&Tag.1.TagKey=group
&Tag.1.TagValue=tag
&CurrentPage=1
&PageSize=10
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceGroupByTagsResponse>
    <PageCount>1</PageCount>
    <Data>
        <DeviceGroup>
            <GroupName>test11</GroupName>
            <GroupId>Z0ElGF5aqc0t****</GroupId>
        </DeviceGroup>
    </Data>
    <Page>1</Page>
    <PageSize>10</PageSize>
    <RequestId>9599EE98-1642-4FCD-BFC4-039E458A4693</RequestId>
    <Success>true</Success>
    <Total>1</Total>
</QueryDeviceGroupByTagsResponse>
```

`JSON` format

```
{
    "PageCount": 1,
    "Data": {
        "DeviceGroup": [
            {
                "GroupName": "test11",
                "GroupId": "Z0ElGF5aqc0t****"
            }
        ]
    },
    "Page": 1,
    "PageSize": 10,
    "RequestId": "9599EE98-1642-4FCD-BFC4-039E458A4693",
    "Success": true,
    "Total": 1
}
```

4.10. Manage TSL models

4.10.1. CreateThingModel

Adds a Thing Specification Language (TSL) feature to a specified product. You can specify the extended information about the feature.

Limits

- If a product is published, you must call the CancelReleaseProduct operation to unpublish the product before you call this operation.
- Before you call the operation, you can use the json-schema library to verify the input parameters in **ThingModelJson**. For more information, see Data structure of ThingModelJson.
- You can call this operation to add a maximum of 10 TSL features. TSL features include properties, services, and events.

- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates a sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateThingModel	The operation that you want to perform. Set the value to CreateThingModel.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
				The details of the new features. **Note** You can specify a maximum of 10 features. Example:

Parameter	Type	Required	Example	Description
ThingModelJson	String	No	{ "properties":[{ "identifier": "SimCardType", "extendConfig":"{...}", "dataSpecs": { "max": "1", "dataType": "INT", "unit": "mmHg", "min": "0", "step": "1" }, "std": false,	{ "properties": [{ "custom": true, "dataSpecsList": [{ "childDataType": "TEXT", "childName": "CCID number of the device SIM card", "dataSpecs": { "custom": true, "dataType": "TEXT", "length": 20 }, "dataType": "STRUCT", "identifier": "CCID", "name": "CCID number of the device SIM card" }, { "childDataType": "INT", "childName": "Battery power", "dataSpecs": { "custom": true, "dataType": "INT", "max": "60000", "min": "0", "step": "1" }, "dataType": "STRUCT", "identifier": "battery", "name": "Battery power" }, { "childDataType": "TEXT", "childName": "Other information", "dataSpecs": { "custom": true, "dataType": "TEXT",

Parameter	Type	Required	Example	Description
			"custom": true, "dataType": "INT", "rwFlag": "READ_ONLY", "productKey": "a1bPo9p****", "required": false, "customFlag": true, "name": "SIM card type" }], "services":[...], "events":[...]	"length": 1024 }, "dataType": "STRUCT", "identifier": "other_info", "name": "Other information" }], "dataType": "STRUCT", "identifier": "DEV_INFO", "name": "Device information", "productKey": "a1T***", "propertyId": 18786548, "required": false, "rwFlag": "READ_ONLY" }, { "custom": true, "dataSpecs": { "childDataType": "INT", "custom": true, "dataType": "ARRAY", "size": 1, "dataSpecs": { "custom": true, "dataType": "INT", "max": "65535", "min": "0", "step": "1", "unit": "ppm", "unitName": "Parts per million" } }, "dataType": "ARRAY", "identifier": "airRH_SR", "name": "Dehumidifier humidity", "productKey": "a1T***", "propertyId": 18786551, "required": false, "rwFlag": "READ_ONLY" }], "services": [...], "events": [...] }

Parameter	Type	Required	Example	Description
				In the **properties** structure of the **ThingModelJson** parameter, you can use the **extendConfig** parameter to define the extended information of the TSL model. For more information, see Data structure of ThingModelJson.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. The identifier must be 1 to 30 characters in length, and can contain letters, digits, and underscores (_). This parameter must be used in combination with the **FunctionBlockName** parameter. If you do not specify this parameter, the system imports the default module.
FunctionBlockName	String	No	Battery_Module	The name of the custom module. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_). This parameter must be used in combination with the **FunctionBlockId** parameter. If you do not specify this parameter, the system imports the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information about common request parameters, see Common parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateThingModel
&ProductKey=a1bPo9p****
&ThingModelJson={"properties":[{"identifier": "SimCardType","dataSpecs": {"max": "1", "data
Type": "INT","unit": "mmHg","min": "0","step": "1"},"std": false,"custom": true,"dataType":
"INT","rwFlag": "READ_ONLY","productKey": "a1bPo9p****","required": false,"customFlag": tru
e, "name": "SIM card type"}]}
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateThingModelResponse>
  <RequestId>9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E</RequestId>
  <Success>true</Success>
</CreateThingModelResponse>
```

`JSON` format

```
{
  "RequestId": "9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E",
  "Success": true
}
```

4.10.2. UpdateThingModel

Updates a Thing Specification Language (TSL) feature of a specified product. You can also updates the extended information about the feature.

Limits

- If a product is published, you must call the CancelReleaseProduct operation to unpublish the product before you call this operation.
- When you call this operation, you can use the json-schema library to verify the input parameters in **ThingModelJson**. For more information, see Data structure of ThingModelJson.
- You can call this operation to update only one feature. TSL features include properties, services, and events.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateThingModel	The operation that you want to perform. Set the value to UpdateThingModel.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Identifier	String	No	Temperature	The identifier of the feature. You can call the GetThingModelTsl operation and view the identifier in the **TslStr** response parameter.

Parameter	Type	Required	Example	Description
ThingModelJson	String	No	{ "properties":[{ "identifier": "SimCardType", "extendConfig":" {...}", "dataSpecs": { "max": "1", "dataType": "INT", "unit": "mmHg", "min": "0", "step": "1" }, "std": false, "custom": true, "dataType": "INT", "rwFlag": "READ_ONLY", "productKey": "a1Jw4i****", "required": false, "customFlag": true, "name": "SIM card type }] }	The updated details of the feature. • If you specify the **Identifier** parameter, you can define only the identifier of the feature. • If you do not specify the **Identifier** parameter, you can define a maximum of 50 input and output parameters for a service or event. For more information about how to specify this parameter, see Data structure of ThingModelJson.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter or the **FunctionBlockName** parameter, the system updates the features of the default module.

Parameter	Type	Required	Example	Description
FunctionBlockName	String	No	Battery_Module	The name of the custom module. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_). • If you do not specify this parameter or the **FunctionBlockId** parameter, the system updates the features of the default module. • If you specify this parameter, the parameter must be used in combination with the **FunctionBlockId** parameter. You can modify the name of the specified custom module. The name corresponds to the value of the **FunctionBlockId** parameter. **Note** You cannot modify the name of the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateThingModel
&ProductKey=a1Jw4id****
&ThingModelJson={"properties":[{"identifier": "SimCardType","dataSpecs": {"max": "1", "data
Type": "INT","unit": "mmHg","min": "0","step": "1"},"std": false,"custom": true,"dataType":
"INT","rwFlag": "READ_ONLY","productKey": "a1Jw4id****","required": false,"customFlag": tru
e, "name": "SIM card type"}]}
&Identifier=SimCardType
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateThingModelResponse>
  <RequestId>5573D217-8E3E-47AD-9331-2083B88E64B2</RequestId>
  <Success>true</Success>
</UpdateThingModelResponse>
```

`JSON` format

```
{
  "RequestId": "5573D217-8E3E-47AD-9331-2083B88E64B2",
  "Success": true
}
```

4.10.3. QueryThingModel

Queries the TSL features of a specified product.

Usage notes

TSL features include properties, services, and events.

If you add custom modules to a TSL model and the value of the **FunctionBlockId** parameter is empty, you can obtain the TSL features of each custom module. If the value of the FunctionBlockId parameter is not empty, you can obtain the TSL features of a specified custom module.

For more information about the data format of the **ThingModelJson** parameter, see Data structure of ThingModelJson.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryThingModel	The operation that you want to perform. Set the value to QueryThingModel.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. You can call the ListThingModelVersion operation to view the version numbers of the TSL model for a product. If you do not specify this parameter, the TSL model that is in the draft status is queried. If you specify this parameter, the TSL model of the specified version is queried.

Parameter	Type	Required	Example	Description
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the default module is queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.
ThingModelJson	String	{ "productKey":"a1Jw4id***", "_ppk":{ "version":"1.1", "description":"xxx" }, "properties":[{ "identifier": "SimCardType", "dataSpecs": { "max": "1", "dataType": "INT", "unit": "mmHg", "min": "0", "step": "1" }, "std": false, "custom": true, "dataType": "INT", "rwFlag": "READ_ONLY", "productKey": "a1Jw4idFWHX", "required": false, "customFlag": true, "name": "SIM card type" }], "services": [...], "events":[...]	The features of the TSL model. The TSL data format of the default module is different from the TSL data format of a custom module. For more information about the data format of the ThingModelJson parameter, see Data structure of ThingModelJson.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
ProductKey	String	a1BwAGV****	The **ProductKey** of the product.

Parameter	Type	Example	Description
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryThingModel
&ProductKey=a1bPo9p****
&ModelVersion=v1.0.0
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryThingModelResponse>
    <RequestId>1F9041A2-ED5B-4A5A-9C44-598E28C0B434</RequestId>
    <Data>
        <ThingModelJson>{"_ppk":{"version":"1594253010934"},"events":[],"productKey":"a114x
eJ****","properties":[{"configCode":"8C03F0EEC63D4897BF2637F89AE36B011594227294067","custom
":true,"customFlag":true,"dataSpecs":{"custom":true,"dataType":"INT","max":"1","min":"0","s
tep":"1","unit":"ppb"},"dataType":"INT","description":"1","extendConfig":"{\"originalDataTy
pe\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type\":\"bool\"}
,\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"writeFunctionCo
de\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}","identifier":"W
akeUpData","name":"WakeUp_Data,"productKey":"a114xeJGj2p","required":false,"rwFlag":"READ_O
NLY","std":false}],"services":[]}</ThingModelJson>
    </Data>
    <Success>true</Success>
</QueryThingModelResponse>
```

`JSON` format

```
{
   "RequestId": "1F9041A2-ED5B-4A5A-9C44-598E28C0B434",
   "Data": {
      "ThingModelJson": "ThingModelJson": "{\"_ppk\":{\"version\":\"1594253010934\"},\"even
ts\":[],\"productKey\":\"a114xeJ****\",\"properties\":[{\"configCode\":\"8C03F0EEC63D4897BF
2637F89AE36B011594227294067\",\"custom\":true,\"customFlag\":true,\"dataSpecs\":{\"custom\"
:true,\"dataType\":\"INT\",\"max\":\"1\",\"min\":\"0\",\"step\":\"1\",\"unit\":\"ppb\"},\"d
ataType\":\"INT\",\"description\":\"1\",\"extendConfig\":\"{\\\"originalDataType\\\":{\\\"s
pecs\\\":{\\\"registerCount\\\":1,\\\"reverseRegister\\\":0,\\\"swap16\\\":0},\\\"type\\\":
\\\"bool\\\"},\\\"identifier\\\":\\\"WakeUpData\\\",\\\"registerAddress\\\":\\\"0x04\\\",\\
\"scaling\\\":1,\\\"writeFunctionCode\\\":0,\\\"operateType\\\":\\\"inputStatus\\\",\\\"pol
lingTime\\\":1000,\\\"trigger\\\":1}\",\"identifier\":\"WakeUpData\",\"name\":\"Wakeup_Data
\",\"productKey\":\"a114xeJGj2p\",\"required\":false,\"rwFlag\":\"READ_ONLY\",\"std\":false
}],\"services\":[]}"
   },
   "Code": "",
   "Success": true
}
```


4.10.4. CopyThingModel

Copies a Thing Specification Language (TSL) model from a source product to a destination product.

Limits

- If a destination product is published, you must call the CancelReleaseProduct operation to unpublish the product before you can copy a TSL model.
- The category keys of the source product and target product must be the same. You can call the QueryProduct operation and view the **CategoryKey** parameter of a product.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CopyThingModel	The operation that you want to perform. Set the value to CopyThingModel.

Parameter	Type	Required	Example	Description
SourceProductKey	String	Yes	a1BwAGV****	The ProductKey of the source product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
TargetProductKey	String	Yes	a1BwwG0****	The ProductKey of the destination product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.
SourceModelVersion	String	No	V1.0.0	The version of the TSL model to be copied. You can call the ListThingModelVersion operation to view the TSL model versions of a product.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CopyThingModel
&ProductKeySource=a1rYuVF****
&ProductKeyTarget=a1bPo9p****
&SourceModelVersion=v1.0.0
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CopyThingModelResponse>
  <RequestId>9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E</RequestId>
  <Success>true</Success>
</CopyThingModelResponse>
```

`JSON` format

```
{
  "RequestId": "9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E",
  "Success": true
}
```

4.10.5. PublishThingModel

Publishes the Thing specification Language (TSL) model of a specified product.

Limits

- If a product is published, you must call the CancelReleaseProduct operation to unpublish the product before you call this operation.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	PublishThingModel	The operation that you want to perform. Set the value to PublishThingModel.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. The version number must be 1 to 16 characters in length and can contain letters, digits, and periods (.).
Description	String	No	Second version	The description of the TSL model version.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=PublishThingModel
&ProductKeySource=a1rYuVF****
&ModelVersion=V1.0.0
&<Common request parameters>
```

Sample success responses

`XML` format

```
<PublishThingModelResponse>
  <RequestId>5252CC6E-9E4B-4DB1-B1D8-7EEA190A5B3E</RequestId>
  <Success>true</Success>
</PublishThingModelResponse>
```

`JSON` format

```
{
  "RequestId": "5252CC6E-9E4B-4DB1-B1D8-7EEA190A5B3E",
  "Success": true
}
```

4.10.6. DeleteThingModel

Deletes one or more features in the Thing Specification Language (TSL) model of a product.

Limits

- If a product is published, you must call the CancelReleaseProduct operation to unpublish the product before you call this operation.
- You must specify the **PropertyIdentifier.N**, **ServiceIdentifier.N**, or **EventIdentifier.N** parameter. You can specify a maximum of 10 identifiers.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteThingModel	The operation that you want to perform. Set the value to DeleteThingModel.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product.
PropertyIdentifier.N	RepeatList	No	Temperature	The list of identifiers for the properties that you want to delete. You can specify a maximum of 10 property identifiers.
ServiceIdentifier.N	RepeatList	No	Set	The list of identifiers for the services that you want to delete. You can specify a maximum of 10 service identifiers.
EventIdentifier.N	RepeatList	No	OfflineAlert	The list of identifiers for the events that you want to delete. You can specify a maximum of 10 event identifiers.

Parameter	Type	Required	Example	Description
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. • You can specify the **PropertyIdentifier.N**, **ServiceIdentifier.N**, or **EventIdentifier.N** parameter. In this case, if you specify this parameter, the system deletes the specified features of the specified custom module. If you do not specify this parameter, the system deletes the specified features of the default module. • You can also choose not to specify the **PropertyIdentifier.N**, **ServiceIdentifier.N**, or **EventIdentifier.N** pararmeter. In this case, if you specify this parameter, the system deletes all the features of the specified module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteThingModel
&ProductKeySource=a1rYuVF****
&PropertyIdentifier.1=speed
&ServiceIdentifier.1=SetSpeed
&EventIdentifier.1=SpeedAlarm
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteThingModelResponse>
  <RequestId>9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E</RequestId>
  <Success>true</Success>
</DeleteThingModelResponse>
```

`JSON` format

```
{
  "RequestId": "9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E",
  "Success": true
}
```

4.10.7. ListThingTemplates

Queries standard product categories that are predefined by IoT Platform.

Usage notes

IoT Platform provides product categories that have defined TSL models, such as street lamps, vehicle location cards, and water immersion detectors.

When you call the CreateProduct operation to create a product, you can set the CategoryKey parameter to specify a product category. The product that you create references the standardized TSL model of the specified category.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListThingTemplates	The operation that you want to perform. Set the value to ListThingTemplates.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of CategoryInfo		The list of standard categories returned if the call is successful.
CategoryKey	String	lighting	The identifier of the category.
CategoryName	String	Street Lamp	The name of the category.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListThingTemplates
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListThingTemplatesResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
  <Data>
        <CategoryName>Smart Rear-view Mirror</CategoryName>
        <CategoryKey>SmartRearviewMirror</CategoryKey>
  </Data>
  <Data>
        <CategoryName>Smart In-vehicle Infotainment</CategoryName>
        <CategoryKey>SmartTox</CategoryKey>
  </Data>
</ListThingTemplatesResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success":true,
  "Data": [
    {
      "CategoryName": "Smart Rearview Mirror",
      "CategoryKey": "SmartRearviewMirror"
    },
    {
      "CategoryName": "Smart In-vehicle Infotainment",
      "CategoryKey": "SmartTox"
    }
  ]
}
```

4.10.8. GetThingTemplate

Queries the Thing Specification Language (TSL) information of a specified category.

Limits

Each Alibaba Cloud account can run a maximum of 2 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetThingTemplate	The operation that you want to perform. Set the value to GetThingTemplate.
CategoryKey	String	Yes	Lighting	The identifier of the category that you want to query. You can call the ListThingTemplates operation and view all category keys in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
ThingModelJSON	String	{"properties":[],"services":[],"events":[]}	The TSL features returned if the call is successful. Format: `{ "properties": [], //The list of properties "services": [], //The list of services "events": [], //The list of events }` For more information, see TSL formats.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetThingTemplate
&CategoryKey=Lighting
&<Common request parameters>
```

Sample success responses

`XML` format


```
<GetThingTemplateResponse>
  <ThingModelJSON>{"services":[{"callType":"ASYNC","custom":false,"description":"","identif
ier":"TimeReset","inputParams":[{"custom":false,"dataSpecs":{"dataType":"TEXT","length":255
},"dataType":"TEXT","direction":"PARAM_INPUT","identifier":"TimeReset","name":"TimeReset","
paraOrder":0}],"outputParams":[],"required":false,"serviceName":"DeviceValidation"},{"callT
ype":"ASYNC","custom":false,"description":"","identifier":"SetTimerTask","inputParams":[],"
outputParams":[{"custom":false,"dataSpecs":{"dataType":"TEXT","length":255},"dataType":"TEX
T","direction":"PARAM_OUTPUT","identifier":"SetTimer","name":"SetTimer","paraOrder":0}],"re
quired":false,"serviceName":"SetTimeTask"}],"properties":[{"custom":false,"customFlag":fals
e,"dataSpecsList":[{"dataType":"BOOL","name":"On","value":1},{"dataType":"BOOL","name":"Off
","value":0}],"dataType":"BOOL","description":"","identifier":"LightStatus","name":"Status"
,"required":true,"rwFlag":"READ_WRITE","std":true},{"custom":false,"customFlag":false,"data
Specs":{"dataType":"INT","max":"100","min":"0","precise":0,"step":"1","unit":"%","unitName"
:"Percentage"},"dataType":"INT","description":"The light adjustment level is a percentage",
"identifier":"LightAdjustLevel","name":"LightAdjustLevel","required":true,"rwFlag":"READ_WR
ITE","std":true},{"custom":false,"customFlag":false,"dataSpecs":{"dataType":"FLOAT","max":"
4","min":"0","precise":7,"step":"0.1","unit":"V","unitName":"Volt"},"dataType":"FLOAT","des
cription":"Displays the device voltage. Electricity parameters are 4-byte floats","identifi
er":"LightVolt","name":"Voltage","required":true,"rwFlag":"READ_ONLY","std":true},{"custom"
:false,"customFlag":false,"dataSpecs":{"dataType":"FLOAT","max":"9","min":"0","precise":7,"
step":"0.1","unit":"A","unitName":"Ampere"},"dataType":"FLOAT","description":"Electricity p
arameters are 4-byte floats","identifier":"LightCurrent","name":"Current","required":true,"
rwFlag":"READ_ONLY","std":true},{"custom":false,"customFlag":false,"dataSpecs":{"dataType":
"FLOAT","max":"1000","min":"0","precise":7,"step":"0.1","unit":"W","unitName":"Watt"},"data
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`JSON` format

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```


4.10.9. ListThingModelVersion

Queries the Thing Specification Language (TSL) model versions of a specified product.

Usage notes

You can manage TSL models by version. After you import a TSL model by calling the ImportThingModelTsl operation, copy a TSL model by calling the CopyThingModel operation, or edit a TSL model, you must publish the TSL model by calling the PublishThingModel operation. Then, the TSL model can be used. Each time a TSL model of a product is published, a new version is generated.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListThingModelVersion	The operation that you want to perform. Set the value to ListThingModelVersion.

Parameter	Type	Required	Example	Description
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.
ModelVersions	Array of ModelVersion		The list of TSL model versions. The versions are displayed in descending order based on the release time. The first version is the current version.
Description	String	Add a light property	The description of the TSL model version.

Parameter	Type	Example	Description
GmtCreate	Long	1579235657535	The timestamp when the TSL model version was published. The time is displayed in UTC. Unit: milliseconds.
ModelVersion	String	V1.0.0	The version number of the TSL model.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListThingModelVersion
&ProductKey=a1rYuVF****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListThingModelVersionResponse>
  <Data>
        <ModelVersions>
              <ModelVersion>V3.0.0</ModelVersion>
              <GmtCreate>1579235682421</GmtCreate>
              <Description>new properties</Description>
        </ModelVersions>
        <ModelVersions>
              <ModelVersion>V2.0.0</ModelVersion>
              <GmtCreate>1579235657535</GmtCreate>
              <Description>new properties</Description>
        </ModelVersions>
        <ModelVersions>
              <ModelVersion>V1.0.0</ModelVersion>
              <GmtCreate>1579235637994</GmtCreate>
              <Description>Lighting</Description>
        </ModelVersions>
  </Data>
  <RequestId>9BA34AE5-2D94-4BDE-BD78-E7D3FC7985BC</RequestId>
  <Success>true</Success>
</ListThingModelVersionResponse>
```

`JSON` format

```
{
  "Data": {
    "ModelVersions": [
      {
        "ModelVersion": "V3.0.0",
        "GmtCreate": 1579235682421,
        "Description": "new properties"
      },
      {
        "ModelVersion": "V2.0.0",
        "GmtCreate": 1579235657535,
        "Description": "new properties"
      },
      {
        "ModelVersion": "V1.0.0",
        "GmtCreate": 1579235637994,
        "Description": "Lighting"
      }
    ]
  },
  "RequestId": "9BA34AE5-2D94-4BDE-BD78-E7D3FC7985BC",
  "Success": true
}
```

4.10.10. GetThingModelTsl

Queries the Thing Specification Language (TSL) model of a product.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetThingModelTsl	The operation that you want to perform. Set the value to GetThingModelTsl.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.

Parameter	Type	Required	Example	Description
ModelVersion	String	No	v1.0.0	The version number of the TSL model to be queried. If you do not specify this parameter, IoT Platform returns the draft TSL model that is unpublished.
Simple	Boolean	No	true	Specifies whether to retrieve a simplified TSL model. • **true**: retrieves a simplified TSL model. A simplified TSL model includes only the **identifier** and **dataType** attributes of properties, services, events, and related input or output parameters. Simplified TSL models can be used by device developers for reference. • **false**: retrieves the complete TSL model. A complete TSL model includes all the parameters and values of properties, services, and events. Complete TSL models can be used by cloud application developers for reference. Default value: false.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the default module is queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The TSL data returned if the call is successful.
TslStr	String	{\"schema\":\"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com/schema.json\",\"profile\":{\"productKey\":\"a14TeWI****\"},\"properties\":[{\"identifier\":\"Humidity\"}]}	The string of the TSL model.
TslUri	String	https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/model.json?Expires=1581947119&OSSAccessKeyId=LTAIuFOwFSR9****&Signature=5i389hacjdj3t%2FnrHmQpEUfnxw****	The URI that is used to store the TSL data in Object Storage Service (OSS). The URI is valid for 60 minutes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetThingModelTsl
&ProductKey=a1bPo9p****
&ModelVersion=v1.0.0
&Simple=false
&<Common request parameters>
```

Sample success responses

`XML` format


```
<GetThingModelTslResponse>
  <Data>
        <TslUri>https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/model.j
son?Expires=1581947119&amp;OSSAccessKeyId=LTAIuFOwFSR9****&amp;Signature=5i389hacjdj3t%2Fnr
HmQpEUfnx****</TslUri>
        <TslStr>{"schema":"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com/schema.json","p
rofile":{"productKey":"a14***"},"properties":[{"identifier":"Humidity","name":"Humidity","a
ccessMode":"rw","required":false,"dataType":{"type":"int","specs":{"min":"55","max":"60","u
nit":"%","step":"1"}}},{"identifier":"Temperature","name":"Temperature","accessMode":"rw","
required":false,"dataType":{"type":"float","specs":{"min":"26","max":"28","unit":"°C","step
":"0.01"}}}],"events":[{"identifier":"post","name":"post","type":"info","required":true,"de
sc":"Submit properties","method":"thing.event.property.post","outputData":[{"identifier":"H
umidity","name":"Humidity","dataType":{"type":"int","specs":{"min":"55","max":"60","unit":"
%","step":"1"}}},{"identifier":"Temperature","name":"Temperature","dataType":{"type":"float
","specs":{"min":"26","max":"28","unit":"°C","step":"0.01"}}}]}],"services":[{"identifier":
"set","name":"set","required":true,"callType":"async","desc":"Set properties","method":"thi
ng.service.property.set","inputData":[{"identifier":"Humidity","name":"Humidity","dataType"
:{"type":"int","specs":{"min":"55","max":"60","unit":"%","step":"1"}}},{"identifier":"Tempe
rature","name":"Temperature","dataType":{"type":"float","specs":{"min":"26","max":"28","uni
t":"°C","step":"0.01"}}}],"outputData":[]},{"identifier":"get","name":"get","required":true
,"callType":"async","desc":"Obtain properties","method":"thing.service.property.get","input
Data":["Humidity","Temperature"],"outputData":[{"identifier":"Humidity","name":"Humidity","
dataType":{"type":"int","specs":{"min":"55","max":"60","unit":"%","step":"1"}}},{"identifie
r":"Temperature","name":"Temperature","dataType":{"type":"float","specs":{"min":"26","max":
"28","unit":"°C","step":"0.01"}}}]}]}</TslStr>
  </Data>
  <RequestId>C4371E68-F6DB-4D7B-8AD0-D38336E1DF94</RequestId>
  <Success>true</Success>
</GetThingModelTslResponse>
```


`JSON` format

```
{
    "Data": {
        "TslUri": "https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/mode
l.json?Expires=1581947119&OSSAccessKeyId=LTAIuFOwFSR9****&Signature=5i389hacjdj3t%2FnrHmQpE
Ufnx****",
        "TslStr": "TslStr": "{\"schema\":\"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com
/schema.json \",\" profile\":[\"productKey\":\"a14*** \",\" properties\":[{\"identifier\":\
"Humidity\",\"name\":\"Humidity\",\" accessMode\":\"rw\",\"required\":false,\"dataType\":{\
"type\":\"int\",\"specs\":{\"min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":\" 1\"****
** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"accessMode\":\"rw\",\"required
\":false,\"dataType\":[\"type\": \"float\",\"specs\":{\"min\":\"26\",\"max\":\"28\",\"unit\
":\"°C\",\"step\":\"0.01\"}}}],\"events\": [{\"identifier\":\"post\",\"name\":\"post\",\"ty
pe\":\"info\",\"required\":true,\"desc\":\"Submit properties reporting \",\"method\":\"thin
g.event.property.post\", \"outputData\":[{\"identifier\":\"Humidity\",\"name\":\"Humidity\"
,\"dataType\" :%\ "type\":\"int\",\"specs\" :%\ "min":\"55\", \"max\":\"60\",\"unit\":\"%\"
,\"step\":\"1\" ****** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"dataType\"
: {\"type\":\"float\",\"specs\":{\"min\":\"26\",\"max\":\"28\",\"unit\":\"°C\",\"step\":\"0
.01\"}}}] }],\"services\":[{\"identifier\":\"set\",\"name\":\"set\",\"required\":true,\"cal
lType\":\"async\",\"desc\":\"Set properties\",\" method\":\"thing.service.property.set\",\"
inputData\":[{\"identifier\":\"Humidity\",\"name\":\" Humidity\",\"dataType\":\"type\":\"in
t\",\" specs\":\" min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":\"1\"}}},{\"identifie
r\":\"Temperature\",\"name\":\" Temperature \",\"dataType\":[\"type\":\"float\",\" specs\":
[\"min\":\"26\",\" max\":\"28\",\"unit\":\"°C\",\"step\": \"0.01\"}}}],\"outputData\":[]},{
\"identifier\":\"get\",\"name\":\"get\",\"required\":true,\"callType\":\"async\",\"desc\":\
"Obtain properties\",\"method\":\"thing.service.property.get\",\"inputData\":[\"Humidity\",
\"Temperature\"],\"outputData\":[{\"identifier\":\"Humidity\",\"name\":\"Humidity \", \"dat
aType\":{\"type\":\"int\",\"specs\":{\"min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":
\" 1\"****** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"dataType\":\\"type\"
:\"float\",\"specs\":[\"min ":\"26\", \"max\":\"28\",\"unit\":\"°C\",\"step\":\"0.01\"}}}]}
]}"
    },
    "RequestId": "C4371E68-F6DB-4D7B-8AD0-D38336E1DF94",
    "Success": true
}
```


4.10.11. ImportThingModelTsl

Imports a Thing Specification Language (TSL) model to a specified product.

Limits

- If a product is published, you must call the CancelReleaseProduct operation to unpublish the product before you call this operation.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ImportThingModelTsl	The operation that you want to perform. Set the value to ImportThingModelTsl.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.

Parameter	Type	Required	Example	Description
TslStr	String	No	null	The TSL model to be edited. The value is a JSON string. The TSL model defines the properties, services, and events of the product. The value of the **TslStr** parameter must conform to the standard TSL data format. For more information, see TSL data format. **Note** To import a TSL model, you must specify the **TslStr** parameter.
TslUrl	String	No	https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/model.json?Expires=1581947119...	The URI that is used to store the TSL data in Object Storage Service (OSS). **Note** This parameter does not take effect. To import a TSL model, you must specify the **TslStr** parameter.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. The identifier must be 1 to 30 characters in length, and can contain letters, digits, and underscores (_). This parameter must be used in combination with the **FunctionBlockName** parameter. If you do not specify this parameter, the system imports the default module.
FunctionBlockName	String	No	Battery_Module	The name of the custom module. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_). This parameter must be used in combination with the **FunctionBlockId** parameter. If you do not specify this parameter, the system imports the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ImportThingModelTsl
&ProductKey=a1lWSUw****
&TslStr={\"profile\":{\"productKey\": \"a1bPo9p****\"},\"services\":[],\"properties\":[],\"
events\":[]}
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ImportThingModelTslResponse>
  <RequestId>9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E</RequestId>
  <Success>true</Success>
</ImportThingModelTslResponse>
```

`JSON` format

```
{
  "RequestId": "9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E",
  "Success": true
}
```

4.10.12. QueryThingModelPublished

Queries the published TSL model of a specified product.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryThingModelPublished	The operation that you want to perform. Set the value to QueryThingModelPublished.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. You can call the ListThingModelVersion operation to view the version numbers of the TSL model for a product. If you do not specify this parameter, the last published TSL model version is returned.

Parameter	Type	Required	Example	Description
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the default module is queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The returned data.

Parameter	Type	Example	Description
ThingModelJson	String	"ThingModelJson": "{\"_ppk\":{\"version\":\"1594253010934\"},\"events\":[],\"productKey\":\"a114xeJ****\",\"properties\":[{\"configCode\":\"8C03F0EEC63D4897BF2637F89AE36B011594227294067\",\"custom\":true,\"customFlag\":true,\"dataSpecs\":{\"custom\":true,\"dataType\":\"INT\",\"max\":\"1\",\"min\":\"0\",\"step\":\"1\",\"unit\":\"ppb\"},\"dataType\":\"INT\",\"description\":\"1\",\"extendConfig\":\"{\\\"originalDataType\\\":{\\\"specs\\\":{\\\"registerCount\\\":1,\\\"reverseRegister\\\":0,\\\"swap16\\\":0},\\\"type\\\":\\\"bool\\\"},\\\"identifier\\\":\\\"WakeUpData\\\",\\\"registerAddress\\\":\\\"0x04\\\",\\\"scaling\\\":1,\\\"writeFunctionCode\\\":0,\\\"operateType\\\":\\\"inputStatus\\\",\\\"pollingTime\\\":1000,\\\"trigger\\\":1}\",\"identifier\":\"WakeUpData\",\"name\":\"Wakeup_Data\",\"productKey\":\"a114xeJGj2p\",\"required\":false,\"rwFlag\":\"READ_ONLY\",\"std\":false}],\"services\":[]}"	Define features for the TSL model. For more information about the data format of the ThingModelJson parameter, see Data structure of ThingModelJson.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
ProductKey	String	a1BwAGV****	The ProductKey of the product.
RequestId	String	E4C0FF92-2A86-41DB-92D3-73B60310D25E	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryThingModelPublished
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryThingModelPublishedResponse>
    <RequestId>1F9041A2-ED5B-4A5A-9C44-598E28C0B434</RequestId>
    <Data>
        <ThingModelJson>{"_ppk":{"version":"1594253010934"},"events":[],"productKey":"a1BwA
GV****","properties":[{"configCode":"8C03F0EEC63D4897BF2637F89AE36B011594227294067","custom
":true,"customFlag":true,"dataSpecs":{"custom":true,"dataType":"INT","max":"1","min":"0","s
tep":"1","unit":"ppb"},"dataType":"INT","description":"1","extendConfig":"{\"originalDataTy
pe\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type\":\"bool\"}
,\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"writeFunctionCo
de\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}","identifier":"W
akeUpData","name":"WakeUp_Data","productKey":"a114xeJ****","required":false,"rwFlag":"READ_
ONLY","std":false}],"services":[]}</ThingModelJson>
    </Data>
    <Success>true</Success>
</QueryThingModelPublishedResponse>
```

`JSON` format

```
{
   "RequestId": "1F9041A2-ED5B-4A5A-9C44-598E28C0B434",
   "Data": {
      "ThingModelJson": "ThingModelJson": "{\"_ppk\":{\"version\":\"1594253010934\"},\"even
ts\":[],\"productKey\":\"a114xeJ****\",\"properties\":[{\"configCode\":\"8C03F0EEC63D4897BF
2637F89AE36B011594227294067\",\"custom\":true,\"customFlag\":true,\"dataSpecs\":{\"custom\"
:true,\"dataType\":\"INT\",\"max\":\"1\",\"min\":\"0\",\"step\":\"1\",\"unit\":\"ppb\"},\"d
ataType\":\"INT\",\"description\":\"1\",\"extendConfig\":\"{\\\"originalDataType\\\":{\\\"s
pecs\\\":{\\\"registerCount\\\":1,\\\"reverseRegister\\\":0,\\\"swap16\\\":0},\\\"type\\\":
\\\"bool\\\"},\\\"identifier\\\":\\\"WakeUpData\\\",\\\"registerAddress\\\":\\\"0x04\\\",\\
\"scaling\\\":1,\\\"writeFunctionCode\\\":0,\\\"operateType\\\":\\\"inputStatus\\\",\\\"pol
lingTime\\\":1000,\\\"trigger\\\":1}\",\"identifier\":\"WakeUpData\",\"name\":\"Wakeup_Data
\",\"productKey\":\"a114xeJGj2p\",\"required\":false,\"rwFlag\":\"READ_ONLY\",\"std\":false
}],\"services\":[]}"
   },
   "Success": true
}
```


4.10.13. GetThingModelTslPublished

Queries the published TSL model of a product.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetThingModelTslPublished	The operation that you want to perform. Set the value to GetThingModelTslPublished.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfm4l5tcwd****	The ID of the resource group. **Note** You cannot specify this parameter.

Parameter	Type	Required	Example	Description
Simple	Boolean	No	true	Specifies whether to retrieve a simplified TSL model. • true: retrieves a simplified TSL model. A simplified TSL model includes only the **identifier** and **dataType** attributes of properties, services, events, and related input or output parameters. Simplified TSL models can be used by device developers for reference. • false: retrieves the complete TSL model. A complete TSL model includes all the parameters and values of properties, services, and events. Complete TSL models can be used by cloud application developers for reference. Default value: false.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. You can call the ListThingModelVersion operation to view the version numbers of the TSL model for a product. If you do not specify this parameter, the last published TSL model version is returned.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the default module is queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The returned data.

Parameter	Type	Example	Description
TslStr	String	{\"schema\":\"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com/schema.json\",\"profile\":{\"productKey\":\"a14TeWI****\"},\"properties\":[{\"identifier\":\"Humidity\"}]}	The string of the TSL model.
TslUri	String	https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/model.json?Expires=1581947119&OSSAccessKeyId=LTAIuFOwFSR9****&Signature=5i389hacjdj3t%2FnrHmQpEUfnxw****	The URI that is used to store the TSL data in Object Storage Service (OSS). The URI is valid for 60 minutes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetThingModelTslPublished
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetThingModelTslPublishedResponse>
    <Data>
            <TslUri>https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/mod
el.json?Expires=1581947119&amp;OSSAccessKeyId=LTAIuFOwFSR9****&amp;Signature=5i389hacjdj3t%
2FnrHmQpEUfnx****</TslUri>
            <TslStr>{"schema":"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com/schema.json
","profile":{"productKey":"a14TeWI****"},"properties":[{"identifier":"Humidity","name":"Hum
idity","accessMode":"rw","required":false,"dataType":{"type":"int","specs":{"min":"55","max
":"60","unit":"%","step":"1"}}},{"identifier":"Temperature","name":"Temperature","accessMod
e":"rw","required":false,"dataType":{"type":"float","specs":{"min":"26","max":"28","unit":"
°C","step":"0.01"}}}],"events":[{"identifier":"post","name":"post","type":"info","required"
:true,"desc":"Submit properties","method":"thing.event.property.post","outputData":[{"ident
ifier":"Humidity","name":"Humidity","dataType":{"type":"int","specs":{"min":"55","max":"60"
,"unit":"%","step":"1"}}},{"identifier":"Temperature","name":"Temperature","dataType":{"typ
e":"float","specs":{"min":"26","max":"28","unit":"°C","step":"0.01"}}}]}],"services":[{"ide
ntifier":"set","name":"set","required":true,"callType":"async","desc":"Set properties","met
hod":"thing.service.property.set","inputData":[{"identifier":"Humidity","name":"Humidity","
dataType":{"type":"int","specs":{"min":"55","max":"60","unit":"%","step":"1"}}},{"identifie
r":"Temperature","name":"Temperature","dataType":{"type":"float","specs":{"min":"26","max":
"28","unit":"°C","step":"0.01"}}}],"outputData":[]},{"identifier":"get","name":"get","requi
red":true,"callType":"async","desc":"Obtain properties","method":"thing.service.property.ge
t","inputData":["Humidity","Temperature"],"outputData":[{"identifier":"Humidity","name":"Hu
midity","dataType":{"type":"int","specs":{"min":"55","max":"60","unit":"%","step":"1"}}},{"
identifier":"Temperature","name":"Temperature","dataType":{"type":"float","specs":{"min":"2
6","max":"28","unit":"°C","step":"0.01"}}}]}]}</TslStr>
    </Data>
    <RequestId>C4371E68-F6DB-4D7B-8AD0-D38336E1DF94</RequestId>
    <Success>true</Success>
</GetThingModelTslPublishedResponse>
```

`JSON` format

```
{
    "Data": {
        "TslUri": "https://iotx-pop-dsl.oss-cn-shanghai.aliyuncs.com/thing/a14TeWI****/mode
l.json?Expires=1581947119&OSSAccessKeyId=LTAIuFOwFSR9****&Signature=5i389hacjdj3t%2FnrHmQpE
Ufnx****",
        "TslStr": "TslStr": "{\"schema\":\"https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com
/schema.json \",\" profile\":[\"productKey\":\"a14*** \",\" properties\":[{\"identifier\":\
"Humidity\",\"name\":\"Humidity\",\" accessMode\":\"rw\",\"required\":false,\"dataType\":{\
"type\":\"int\",\"specs\":{\"min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":\" 1\"****
** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"accessMode\":\"rw\",\"required
\":false,\"dataType\":[\"type\": \"float\",\"specs\":{\"min\":\"26\",\"max\":\"28\",\"unit\
":\"°C\",\"step\":\"0.01\"}}}],\"events\": [{\"identifier\":\"post\",\"name\":\"post\",\"ty
pe\":\"info\",\"required\":true,\"desc\":\"Submit properties reporting \",\"method\":\"thin
g.event.property.post\", \"outputData\":[{\"identifier\":\"Humidity\",\"name\":\"Humidity\"
,\"dataType\" :%\ "type\":\"int\",\"specs\" :%\ "min":\"55\", \"max\":\"60\",\"unit\":\"%\"
,\"step\":\"1\" ****** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"dataType\"
: {\"type\":\"float\",\"specs\":{\"min\":\"26\",\"max\":\"28\",\"unit\":\"°C\",\"step\":\"0
.01\"}}}] }],\"services\":[{\"identifier\":\"set\",\"name\":\"set\",\"required\":true,\"cal
lType\":\"async\",\"desc\":\"Set properties\",\" method\":\"thing.service.property.set\",\"
inputData\":[{\"identifier\":\"Humidity\",\"name\":\" Humidity\",\"dataType\":\"type\":\"in
t\",\" specs\":\" min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":\"1\"}}},{\"identifie
r\":\"Temperature\",\"name\":\" Temperature \",\"dataType\":[\"type\":\"float\",\" specs\":
[\"min\":\"26\",\" max\":\"28\",\"unit\":\"°C\",\"step\": \"0.01\"}}}],\"outputData\":[]},{
\"identifier\":\"get\",\"name\":\"get\",\"required\":true,\"callType\":\"async\",\"desc\":\
"Obtain properties\",\"method\":\"thing.service.property.get\",\"inputData\":[\"Humidity\",
\"Temperature\"],\"outputData\":[{\"identifier\":\"Humidity\",\"name\":\"Humidity \", \"dat
aType\":{\"type\":\"int\",\"specs\":{\"min\":\"55\",\"max\":\"60\",\"unit\":\"%\",\"step\":
\" 1\"****** \"identifier\":\"Temperature\",\"name\":\"Temperature\",\"dataType\":\\"type\"
:\"float\",\"specs\":[\"min ":\"26\", \"max\":\"28\",\"unit\":\"°C\",\"step\":\"0.01\"}}}]}
]}"
    },
    "RequestId": "C4371E68-F6DB-4D7B-8AD0-D38336E1DF94",
    "Success": true
}
```


4.10.14. QueryThingModelExtendConfig

Queries the extended Thing Specification Language (TSL) information of a specified product.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryThingModelExtendConfig	The operation that you want to perform. Set the value to QueryThingModelExtendConfig.
ProductKey	String	Yes	a1T27vz****	The ProductKey of the product.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. You can call the ListThingModelVersion operation to view the version numbers of the TSL model for a product. If you do not specify this parameter, the last published TSL version is returned.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the system exports the data of the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Data	Struct		The data returned if the call is successful.
Configuration	String	{\"profile\":{\"productKey\":\"a114x******\"},\"properties\":[{\"originalDataType\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type\":\"bool\"},\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"writeFunctionCode\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}]}	The information of the extended TSL parameters. For more information about the definition of extended parameters, see CreateThingModel.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryThingModelExtendConfig
&ProductKey=a1T27vz****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryThingModelExtendConfigResponse>
    <Data>
        <Configuration>{"profile":{"productKey":"a114x******"},"properties":[{"originalData
Type":{"specs":{"registerCount":1,"reverseRegister":0,"swap16":0},"type":"bool"},"identifie
r":"WakeUpData","registerAddress":"0x04","scaling":1,"writeFunctionCode":0,"operateType":"i
nputStatus","pollingTime":1000,"trigger":1}]}</Configuration>
    </Data>
    <RequestId>6DDF9D04-24C3-40D8-B490-2A528E59EA67</RequestId>
    <Success>true</Success>
</QueryThingModelExtendConfigResponse>
```

`JSON` format

```
{
   "Data": {
      "Configuration": "{\"profile\":{\"productKey\":\"a114x******\"},\"properties\":[{\"or
iginalDataType\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type
\":\"bool\"},\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"wri
teFunctionCode\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}]}"
   },
   "RequestId": "6DDF9D04-24C3-40D8-B490-2A528E59EA67",
   "Success": true
}
```

4.10.15. QueryThingModelExtendConfigPublished

Queries the extended parameters of a published Thing Specification Language (TSL) model.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryThingModelExtendConfigPublished	The operation that you want to perform. Set the value to QueryThingModelExtendConfigPublished.

Parameter	Type	Required	Example	Description
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product. You can view the ProductKey on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ModelVersion	String	No	v1.0.0	The version number of the TSL model. If you do not specify this parameter, the last published TSL model is returned.
FunctionBlockId	String	No	BatteryModule	The identifier of the custom TSL module. Each identifier is unique in a product. If you do not specify this parameter, the default module is queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Struct		The data returned if the call is successful.
Configuration	String	{\"profile\":{\"productKey\":\"a114x******\"},\"properties\":[{\"originalDataType\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type\":\"bool\"},\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"writeFunctionCode\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}]}	The information about the extended TSL parameters. For more information about the definition of extended parameters, see CreateThingModel. For more information, see Data structure of ThingModelJson.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=QueryThingModelExtendConfigPublished
&ProductKey=a1BwAGV****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryThingModelExtendConfigPublishedResponse>
  <Data>
        <Configuration>{"profile":{"productKey":"a114x******"},"properties":[{"originalData
Type":{"specs":{"registerCount":1,"reverseRegister":0,"swap16":0},"type":"bool"},"identifie
r":"WakeUpData","registerAddress":"0x04","scaling":1,"writeFunctionCode":0,"operateType":"i
nputStatus","pollingTime":1000,"trigger":1}]}</Configuration>
  </Data>
  <RequestId>6DDF9D04-24C3-40D8-B490-2A528E59EA67</RequestId>
  <Success>true</Success>
</QueryThingModelExtendConfigPublishedResponse>
```

`JSON` format

```
{
   "Data": {
      "Configuration": "{\"profile\":{\"productKey\":\"a114x******\"},\"properties\":[{\"or
iginalDataType\":{\"specs\":{\"registerCount\":1,\"reverseRegister\":0,\"swap16\":0},\"type
\":\"bool\"},\"identifier\":\"WakeUpData\",\"registerAddress\":\"0x04\",\"scaling\":1,\"wri
teFunctionCode\":0,\"operateType\":\"inputStatus\",\"pollingTime\":1000,\"trigger\":1}]}"
   },
   "RequestId": "6DDF9D04-24C3-40D8-B490-2A528E59EA67",
   "Success": true
}
```

4.10.16. CreateThingScript

Submits a data parsing script for a specified product.

Usage notes

A data parsing script is used to convert data submitted by devices into the JSON format. The data submitted by devices is in a custom format. You can write a script in JavaScript, Python 2.7, and PHP 7.2. For more information, see Submit scripts for data parsing.

> **Notice** If the data format is **Alink JSON**, the CreateThingScript operation is not supported. Alink JSON is a standard data format that is defined by IoT Connectivity Alliance (ICA).

QPS limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** The Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateThingScript	The operation that you want to perform. Set the value to CreateThingScript.
ProductKey	String	Yes	a1Q5XoY****	The **ProductKey** of the product. You can view the **ProductKey** on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
ScriptContent	String	Yes	"function protocolToRawData(jsonObj) {return rawdata; }function rawDataToProtocol(rawData) {return jsonObj; }"	The content of the script. You must specify this parameter. For more information about script examples, see What is data parsing.
ScriptType	String	Yes	JavaScript	The language of the script. Valid values: • JavaScript • Python_27: Python 2.7 • PHP_72: PHP 7.2

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify this parameter. Otherwise, the call fails. • If the **Overview** page does not appear in the console or no ID is generated for your instance, you do not need to specify this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the request fails.
RequestId	String	BB71E443-4447-4024-A000-EDE09922891E	The ID of the request. The ID uniquely identifies this request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the request was successful. • **true**: The request was successful. • **false**: The request failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=CreateThingScript
&ProductKey=a1Q5XoY****
&ScriptContent="function protocolToRawData(jsonObj) {return rawdata; }function rawDataToPro
tocol(rawData) {return jsonObj; }"
&ScriptType=JavaScript
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateThingScriptResponse>
    <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
    <Success>true</Success>
</CreateThingScriptResponse>
```

`JSON` format

```
{
      "RequestId":"BB71E443-4447-4024-A000-EDE09922891E",
      "Success":true
  }
```

4.10.17. UpdateThingScript

Modifies a data parsing script for a specified product.

Usage notes

- A data parsing script is used to convert the custom-formatted data to JSON data after the data is submitted by a device. You can write a script in JavaScript, Python 2.7, and PHP 7.2. For more information, see Submit scripts for data parsing.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateThingScript	The operation that you want to perform. Set the value to UpdateThingScript.
ProductKey	String	Yes	a1Q5XoY****	The **ProductKey** of the product. You can view the **ProductKey** on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
ScriptContent	String	Yes	"function protocolToRawData(jsonObj) {return rawdata; }function rawDataToProtocol(rawData) {return jsonObj; }"	The content of the script. You must specify this parameter. For more information about script examples, see What is data parsing.
ScriptType	String	Yes	JavaScript	The type of the script. Valid values: • JavaScript • Python_27: Python 2.7 • PHP_72: PHP 7.2

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	BB71E443-4447-4024-A000-EDE09922891E	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=UpdateThingScript
&ProductKey=a1Q5XoY****
&ScriptContent="function protocolToRawData(jsonObj) {return rawdata; }function rawDataToPro
tocol(rawData) {return jsonObj; }"
&ScriptType=JavaScript
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateThingScriptResponse>
    <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
    <Success>true</Success>
</UpdateThingScriptResponse>
```

`JSON` format

```
{
      "RequestId":"BB71E443-4447-4024-A000-EDE09922891E",
      "Success":true
  }
```

4.10.18. GetThingScript

Queries a data parsing script for a specified product.

Usage notes

- A data parsing script is used to convert the custom-formatted data to JSON data after the data is submitted by a device. You can write a script in JavaScript, Python 2.7, and PHP 7.2. For more information, see Submit scripts for data parsing.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetThingScript	The operation that you want to perform. Set the value to GetThingScript.
ProductKey	String	Yes	a1Q5XoY****	The **ProductKey** of the product. You can view the **ProductKey** on the Product Details page of the IoT Platform console. You can also obtain the ProductKey by calling the QueryProductList operation.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.

Parameter	Type	Example	Description
ScriptType	String	JavaScript	The type of the script. Valid values: • JavaScript • Python_27: Python 2.7 • PHP_72: PHP 7.2
ScriptUrl	String	http://***	The URL of the script payload.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	BB71E443-4447-4024-A000-EDE09922891E	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=GetThingScript
&ProductKey=a1Q5XoY****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetThingScriptResponse>
  <Data>
        <ScriptType>JavaScript</ScriptType>
        <ScriptUrl>http://***</ScriptUrl>
  </Data>
  <RequestId>6DDF9D04-24C3-40D8-B490-2A528E59EA67</RequestId>
  <Success>true</Success>
</GetThingScriptResponse>
```

`JSON` format

```
{
   "Data": {
        "ScriptType": "JavaScript",
        "ScriptUrl":"http://***"
    },
   "RequestId": "6DDF9D04-24C3-40D8-B490-2A528E59EA67",
   "Success": true
}
```

4.10.19. Data structure of ThingModelJson

When you call API operations that are related to Thing Specification Language (TSL) models, the request parameters or response parameters may contain the ThingModelJson parameter. The value of this parameter indicates the TSL data structure that is stored in IoT Platform. This TSL data structure is different from the original TSL data structure. All fields in the ThingModelJson parameter are sorted by key in alphabetical order.

For information about the limits of TSL features, see Limits.

Data structure

The data structure of a default TSL module is different from that of a custom TSL module.

- Default TSL module

```
{
  "_ppk":{
       "description":"test",
       "version":"159244410****"
  }
  "events":[],
  "productKey":"a112345****",
  "properties":[],
  "services":[],
  "functionBlocks":[{
      "productKey":"a112345****",
      "functionBlockId":"location0",
      "functionBlockName":"Location module 0"
    }]
}
```

Parameter	Type	Description
productKey	String	The ProductKey of the product to which the TSL model belongs.

Parameter	Type	Description
_ppk	String	The information about the TSL model version. This parameter consists of the following fields: ○ version: the version number of the current TSL model. This field is available only for published TSL models. ○ description: the description of the current TSL model. This field is available only for published TSL models.
properties	List	The properties of the product to which the TSL model belongs. For more information about the data structure of the properties parameter, see Data structure of the properties parameter. In each property, you can use the extendConfig parameter to define the extended information about the TSL model. For more information, see Data structure of the extendConfig parameter. If no extended information needs to be defined, you do not need to specify the extendConfig parameter.
services	List	The services of the product to which the TSL model belongs. For more information about the data structure of the services parameter, see Data structure of the services parameter. In each service, you can use the extendConfig parameter to define the extended information about the TSL model. For more information, see Data structure of the extendConfig parameter. If no extended information needs to be defined, you do not need to specify the extendConfig parameter.
events	List	The events of the product to which the TSL model belongs. For more information about the data structure of the events parameter, see Data structure of the events parameter. In each event, you can use the extendConfig parameter to define the extended information about the TSL model. For more information, see Data structure of the extendConfig parameter. If no extended information needs to be defined, you do not need to specify the extendConfig parameter.
functionBlocks	List	The list of custom modules. This parameter is available only when the product contains at least one custom TSL module. This parameter consists of the following fields: ○ productKey: the ProductKey of the product to which the TSL model belongs. ○ functionBlockId: the identifier of the custom TSL module. Each identifier is unique in a product. ○ functionBlockName: the name of the custom TSL module.

- Custom TSL module

```
{
  "productKey":"a112345****",
  "identifier":"location0",
  "name":"Location module 0",
  "properties":[],
  "services":[],
  "events":[],
  "description":""
}
```

The following table describes the parameters of a custom TSL module, excluding those inherited from the default TSL module.

Parameter	Type	Description
identifier	String	The identifier of the custom TSL module. Each identifier is unique in a product. The identifier must be 1 to 30 characters in length, and can contain letters, digits, and underscores (_).
name	String	The name of the custom TSL module. The name must be 4 to 30 characters in length, and can contain letters, digits, and underscores (_).
description	String	The description of the custom TSL module. The description can be up to 100 characters in length.

Data structure of the properties parameter

The following table describes the parameters that are used to define a property.

Notice The std and customFlag parameters are not required. When you call API operations, you do not need to specify these parameters. Therefore, no more description is provided for these parameters.

Parameter	Type	Required	Description
productKey	String	Yes	The ProductKey of the product to which the TSL model belongs.

Parameter	Type	Required	Description
createTs	Long	No	The time when the feature was defined. By default, the value is a 13-digit timestamp. You can specify this parameter. If you do not specify this parameter, IoT Platform generates a timestamp. Features are sorted by timestamp in chronological order. **Note** For an existing TSL model, its creation time is the time when the TSL model was first modified after it was published.
identifier	String	Yes	The identifier of the property. The identifier must be 1 to 50 characters in length, and can contain letters, digits, and underscores (_). **Note** The identifier cannot be any of the following words: set, get, post, property, event, time, and value.
dataType	String	Yes	The data type of the property value. Valid values: *ARRAY*, *STRUCT*, *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, *ENUM*, and *BOOL*. You must specify different parameters when different data types are specified. For more information, see the data structure of the corresponding type in this topic.
name	String	Yes	The name of the property. The name must be 1 to 30 characters in length and can contain letters, digits, hyphens (-), underscores (_), and periods (.). It must start with a letter or digit.
rwFlag	String	Yes	The type of the operation that IoT Platform can perform on the property. Valid values: • *READ_WRITE*: read and write. • *READ_ONLY*: read-only.

Parameter	Type	Required	Description
dataSpecs	Object	No	If you set dataType to *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, or *ARRAY*, the data specifications are included in the dataSpecs parameter. **Note** • The dataSpecsList parameter applies to all data, excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
dataSpecsList	List	No	If you set the dataType parameter to *ENUM*, *BOOL*, or *STRUCT*, the data specifications are included in the dataSpecsList parameter. **Note** • The dataSpecs parameter applies to all data, excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
required	Boolean	Yes	Specifies whether the property is required for the standard category. Valid values: • *true*: yes. • *false*: no.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

- Sample value of the dataSpecs parameter if the dataType parameter is set to *INT*:

```
{
  "dataSpecs": {
    "custom": true,
    "dataType": "INT",
    "defaultValue": "30",
    "max": "1440",
    "min": "0",
    "step": "10",
    "unit": "min"
  }
}
```

- Sample value of the dataSpecs parameter if the dataType parameter is set to *TEXT*:

```
{
  "dataSpecs": {
    "custom": true,
    "dataType": "TEXT",
    "id": 2412127,
    "length": 2048
  }
}
```

- Sample value of the dataSpecs parameter if the dataType parameter is set to *ARRAY*:

```
{
  "dataSpecs": {
    "childDataType": "INT",
    "custom": true,
    "dataType": "ARRAY",
    "size": 1
  }
}
```

- Sample value of the dataSpecsList parameter if the dataType parameter is set to *ENUM*:

```
{
  "dataSpecsList": [
    {
      "custom": false,
      "dataType": "ENUM",
      "defaultValue": "true",
      "name": "Open",
      "value": 1
    },
    {
      "custom": false,
      "dataType": "ENUM",
      "defaultValue": "false",
      "name": "Close",
      "value": 0
    }
  ]
}
```

- Sample value of the dataSpecsList parameter if the dataType parameter is set to *STRUCT*:

```
{
  "childDataType": "TEXT",
  "childName": "Card number",
  "dataSpecs": {
    "custom": true,
    "dataType": "TEXT",
    "length": 128
  },
  "dataType": "STRUCT",
  "identifier": "CardNo",
  "name": "NVR chip information"
}
```

Data structure of the services parameter

The following table describes the parameters that are used to define a service.

Parameter	Type	Required	Description
productKey	String	Yes	The ProductKey of the product to which the TSL model belongs.
createTs	Long	No	The time when the feature was defined. By default, the value is a 13-digit timestamp. You can specify this parameter. If you do not specify this parameter, IoT Platform generates a timestamp. Features are sorted by timestamp in chronological order. **Note** For an existing TSL model, its creation time is the time when the TSL model was first modified after it was published.
identifier	String	Yes	The identifier of the service. The identifier must be 1 to 50 characters in length and can contain letters, digits, and underscores (_). **Note** The identifier cannot be one of the following words: set, get, post, property, event, time, and value.
serviceName	String	Yes	The name of the service. The name must be 1 to 30 characters in length and can contain letters, digits, hyphens (-), underscores (_), and periods (.). It must start with a letter or digit.
inputParams	List	No	The input parameters of the service. For more information about the data structure, see Data structure of the input and output parameters.

Parameter	Type	Required	Description
outputParams	List	No	The output parameters of the service. For more information about the data structure, see Data structure of the input and output parameters.
required	Boolean	Yes	Specifies whether the service is required for the standard category. Valid values: • *true*: yes. • *false*: no.
callType	String	Yes	The method that is used to call the service. • *ASYNC*: asynchronously calls the service. • *SYNC*: synchronously calls the service.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the events parameter

The following table describes the parameters that are used to define an event.

Parameter	Type	Required	Description
productKey	String	Yes	The ProductKey of the product to which the TSL model belongs.
createTs	Long	No	The time when the feature was defined. By default, the value is a 13-digit timestamp. You can specify this parameter. If you do not specify this parameter, IoT Platform generates a timestamp. Features are sorted by timestamp in chronological order. **Note** For an existing TSL model, its creation time is the time when the TSL model was first modified after it was published.

Parameter	Type	Required	Description
identifier	String	Yes	The identifier of the event. The identifier must be 50 characters in length and can contain uppercase letters, lowercase letters, digits, and underscores (_). **Note** The identifier cannot be one of the following words: set, get, post, property, event, time, and value.
eventName	String	Yes	The list of one or more event names. The name must be 1 to 30 characters in length, and can contain letters, digits, hyphens (-), underscores (_), and periods (.). The name must start with a letter or digit.
eventType	String	Yes	The type of the event. Valid values: • *INFO_EVENT_TYPE*: information. • *ALERT_EVENT_TYPE*: alert. • *ERROR_EVENT_TYPE*: error.
outputdata	List	No	The output parameters of the event. For more information about the data structure, see Data structure of the input and output parameters.
required	Boolean	Yes	Specifies whether the event is required for the standard category. Valid values: • *true*: yes. • *false*: no.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the input and output parameters

The following table describes the parameters that are used to define the input and output parameters of a service or an event.

Parameter	Type	Required	Description
dataType	String	Yes	The data type of the parameter value. Valid values: *ARRAY*, *STRUCT*, *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, *ENUM*, and *BOOL*. For more information, see the data structure of the corresponding type in this topic.

Parameter	Type	Required	Description
identifier	String	Yes	The identifier of the parameter. The identifier must be 1 to 50 characters in length and can contain letters, digits, and underscores (_). **Note** The identifier cannot be one of the following words: set, get, post, property, event, time, and value.
name	String	Yes	The name of the request parameter. The name must be 1 to 30 characters in length and can contain letters, digits, hyphens (-), underscores (_), and periods (.). It must start with a letter or digit.
direction	String	Yes	Specifies whether the parameter is an input parameter or output parameter. Valid values: • *PARAM_INPUT*: an input parameter. • *PARAM_OUTPUT*: an output parameter.
paraOrder	Integer	Yes	The serial number of the parameter. The serial number starts from 0 and must be unique.
dataSpecs	Object	No	If you set the dataType parameter to *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, or *ARRAY*, the data specifications are included in the dataSpecs parameter. **Note** • The dataSpecs parameter applies to all data, excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.

Parameter	Type	Required	Description
dataSpecsList	List	No	If you set the dataType parameter to *ENUM*, *BOOL*, or *STRUCT*, the data specifications are included in the dataSpecsList parameter. **Note** • The dataSpecsList parameter applies to all data excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
custom	Boolean	Yes	Specifies whether the parameter belongs to a custom TSL feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the INT, FLOAT, or DOUBLE type

The following table describes the parameters that are used to define the data of the *INT*, *FLOAT*, and *DOUBLE* types.

Parameter	Type	Required	Description
dataType	String	Yes	The type of the data. Valid values: *INT*, *FLOAT*, and *DOUBLE*.
max	String	Yes	The maximum value of the parameter. The maximum value is of the *INT*, *FLOAT*, or *DOUBLE* type, as specified by the dataType parameter. The value of the max parameter must be converted to the data of the *STRING* type. For example, if the dataType parameter is set to *INT*, the value of 200 must be expressed as `"200"` instead of `200`.

Parameter	Type	Required	Description
min	String	Yes	The minimum value of the parameter. The minimum value is of the *INT*, *FLOAT*, or *DOUBLE* type, as specified by the dataType parameter. The value of the step parameter must be converted to the data of the *STRING* type. For more information, see the description of the max parameter.
step	String	Yes	The step size, which indicates the increment of each data change. The step size is of the *INT*, *FLOAT*, or *DOUBLE* type, as specified by the dataType parameter. The value of the step parameter must be converted to the data of the *STRING* type. For more information, see the description of the max parameter.
precise	String	No	The precision of the value. You can specify this parameter when the dataType parameter is set to *FLOAT* or *DOUBLE*.
defaultValue	String	No	You can specify this parameter to set a default value.
unit	String	Yes	The symbol of the unit.
unitName	String	Yes	The name of the unit.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the DATE or TEXT type

The following table describes the parameters that are used to define the data of the *DATE* and *TEXT* types.

Parameter	Type	Required	Description
dataType	String	Yes	The type of the data. Valid values: *DATE* and *TEXT*.
length	Long	Yes	The length of the data. Maximum value: 2048. Unit: bytes. You must specify this parameter if the dataType parameter is set to *TEXT*.
defaultValue	String	No	You can specify this parameter to set a default value.

Parameter	Type	Required	Description
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the ARRAY type

The following table describes the parameters that are used to define the data of the *ARRAY* type.

> **Notice** If the data of the *ARRAY* type and the data of the *STRUCT* type are nested with each other, at most two layers of recursive nesting are supported.

Parameter	Type	Required	Description
dataType	String	Yes	The type of the data. Set the value to *ARRAY*.
size	Long	Yes	The number of elements in the array.
childDataType	String	Yes	The data type of the elements in the array. Valid values: *STRUCT*, *INT*, *FLOAT*, *DOUBLE*, and *TEXT*.
dataSpecs	Object	No	If you set the dataType parameter to *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, or *ARRAY*, the data specifications are included in the dataSpecs parameter. **Note** • The dataSpecs parameter applies to all data, excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.

Parameter	Type	Required	Description
dataSpecsList	List	No	If you set the dataType parameter to *ENUM*, *BOOL*, or *STRUCT*, the data specifications are included in the dataSpecsList parameter. **Note** • The dataSpecsList parameter applies to all data excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the ENUM or BOOL type

The following table describes the parameters that are used to define the data of the *BOOL* and *ENUM* types.

Parameter	Type	Required	Description
dataType	String	Yes	The type of the data. Valid values: *BOOL* and *ENUM*.
name	String	Yes	The name of the ENUM item. The name must be 1 to 20 characters in length and can contain letters, digits, underscores (_), and hyphens (-). The name must start with a letter or digit.
value	Integer	Yes	The value of the ENUM item.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the STRUCT type

The following table describes the parameters that are used to define the data of the *STRUCT* type.

Notice

- The childSpecsDTO and childEnumSpecsDTO parameters are not required. When you call API operations, you do not need to specify these parameters. Therefore, no description is provided for these parameters.
- If the data of the *ARRAY* type and the data of the *STRUCT* type are nested with each other, at most two layers of recursive nesting, which indicate a parent-child relationship, are supported.

Parameter	Type	Required	Description
dataType	String	Yes	The type of the data. Set the value to *STRUCT*.
identifier	String	Yes	The identifier of the sub-parameter in the struct. The identifier must be 1 to 50 characters in length and can contain letters, digits, and underscores (_). **Note** The identifier cannot be one of the following words: set, get, post, property, event, time, and value.
name	String	Yes	The name of the sub-parameter in the struct. The name must be 1 to 30 characters in length and can contain letters, digits, hyphens (-), underscores (_), and periods (.). It must start with a letter or digit. **Note** The definition of the parameter is the same as the definition of the childName parameter. This parameter is not used.
childDataType	String	No	The data type of the sub-parameter in the struct. Valid values: *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, *ENUM*, and *BOOL*.
childName	String	Yes	The name of the sub-parameter in the struct. The name must be 1 to 30 characters in length and can contain letters, digits, hyphens (-), underscores (_), and periods (.). It must start with a letter or digit.

Parameter	Type	Required	Description
dataSpecs	Object	No	If you set the dataType parameter to *INT*, *FLOAT*, *DOUBLE*, *TEXT*, *DATE*, or *ARRAY*, the data specifications are included in the dataSpecs parameter. **Note** • The dataSpecs parameter applies to all data, excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
dataSpecsList	List	No	If you set the dataType parameter to *ENUM*, *BOOL*, or *STRUCT*, the data specifications are included in the dataSpecsList parameter. **Note** • The dataSpecsList parameter applies to all data excluding the data that is used to define properties, services, events, and parameters. • You must specify the dataSpecs or dataSpecsList parameter based on the data type.
custom	Boolean	Yes	Specifies whether the TSL feature is a custom feature. Valid values: • *true*: yes. • *false*: no.

Data structure of the extendConfig parameter

In each property, event, and service, you can use the extendConfig parameter to define the extended information about the TSL model. The extended information indicates the mapping between the connection protocol and the standard TSL model of the device.

Note The configCode parameter indicates the unique identifier that is generated by IoT Platform. The identifier is used to define the extended information about a TSL feature.

If Modbus, OPC UA, or a custom protocol is used as the gateway connection protocol of a device, you can define the extended information about the device. Different types of extended information have different data specifications.

Modbus type

If Modbus is used as the gateway connection protocol of a device, you can define the extended information only about the properties.

> **Note** To fully demonstrate the data structure of the extendConfig parameter, the following example includes all parameters. However, the parameters may vary in actual scenarios. The following table describes these parameters.

```
{
  "identifier":"extend1",
  "writeFunctionCode":0,
  "writeOnly":0,
  "registerAddress":"0xFE",
  "operateType":"coilStatus",
  "scaling":0.1,
  "pollingTime":1000,
  "trigger":1,
  "bitMask":128,
  "originalDataType":{
     "type":"uint64",
     "specs":{
        "swap":0,
        "reverseRegister":0}
  }
}
```

Parameter	Type	Description
identifier	String	The identifier of the property. The identifier must be unique in a product.
registerAddress	String	The address of the register. The address must start with `0x`. Valid values: 0x0 to 0xFFFF. Example: 0xFE.
operateType	String	The type of the operation. Valid values: • coilStatus: the status of coils. • inputStatus: discrete input. • holdingRegister: holding register. • inputRegister: input register.

Parameter	Type	Description

writeFunctionCode	Integer	The read and write operations. The value varies based on the value of the operateType parameter.
		• coilStatus:
		  ○ 5: read and write (read 0x01, write 0x05).
		  ○ 15: read and write (read 0x01, write 0x0F).
		  ○ 0: read-only (0x01).
		  ○ 6: write-only (0x05).
		  ○ 15: write-only (0x0F).
		• If the operateType parameter is set to inputStatus, the valid value is 0 (read-only 0x02).
		• holdingRegister:
		  ○ 6: read and write (read 0x03, write 0x06).
		  ○ 16: read and write (read 0x03, write 0x10).
		  ○ 0: read-only (0x03).
		  ○ 6: write-only (0x06).
		  ○ 16: write only (0x10).
		• If the operateType parameter is set to inputRegister, the valid value is 0 (read-only 0x00).

writeOnly	Integer	Specifies whether the operation is write-only. Valid values:
		• 0: not write-only.
		  ○ If the writeFunctionCode parameter is not set to 0, the extendConfig parameter supports read and write operations. If you set the writeOnly parameter to 0, the extendConfig parameter supports read and write operations.
		  ○ If the writeFunctionCode parameter is set to 0, the extendConfig parameter supports only read operations. You must set the writeOnly parameter to 0.
		• 1: write-only.
		  If the writeFunctionCode parameter is not set to 0, the extendConfig parameter supports read and write operations. If you set the writeOnly parameter to 1, the extendConfig parameter supports only write operations.

scaling	Number	The scaling factor. The value cannot be 0. This parameter is unavailable for data of the STRING and BOOLEAN types.
pollingTime	Integer	The interval of the collection. Unit: ms. You do not need to specify this parameter. The specified collection interval of the device is used.

Parameter	Type	Description
trigger	Integer	The method to submit data. Valid values: 1 and 2. The value of 1 indicates that data is submitted at a specific time. The value of 2 indicates that data is submitted when changes occur.
bitMask	Integer	The mask. Valid values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, and 32768. This parameter is specific to data of the BOOLEAN type.
originalDataType	Object	The description of the original data type.
type	String	The type of the original data. The type must be one of the following basic data types: INT16, UINT16, INT32, UINT32, INT64, UINT64, FLOAT, DOUBLE, STRING, BOOLEAN, and customized (hexadecimal data that is returned in big-endian order).
specs	Object	The parameters that are specific to some data types.
registerCount	Integer	The number of registers. This parameter is specific to data of the STRING and customized types.
swap	Integer	This parameters is specific to data of all types except for the STRING and customized types. Specifies whether to switch the high byte and low byte in the register. If so, the first and last 8 bits of the 16-bit integer in the register are swapped. Valid values: • 0: The high byte and low byte are not swapped. • 1: The high byte and low byte are swapped.
reverseRegister	Integer	This parameters is specific to data of all types except for the STRING and customized types. Specifies whether to switch the high byte and low byte in the register. If so, the first and last 16 bits of the 32-bit integer in the register are swapped. Valid values: • 0: The high byte and low byte are not swapped. • 1: The high byte and low byte are swapped.

OPC UA type

If OPC UA is used as the gateway connection protocol of a device, you can define the extended information about the properties, services, and events.

```
{
  "identifier":"extend2",
  "displayName":"Action",
  "inputData":[
    {
      "identifier":"xxxx",
      "index":1
    },
    {
      "identifier":"xxxx",
      "index":2
    }
  ],
  "outputData":[
     {
      "identifier":"xxxx",
      "index":1
    },
    {
      "identifier":"xxxx",
      "index":2
    }
  ]
}
```

Parameter	Type	Description
identifier	String	The identifier of the property, service, or event. The identifier must be unique in a product.
displayName	String	You must specify the displayName parameter for a property or an event. You do not need to specify the displayName parameter for a service.
inputData	List	The input data.
outputData	List	The output data.
identifier	String	The identifier of the input data or output data. The identifier must be unique in a product.
index	Integer	The index. The index must be unique in both the inputData and outputData parameters.

Custom type

If a custom protocol is used as the gateway connection protocol of a device, you can define the extended information about the properties, services, and events.

```
{
  "identifier":"xxx",
  "customize":{}
}
```

Parameter	Type	Description
identifier	String	The identifier of the property, service, or event. It must be unique in a product.
customize	Object	The custom JSON file.

Verify the ThingModelJson parameter

You can use the json-schema file to verify the input parameters in the ThingModelJson parameter.

For more information, see schema.json.

Example of verifying the ThingModelJson parameter

- Add the following dependency to the Maven project to download the json-schema library:

```
<dependency>
    <groupId>com.github.everit-org.json-schema</groupId>
    <artifactId>org.everit.json.schema</artifactId>
    <version>1.11.0</version>
</dependency>
```

- Sample code:

```
package com.aliyun.iot.thingmodel;
import java.io.InputStream;
import java.net.URL;
import java.util.ArrayList;
import java.util.Arrays;
import org.everit.json.schema.Schema;
import org.everit.json.schema.ValidationException;
import org.everit.json.schema.loader.SchemaLoader;
import org.json.JSONObject;
import org.json.JSONTokener;
/**
 * @author: ***
 * @date: 2020-01-14 15:11
 */
public class ThingModelJsonValidator {
    public static void main(String[] args) throws Exception {
        try (InputStream inputStream = new URL("https://iotx-thing-model-schema.oss-ap-so
utheast-1.aliyuncs.com/schema.json").openStream()) {
            JSONObject rawSchema = new JSONObject(new JSONTokener(inputStream));
            Schema schema = SchemaLoader.load(rawSchema);
            long start = System.currentTimeMillis();
            JSONObject object = new JSONObject();
            String jsonStr = "{\n"
                    + "\t\t\t\"productKey\": \"a1Q1Yrc****\",\n"
                    + "\t\t\t\"name\": "Alert event",\n"
                    + "\t\t\t\"identifier\": \"alarmEvent\",\n"
                    + "\t\t\t\"eventName\": "Alert event",\n"
                    + "\t\t\t\"eventType\": \"ALERT_EVENT_TYPE\",\n"
                    + "\t\t\t\"outputData\": [\n"
                    + "\t\t\t\t{\n"
                    + "\t\t\t\t\t\"paraOrder\": 0,\n"
```

```
                    + "\t\t\t\t\t\"direction\": \"PARAM_OUTPUT\",\n"
                    + "\t\t\t\t\t\"dataSpecsList\": [\n"
                    + "\t\t\t\t\t\t{\n"
                    + "\t\t\t\t\t\t\t\"dataType\": \"ENUM\",\n"
                    + "\t\t\t\t\t\t\t\"name\": "Anti-detachment alert",\n"
                    + "\t\t\t\t\t\t\t\"value\": 0\n"
                    + "\t\t\t\t\t\t},\n"
                    + "\t\t\t\t\t\t{\n"
                    + "\t\t\t\t\t\t\t\"dataType\": \"ENUM\",\n"
                    + "\t\t\t\t\t\t\t\"name\": "Anti-detachment alert",\n"
                    + "\t\t\t\t\t\t\t\"value\": 1\n"
                    + "\t\t\t\t\t\t}\n"
                    + "\t\t\t\t\t],\n"
                    + "\t\t\t\t\t\"dataType\": \"ENUM\",\n"
                    + "\t\t\t\t\t\"identifier\": \"alarmType\",\n"
                    + "\t\t\t\t\t\"name\": "Alert type",\n"
                    + "\t\t\t\t\t\"index\": 0,\n"
                    + "\t\t\t\t\t\"custom\": true\n"
                    + "\t\t\t\t}\n"
                    + "\t\t\t],\n"
                    + "\t\t\t\"outputParams\": [\n"
                    + "\t\t\t\t{\n"
                    + "\t\t\t\t\t\"index\": 0,\n"
                    + "\t\t\t\t\t\"identifier\": \"alarmType\"\n"
                    + "\t\t\t\t}\n"
                    + "\t\t\t],\n"
                    + "\t\t\t\"custom\": true\n"
                    + "\t\t}";
            object.put("properties", new ArrayList<>());
            object.put("services", new ArrayList<>());
            object.put("events", Arrays.asList(com.alibaba.fastjson.JSONObject.parseObjec
t(jsonStr)));
            object.put("productKey", "a1Q1Yrc****");
            schema.validate(object); // throws a ValidationException if this object is in
valid
            //}
            System.out.println(System.currentTimeMillis() - start);
        }
        catch (ValidationException exception) {
            System.out.println(exception);
        }
    }
}
```

Specify the ThingModelJson parameter

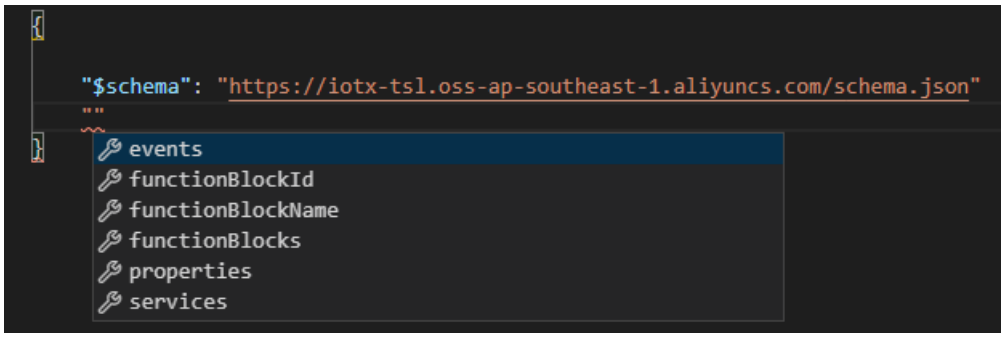
The section describes how to use the Visual Studio Code tool to specify the ThingModelJson parameter.

1. Visit the Visual Studio Code official website to download and install the latest version of the Visual Studio Code tool.
2. Open Visual Studio Code, click the button in the lower left corner, and then select **Settings**.
3. On the **User Settings** tab, choose **Extensions > JSON**. Click **Edit in settings.json** under

Schemas, and then enter and save the following content.

```
"json.schemas": [{
        "fileMatch": ["/.json"],
        "url": "https://iotx-tsl.oss-ap-southeast-1.aliyuncs.com/schema.json"
}]
```

Then, you can specify the ThingModelJson parameter as prompted.



4.11. Use TSL models

4.11.1. SetDeviceProperty

Sets the values of properties for a specified device.

Response description

After IoT Platform sends a request to set device properties, the device asynchronously receives and processes the request. When you call this operation, a successful response indicates that IoT Platform sent a request, but does not indicate that the device has received and processed the request. The device SDK must respond to the request and then set the device properties.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	SetDeviceProperty	The operation that you want to perform. Set the value to SetDeviceProperty.
Items	String	Yes	{"Switch":1,"Color":"blue"}	The properties that you want to set. The value is a JSON string. Each property is a **key-value** pair. Separate multiple properties with commas (,). For example, you want to set the following properties of a smart lamp: • A switch property whose identifier is **Switch** and the data type is **Boolean**. Set the value to **1**. The value 1 indicates that the light is on. • A color property whose identifier is **Color** and the data type is **String**. Set the value to **blue**. In this case, you can set **Items={"Switch":1,"Color":"blue"}**. **Note** If the preceding properties belong to a custom module named testFB, you can set the **Items parameter to {"testFb:Switch":1,"testFb:Color":"blue"}**. The custom module is not the default module.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, only the **IotId** parameter is used.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The name of each device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call succeeds.
MessageId	String	abcabc123	The ID of the message that IoT Platform sends to the device.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=SetDeviceProperty
&ProductKey=a1BwAGV****
&DeviceName=device1
&Items=%7B%22LightAdjustLevel%22%3A1%7D
&<Common request parameters>
```

Sample success responses

`XML` format

```
<SetDevicePropertyResponse>
  <RequestId>57b144cf-09fc-4916-a272-a62902d5b207</RequestId>
  <Success>true</Success>
  <Data>
        <MessageId>abcabc123</MessageId>
  </Data>
</SetDevicePropertyResponse>
```

`JSON` format

```
{
  "RequestId":"57b144cf-09fc-4916-a272-a62902d5b207",
  "Success": true,
  "Data": {
     "MessageId":"abcabc123"
   }
}
```

4.11.2. SetDevicesProperty

Specifies properties for multiple devices at a time.

QPS limits

The maximum queries per second (QPS) for each Alibaba Cloud account to call this operation is 10.

> **Note** The Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	SetDevicesProperty	The operation that you want to perform. Set the value to SetDevicesProperty.
DeviceName.N	RepeatList	Yes	light	The name of device N for which you want to specify properties. Valid values: 1 to 100.
Items	String	Yes	null	The properties that you want to specify. The properties must be in the JSON format. Each property consists of a **key-value pair in the key:value format**. Separate multiple properties with commas (,). For example, specify the following properties for a smart lamp: • A switch property whose key is **Switch** and the data type is **BOOLEAN**. The value is **1**. The value 1 specifies that the light is on. • A color property whose key is **Color** and the data type is **STRING**. The value is **blue**. In this case, you can specify the following properties in the JSON format: `Items={"Switch":1,"Color":"blue"}` **Note** If you specify properties for the custom module testFb, set the Items parameter to `{"testFb:Switch":1,"testFb:Color":"blue"}`. The testFb module is not the default module.
ProductKey	String	Yes	a1BwAGV****	The **key of the product** to which the devices belong.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=SetDevicesProperty
&DeviceName.1=1102andriod02
&DeviceName.2=1102android01
&Items=%7B%20%20%20%20%20%22Data%22%3A%221372060916%22%2C%20%20%20%20%20%22Status%22%3A1%20
%7D
&ProductKey=a1hWjHD****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<SetDevicesPropertyResponse>
  <RequestId>2E19BDAF-0FD0-4608-9F41-82D230CFEE38</RequestId>
  <Success>true</Success>
</SetDevicesPropertyResponse>
```

`JSON` format

```
{
  "RequestId": "2E19BDAF-0FD0-4608-9F41-82D230CFEE38",
  "Success": true
}
```

4.11.3. InvokeThingService

Calls a specified service of a device.

Usage notes

When you define a service in a Thing Specification Language (TSL) model, the mode in which the service is called is specified. When you call a service by using this operation, IoT Platform uses a calling mode based on the **Identifier** parameter.

- Synchronous mode: IoT Platform sends an RRPC request to a device and the device synchronously returns an RRPC response. For more information about how to implement an RRPC, see What is RRPC?
- Asynchronous mode: IoT Platform sends a request to a device and the device asynchronously returns a response. For more information about topics, see Device properties, events, and services.

Limits

- If you synchronously call a service, the timeout period is 5 seconds. If a server does not receive a response within 5 seconds, a timeout error occurs. No timeout limit is applied for asynchronous calls.
- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates a sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	InvokeThingService	The operation that you want to perform. Set the value to InvokeThingService.
Args	String	Yes	null	The input parameter of the service. The value is a JSON string. **Example: Args={"param1": 1}**. If you do not need to specify this parameter, set the value to **Args={}**.
Identifier	String	Yes	Set	The identifier of the service. To view the service identifier in the IoT Platform console, go to the **Define Feature** tab of the Product Details page. You can also call the QueryThingModel operation and view the service identifier in the returned TSL data. **Note** If a service named testService belongs to a custom module named testFb, you can set this parameter to **testFb:testService**. The custom module is not the default module.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter is a globally unique identifier (GUID), and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter is used.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The DeviceName of the device to which the required service belongs. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call is successful.
MessageId	String	abcabcabc1234****	The ID of the message. IoT Platform sends the message to the device to call the service.
Result	String	null	The result of the synchronous call. This parameter is not returned if you asynchronously call the service.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. However, this result does not indicate that the service is implemented. To obtain the implementation result, view the logs of the device. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=InvokeThingService
&ProductKey=a1BwAGV****
&DeviceName=device1
&Identifier=service1
&Args=%7B%22param1%22%3A1%7D
&<Common request parameters>
```

Sample success responses

`XML` format

```
<InvokeThingServiceResponse>
  <Data>
        <Result>{"code":200,"data":{},"id":"100686","message":"success","version":"1.0"}</R
esult>
        <MessageId>abcabc123</MessageId>
  </Data>
  <RequestId>A44C818E-FA7F-4765-B1E7-01D14AE01C6A</RequestId>
  <Success>true</Success>
</InvokeThingServiceResponse>
```

`JSON` format

```
{
  "Data": {
    "Result": "{\"code\":200,\"data\":{},\"id\":\"100686\",\"message\":\"success\",\"versio
n\":\"1.0\"}",
    "MessageId": "abcabc123"
  },
  "RequestId": "A44C818E-FA7F-4765-B1E7-01D14AE01C6A",
  "Success": true
}
```

4.11.4. InvokeThingsService

Calls multiple device services at the same time.

Limit

- You can only asynchronously call this operation.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** Resource Access Management (RAM) users share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	InvokeThingsService	The operation that you want to perform. Set the value to InvokeThingsService.
Args	String	Yes	{"param1":1}	The input parameter of the service. The value is a JSON string. **Example: Args={"param1": 1}**. If you do not need to specify this parameter, set the value to **Args={}**.
DeviceName.N	RepeatList	Yes	device1	The name of the device whose service is called. You can specify a maximum of 100 devices.
Identifier	String	Yes	Set	The identifier of the service. You can view the service identifier in the IoT Platform console. Go to the **Define Feature** tab of the Product Details page. You can also call the QueryThingModel operation and view the service identifier in the returned TSL data. **Note** If a service named testService belongs to a custom module named testFb, you can set this parameter to **testFb:testService**. The custom module is not the default module.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product to which the device belongs.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. However, this result does not indicate that the service is executed. The execution result is written in the device logs. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=InvokeThingsService
&Args=%7B%20%20%20%20%20%22walk%22%3A%22a~z%22%2C%20%20%20%20%20%22city%22%3A%22shanghai%22
%20%7D
&DeviceName.1=1102andriod02
&DeviceName.2=1102android01
&Identifier=TimeReset
&ProductKey=a1hWjHD****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<InvokeThingsServiceResponse>
  <RequestId>059C3274-6197-4BEC-95E4-49A076330E57</RequestId>
  <Success>true</Success>
</InvokeThingsServiceResponse>
```

`JSON` format

```
{
  "RequestId": "059C3274-6197-4BEC-95E4-49A076330E57",
  "Success": true
}
```

4.11.5. QueryDevicePropertyData

Queries the property data of a specified device.

Limits

- You can query property data that was generated within the last 30 days.

  > **Note** The data of a property is stored from the day when the property data was generated.

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

  > **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDevicePropertyData	The operation that you want to perform. Set the value to QueryDevicePropertyData.
Asc	Integer	Yes	0	The sorting method of the property records in returned results. Valid values: • **0**: in reverse chronological order • **1**: in chronological order
EndTime	Long	Yes	1579249499000	The end of the time range to query. The value is a timestamp in milliseconds, for example, 1579249499000.
Identifier	String	Yes	temperature	The identifier of the property that you want to query. If a device has multiple properties, you can call this operation multiple times to query these properties. You can view the property identifier in the IoT Platform console. Go to the Define Feature tab of the Product Details page. You can also call the QueryThingModel operation and view the property identifier in the returned TSL data. **Note** If the temperature property belongs to a custom module named testFb, this parameter is set to **testFb:temperature**.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 50.
StartTime	Long	Yes	1579249499000	The start of the time range to query. The value is a timestamp in milliseconds, for example 1579249499000.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and the combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter is used.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
DeviceName	String	No	airconditioning	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The property data returned if the call succeeds.
List	Array of PropertyInfo		The list of properties. Each element indicates a property.
PropertyInfo			
Time	String	1516541885630	The time when the property was modified.
Value	String	2	The value of the property.
NextTime	Long	1579249499000	The start time to query on the next page. • If the **Asc** parameter is set to **0**, you can use this value for the **EndTime** parameter when you call this operation again to query the next page of property records. • If the **Asc** parameter is set to **1**, you can use this value for the **StartTime** parameter when you call this operation again to query the next page of property records.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDevicePropertyData
&ProductKey=a1BwAGV****
&DeviceName=device1
&Identifier=lightLevel
&StartTime=1516538300303
&EndTime=1516541900303
&PageSize=10
&Asc=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDevicePropertyDataResponse>
  <Data>
        <NextValid>false</NextValid>
        <NextTime>1579249151177</NextTime>
        <List>
              <PropertyInfo>
                    <Value>32.46</Value>
                    <Time>1579249151178</Time>
              </PropertyInfo>
        </List>
  </Data>
  <RequestId>45391E10-446B-4986-863E-1BA8CC44748F</RequestId>
  <Success>true</Success>
</QueryDevicePropertyDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": false,
    "NextTime": 1579249151177,
    "List": {
      "PropertyInfo": [
        {
          "Value": "32.46",
          "Time": 1579249151178
        }
      ]
    }
  },
  "RequestId": "45391E10-446B-4986-863E-1BA8CC44748F",
  "Success": true
}
```

4.11.6. QueryDevicePropertiesData

Queries multiple properties that are submitted by a device within a specified period.

Limits

- A maximum of 10 properties can be queried at a time. A maximum of 100 records can be queried for each property.
- You can query property data that is generated within the last 30 days.

  Note The storage period of a property record is calculated from the day when the property record was generated.

- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

  Note RAM users of an Alibaba Cloud account share the quota of the account.

Usage notes

When you call this operation to query property records within a specified period, the number of records for a property at a point in time may reach the limit. The limit is specified by the **PageSize** parameter. In this case, the query stops. Some records of other properties may be not returned. You can check whether all records of a property are returned based on the NextValid repsonse parameter:

- If the value of the **NextValid** parameter is true, unretrieved records exist in the period that is indicated by the **NextTime** and **EndTime** parameter.

  You can use the value of the **NextTime** response parameter as the value of the StartTime request parameter and call this operation again to query the rest records. You can call this operation multiple times until the value of the **NextValid** parameter is false.

> **Note** To retrieve all property records within a specified period, you can set the **PageSize** parameter to the maximum value. Then, call this operation multiple times until the value of the **NextValid** parameter is false.

- If the value of the **NextValid** parameter is false, all property records are returned.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDevicePropertiesData	The operation that you want to perform. Set the value to QueryDevicePropertiesData.
Asc	Integer	Yes	0	The sorting order of the returned property records. Valid values: • **0**: in reverse chronological order. In this case, the time that is specified by the **StartTime** parameter must be later than the time that is specified by the **EndTime** parameter. • **1**: in chronological order. In this case, the time that is specified by the **StartTime** parameter must be earlier than the time that is specified by the **EndTime** parameter.
DeviceName	String	Yes	airconditioning	The DeviceName of the device.
EndTime	Long	Yes	1579249499000	The end of the time range to query. The value is a 13-digit timestamp in milliseconds, for example 1579249499000.

Parameter	Type	Required	Example	Description
Identifier.N	RepeatList	Yes	temperature	The identifiers of the properties. The property identifiers must be unique. You can view the property identifiers in the IoT Platform console. Go to the Define Feature tab of the Product Details page. You can also call the QueryThingModel operation and view the property identifiers in the returned TSL data. **Note** If a property named temperature belongs to a custom module named testFb, set this pararmeter to **testFb:temperature**. The custom module is not the default module.
PageSize	Integer	Yes	10	The maximum number of records that is returned for each property. Maximum value: 100. The number of records that are returned for an arbitrary property cannot exceed the limit.
ProductKey	String	Yes	a1BwAGV****	The ProductKey of the product to which the device belongs.
StartTime	Long	Yes	1579249499000	The start of the time range to query. The value is a 13-digit timestamp in milliseconds, for example, 1579249499000.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The device ID is issued by IoT Platform. **Note** The **IotId** parameter is a globally unique identifier (GUID), and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter is used.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
NextTime	Long	1579249499000	The start time to query on the next page. You can use the value of the **NextTime** parameter as the value of the **StartTime** parameter when you query the next page of results.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the return value of the **NextValid** parameter is **true**, you can use the value of the **NextTime** parameter as the value of the **StartTime** parameter when you query the next page of results.
PropertyDataInfos	Array of PropertyDataInfo		The list of property records returned if the call is successful. For more information, see **PropertyDataInfo**.
PropertyDataInfo			
Identifier	String	temperature	The identifier of the property.
List	Array of PropertyInfo		The list of property records.
PropertyInfo			
Time	Long	1579249499000	The time when the property was submitted. The value is a timestamp in milliseconds, such as 1579249499000.
Value	String	21.3	The value of the property.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDevicePropertiesData
&Asc=0
&DeviceName=water
&EndTime=1540115948152
&Identifier.1=Temperature
&Identifier.2=Humidity
&PageSize=100
&ProductKey=a1bd***
&StartTime=1540116010723
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDevicePropertiesData>
  <NextValid>false</NextValid>
  <RequestId>CC4CAC00-ED4C-4004-9E8D-E8B4A78552FA</RequestId>
  <PropertyDataInfos>
        <PropertyDataInfo>
              <List>
                    <PropertyInfo>
                          <Value>32.46</Value>
                          <Time>1579249151178</Time>
                    </PropertyInfo>
              </List>
              <Identifier>Temperature</Identifier>
        </PropertyDataInfo>
        <PropertyDataInfo>
              <List>
                    <PropertyInfo>
                          <Value>48</Value>
                          <Time>1579249151178</Time>
                    </PropertyInfo>
              </List>
              <Identifier>Humidity</Identifier>
        </PropertyDataInfo>
  </PropertyDataInfos>
  <Success>true</Success>
</QueryDevicePropertiesData>
```

`JSON` format

```
{
  "NextValid": false,
  "RequestId": "CC4CAC00-ED4C-4004-9E8D-E8B4A78552FA",
  "PropertyDataInfos": {
    "PropertyDataInfo": [
      {
        "List": {
          "PropertyInfo": [
            {
              "Value": "32.46",
              "Time": 1579249151178
            }
          ]
        },
        "Identifier": "Temperature"
      },
      {
        "List": {
          "PropertyInfo": [
            {
              "Value": "48",
              "Time": 1579249151178
            }
          ]
        },
        "Identifier": "Humidity"
      }
    ]
  },
  "Success": true
}
```

4.11.7. QueryDeviceEventData

Queries the event records of a specified device.

Usage notes

You can query only the event records that are generated in the previous 30 days.

> **Note** The storage period of an event record is calculated from the day when the record is generated.

QPS limits

Each Alibaba Cloud account can run up to 50 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceEventData	The operation that you want to perform. Set the value to QueryDeviceEventData.
EndTime	Long	Yes	1516541900303	The end of the time range to query. The value is a 13-digit timestamp in milliseconds. Example: 1516541900303.
StartTime	Long	Yes	1516541900303	The beginning of the time range to query. The value is a 13-digit timestamp in milliseconds. Example: 1516538300303. **Note** You can query the event data only of the most recent 30 days.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify this parameter. Otherwise, the call fails. • If the **Overview** page does not appear in the IoT Platform console or no ID is generated for your instance, you do not need to specify this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
PageSize	Integer	No	10	The number of entries to return on each page. Valid values: 1 to 50. Default value: 10.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The DeviceName of the device. **Note** If you specify a value for this parameter, you must also specify a value for the **ProductKey** parameter.
Identifier	String	No	PowerOff	The identifier of the event that you want to query. You can view the event identifier on the Define Feature tab of the Product Details page in the IoT Platform console. You can also call the QueryThingModel operation and view the event identifier in the returned TSL data. **Note** If the PowerOff event belongs to a custom module named testFb, this parameter is set to **testFb:PowerOff**. If you do not specify this parameter, the system queries all event data of the default module and custom modules.
EventType	String	No	info	The type of the event that you want to query. Valid values: • **info**: Information. • **alert**: Alert. • **error**: Error.

Parameter	Type	Required	Example	Description
Asc	Integer	No	0	The order in which you want to sort the returned event records. Valid values: • **0**: in reverse chronological order. This is the default value. • **1**: in chronological order. **Note** If you do not configure this parameter, the default value **0** is used. The system sorts the returned event records in reverse chronological order.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device. **Note** If you specify a value for this parameter, you do not need to specify a value for the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a globally unique identifier (GUID) for the device. The value of the IotId parameter corresponds to a combination of the values of the **ProductKey** and **DeviceName** parameters. If you specify a value for the **IotId** parameter and values for the **ProductKey** and **DeviceName** parameters, the value of the **IotId** parameter takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Struct		The event records returned if the call succeeds.
List	Array of EventInfo		The array of events. Each element represents an event.
EventInfo			
EventType	String	info	The type of the event. Valid values: • **info**: information. • **alert**: alert. • **error**: error.
Identifier	String	PowerOff	The identifier of the event.
Name	String	Device shutdown	The name of the event.
OutputData	String	null	The output parameter of the event. The value is a string in the MAP format.
Time	String	1579163099000	The time when the event occurred. The value is a timestamp in milliseconds.
NextTime	Long	1579163099000	The start time of the event records on the next page. The value is a timestamp in milliseconds. • If the **Asc** parameter is set to 0, you can specify this value for the **EndTime** parameter when you call this operation again to query the next page of event records. • If the **Asc** parameter is set to 1, you can specify this value for the **StartTime** parameter when you call this operation again to query the next page of event records.

Parameter	Type	Example	Description
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. The value of the **NextTime** parameter is returned. For more information, see the description of the **NextTime** parameter in this topic. • **false**: The next page does not exist.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceEventData
&IotId=abcdef1234567************
&ProductKey=al**********
&DeviceName=device1
&EventType=info
&Identifier=lightLevel
&StartTime=1516538300303
&EndTime=1516541900303
&PageSize=10
&Asc=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceEventDataResponse>
  <Data>
        <NextValid>false</NextValid>
        <NextTime>1579249151177</NextTime>
        <List>
              <EventInfo>
                    <Name>testEventInfoName</Name>
                    <Time>1516517974638</Time>
                    <OutputData>{"structArgs":{"structchildFLOATf71c20e":1.23,"structchildI
NT6b6b626":3,"structchildDATE663436a":"1516517966152","structchildDOUBLE08d0f74":1.23,"stru
ctchildTEXTdc764f9":"07b68264b0ba42c18e5f","structchildBOOLd260729":0,"structchildENUMbe625
90":1},"enumArgs":0,"boolArgs":0,"floatArgs":2.3,"dateArgs":"1516517966152","intArgs":1,"do
ubleArgs":2.3,"textArgs":"dV56zbkzjBjw1Ti1dA52"}</OutputData>
                    <EventType>info</EventType>
                    <Identifier>testEventInfo</Identifier>
              </EventInfo>
        </List>
  </Data>
  <RequestId>45391E10-446B-4986-863E-1BA8CC44748F</RequestId>
  <Success>true</Success>
</QueryDeviceEventDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": false,
    "NextTime": 1579249151177,
    "List": {
      "EventInfo": [
        {
          "Name": "testEventInfoName",
          "Time": 1516517974638,
          "OutputData": "{\"structArgs\":{\"structchildFLOATf71c20e\":1.23,\"structchildINT
6b6b626\":3,\"structchildDATE663436a\":\"1516517966152\",\"structchildDOUBLE08d0f74\":1.23,
\"structchildTEXTdc764f9\":\"07b68264b0ba42c18e5f\",\"structchildBOOLd260729\":0,\"structch
ildENUMbe62590\":1},\"enumArgs\":0,\"boolArgs\":0,\"floatArgs\":2.3,\"dateArgs\":\"15165179
66152\",\"intArgs\":1,\"doubleArgs\":2.3,\"textArgs\":\"dV56zbkzjBjw1Ti1dA52\"}",
          "EventType": "info",
          "Identifier": "testEventInfo"
        }
      ]
    }
  },
  "RequestId": "45391E10-446B-4986-863E-1BA8CC44748F",
  "Success": true
}
```

4.11.8. QueryDeviceServiceData

Queries the service call records of a specified device.

Limits

- You can query only the service call records that are generated in the last 30 days.

  > **Note** The storage period of a service call record is calculated from the day when the service is called.

- Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

  > **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceServiceData	The operation that you want to perform. Set the value to QueryDeviceServiceData.
EndTime	Long	Yes	1579249499000	The end of the time range to query. The value is a timestamp in milliseconds, for example 1579249499000.
StartTime	Long	Yes	1579249499000	The start of the time range to query. The value is a timestamp in milliseconds, for example 1579249499000.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and the combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter is used.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
Identifier	String	No	Set	The identifier of the service. The identifier of the service that is called. You can view the service identifier on the Define Feature tab of the IoT Platform console. You can also call the QueryThingModel operation to view the service identifier. **Note** If a service named testService belongs to a custom module named testFb, this parameter is set to **testFb:testService**. The custom module is not the default module. If you do not specify this parameter, the system queries all the service data of the default module and custom modules.
Asc	Integer	No	0	The sorting order of the returned service call records. Valid values: • **0**: descending • **1**: ascending
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 50.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Struct		The service call records returned if the call succeeds.
List	Array of ServiceInfo		The array of service call records. Each element represents a service call record.
ServiceInfo			
Identifier	String	Set	The identifier of the service.
InputData	String	{\"code\":200,\"data\": {},\"id\":\"100686\",\"message\":\"success\",\"version\":\"1.0\"}	The input parameter of the service. The value is a string in the MAP format. Syntax: key:value.
Name	String	Set_Temperature	The service name.
OutputData	String	{\"LightAdjustLevel\":123}	The output parameter of the service. The value is a string in the MAP format. Syntax: key:value.
Time	String	1579249499000	The time when the service was called.
NextTime	Long	1579335899000	The start time of service call records on the next page. If you call the QueryDeviceServiceData operation to query the service call records on the next page, you must set the **StartTime** parameter to the value of this parameter.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the return value of the **NextValid** parameter is **true**, you can use the value of the **NextTime** parameter as the value of the **StartTime** parameter when you query the next page of results.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceServiceData
&ProductKey=a1BwAGV****
&DeviceName=device1
&Identifier=set
&StartTime=1516538300303
&EndTime=1516541900303
&PageSize=10
&Asc=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceServiceDataResponse>
  <Data>
        <NextValid>true</NextValid>
        <NextTime>1517315865197</NextTime>
        <List>
              <ServiceInfo>
                    <Name>set</Name>
                    <Time>1517315865198</Time>
                    <OutputData>{"code":200,"data":{},"id":"100686","message":"success","ve
rsion":"1.0"}</OutputData>
                    <InputData>{"LightAdjustLevel":123}</InputData>
                    <Identifier>set</Identifier>
              </ServiceInfo>
        </List>
  </Data>
  <RequestId>A44C818E-FA7F-4765-B1E7-01D14AE01C6A</RequestId>
  <Success>true</Success>
</QueryDeviceServiceDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": true,
    "NextTime": 1517315865197,
    "List": {
      "ServiceInfo": [
        {
          "Name": "set",
          "Time": 1517315865198,
          "OutputData": "{\"code\":200,\"data\":{},\"id\":\"100686\",\"message\":\"success\
",\"version\":\"1.0\"}",
          "InputData": "{\"LightAdjustLevel\":123}",
          "Identifier": "set"
        }
      ]
    }
  },
  "RequestId": "A44C818E-FA7F-4765-B1E7-01D14AE01C6A",
  "Success": true
}
```


4.11.9. SetDeviceDesiredProperty

Sets the desired values of multiple device properties.

Limits

- The desired values of read-only properties cannot be queried.
- A maximum of 10 desired property values can be set in a single call.
- After a device is created, the value of the **Version** parameter is **0**. If you specify the **Version** parameter when you set a desired property value for the first time, set the value of the **Version** parameter to **0**.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	SetDeviceDesiredProperty	The operation that you want to perform. Set the value to SetDeviceDesiredProperty.
Items	String	Yes	{"Temperature":35}	The property that you want to set. This parameter is a JSON string. Format: **Key:Value**. Example: **{"Temperature":35}**. You can set a maximum of 10 desired property values. • **Key** specifies the **identifier** of the property. You can view the property identifier in the IoT Platform console. Go to the **Define Feature** tab of the Product Details page. You can also call the QueryThingModel operation and view the property identifier in the returned TSL data. If the temperature property belongs to a custom module named testFb, this parameter is set to **{"testFb:temperature":35}**. **Note** The specified property must allow read/write access. If you specify a read-only property, the setting fails. The property identifier must be unique. • **Value** specifies the desired value of the property. The value must match the data type and value range that are defined for the property. **Note** If you set Value to null, the desired value of the property is cleared.

Parameter	Type	Required	Example	Description
Versions	String	Yes	{"Temperature":2}	The version number of the desired property value. This parameter is a JSON string. Format: Key:Value. Example: {"Temperature":2}. • **Key** specifies the identifier of the property. You can view the property identifier in the IoT Platform console. Go to the Define Feature tab of the Product Details page. **Note** The property identifier must be unique. • **Value** specifies the version number of the desired property value. Set Value to 0 when you set a desired property value for the first time. After you set the property value, the version number changes to 1. Each time you set a desired property value, IoT Platform automatically increases the version number by 1. After you set a desired property value the second time, the version number changes to 2. When you set a desired property value the third time, set the version number to 2. After you set the desired property value, the version number changes to 3. **Note** If the version number that you specify for this parameter is not the current version number, the server rejects the request. If you are not sure about the current version number, you do not need to specify a version number. In this case, you must enter a valid JSON object {}.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, only the **IotId** parameter is used.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
ProductKey	String	No	a1BwAGV****	The ProductKey of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call succeeds. For more information, see the following parameters.
MessageId	String	300511751	The ID of the message that IoT Platform sends to the device. The message is sent to set desired property values.
Versions	String	{\"Temperature\":2}	The current version numbers of the desired property values.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=SetDeviceDesiredProperty
&ProductKey=a1BwAGV****
&DeviceName=device1
&Items=%7B%22LightAdjustLevel%22%3A1%7D
&Versions=%7B%22LightAdjustLevel%22%3A10%7D
&<Common request parameters>
```

Sample success responses

`XML` format

```
<SetDeviceDesiredPropertyResponse>
  <Data>
        <MessageId>300511751</MessageId>
        <Versions>{"LightAdjustLevel":2}</Versions>
  </Data>
  <RequestId>AADE79D2-B328-4FC6-A3E0-34BB23BCA440</RequestId>
  <Success>true</Success>
</SetDeviceDesiredPropertyResponse>
```

`JSON` format

```
{
    "Data": {
        "MessageId": "300511751",
        "Versions": "{\"LightAdjustLeve\":2}"
    },
    "RequestId": "AADE79D2-B328-4FC6-A3E0-34BB23BCA440",
    "Success": true
}
```

4.11.10. QueryDeviceDesiredProperty

Queries the desired property values of a specified device.

Limits

- The desired values of read-only properties cannot be queried.
- A maximum of 10 properties can be queried at a time.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

- Each Alibaba Cloud account can run a maximum of 30 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceDesiredProperty	The operation that you want to perform. Set the value to QueryDeviceDesiredProperty.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	a1BwAGV****	The key of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
Identifier.N	RepeatList	No	Temperature	The identifiers of properties that you want to query. You can view the property identifiers in the IoT Platform console. Go to the Define Feature tab of the Product Details page. • A maximum of 10 identifiers can be specified in a single call. • The property identifiers must be unique. • If you do not specify this parameter, the desired values of all properties are returned.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter takes precedence.
FunctionBlockId	String	No	BatteryModule	The identifier of a Thing Specification Language (TSL)-based custom module. Each identifier is unique in a product. If you do not specify this parameter, the system queries the data of the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call succeeds. For more information, see **List**.
List	Array of DesiredPropertyInfo		The desired property information. For more information, see **DesiredPropertyInfo**.
DesiredPropertyInfo			

Parameter	Type	Example	Description
DataType	String	int	The data type of the property.
Identifier	String	Temperature	The identifier of the property.
Name	String	airconditioning	The name of the property.
Time	String	1579335899000	The time when the desired value of a property was modified. Unit: milliseconds.
Unit	String	°C	The unit of the property.
Value	String	34	The desired value of the property.
Version	Long	1	The version of the desired value.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDeviceDesiredProperty
&IotId=SR8FiTu1R9tlUR2****0010300
&Identifier.1=Weight
&Identifier.2=Circle
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceDesiredPropertyResponse>
  <Data>
        <List>
              <DesiredPropertyInfo>
                    <Name>Humidity</Name>
                    <Value>35</Value>
                    <Time>1581778567154</Time>
                    <DataType>float</DataType>
                    <Version>1</Version>
                    <Identifier>Temperature</Identifier>
                    <Unit>°C</Unit>
              </DesiredPropertyInfo>
        </List>
  </Data>
  <RequestId>F0B1F7C8-A799-44C3-BDF8-1B8F9E91E675</RequestId>
  <Success>true</Success>
</QueryDeviceDesiredPropertyResponse>
```

`JSON` format

```
{
  "Data": {
    "List": {
      "DesiredPropertyInfo": [
        {
          "Name": "Temperature",
          "Value": "35",
          "Time": "1581778567154",
          "DataType": "float",
          "Version": 1,
          "Identifier": "Temperature",
          "Unit": "°C"
        }
      ]
    }
  },
  "RequestId": "F0B1F7C8-A799-44C3-BDF8-1B8F9E91E675",
  "Success": true
}
```

4.11.11. QueryDevicePropertyStatus

Queries the property snapshot of a specified device.

Limits

Each Alibaba Cloud account can run a maximum of 200 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDevicePropertyStatus	The operation that you want to perform. Set the value to QueryDevicePropertyStatus.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The key of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. The ID of the device. The ID is the unique identifier that is issued by IoT Platform to the device. You can call the QueryDeviceDetail operation to query the value of this parameter for a specified device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter takes precedence.
FunctionBlockId	String	No	BatteryModule	The identifier of a Thing Specification Language (TSL)-based custom module. Each identifier is unique in a product. If you do not specify this parameter, the system queries the data of the default module.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call succeeds. For more information, see **List**.
List	Array of PropertyStatusInfo		The array of property information. The information about each property is indicated by the **PropertyStatusInfo** parameter.

Parameter	Type	Example	Description
PropertyStatusInfo			
DataType	String	int	The data type of the property. Valid values: • **int**: integer • **float**: single-precision floating-point number • **double**: double-precision floating-point number • **enum**: enumeration • **bool**: Boolean • **text**: character • **date**: time (string-type UTC timestamp in milliseconds) • **array**: array • **struct**: structure
Identifier	String	Temperture	The identifier of the property.
Name	String	temperature	The name of the property.
Time	String	1517553572362	The time when the property was modified, in milliseconds.
Unit	String	°C	The unit of the property value.
Value	String	25	The value of the property.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • **true**: The call succeeded. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryDevicePropertyStatus
&ProductKey=a1rYuVF****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDevicePropertyStatusResponse>
  <Data>
        <List>
              <PropertyStatusInfo>
                    <Name>Humidity</Name>
                    <Value>48</Value>
                    <Time>1579249151178</Time>
                    <DataType>int</DataType>
                    <Identifier>Humidity</Identifier>
                    <Unit>%</Unit>
              </PropertyStatusInfo>
              <PropertyStatusInfo>
                    <Name>Temperature</Name>
                    <Value>32.46</Value>
                    <Time>1579249151178</Time>
                    <DataType>float</DataType>
                    <Identifier>Temperature</Identifier>
                    <Unit>°C</Unit>
              </PropertyStatusInfo>
        </List>
  </Data>
  <RequestId>84BAD25B-9879-4BA1-9213-F576C6558D77</RequestId>
  <Success>true</Success>
</QueryDevicePropertyStatusResponse>
```

`JSON` format

```
{
    "Data": {
        "List": {
            "PropertyStatusInfo": [
                {
                    "Name": "Humidity",
                    "Value": "48",
                    "Time": "1579249151178",
                    "DataType": "int",
                    "Identifier": "Humidity",
                    "Unit": "%"
                },
                {
                    "Name": "Temperature",
                    "Value": "32.46",
                    "Time": "1579249151178",
                    "DataType": "float",
                    "Identifier": "Temperature",
                    "Unit": "°C"
                }
            ]
        }
    },
    "RequestId": "84BAD25B-9879-4BA1-9213-F576C6558D77",
    "Success": true
}
```

4.11.12. QueryDeviceOriginalPropertyStatus

Queries the original property snapshots that are submitted by a specified device. These snapshots include properties that are verified and not verified by a specified Thing Specification Language (TSL) model.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceOriginalPropertyStatus	The operation that you want to perform. Set the value to QueryDeviceOriginalPropertyStatus.
Asc	Integer	Yes	0	The chronological order in which property data is queried. Valid values: • 0: in reverse chronological order. • 1: in chronological order.
PageSize	Integer	Yes	10	The number of entries to return on each page. Valid values: 1 to 50.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
NextPageToken	String	No	Bo***x44Qx	The identifier of the next page. If the next page exists, this parameter is returned. In this case, you must add the value of the parameter to the next request.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.common.InvalidPageParams	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The data returned if the call succeeds. For more information, see the parameters of the List parameter.

Parameter	Type	Example	Description
List	Array of PropertyStatusDataInfo		The array of property information. The information about each property is indicated by the **PropertyStatusInfo** parameter.
PropertyStatusDataInfo			
Identifier	String	Temperture	The identifier of the property.
Time	Long	1517553572362	The time when the property was modified, in milliseconds.
Value	String	26	The value of the property.
NextPageToken	String	Bo***x44Qx	The identifier of the next page.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the value **true** is returned, you can add the value of the **NextPageToken** parameter to the next query. This allows you to query the data that is not returned by the current query.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • true: The call succeeded. • false: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/? Action=QueryDeviceOriginalPropertyStatus
&Asc=0
&PageSize=10
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceOriginalPropertyStatusResponse>
  <Data>
        <NextValid>false</NextValid>
        <nextPageToken>Bo***x44Qx</nextPageToken>
        <List>
              <PropertyStatusInfo>
                    <Value>48</Value>
                    <Time>1579249151178</Time>
                    <Identifier>Humidity</Identifier>
              </PropertyStatusInfo>
              <PropertyStatusInfo>
                    <Value>32.46</Value>
                    <Time>1579249151178</Time>
                    <Identifier>Temperature</Identifier>
              </PropertyStatusInfo>
        </List>
  </Data>
  <RequestId>84BAD25B-9879-4BA1-9213-F576C6558D77</RequestId>
  <Success>true</Success>
</QueryDeviceOriginalPropertyStatusResponse>
```

`JSON` format

```
{
    "Data": {
        "NextValid": false,
        "nextPageToken": "Bo***x44Qx",
        "List": {
            "PropertyStatusInfo": [
                {
                    "Value": "48",
                    "Time": "1579249151178",
                    "Identifier": "Humidity"
                },
                {
                    "Value": "32.46",
                    "Time": "1579249151178",
                    "Identifier": "Temperature"
                }
            ]
        }
    },
    "RequestId": "84BAD25B-9879-4BA1-9213-F576C6558D77",
    "Success": true
}
```

4.11.13. QueryDeviceOriginalPropertyData

Queries the original property records that are submitted by a specified device. These records include properties that are verified and not verified by a specified Thing Specification Language (TSL) model.

Limits

- You can query property data that is generated within the last 30 days.

> **Note** The data of a property is stored from the day when the property data was generated.

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceOriginalPropertyData	The operation that you want to perform. Set the value to QueryDeviceOriginalPropertyData.
Asc	Integer	Yes	0	The sorting order of the returned property records. Valid values: • 0: descending. • 1: ascending. **Note** The **start time** must be earlier than the **end time**. The system sorts the returned records based on the specified order.
EndTime	Long	Yes	1579249499000	The end of the time range to query. The value must be a 13-digit timestamp.

Parameter	Type	Required	Example	Description
Identifier	String	Yes	temperature	The identifier of the property. • If low-level verification is applied, you can perform the following steps to view the **Identifier** of a device event: Log on to the IoT Platform console and go to the Define Feature tab of the Product Details page. You can also call the QueryThingModel operation and view the service identifier in the returned TSL data. • If no verification is applied, the value must be the same as the value of the custom **identifier** that is submitted by the device.
PageSize	Integer	Yes	10	The maximum number of records that are returned for each property. Maximum value: 100. The number of records that are returned for an arbitrary property cannot exceed the limit.
StartTime	Long	Yes	1579249499000	The start of the time range to query. The value must be a 13-digit timestamp.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
NextPageToken	String	No	Bo***x44Qx	The identifier of the next page. If the next page exists, this parameter is returned. In this case, you must add the value of the parameter to the next request.
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and the combination of the **ProductKey** and **DeviceName** parameters at the same time, only the **IotId** parameter is used.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information about common request parameters, see Common parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.device.InvalidIoTId	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The property data returned if the call succeeds.
List	Array of PropertyInfo		The list of properties. Each element indicates a property.
PropertyInfo			
Time	String	1516541885630	The time when the property was modified.
Value	String	2	The value of the property.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the value **true** is returned, you can add the value of the **NextPageToken** parameter to the next request. This allows you to query the data that is not included in the current query.
nextPageToken	String	Bo***x44Qx	The identifier of the next page.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • true: The call succeeded. • false: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/? Action=QueryDeviceOriginalPropertyData
&Asc=0
&EndTime=1579249499000
&Identifier=temperature
&PageSize=10
&StartTime=1579249499000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceOriginalPropertyDataResponse>
  <Data>
        <NextValid>false</NextValid>
        <nextPageToken>Bo***x44Qx</nextPageToken>
        <List>
              <PropertyInfo>
                    <Value>32.46</Value>
                    <Time>1579249151178</Time>
              </PropertyInfo>
        </List>
  </Data>
  <RequestId>45391E10-446B-4986-863E-1BA8CC44748F</RequestId>
  <Success>true</Success>
</QueryDeviceOriginalPropertyDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": false,
    "nextPageToken": "Bo***x44Qx",
    "List": {
      "PropertyInfo": [
        {
          "Value": "32.46",
          "Time": 1579249151178
        }
      ]
    }
  },
  "RequestId": "45391E10-446B-4986-863E-1BA8CC44748F",
  "Success": true
}
```

4.11.14. QueryDeviceOriginalEventData

Queries the event records that are submitted by a specified device. These records include events that are verified and not verified by a specified Thing Specification Language (TSL) model.

Limits

- You can query only the event records that are generated in the last 30 days.

> **Note** The storage period of an event record is calculated from the day when the record is generated.

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceOriginalEventData	The operation that you want to perform. Set the value to QueryDeviceOriginalEventData.
Asc	Integer	Yes	0	The sorting order of the returned event records. Value values: • 0: descending. • 1: ascending.
EndTime	Long	Yes	1516541900303	The end of the time range to query. The value is a 13-digit timestamp in milliseconds.

Parameter	Type	Required	Example	Description
Identifier	String	Yes	PowerOff	The event identifier that you want to query. • If low-level verification is applied, you can perform the following steps to view the **Identifier** of a device event: Log on to the IoT Platform console and go to the Define Feature tab of the Product Details page. You can also call the QueryThingModel operation and view the service identifier in the returned TSL data. • If no verification is applied, the value must be the same as the value of the custom **identifier** that is submitted by the device.
PageSize	Integer	Yes	10	The number of entries to return on each page. Valid values: 1 to 50. Default value: 10.
StartTime	Long	Yes	1516538300303	The start of the time range to query. The value is a 13-digit timestamp in milliseconds.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
NextPageToken	String	No	Bo***x44Qx	The identifier of the next page. If the next page exists, this parameter is returned. In this case, you must add the value of the parameter to the next request.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and the combination of the **ProductKey** and **DeviceName** parameters at the same time, only the **IotId** parameter is used.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information about common request parameters, see Common parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.device.InvalidIoTId	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The event records returned if the call succeeds.
List	Array of EventInfo		The array of events. Each element represents an event. For more information about the details of the event, see the parameters of the **EventInfo** parameter.

Parameter	Type	Example	Description
EventInfo			
EventType	String	info	The type of the event. Valid values: • info: information. • alert: alert. • error: error.
Identifier	String	PowerOff	The identifier of the event.
Name	String	Device shutdown	The name of the event.
OutputData	String	{"structArgs": {"structchildFLOATf71c20e":1.23}}	The output parameter of the event. The value is a string in the MAP format.
Time	String	1579163099000	The time when the event occurred. The value is a 13-digit timestamp in milliseconds.
NextPageToken	String	Bo***x44Qx	The identifier of the next page.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the value **true** is returned, you can add the value of the **NextPageToken** parameter to the next request. This allows you to query the data that is not included in the current query.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • true: The call succeeded. • false: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/? Action=QueryDeviceOriginalEventData
&Asc=0
&EndTime=1516541900303
&Identifier=PowerOff
&PageSize=10
&StartTime=1516538300303
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceOriginalEventDataResponse>
  <Data>
        <NextValid>false</NextValid>
        <NextTime>Bo***x44Qx</NextTime>
        <List>
              <EventInfo>
                    <Name>testEventInfoName</Name>
                    <Time>1516517974638</Time>
                    <OutputData>{"structArgs":{"structchildFLOATf71c20e":1.23,"structchildI
NT6b6b626":3,"structchildDATE663436a":"1516517966152","structchildDOUBLE08d0f74":1.23,"stru
ctchildTEXTdc764f9":"07b68264b0ba42c18e5f","structchildBOOLd260729":0,"structchildENUMbe625
90":1},"enumArgs":0,"boolArgs":0,"floatArgs":2.3,"dateArgs":"1516517966152","intArgs":1,"do
ubleArgs":2.3,"textArgs":"dV56zbkzjBjw1Ti1dA52"}</OutputData>
                    <EventType>info</EventType>
                    <Identifier>testEventInfo</Identifier>
              </EventInfo>
        </List>
  </Data>
  <RequestId>45391E10-446B-4986-863E-1BA8CC44748F</RequestId>
  <Success>true</Success>
</QueryDeviceOriginalEventDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": false,
    "NextPageToken": "Bo***x44Qx",
    "List": {
      "EventInfo": [
        {
          "Name": "testEventInfoName",
          "Time": 1516517974638,
          "OutputData": "{\"structArgs\":{\"structchildFLOATf71c20e\":1.23,\"structchildINT
6b6b626\":3,\"structchildDATE663436a\":\"1516517966152\",\"structchildDOUBLE08d0f74\":1.23,
\"structchildTEXTdc764f9\":\"07b68264b0ba42c18e5f\",\"structchildBOOLd260729\":0,\"structch
ildENUMbe62590\":1},\"enumArgs\":0,\"boolArgs\":0,\"floatArgs\":2.3,\"dateArgs\":\"15165179
66152\",\"intArgs\":1,\"doubleArgs\":2.3,\"textArgs\":\"dV56zbkzjBjw1Ti1dA52\"}",
          "EventType": "info",
          "Identifier": "testEventInfo"
        }
      ]
    }
  },
  "RequestId": "45391E10-446B-4986-863E-1BA8CC44748F",
  "Success": true
}
```


4.11.15. QueryDeviceOriginalServiceData

Queries the original service records that are submitted by a specified device. These records include services that are verified and not verified by a specified Thing Specification Language (TSL) model.

Limits

- You can query only the service call records that are generated in the last 30 days.

> **Note** The storage period of a service call record is calculated from the day when the service is called.

- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** Resource Access Management (RAM) users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryDeviceOriginalServiceData	The operation that you want to perform. Set the value to QueryDeviceOriginalServiceData.
Asc	Integer	Yes	0	The sorting order of the returned service call records. Valid values: • 0: descending. • 1: ascending. Note The start time must be earlier than the end time. The system sorts the returned records based on the specified order.
EndTime	Long	Yes	1579249499000	The end of the time range to query. The value must be a 13-digit timestamp.
Identifier	String	Yes	Set	The identifier of the service. • If low-level verification is applied, you can perform the following steps to view the **Identifier** of a device event: Log on to the IoT Platform console and go to the Define Feature tab of the Product Details page. You can also call the QueryThingModel operation and view the service identifier in the returned TSL data. • If no verification is applied, the value must be the same as the value of the custom **identifier** that is submitted by the device.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 50.
StartTime	Long	Yes	1579249498000	The start of the time range to query. The value must be a 13-digit timestamp.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ProductKey	String	No	a1BwAGV****	The **ProductKey** of the product to which the device belongs. **Note** If you specify this parameter, you must also specify the **DeviceName** parameter.
DeviceName	String	No	light	The name of the device. **Note** If you specify this parameter, you must also specify the **ProductKey** parameter.
NextPageToken	String	No	Bo***x44Qx	The identifier of the next page. The response to the first request contains this parameter, which will be added to the next request.

Parameter	Type	Required	Example	Description
IotId	String	No	Q7uOhVRdZRRlDnTLv****00100	The ID of the device. It is the unique identifier that IoT Platform generated for the device. **Note** If you specify this parameter, you do not need to specify the **ProductKey** or **DeviceName** parameter. The **IotId** parameter specifies a unique identifier for the device, and corresponds to a combination of the **ProductKey** and **DeviceName** parameters. If you specify the **IotId** parameter and a combination of the **ProductKey** and **DeviceName** parameters at the same time, the **IotId** parameter takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this API operation. For more information about common request parameters, see Common parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.device.InvalidIoTId	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The service call records returned if the call succeeds.
List	Array of ServiceInfo		The array of service call records. Each element represents a service call record. For more information about the details of a service, see the parameters that belong to the **ServiceInfo** parameter.
ServiceInfo			
Identifier	String	Set	The identifier of the service.

Parameter	Type	Example	Description
InputData	String	{\"code\":200,\"data\": {},\"id\":\"100686\",\"message\":\"success\",\"version\":\"1.0\"}	The input parameter of the service. The value is a string in the MAP format. Syntax: key:value.
Name	String	Set_Temperature	The service name.
OutputData	String	{\"LightAdjustLevel\":123}	The output parameter of the service. The value is a string in the MAP format. Syntax: key:value.
Time	String	1579249499000	The time when the service was called.
NextPageToken	String	Bo***x44Qx	The identifier of the next page.
NextValid	Boolean	true	Indicates whether the next page exists. • **true**: The next page exists. • **false**: The next page does not exist. If the value **true** is returned, you can add the value of the **NextPageToken** parameter to the next request. This allows you to query the data that is not included in the current query.
ErrorMessage	String	A system exception has occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call succeeds. • true: The call succeeded. • false: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/? Action=QueryDeviceOriginalServiceData
&Asc=0
&EndTime=1579249499000
&Identifier=Set
&PageSize=10
&StartTime=1579249498000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryDeviceOriginalServiceDataResponse>
  <Data>
        <NextValid>true</NextValid>
        <NextPageToken>Bo***x44Qx</NextPageToken>
        <List>
              <ServiceInfo>
                    <Name>set</Name>
                    <Time>1517315865198</Time>
                    <OutputData>{"code":200,"data":{},"id":"100686","message":"success","ve
rsion":"1.0"}</OutputData>
                    <InputData>{"LightAdjustLevel":123}</InputData>
                    <Identifier>set</Identifier>
              </ServiceInfo>
        </List>
  </Data>
  <RequestId>A44C818E-FA7F-4765-B1E7-01D14AE01C6A</RequestId>
  <Success>true</Success>
</QueryDeviceOriginalServiceDataResponse>
```

`JSON` format

```
{
  "Data": {
    "NextValid": true,
    "NextPageToken": "Bo***x44Qx",
    "List": {
      "ServiceInfo": [
        {
          "Name": "set",
          "Time": 1517315865198,
          "OutputData": "{\"code\":200,\"data\":{},\"id\":\"100686\",\"message\":\"success\
",\"version\":\"1.0\"}",
          "InputData": "{\"LightAdjustLevel\":123}",
          "Identifier": "set"
        }
      ]
    }
  },
  "RequestId": "A44C818E-FA7F-4765-B1E7-01D14AE01C6A",
  "Success": true
}
```


4.12. Manage Topics

4.12.1. CreateProductTopic

Creates a custom topic category for a specified product.

Limits

Each Alibaba Cloud account can run a maximum of 1 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateProductTopic	The operation that you want to perform. Set the value to CreateProductTopic.

Parameter	Type	Required	Example	Description
Operation	String	Yes	PUB	The operation permissions of the device on the topic category. Valid values: • **SUB**: Subscribe. • **PUB**: Publish. • **ALL**: Publish and Subscribe.
ProductKey	String	Yes	aldDEin****	The ProductKey of the product for which you want to create a topic category.
TopicShortName	String	Yes	submit	The name of the user-defined category level that you want to set. By default, a topic category includes the following levels: _productkey_ and _devicename_. Separate the two levels with slashes (/). Format of a topic category: `productKey/deviceName/topicShortName` . **Note** Each level can contain letters, digits, and underscores (_), and cannot be empty.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
Desc	String	No	submit a test topic	The description of the topic category. The description must be 1 to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
TopicId	Long	10000	The ID of the topic category. The ID is generated by IoT Platform if the call is successful. **Note** Secure the information for future reference. When you call an operation that is related to the topic category, you must provide this parameter.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateProductTopic
&ProductKey=aldDEin****
&TopicShortName=submit
&Operation=PUB
&Desc=submit a test topic
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateProductTopicResponse>
      <RequestId>FCC27691-9151-4B93-9622-9C90F30542EC</RequestId>
      <Success>true</Success>
      <TopicId>10000</TopicId>
</CreateProductTopicResponse>
```

`JSON` format

```
{
    "RequestId":"FCC27691-9151-4B93-9622-9C90F30542EC",
    "Success":true,
    "TopicId":10000
}
```

4.12.2. UpdateProductTopic

Modifies a specified topic category.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateProductTopic	The operation that you want to perform. Set the value to UpdateProductTopic.
Operation	String	Yes	PUB	The operation permissions of the device on the topic category. Valid values: • **SUB**: Subscribe. • **PUB**: Publish. • **ALL**: Publish and Subscribe.

Parameter	Type	Required	Example	Description
TopicId	String	Yes	821****	The ID of the topic category that you want to modify.
TopicShortName	String	Yes	resubmit	The name of the user-defined category level that you want to set. By default, a topic category includes the following levels: _productkey_ and _devicename_. Separate the two levels with slashes (/). Format of a topic category: `productKey/deviceName/topicShortName`. **Note** Each level can contain letters, digits, and underscores (_), and cannot be empty.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Desc	String	No	resubmit a test topic	The description of the topic category. The description must be 1 to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateProductTopic
&TopicId=821****
&TopicShortName=resubmit
&Operation=PUB
&Desc=resubmit a test topic
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateProductTopicResponse>
      <RequestId>FCC27691-9151-4B93-9622-9C90F30542EC</RequestId>
      <Success>true</Success>
</UpdateProductTopicResponse>
```

`JSON` format

```
{
    "RequestId":"FCC27691-9151-4B93-9622-9C90F30542EC",
    "Success":true
}
```

4.12.3. QueryProductTopic

Queries the topic categories of a specified product.

Limits

Each Alibaba Cloud account can run a maximum of 3 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryProductTopic	The operation that you want to perform. Set the value to QueryProductTopic.
ProductKey	String	Yes	HMyB*******	The **ProductKey** of the product.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Array of ProductTopicInfo		The list of topic categories returned if the call is successful. For more information, see **ProductTopicInfo**.
ProductTopicInfo			
Desc	String	topicDesc	The description of the topic category.
Id	String	821****	The ID of the topic category.
Operation	String	1	The operation that devices can perform on the topic category. Valid values: • **0**: Publish. • **1**: Subscribe. • **2**: Publish and Subscribe.
ProductKey	String	HMyB***	The ProductKey of the product.
TopicShortName	String	/HMyB***/${deviceName}/user/get	The topic category that does not include the _productKey_ and _deviceName_ levels.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	B953EAFF-CFF6-4FF8-BC94-8B89F018E4DD	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryProductTopic
&ProductKey=HMyB*******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryProductTopicResponse>
  <RequestId>22C22D81-11EA-419F-81F1-08207DD9D0E5</RequestId>
  <Data>
        <ProductTopicInfo>
              <TopicShortName>/g18***/${deviceName}/user/update</TopicShortName>
              <Operation>0</Operation>
              <Id>12362218</Id>
              <ProductKey>g18***</ProductKey>
        </ProductTopicInfo>
        <ProductTopicInfo>
              <TopicShortName>/g18***/${deviceName}/user/update/error</TopicShortName>
              <Operation>0</Operation>
              <Id>12362219</Id>
              <ProductKey>g18***</ProductKey>
        </ProductTopicInfo>
        <ProductTopicInfo>
              <TopicShortName>/g18***/${deviceName}/user/get</TopicShortName>
              <Operation>1</Operation>
              <Id>12362220</Id>
              <ProductKey>g18***</ProductKey>
        </ProductTopicInfo>
  </Data>
  <Success>true</Success>
</QueryProductTopicResponse>
```

`JSON` format

```
{
    "RequestId": "22C22D81-11EA-419F-81F1-08207DD9D0E5",
    "Data": {
        "ProductTopicInfo": [
            {
                "TopicShortName": "/g18***/${deviceName}/user/update",
                "Operation": "0",
                "Id": "12362218",
                "ProductKey": "g18***"
            },
            {
                "TopicShortName": "/g18***/${deviceName}/user/update/error",
                "Operation": "0",
                "Id": "12362219",
                "ProductKey": "g18***"
            },
            {
                "TopicShortName": "/g18***/${deviceName}/user/get",
                "Operation": "1",
                "Id": "12362220",
                "ProductKey": "g18***"
            }
        ]
    },
    "Success": true
}
```

4.12.4. DeleteProductTopic

Deletes a specified topic category.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteProductTopic	The operation that you want to perform. Set the value to DeleteProductTopic.
TopicId	String	Yes	798****	The ID of the topic category that you want to delete.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteProductTopic
&TopicId=798****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteProductTopicResponse>
      <RequestId>FCC27691-9151-4B93-9622-9C90F30542EC</RequestId>
      <Success>true</Success>
</DeleteProductTopicResponse>
```

`JSON` format

```
{
    "RequestId":"FCC27691-9151-4B93-9622-9C90F30542EC",
    "Success":true
}
```

4.12.5. CreateTopicRouteTable

Establishes message routing relationships between topics.

Limits

- You can specify a maximum of 100 destination topics for a source topic.
- The device to which the source topic belongs must be activated.
- The source and destination topics support only custom topics.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateTopicRouteTable	The operation that you want to perform. Set the value to CreateTopicRouteTable.
DstTopic.N	RepeatList	Yes	/x7aWKW9****/deviceNameTest1/user/add	The list of destination topics. The destination topics subscribe to the source topic that is specified by the **SrcTopic** parameter. Use the array data type even if you specify only one destination topic. Examples: `DstTopic.1=/x7aWKW9****/deviceNameTest1/user/add` and `DstTopic.2=/x7aWKW9****/deviceNameTest2/user/delete`.
SrcTopic	String	Yes	/x7aWKW9****/testDataToDataHub/user/update	The source topic. Example: `SrcTopic=/x7aWKW9 ******/testDataToDataHub/user/update`.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	iot.system.SystemException	The error message returned if the call fails.
FailureTopics	List	["/2Fx7aWKW9****/FdeviceNameTest2/user/delete"]	The list of topics returned if the call fails.
IsAllSucceed	Boolean	true	Indicates whether all the message routing relationships between topics are established. • **true**: All the message routing relationships between topics are established. • **false**: Not all the message routing relationships between topics are established.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateTopicRouteTable
&SrcTopic=%2Fx7aWKW9****%2FtestDataToDataHub%2Fuser%2Fupdate
&DstTopic.1=%2Fx7aWKW9****%2FdeviceNameTest1%2Fuser%2Fadd
&DstTopic.2=%2Fx7aWKW9****%2FdeviceNameTest2%2Fuser%2Fdelete
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateTopicRouteTableResponse>
  <RequestId>32B9828A-25DD-48E2-8E26-D1664B341940</RequestId>
  <FailureTopics></FailureTopics>
  <Success>true</Success>
</CreateTopicRouteTableResponse>
```

`JSON` format

```
{
    "RequestId": "32B9828A-25DD-48E2-8E26-D1664B341940",
    "FailureTopics": {
        "Topic": []
    },
    "Success": true
}
```

4.12.6. DeleteTopicRouteTable

Deletes the routing relationships of a specified custom topic.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteTopicRouteTable	The operation that you want to perform. Set the value to DeleteTopicRouteTable.
DstTopic.N	RepeatList	Yes	/x7aWKW9***/deviceNameTest1/user/add	The list of destination topics. The destination topics subscribe to the source topic that is specified by the **SrcTopic** parameter. Examples: `DstTopic.1=/x7aWKW9****/deviceNameTest1/user/add` and `DstTopic.2=/x7aWKW9****/deviceNameTest2/user/delete`.
SrcTopic	String	Yes	/x7aWKW9***/testDataToDataHub/user/update	The source topic. Example: `SrcTopic.1=/x7aWKW9****/testDataToDataHub/user/update`.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
FailureTopics	List	["/x7aWKW9***/deviceNameTest2/user/delete"]	The list of topics returned if the call fails.
IsAllSucceed	Boolean	true	Indicates whether all the routing relationships of the topic are deleted. • **true**: All the routing relationships of the topic are deleted. • **false**: Not all the message routing relationships of the topic are deleted.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteTopicRouteTable
&SrcTopic=%2Fx7aWKW94bb8%2FtestDataToDataHub%2Fuser%2Fupdate
&DstTopic.1=%2Fx7aWKW94bb8%2FdeviceNameTest1%2Fuser%2Fadd
&DstTopic.2=%2Fx7aWKW94bb8%2FdeviceNameTest2%2Fuser%2Fdelete
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteTopicRouteTableResponse>
  <RequestId>9DEBEF66-2B75-4CB2-BF19-1488802F4381</RequestId>
  <FailureTopics></FailureTopics>
  <Success>true</Success>
</DeleteTopicRouteTableResponse>
```

`JSON` format

```
{
    "RequestId": "9DEBEF66-2B75-4CB2-BF19-1488802F4381",
    "FailureTopics": {
        "Topic": []
    },
    "Success": true
}
```

4.12.7. QueryTopicReverseRouteTable

Queries the source topics that are subscribed to by a specified custom topic.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryTopicReverseRouteTable	The operation that you want to perform. Set the value to QueryTopicReverseRouteTable.
Topic	String	Yes	/x7aWKW9***/testDataToDataHub/user/update	The destination topic that receives messages.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
RegionId	String	No	cn-shanghai	The region where your devices reside. The region you specify must match the region that is specified in the console. Example: cn-shanghai. **Note** This parameter is no longer used as an operation-specific request parameter. It is included in common request parameters.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC"	The ID of the request.
SrcTopics	List	["/CXi4***/device1/user/get","/CXi4***/device4/user/get"]	The list of source topics returned if the call is successful.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryTopicReverseRouteTable
&Topic=%2Fx7aWKW94bb8%2FtestDataToDataHub%2Fuser%2Fupdate
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryTopicReverseRouteTableResponse>
  <SrcTopics>
        <Topic>/CXi4***/device1/user/get</Topic>
        <Topic>/CXi4***/device4/user/get</Topic>
  </SrcTopics>
  <RequestId>C5515170-3C1F-4004-A7C1-181E7955BC73</RequestId>
  <Success>true</Success>
</QueryTopicReverseRouteTableResponse>
```

`JSON` format

```
{
    "SrcTopics": {
        "Topic": ["/CXi4***/device1/user/get","/CXi4***/device4/user/get"]
    },
    "RequestId": "C5515170-3C1F-4004-A7C1-181E7955BC73",
    "Success": true
}
```

4.12.8. QueryTopicRouteTable

Queries the destination topics that subscribe to a specified source topic.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryTopicRouteTable	The operation that you want to perform. Set the value to QueryTopicRouteTable.
Topic	String	Yes	/x7aWKW94bb8/testDataToDataHub/user/update	The source topic that publishes messages.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
DstTopics	List	["/CXi4***/device2/get","/CXi4***/device3/get"]	The list of destination topics returned if the call is successful.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	FCC27691-9151-4B93-9622-9C90F30542EC	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryTopicRouteTable
&Topic=%2Fx7aWKW94bb8%2FtestDataToDataHub%2Fuser%2Fupdate
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryTopicRouteTableResponse>
  <DstTopics>
        <Topic>/a1T27vz****/${deviceName}/user/submit/update</Topic>
  </DstTopics>
  <RequestId>D6CB2387-0D65-4240-9436-A2E18B434E31</RequestId>
  <Success>true</Success>
</QueryTopicRouteTableResponse>
```

`JSON` format

```
{
    "DstTopics": {
        "Topic": [
            "/a1T27vz****/${deviceName}/user/submit/update"
        ]
    },
    "RequestId": "D6CB2387-0D65-4240-9436-A2E18B434E31",
    "Success": true
}
```

4.13. Data forwarding

4.13.1. CreateRule

Creates a rule for a specified topic.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateRule	The operation that you want to perform. Set the value to CreateRule.
Name	String	Yes	iot_test1	The name of the rule. The rule name must be 1 to 30 characters in length, and can contain letters, digits, underscores (_), and hyphens (-).

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Select	String	No	deviceName() as deviceName, items.Humidity.value as Humidity, items.Temperature.value as Temperature	The SQL SELECT statement to be executed. For more information, see SQL expressions. **Note** Specify the content that follows the SELECT keyword for this parameter. For example, if the SELECT statement is `SELECT a,b,c`, specify `a,b,c` for this parameter.
				The topic to which this rule is applied. Syntax: `${deviceName}/topicShortName`. `${deviceName}` specifies the name of the device, and `topicShortName` specifies the custom name of the topic. • Basic communication topics or Thing Specification Language (TSL)-based communication topics. Syntax: `${deviceName}/topicShortName`. You can replace `${deviceName}` with the `+` wildcard. The wildcard indicates that the topic applies to all devices under the product. Valid values of `topicShortName`:

Parameter	Type	Required	Example	Description
ShortTopic	String	No	+/thing/event/property/post	○ `/thing/event/property/post` : submits the property data of a device. ○ `/thing/event/${tsl.event.identifier}/post` : submits the event data of a device. `${tsl.event.identifier}` specifies the identifier of an event in the TSL model. ○ `/thing/lifecycle` : submits device lifecycle changes. ○ `/thing/downlink/reply/message` : sends a response to a request from IoT Platform. ○ `/thing/list/found` : submits the data when a gateway detects a new sub-device. ○ `/thing/topo/lifecycle` : submits device topology changes. ○ `/thing/event/property/history/post` : submits historical property data of a device. ○ `/thing/event/${tsl.event.identifier}/post` : submits the historical event data of a device. `${tsl.event.identifier}` specifies the identifier of an event in the TSL. ○ `/ota/upgrade` : submits OTA update statuses. ○ `/ota/version/post` : submits OTA module versions. ○ `/thing/deviceinfo/update` : submits device tag changes. ○ `/edge/driver/${driver_id}/point_post` : submits pass-through data from Link IoT Edge. `${driver_id}` specifies the ID of the driver that a device uses to access Link IoT Edge. `${packageId}/${jobId}/ota/job/status` : submits the statuses of OTA update batches. This topic is a basic communication topic. `${packageId}` specifies the ID of the update package. `${jobId}` specifies the ID of the update batch.

Parameter	Type	Required	Example	Description
				• Custom topics. Example: `${deviceName}/user/get`. You can call the QueryProductTopic operation to view all custom topics of the product. When you specify a custom topic, you can use the `+` and `#` wildcards. ○ You can replace `${deviceName}` with the `+` wildcard. The wildcard indicates that the topic applies to all devices under the product. ○ You can replace the fields that follow ${deviceName} with `/user/#`. The `#` wildcard indicates that the topic applies whatever values are specified for the fields that follow `/user`. For more information about how to use wildcards, see Wildcards in topics. • Topic that is used to submit device status changes: `${deviceName}`. You can use the `+` wildcard. In this case, the status changes of all devices under the product are submitted.
Where	String	No	Temperature>35	The condition that is used to trigger the rule. For more information, see SQL expressions. **Note** Specify the fields that follow the **Where** keyword for this parameter. For example, if the **WHERE** clause is `WHERE a > 10`, specify `a > 10` for this parameter.
ProductKey	String	No	a1T27vz****	The ProductKey of the product to which the rule applies.

Parameter	Type	Required	Example	Description
RuleDesc	String	No	rule test	The description of the rule. The description can be up to 100 characters in length.
DataType	String	No	JSON	The format of the data to be processed by the rule. You must specify the format of device data to be processed for this parameter. Valid values: • **JSON**: JSON data. • **BINARY**: binary data. **Note** If this parameter is set to **BINARY**, you cannot set the **TopicType** parameter to 0 and forward data toTablestore and ApsaraDB RDS. Default value: JSON.
TopicType	Integer	No	1	• **0**: The topic is a basic communication topic or TSL-based communication topic. • **1**: The topic is a custom topic. • **2**: The topic is used to submit device status changes. Syntax: `/as/mqtt/status/${productKey}/${deviceName}`.
ResourceGroupId	String	No	rg-acfmxazb4ph****	The ID of the resource group to which the rule is assigned. You can view the resource group information in the Resource Management console. If you do not specify this parameter, the rule is assigned to the default resource group.
Topic	String	No	/sys/g18l***/device1/thing/event/property/post	The complete topic to which the rule applies. If you specify this parameter, you do not need to specify the **ProductKey**, **ShortTopic**, and **TopicType** parameters.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

> **Note** To enable a rule, you must specify the ProductKey, ShortTopic, and Select parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E4C0FF92-2A86-41DB-92D3-73B60310D25E	The ID of the request.
RuleId	Long	100000	The ID of the rule. The rule ID is generated by the rules engine if the call was successful. **Note** Secure the rule ID, which must be provided when you call the rule-related operations.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateRule
&Name=iot_test1
&ProductKey=a1T27vz****
&ShortTopic=+/thing/event/property/post
&Select=deviceName() as deviceName, items.Humidity.value as Humidity, items.Temperature.val
ue as Temperature
&RuleDesc=rule test
&DataType=JSON
&Where=Temperature>35
&TopicType=1
&ResourceGroupId=rg-acfmxazb4ph****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateRuleResponse>
      <RequestId>E4C0FF92-2A86-41DB-92D3-73B60310D25E</RequestId>
      <RuleId>100000</RuleId>
      <Success>true</Success>
</CreateRuleResponse>
```

`JSON` format

```
{
  "RequestId": "E4C0FF92-2A86-41DB-92D3-73B60310D25E",
  "RuleId": 100000,
  "Success": true
}
```

4.13.2. CreateRuleAction

Creates a rule action for a specified rule to forward processed data from a topic to another topic or a supported Alibaba Cloud service.

Limits

- Destination Alibaba Cloud services that are supported by the rules engine vary based on regions. For more information about the regions and destination cloud services that are supported by the rules engine, see Regions and zones.
- You can create a maximum of 10 rule actions for each rule.
- You can call this API operation to define rule actions to forward data to an IoT Platform topic, AMQP consumer group, or Alibaba Cloud service. The supported Alibaba Cloud services include Message Service (MNS), Function Compute, and Tablestore. If you need to forward data to ApsaraDB RDS, you must use the IoT Platform console.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateRuleAction	The operation that you want to perform. Set the value to CreateRuleAction.
Configuration	String	Yes	null	The configurations of the rule action. You must specify a JSON string. The configurations vary based on the types of rule actions. For more information about required syntax and examples, see the following tables.
RuleId	Long	Yes	100000	The ID of the rule for which you want to create an action. You can log on to the IoT Platform console, and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
Type	String	Yes	REPUBLISH	The type of the rule action. Valid values: • **REPUBLISH**: forwards topic data that is processed by the rules engine to another IoT Platform topic. • **AMQP**: forwards data to an AMQP consumer group. • **MNS**: forwards data that is processed by the rules engine to Message Service (MNS). • **FC**: forwards topic data that is processed by the rules engine to Function Compute for event computing. • **OTS**: forwards data that is processed by the rules engine to OTS for NoSQL data storage. **Note** If you set the **DataType** parameter to **BINARY**, rules are created in the binary format. These rules cannot be used to forward data to Tablestore.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ErrorActionFlag	Boolean	No	false	Specifies whether the rule action forwards error operation data. Error operation data is generated when the rules engine failed to forward data from the IoT Platform topic to the destination cloud service. A data forwarding failure indicates that forwarding retries also fail. Valid values: • **true**: forwards error operation data. • **false**: forwards normal data instead of error operation data. Default value: **false**.

The configurations of the REPUBLISH type

Parameter	Description

Parameter	Description
topic	The destination topic. You can specify a Thing Specification Language (TSL) communication topic or a custom topic. You can forward data to the following downstream TSL communication topics: `/sys/${YourProductKey}/${YourDeviceName}/thing/service/property/set` `/sys/${YourProductKey}/${YourDeviceName}/thing/service/${tsl.service.identifier}` Replace the **${tsl.service.identifier}** variable with a service identifier that is defined in the TSL model.
topicType	The type of the topic. Valid values: 0: a downstream TSL communication topic. 1: a custom topic.

Examples

```
A system topic: {"topic":"/sys/a1TXXXXXWSN/xxx_cache001/thing/service/property/set","topicType":0}
A custom topic: {"topic":"/a1TXXXXXWSN/xxx_cache001/user/update","topicType":1}
```

The configurations of the DATAHUB type

Parameter	Description
projectName	The name of the DataHub project that is used to receive data.
topicName	The name of the DataHub topic that is used to receive data.
regionName	The code of the region in which DataHub is deployed. Example: cn-shanghai.

Parameter	Description
role	The information about the RAM role. You can grant IoT Platform the access to DataHub by assigning a service role to IoT Platform. The syntax of a RAM role: `{"roleArn":"acs:ram::6541***:role/aliyuniotaccessingdatahubrole","roleName":"AliyunIOTAccessingDataHubRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingDataHubRole` indicates a service-linked role that is defined in RAM. This role is used to grant IoT Platform the access to DataHub. You can go to the RAM Roles page of the RAM console to manage RAM roles.
schemaVals	The schema of DataHub. For more information, see the following SchemaVals table.

schemaVals

Parameter	Description
name	The name of the column.
value	The value of the column.
type	The data type of the column. Valid values: BIGINT: big integer DOUBLE: double-precision float BOOLEAN: Boolean. TIMESTAMP: timestamp. STRING: string. DECIMAL: decimal.

Example

```
{
    "schemaVals": [
        {
            "name": "devicename",
            "value": "${deviceName}",
            "type": "STRING"
        },
        {
            "name": "msgtime",
            "value": "${msgTime}",
            "type": "TIMESTAMP"
        }
    ],
    "role": {
        "roleArn": "acs:ram::6541***:role/aliyuniotaccessingdatahubrole",
        "roleName": "AliyunIOTAccessingDataHubRole"
    },
    "projectName": "iot_datahub_stream",
    "topicName": "device_message",
    "regionName": "cn-shanghai"
}
```

The configurations of the OTS type

Parameter	Description
instanceName	The name of the Tablestore instance that is used to receive data.
tableName	The name of the table that is used to receive data.
regionName	The code of the region in which Tablestore is deployed. Example: cn-shanghai.

Parameter	Description
role	The information about the RAM role. You can grant IoT Platform the access to Tablestore by assigning a service role to IoT Platform. The syntax of a RAM role: `{"roleArn":"acs:ram::6541***:role/aliyuniotaccessingotsrole","roleName":"AliyunIOTAccessingOTSRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingOTSRole` indicates a service-linked role that is defined in RAM. This role is used to grant IoT Platform the access to Tablestore. You can go to the RAM Roles page of the RAM console to manage RAM roles.
primaryKeys	The list of primary keys in the destination table. For more information, see the following PrimaryKeys table.

PrimaryKeys

Parameter	Description
columnType	The data type of the primary key. Valid values: INTEGER: integer STRING: string BINARY: binary
columnName	The name of the primary key.
columnValue	The value of the primary key.
option	Specifies whether the primary key is an auto-increment column. You can set the parameter to AUTO_INCREMENT or leave it empty. The primary key is an auto-increment column if the columnType and option parameters are respectively set to INTEGER and AUTO_INCREMENT.

Example

```
{
    "instanceName": "testaaa",
    "tableName": "tt",
    "primaryKeys": [
        {
            "columnType": "STRING",
            "columnName": "ttt",
            "columnValue": "${tt}",
            "option": ""
        },
        {
            "columnType": "INTEGER",
            "columnName": "id",
            "columnValue": "",
            "option": "AUTO_INCREMENT"
        }
    ],
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingotsrole",
        "roleName": "AliyunIOTAccessingOTSRole"
    }
}
```

The configurations of the MNS type

Parameter	Description
themeName	The name of the MNS topic that is used to receive data.
regionName	The code of the region in which MNS is deployed. Example: cn-shanghai.

Parameter	Description
role	The information about the RAM role. To grant IoT Platform the access to MNS, you can assign a service role to IoT Platform. The syntax of a RAM role: `{"roleArn":"acs:ram::6541***:role/aliyuniotaccessingmnsrole","roleName":"AliyunIOTAccessingMNSRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingMNSRole` indicates a service-linked role that is defined in RAM. This role is used to grant IoT Platform access to MNS. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Example

```
{
    "themeName": "mns-test-topic1",
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole",
        "roleName": "AliyunIOTAccessingMNSRole"
    }
}
```

The configurations of the FC type

Parameter	Description
functionName	The name of the function that is used to receive data.
serviceName	The name of the service that is used to receive data.
regionName	The code of the region in which Function Compute is deployed. Example: cn-shanghai.

Parameter	Description
role	The information about the RAM role. You can grant IoT Platform the access to Function Compute by assigning a service role to IoT Platform. The syntax of a RAM role: `{"roleArn":"acs:ram::6541***:role/aliyuniotaccessingfcrole","roleName":"AliyunIOTAccessingFCRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingFCRole` indicates a service-linked role that is defined in RAM. This role is used to grant IoT Platform the access to Function Compute. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Example

```
{
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingfcrole",
        "roleName": "AliyunIOTAccessingFCRole"
    },
    "functionName": "weatherForecast",
    "serviceName": "weather"
}
```

The configurations of the ONS type

Note You must call the SDK or use the console of Message Queue for Apache RocketMQ to grant IoT Platform the access to the service. IoT Platform must be authorized to publish messages to Message Queue for Apache RocketMQ. Then, you can create a rule action to forward data to the service.

Parameter	Description
instanceId	The ID of the Message Queue for Apache RocketMQ instance that is used to receive data.

Parameter	Description
topic	The name of the Message Queue for Apache RocketMQ topic that is used to receive data.
regionName	The code of the region in which Message Queue for Apache RocketMQ is deployed. Example: cn-shanghai. To forward data over the Internet in the same zone, you can use a common Message Queue for Apache RocketMQ instance. To forward data across zones, you must use a Message Queue for Apache RocketMQ Platinum Edition instance.
tag	Optional. The tag. The tag cannot exceed 128 bytes in length.
role	The information about the RAM role. You can grant IoT Platform the access to Message Queue for Apache RocketMQ by assigning a service role to IoT Platform. The syntax of a RAM role: `{"roleArn":"acs:ram::6541***:role/aliyuniotaccessingonsrole","roleName": "AliyunIOTAccessingONSRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingONSRole` indicates a service-linked role that is defined in RAM. This role is used to grant IoT Platform the access to Message Queue for Apache RocketMQ. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Example

```
{
    "instanceId": "MQ_INST_123157908552****_XXXXXX"
    "topic": "aliyun-iot-XXXXX",
    "regionName": "cn-hangzhou",
    "role": {
        "roleArn": "acs:ram::6541***:role/aliyuniotaccessingonsrole",
        "roleName": "AliyunIOTAccessingONSRole"
    }
}
```

The configurations of the AMQP type

Parameter	Description
groupId	The ID of the consumer group.

Example

```
{
    "groupId":"ZTh1JmyLGuZcUfv44p4z00****"
}
```

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
ActionId	Long	10003	The ID of the action. The action ID is generated by the rules engine if the call is successful. **Note** Secure the information for future reference. When you call an operation that is related to the rule action, you must provide the action ID.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	21D327AF-A7DE-4E59-B5D1-ACAC8C024555	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateRuleAction
&RuleId=100000
&Type=REPUBLISH
&Configuration={"topic":"/a1POX0c****/device1/user/get","topicType":1}
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateRuleActionResponse>
      <RequestId>21D327AF-A7DE-4E59-B5D1-ACAC8C024555</RequestId>
      <ActionId>10003</ActionId>
      <Success>true</Success>
</CreateRuleActionResponse>
```

`JSON` format

```
{
    "RequestId": "21D327AF-A7DE-4E59-B5D1-ACAC8C024555",
    "ActionId": 10003,
    "Success": true
}
```

4.13.3. DeleteRule

Deletes a specified rule.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteRule	The operation that you want to perform. Set the value to DeleteRule.

Parameter	Type	Required	Example	Description
RuleId	Long	Yes	100000	The ID of the rule that you want to delete. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	A8F48485-44B9-40D8-A56D-F716F384F387	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteRule
&RuleId=100000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteRuleResponse>
      <RequestId>A8F48485-44B9-40D8-A56D-F716F384F387</RequestId>
      <Success>true</Success>
</DeleteRuleResponse>
```

`JSON` format

```
{
    "RequestId": "A8F48485-44B9-40D8-A56D-F716F384F387",
    "Success": true
}
```

4.13.4. DeleteRuleAction

Deletes a specified rule action.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteRuleAction	The operation that you want to perform. Set the value to DeleteRuleAction.

Parameter	Type	Required	Example	Description
ActionId	Long	Yes	100001	The identifier of the rule action that you want to delete. After you call the CreateRuleAction operation to create a rule action, the rule action ID is returned. You can call the ListRuleActions operation to view the rule action ID.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	8FC9E36B-E0DC-4802-84EE-184E255B4E95	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteRuleAction
&ActionId=1000001
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteRuleActionResponse>
      <RequestId>8FC9E36B-E0DC-4802-84EE-184E255B4E95</RequestId>
      <Success>true</Success>
</DeleteRuleActionResponse>
```

`JSON` format

```
{
    "RequestId": "8FC9E36B-E0DC-4802-84EE-184E255B4E95",
    "Success": true
}
```

4.13.5. GetRule

Queries detailed information about a specified rule.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetRule	The operation that you want to perform. Set the value to GetRule.

Parameter	Type	Required	Example	Description
RuleId	Long	Yes	100000	The ID of the rule that you want to query. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	58D4CEC0-3E95-4DBE-AFC1-809D1400E52F	The ID of the request.
RuleInfo	Struct		The rule information returned if the call is successful. For more information, see RuleInfo.
CreateUserId	Long	100000000000000	The ID of the user who created the rule.

Parameter	Type	Example	Description
Created	String	Thu Feb 28 14:14:33 CST 2019	The time when the rule was created. The time is displayed in UTC-6.
DataType	String	JSON	The data type of the rule. Valid values: **JSON** and **BINARY** .
Id	Long	100000	The ID of the rule.
Modified	String	Thu Feb 28 14:20:58 CST 2019	The time when the rule was last modified. The time is displayed in UTC-6.
Name	String	iotrules	The name of the rule.
ProductKey	String	a1KiV******	The ProductKey of the product to which the rule applies.
RuleDesc	String	rule1Desc	The description of this rule.
Select	String	deviceName() as deviceName	The values of **Select** in the SQL statements of the rule.
ShortTopic	String	+/user/pm25data	The topic to which the rule applies. The topic does not include the ProductKey level. Format: `${deviceName}/topicShortName` . ${deviceName} indicates the name of the device, and topicShortName indicates the custom name of the topic. **Note** For information about how to use the `+` or `#` wildcard in a topic, see Topic wildcards.
Status	String	STOP	The status of the rule. Valid values: • **RUNNING**: Running • **STOP**: Stopped

Parameter	Type	Example	Description
Topic	String	/a1QsMlL44pp/+/user/pm25data	The complete topic to which the rule applies. Format: `${productKey}/${deviceName}/topicShortName`. **Note** For information about how to use the `+` or `#` wildcard in a topic, see Topic wildcards.
TopicType	Integer	1	The type of the topic. This parameter is returned if you set the SQL statement for the rule. Valid values: • **0**: a basic communication topic or TSL communication topic. • **1**: a custom topic. • **2**: a device status topic. If no SQL statement is set for the rule, the value **-1** is returned.
UtcCreated	String	2019-02-28T06:14:33.000Z	The time when the rule was created. The time is displayed in UTC.
UtcModified	String	2019-02-28T06:20:58.000Z	The time when the rule was last modified. The time is displayed in UTC.
Where	String	Temperature>35	The **Where** query condition in the SQL statements of the rule.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetRule
&RuleId=100000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetRuleResponse>
  <RequestId>85648524-E5EE-418E-BD16-FAFBB4FF3645</RequestId>
  <Success>true</Success>
  <RuleInfo>
        <DataType>JSON</DataType>
        <ShortTopic>+/user/pm25data</ShortTopic>
        <ProductKey>a1QsMl****</ProductKey>
        <UtcModified>2019-12-23T03:34:45.000Z</UtcModified>
        <CreateUserId>198426864326****</CreateUserId>
        <UtcCreated>2019-12-23T02:32:06.000Z</UtcCreated>
        <Name>Ruff_rule1</Name>
        <Status>RUNNING</Status>
        <Select>deviceName() as deviceName , timestamp('yyyy-MM-dd HH:mm:ss') as time, pm25
, pm10</Select>
        <Created>Mon Dec 23 10:32:06 CST 2019</Created>
        <Modified>Mon Dec 23 11:34:45 CST 2019</Modified>
        <TopicType>1</TopicType>
        <Topic>/a1QsMlL****/+/user/pm25data</Topic>
        <Id>425367</Id>
  </RuleInfo>
</GetRuleResponse>
```

`JSON` format

```
{
    "RequestId": "85648524-E5EE-418E-BD16-FAFBB4FF3645",
    "Success": true,
    "RuleInfo": {
        "DataType": "JSON",
        "ShortTopic": "+/user/pm25data",
        "ProductKey": "a1QsMl****",
        "UtcModified": "2019-12-23T03:34:45.000Z",
        "CreateUserId": "198426864326****",
        "UtcCreated": "2019-12-23T02:32:06.000Z",
        "Name": "Ruff_rule1",
        "Status": "RUNNING",
        "Select": "deviceName() as deviceName , timestamp('yyyy-MM-dd HH:mm:ss') as time, p
m25, pm10",
        "Created": "Mon Dec 23 10:32:06 CST 2019",
        "Modified": "Mon Dec 23 11:34:45 CST 2019",
        "TopicType": 1,
        "Topic": "/a1QsMlL****/+/user/pm25data",
        "Id": 425367
    }
}
```

4.13.6. GetRuleAction

Queries detailed information of a specified rule action.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetRuleAction	The operation that you want to perform. Set the value to GetRuleAction.
ActionId	Long	Yes	100001	The rule action ID that you want to query. You can query the rule action ID by using the following methods: • Call the CreateRuleAction operation and view the **ActionId** parameter in the response. • Call the ListRuleActions operation and view the **Id** parameter in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	F2D0755D-F350-40FE-9A6D-491859DB5E5F	The ID of the request.
RuleActionInfo	Struct		The rule action information returned if the call was successful. For more information, see the following parameters.
Configuration	String	{\"topic\":\"/sys/a1zSA28****/device/thing/service/property/set\",\"topicType\":0,\"uid\":\"1231579*******\"}	The configurations of the rule action.
ErrorActionFlag	Boolean	false	Indicates whether the rule action forwarded error operation data that failed to be forwarded to the destination cloud service. A data forwarding failure indicates that forwarding retries also failed. • **true**: forwards error operation data. • **false**: forwards normal data instead of error operation data.
Id	Long	100001	The ID of rule action.
RuleId	Long	152323	The ID of the rule based on which the rule action is performed.

Parameter	Type	Example	Description
Type	String	REPUBLISH	The type of the rule action. Valid values: • **REPUBLISH**: forwards data to another topic. • **OTS**: stores data to Tablestore. • **MNS**: sends data to Message Service (MNS). • **FC**: sends data to Function Compute. • **RDS**: Save to cloud databases. • **AMQP**: forwards data to an AMQP consumer group.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetRuleAction
&ActionId=1000001
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetRuleActionResponse>
      <RuleActionInfo>
            <Type>REPUBLISH</Type>
            <RuleId>152323</RuleId>
            <Id>100001</Id>
            <Configuration>
                  <topic>/sys/a1zSA28****/device/thing/service/property/set</topic>
                  <topicType>0</topicType>
                  <uid>1231579*******</uid>
            </Configuration>
            <ErrorActionFlag>false</ErrorActionFlag>
      </RuleActionInfo>
      <RequestId>F2D0755D-F350-40FE-9A6D-491859DB5E5F</RequestId>
      <Success>true</Success>
</GetRuleActionResponse>
```

`JSON` format

```
{
  "RuleActionInfo": {
    "Type": "REPUBLISH",
    "RuleId": 152323,
    "Id": 100001,
    "Configuration": "{\"topic\":\"/sys/a1zSA28***/device/thing/service/property/set\",\"topicType\":0,\"uid\":\"1231579*******\"}",
    "ErrorActionFlag": false
  },
  "RequestId": "F2D0755D-F350-40FE-9A6D-491859DB5E5F",
  "Success": true
}
```

4.13.7. ListRule

Queries rules by page.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListRule	The operation that you want to perform. Set the value to ListRule.
CurrentPage	Integer	Yes	1	The number of the page to return. Maximum value: 1000. Default value: 1.
PageSize	Integer	No	2	The number of entries returned per page. Maximum value: 100. Default value: 10.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ResourceGroupId	String	No	rg-acfmxazb4ph****	The ID of the resource group to which the rule belongs. You can log on to the Resource Management console to view the details of the resource group. If you do not specify this parameter, all resource groups of the Alibaba Cloud account are queried.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of RuleInfo		The list of rules returned if the call is successful. For more information, see RuleInfo. **Note** The returned information is sorted in reverse-chronological order based on the time when the rules were created.
RuleInfo			

Parameter	Type	Example	Description
CreateUserId	Long	1231579085000000	The ID of the user who created the rule.
Created	String	Wed Feb 27 20:45:43 CST 2019	The time when the rule was created. The time is displayed in UTC-6.
DataType	String	JSON	The data type of the rule. Valid values: **JSON** and **BINARY** .
Id	Long	151454	The ID of the rule.
Modified	String	Wed Feb 27 20:45:43 CST 2019	The time when the rule was last modified. The time is displayed in UTC-6.
Name	String	test123	The name of the rule.
ProductKey	String	a1KiV******	The ProductKey of the product to which the rule applies.
RuleDesc	String	rule1Desc	The description of the rule.
Select	String	deviceName() as deviceName	The values of **Select** in the SQL statements of the rule.
ShortTopic	String	+/thing/event/property/post	The topic to which the rule applies. The topic does not include the ProductKey level. Format: `${deviceName}/topicShortName` . ${deviceName} indicates the name of the device, and topicShortName indicates the custom name of the topic. **Note** For information about how to use the `+` or `#` wildcard in a topic, see Topic wildcards.
Status	String	STOP	The status of the rule. Valid values: • **RUNNING**: Running • **STOP**: Stopped

Parameter	Type	Example	Description
Topic	String	/a1T27vz****/+/thing/event/property/post	The topic to which the rule applies. Format: `${productKey}/${deviceName}/topicShortName`. **Note** For information about how to use the `+` or `#` wildcard in a topic, see Topic wildcards.
UtcCreated	String	2019-02-27T12:45:43.000Z	The time when the rule was last modified.
UtcModified	String	2019-02-27T12:45:43.000Z	The time when the device was created. The time is displayed in UTC.
Where	String	Temperature>35	The **Where** query condition in the SQL statements of the rule.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
Page	Integer	1	The number of the returned page.
PageSize	Integer	2	The number of entries returned on each page.
RequestId	String	1564B626-DE97-452D-9E9B-305888AC6105	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	25	The total number of pages returned.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListRule
&PageSize=2
&CurrentPage=1
&ResourceGroupId=rg-acfmxazb4ph****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListRuleResponse>
  <Data>
        <RuleInfo>
              <DataType>JSON</DataType>
              <ProductKey>a1T27vz****</ProductKey>
              <CreateUserId>198426864326****</CreateUserId>
              <UtcModified>2020-02-26T06:38:27.000Z</UtcModified>
              <UtcCreated>2020-02-26T02:50:44.000Z</UtcCreated>
              <Where>Temperature&gt;35</Where>
              <Name>testrule2</Name>
              <Status>STOP</Status>
              <Select>deviceName() as DeviceName</Select>
              <Created>Wed Feb 26 10:50:44 CST 2020</Created>
              <Modified>Wed Feb 26 14:38:27 CST 2020</Modified>
              <Topic>/a1T27vz****/+/thing/event/property/post</Topic>
              <Id>497350</Id>
        </RuleInfo>
  </Data>
  <Page>1</Page>
  <PageSize>1</PageSize>
  <RequestId>1A6131EC-7504-4673-B997-DEFC6B363A37</RequestId>
  <Success>true</Success>
  <Total>5</Total>
</ListRuleResponse>
```

`JSON` format

```
{
    "Data": {
        "RuleInfo": [
            {
                "DataType": "JSON",
                "ProductKey": "a1T27vz****",
                "CreateUserId": "198426864326****",
                "UtcModified": "2020-02-26T06:38:27.000Z",
                "UtcCreated": "2020-02-26T02:50:44.000Z",
                "Where": "Temperature>35",
                "Name": "testrule2",
                "Status": "STOP",
                "Select": "deviceName() as DeviceName",
                "Created": "Wed Feb 26 10:50:44 CST 2020",
                "Modified": "Wed Feb 26 14:38:27 CST 2020",
                "Topic": "/a1T27vz****/+/thing/event/property/post",
                "Id": 497350
            }
        ]
    },
    "Page": 1,
    "PageSize": 1,
    "RequestId": "1A6131EC-7504-4673-B997-DEFC6B363A37",
    "Success": true,
    "Total": 5
}
```


4.13.8. ListRuleActions

Queries all data forwarding actions of a specified rule.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	ListRuleActions	The operation that you want to perform. Set the value to ListRuleActions.
RuleId	Long	Yes	10000	The ID of the rule that you want to query. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	22254BDB-3DC1-4643-8D1B-EE0437EF09A9	The ID of the request.

Parameter	Type	Example	Description
RuleActionList	Array of RuleActionInfo		The rule action information returned if the call is successful. For more information, see the following parameters included in the **RuleActionInfo** parameter.
RuleActionInfo			
Configuration	String	{\"endPoint\":\"http://ShanghaiRegion.cn-shanghai.ots.aliyuncs.com\",\"instanceName\":\"ShanghaiRegion\",\"primaryKeys\":[{\"columnName\":\"temperature\",\"columnType\":\"INTEGER\",\"columnValue\":\"${deviceName}\"}],\"regionName\":\"cn-shanghai\",\"role\":{\"roleArn\":\"acs:ram::1231579085******:role/aliyuniotaccessingotsrole\",\"roleName\":\"AliyunIOTAccessingOTSRole\"},\"tableName\":\"iottest\",\"uid\":\"1231579085******\"}	The configurations of the rule action.
ErrorActionFlag	Boolean	false	Indicates whether the rule action forwarded error operation data that failed to be forwarded to the destination cloud service. A data forwarding failure indicates that forwarding retries also failed. • **true**: forwards error operation data. • **false**: forwards normal data instead of error operation data.
Id	Long	139099	The ID of the rule action.
RuleId	Long	10000	The ID of the rule based on which the rule action is performed.

Parameter	Type	Example	Description
Type	String	OTS	The type of the rule action. Valid values: • **REPUBLISH**: forwards data to another topic. • **OTS**: stores data to Tablestore. • **MNS**: sends data to Message Service (MNS). • **FC**: sends data to Function Compute. • **RDS**: stores data to ApsaraDB RDS. • **AMQP**: forwards data to an AMQP consumer group.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListRuleActions
&RuleId=10000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListRuleActionsResponse>
      <RuleActionList>
            <RuleActionInfo>
                  <Type>REPUBLISH</Type>
                  <RuleId>152323</RuleId>
                  <Id>142401</Id>
                  <Configuration>
                        <topic>/sys/a1zSA28HUyy/device/thing/service/property/set</topic>
                        <topicType>0</topicType>
                        <uid>1231579*******</uid>
                  </Configuration>
                  <ErrorActionFlag>false</ErrorActionFlag>
            </RuleActionInfo>
      </RuleActionList>
      <RequestId>22254BDB-3DC1-4643-8D1B-EE0437EF09A9</RequestId>
      <Success>true</Success>
</ListRuleActionsResponse>
```

`JSON` format

```
{
  "RuleActionList": {
    "RuleActionInfo": [
      {
        "Type": "OTS",
        "RuleId": 10000,
        "Id": 139099,
        "Configuration": "{\"endPoint\":\"http://ShanghaiRegion.cn-shanghai.ots.aliyuncs.com\",\"instanceName\":\"ShanghaiRegion\",\"primaryKeys\":[{\"columnName\":\"temperature\",\"columnType\":\"INTEGER\",\"columnValue\":\"${deviceName}\"}],\"regionName\":\"cn-shanghai\",\"role\":{\"roleArn\":\"acs:ram::1231579085******:role/aliyuniotaccessingotsrole\",\"roleName\":\"AliyunIOTAccessingOTSRole\"},\"tableName\":\"iottest\",\"uid\":\"1231579085******\"}",
        "ErrorActionFlag": false
      },
      {
        "Type": "REPUBLISH",
        "RuleId": 152323,
        "Id": 142401,
        "Configuration": "{\"topic\":\"/sys/a1zSA28H***/device/thing/service/property/set\",\"topicType\":0,\"uid\":\"1231579085******\"}",
        "ErrorActionFlag": false
      }
    ]
  },
  "RequestId": "22254BDB-3DC1-4643-8D1B-EE0437EF09A9",
  "Success": true
}
```


4.13.9. StartRule

Enables a specified rule.

Limits

- You must verify that the rule has SQL statements configured before you start the rule. If you do not set an SQL statement when you create the rule, call the UpdateRule operation to add an SQL statement and update the rule.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	StartRule	The operation that you want to perform. Set the value to StartRule.
RuleId	Long	Yes	100000	The ID of the rule that you want to enable. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	9A2F243E-17FE-4846-BAB5-D02A25155AC4	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=StartRule
&RuleId=100000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<StartRuleResponse>
      <RequestId>9A2F243E-17FE-4846-BAB5-D02A25155AC4</RequestId>
      <Success>true</Success>
</StartRuleResponse>
```

`JSON` format

```
{
    "RequestId":"9A2F243E-17FE-4846-BAB5-D02A25155AC4",
    "Success":true
}
```

4.13.10. StopRule

Disables a specified rule.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	StopRule	The operation that you want to perform. Set the value to StopRule.
RuleId	Long	Yes	100000	The ID of the rule that you want to disable. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	9A2F243E-17FE-4846-BAB5-D02A25155AC4	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=StopRule
&RuleId=100000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<StopRuleResponse>
      <RequestId>9A2F243E-17FE-4874-QBB5-D02A25155AC8</RequestId>
      <Success>true</Success>
</StopRuleResponse>
```

`JSON` format

```
{
    "RequestId":"9A2F243E-17FE-4846-BAB5-D02A25155AC4",
    "Success":true
}
```

4.13.11. UpdateRule

Modifies a specified rule.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateRule	The operation that you want to perform. Set the value to UpdateRule.
RuleId	Long	Yes	100000	The ID of the rule that you want to modify. You can log on to the IoT Platform console and choose **Rules** > **Data Forwarding** to view the rule ID. You can also call the ListRule operation and view the rule ID in the response.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Select	String	No	deviceName() as deviceName, items.Humidity.value as Humidity, items.Temperature.value as Temperature	The SQL SELECT statement to be executed. For more information, see SQL expressions. **Note** Specify the content that follows the SELECT keyword for this parameter. For example, if the SELECT statement is `SELECT a,b,c`, specify `a,b,c` for this parameter.
				The topic to which this rule is applied. Syntax: `${deviceName}/topicShortName`. `${deviceName}` specifies the name of the device, and `topicShortName` specifies the custom name of the topic.

Parameter	Type	Required	Example	Description
ShortTopic	String	No	+/thing/event/property/post	• Basic communication topics or Thing Specification Language (TSL)-based communication topics. Syntax: `${deviceName}/topicShortName`. You can replace `${deviceName}` with the `+` wildcard. The wildcard indicates that the topic applies to all devices under the product. Valid values of `topicShortName`: ○ `/thing/event/property/post`: submits the property data of a device. ○ `/thing/event/${tsl.event.identifier}/post`: submits the event data of a device. `${tsl.event.identifier}` specifies the identifier of an event in the TSL model. ○ `/thing/lifecycle`: submits device lifecycle changes. ○ `/thing/downlink/reply/message`: sends a response to a request from IoT Platform. ○ `/thing/list/found`: submits the data when a gateway detects a new sub-device. ○ `/thing/topo/lifecycle`: submits device topology changes. ○ `/thing/event/property/history/post`: submits historical property data of a device. ○ `/thing/event/${tsl.event.identifier}/post`: submits the historical event data of a device. `${tsl.event.identifier}` specifies the identifier of an event in the TSL. ○ `/ota/upgrade`: submits OTA update statuses. ○ `/ota/version/post`: submits OTA module versions. ○ `/thing/deviceinfo/update`: submits device tag changes.

Parameter	Type	Required	Example	Description
				○ `/edge/driver/${driver_id}/point_post` : submits pass-through data from Link IoT Edge. `${driver_id}` specifies the ID of the driver that a device uses to access Link IoT Edge. `${packageId}/${jobId}/ota/job/status` : submits the statuses of OTA update batches. This topic is a basic communication topic. `${packageId}` specifies the ID of the update package. `${jobId}` specifies the ID of the update batch. • Custom topics. Example: `${deviceName}/user/get` . You can call the QueryProductTopic operation to view all custom topics of the product. When you specify a custom topic, you can use the `+` and `#` wildcards. ○ You can replace `${deviceName}` with the `+` wildcard. The wildcard indicates that the topic applies to all devices under the product. ○ You can replace the fields that follow ${deviceName} with `/user/#` . The `#` wildcard indicates that the topic applies whatever values are specified for the fields that follow `/user` . For more information about how to use wildcards, see Wildcards in topics. • Topic that is used to submit device status changes: `${deviceName}` . You can use the `+` wildcard. In this case, the status changes of all devices under the product are submitted.

Parameter	Type	Required	Example	Description
Where	String	No	Temperature>35	The condition that is used to trigger the rule. For more information, see SQL expressions. **Note** Specify the content that follows the WHERE keyword for this parameter. For example, if the WHERE statement is `WHERE a>10`, specify `a>10` for this parameter.
ProductKey	String	No	aladaeW****	The **ProductKey** of the product to which the rule applies.
Name	String	No	test_2	The name of the rule. The rule name must be 1 to 30 characters in length, and can contain letters, digits, underscores (_), and hyphens (-).
RuleDesc	String	No	test	The description of the rule. The description can be up to 100 characters in length.
TopicType	Integer	No	1	• **0**: The topic is a basic communication topic or TSL-based communication topic. • **1**: The topic is a custom topic. • **2**: The topic is used to submit device status changes. Syntax: `/as/mqtt/status/${productKey}/${deviceName}`.
Topic	String	No	/sys/g18l***/device1/thing/event/property/post	The complete topic to which the rule applies. If you specify this parameter, you do not need to specify the **ProductKey**, **ShortTopic**, and **TopicType** parameters.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	9A2F243E-17FE-4846-BAB5-D02A25155AC4	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateRule
&RuleId=100000
&Name=test_2
&ProductKey=aladaeW****
&ShortTopic=+/thing/event/property/post
&Select=deviceName() as deviceName, items.Humidity.value as Humidity, items.Temperature.val
ue as Temperature
&RuleDesc=test
&Where=a>10
&TopicType=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateRuleResponse>
      <RequestId>9A2F243E-17FE-4874-QBB5-D02A25155AC8</RequestId>
      <Success>true</Success>
</UpdateRuleResponse>
```

`JSON` format

```
{
    "RequestId":"9A2F243E-17FE-4846-BAB5-D02A25155AC4",
    "Success":true
}
```

4.13.12. UpdateRuleAction

Modifies a specified rule action.

Limits

Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateRuleAction	The operation that you want to perform. Set the value to UpdateRuleAction.
ActionId	Long	Yes	1000003	The ID of the rule action to be modified. After you call the CreateRuleAction operation to create a rule action, the rule action ID is returned. You can call the ListRuleActions operation to view the rule action ID.
Configuration	String	Yes	{"topic":"/a1iYSOl****/device5/user/get","topicType":1}	The configurations of the rule action. The configurations for different rule action types are different. For more information about the configurations for different rule action types, see CreateRuleAction.

Parameter	Type	Required	Example	Description
Type	String	Yes	REPUBLISH	The type of the rule action. Valid values: • **MNS**: forwards topic data that is processed by the rules engine to MNS. • **FC**: forwards topic data that is processed by the rules engine to Function Compute for event computing. • **REPUBLISH**: forwards topic data that is processed by the rules engine to another IoT Platform topic. • **AMQP**: forwards data to an AMQP consumer group. • **OTS**: forwards topic data that is processed by the rules engine to Tablestore for NoSQL data storage. **Note** • If you set the **DataType** parameter to **BINARY**, rules are created in the binary format. These rules cannot be used to forward data to Tablestore. • Destination Alibaba Cloud services that are supported by the rules engine vary based on regions. For more information about the regions and destination cloud services that are supported by the rules engine, see Regions and zones.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	21D327AF-A7DE-4E59-B5D1-ACAC8C024555	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateRuleAction
&ActionId=10003
&Type=REPUBLISH
&Configuration={"topic":"/a1iYSOl****/device5/user/get","topicType":1}
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateRuleActionResponse>
      <RequestId>9A2F243E-17FE-4874-QBB5-D02A25155AC8</RequestId>
      <Success>true</Success>
</UpdateRuleActionResponse>
```

`JSON` format

```
{
    "RequestId": "21D327AF-A7DE-4E59-B5D1-ACAC8C024555",
    "Success": true
}
```

4.14. Communications

4.14.1. BatchPub

Publishes a message to multiple devices of a product by using a custom topic.

Usage notes

- You can call this operation to publish a message to a maximum of 100 devices of a product at a time.
- The BatchPub operation cannot be used to send commands of setting properties or calling services. If you need to set properties, use the SetDeviceProperty or SetDevicesProperty operation. If you need to call services, use the InvokeThingService or InvokeThingsService operation.
- Each Alibaba Cloud account can run a maximum of 50 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	BatchPub	The operation that you want to perform. Set the value to BatchPub.

Parameter	Type	Required	Example	Description
DeviceName.N	RepeatList	Yes	newdevice1	The name of the device that receives the message. **Note** • This parameter is used together with the **ProductKey** parameter. The specified devices must belong to the same product. • You can specify up to 100 device names in a single call. The device names must be unique.
MessageContent	String	Yes	aGVsbG8gd29ybGQ%3D	The body of the message to be published. The maximum size of a message is 256 KB. To generate a message body, you must convert the raw message into binary data and perform Base64 encoding.
ProductKey	String	Yes	a1BwAGV****	The **ProductKey** of the product to which the device belongs.

Parameter	Type	Required	Example	Description
TopicShortName	String	Yes	get	The suffix of the custom topic. A custom topic is in the following format: `/${productKey}/${deviceName}/user/${TopicShortName}`. ${TopicShortName} specifies the suffix. **Note** You must specify the Subscribe permission, or Publish and Subscribe permissions for the topic. Make sure that all devices subscribe to the topic. You can use the following methods to view custom topics: • On the **Topic Categories** tab of the Product Details page, view the custom topics of the product. • On the **Topic List** tab of the Device Details page, view the custom topics to which the device has subscribed. • Call the QueryProductTopic operation to query the custom topics of the product.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
Qos	Integer	No	0	The quality of service (QoS) level of the message. Valid values: • **0**: The message is published at most once. • **1**: The message is published at least once. Default value: **0**. **Note** IoT Platform stores QoS 1 messages for up to 7 days. IoT Platform does not store QoS 0 messages.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests:

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=BatchPub
&DeviceName.1=newdevice1
&MessageContent=aGVsbG8gd29ybGQ%3D
&ProductKey=a1BwAGV****
&TopicShortName=get
&<Common request parameters>
```

Sample success responses

`XML` format

```
<BatchPubResponse>
  <RequestId>9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E</RequestId>
  <Success>true</Success>
</BatchPubResponse>
```

`JSON` format

```
{
  "RequestId": "9E76053E-26ED-4AB4-AE58-8AFC3F1E7E8E",
  "Success": true
}
```

4.14.2. Pub

Publishes a message to a specified device by using a custom topic.

Limits

- The Pub operation cannot be used to send commands of setting properties or calling services. If you need to set properties, use the SetDeviceProperty or SetDevicesProperty operation. If you need to call services, use the InvokeThingService or InvokeThingsService operation.
- Each Alibaba Cloud account can run a maximum of 1,600 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	Pub	The operation that you want to perform. Set the value to Pub.

Parameter	Type	Required	Example	Description
MessageContent	String	Yes	aGVsbG8gd29ybGQ%3D	The body of the message to be published. To generate a message body, you must convert the raw message into binary data and perform Base64 encoding.
ProductKey	String	Yes	a1Q5XoY****	The **ProductKey** of the device that receives the message.
TopicFullName	String	Yes	/a1Q5XoY****/device1/user/get	The custom topic that is used to publish the message. • Topic format: `/${productKey}/${deviceName}/user/${TopicShortName}`. • You must specify the **Subscribe** permission, or **Publish and Subscribe** permissions for the topic. **Notice** Make sure that the device subscribes to the topic before you call the Pub operation. Otherwise, the device cannot receive the message. You can view the custom topics of a product on the **Topic Categories** tab of the **Product Details** page, or by calling the QueryProductTopic operation. You can view the topics to which the device subscribes on the **Topic List** tab of the **Device Details** page.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Qos	Integer	No	0	The quality of service (QoS) level of the message. Valid values: • **0**: The message is published at most once. • **1**: The message is published at least once. If a PUBACK response is not returned after you publish a QoS 1 message, the message is pushed to the device again when the device reconnects with IoT Platform. Default value: **0**. For more information about message communication, see Limits.
ResponseTopic	String	No	/a1Q5XoY****/device1/user/update	The response topic in the request/response communication mode when you use MQTT 5.0. For more information, see MQTT 5.0.

Parameter	Type	Required	Example	Description
CorrelationData	String	No	aGVsbG8****	The related data in the request/response communication mode when you use MQTT 5.0. You can specify this parameter as needed. A message recipient can process the request based on the data. **Note** You must convert the related data into binary data and perform Base64 encoding to generate a value of the string type.
UserProp.N.Key	String	No	key1	The custom property key that is specified when you use MQTT 5.0 for communication. This parameter must be used in pair with the **UserProp.N.Value** parameter.
UserProp.N.Value	String	No	value1	The custom property value that is specified when you use MQTT 5.0 for communication. This parameter must be used in pair with the **UserProp.N.Key** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
MessageId	String	88945594212434732 9	The ID of the message. The message ID is generated by IoT Platform when the message is sent.

Parameter	Type	Example	Description
RequestId	String	BB71E443-4447-4024-A000-EDE09922891E	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=Pub
&ProductKey=a1Q5XoY****
&TopicFullName=/a1Q5XoY****/device1/user/get
&MessageContent=aGVsbG8gd29ybGQ%3D
&Qos=0
&ResponseTopic=/a1Q5XoY****/device1/user/update
&CorrelationData=aGVsbG8%3D****
&UserProp.1.Key=k1&UserProp.1.Value=v1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<PubResponse>
    <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
    <Success>true</Success>
    <MessageId>889455942124347329</MessageId>
</PubResponse>
```

`JSON` format

```
{
      "RequestId":"BB71E443-4447-4024-A000-EDE09922891E",
      "Success":true,
      "MessageId":889455942124347329
  }
```

4.14.3. PubBroadcast

Broadcasts a message to all devices of a specified product or all devices that subscribe to a specified topic.

Limits

- Each Alibaba Cloud account can run only 1 query per second (QPS) to broadcast a message to

devices that subscribe to a topic.

- Each Alibaba Cloud account can run only 1 query per minute (QPM) to broadcast a message to all online devices of a product.

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

Alibaba Cloud provides OpenAPI Explorer to simplify API usage. OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	PubBroadcast	The operation that you want to perform. Set the value to PubBroadcast.
MessageContent	String	Yes	aGVsbG93b3JsZA	The body of the message to be sent. The maximum size of a message is 64 KB. To generate a message body, you must convert the raw message into binary data and perform Base64 encoding.
ProductKey	String	Yes	aldeji3*****	The ProductKey of the devices to which the message is broadcasted.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
TopicFullName	String	No	/broadcast/UPqS	The name of the topic. This parameter is optional. • If you do not specify this parameter, the message is pushed to all online devices that have the specified **ProductKey**. Devices receive the message from the following broadcast topic: `/sys/${productKey}/${deviceName}/broadcast/request/${MessageId}`. The **MessageId** variable is generated by IoT Platform. • If you specify this parameter, the message is pushed to the devices that have the specified **ProductKey** and subscribe to the specified topic. You must specify a topic by using the following syntax: `/broadcast/${productKey}/A custom field`. Replace **${productKey}** with the **ProductKey** of the devices that receive the message. For the custom field, you can specify a value based on your needs.

TopicFullName Parameter	String Type	No Required	xj2vXXX/xxx Example	Description
				Note • When you develop devices, use code to define a broadcast topic. You do not need to create a topic in the IoT Platform console. • A maximum of 1,000 devices can subscribe to a topic. If the number of devices exceeds the limit, you can divide the devices into groups. For example, you can divide 5,000 devices into five groups each containing 1,000 devices. In this case, you must call this operation five times and set the value of the custom field to group1, group2, group3, group4, and group5, respectively. Then, configure the devices so that each group of devices subscribes to the corresponding topic.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
MessageId	Long	1234291569964771840	The message ID generated by IoT Platform when the message is sent.

Parameter	Type	Example	Description
RequestId	String	BB71E443-4447-4024-A000-EDE09922891E	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests:

```
https://iot.cn-shanghai.aliyuncs.com/?Action=PubBroadcast
&ProductKey=al**********
&TopicFullName=/broadcast/UPqSxj2vXXX/xxx
&MessageContent=aGVsbG93b3JsZA
&<Common request parameters>
```

Sample success responses

`XML` format

```
<PubBroadcastResponse>
        <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
        <MessageId>1234291569964771840</MessageId>
        <Success>true</Success>
  </PubBroadcastResponse>
```

`JSON` format

```
{
      "RequestId":"BB71E443-4447-4024-A000-EDE09922891E",
      "MessageId":1234291569964771840,
      "Success":true
}
```

4.14.4. RRpc

Sends a request to a specified device and synchronously receives a response from the device.

Usage notes

If the device fails to send a response within the timeout period after you call the operation, IoT Platform considers that the call fails even if the device receives the message. The timeout period is specified by the **Timeout** parameter.

QPS limits

Each Alibaba Cloud account can run up to 1000 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	RRpc	The operation that you want to perform. Set the value to RRpc.
DeviceName	String	Yes	device1	The name of the device that receives the request.
ProductKey	String	Yes	aldfeSe****	The ProductKey of the product to which the device belongs.
RequestBase64Byte	String	Yes	dGhpcyBpcyBhbiBleGFtcGxl	The string that is obtained by performing Base64 encoding on the message. Example: `dGhpcyBpcyBhbiBleGFtcGxl`.
Timeout	Integer	Yes	1000	The timeout period of a response. Unit: milliseconds. Valid values: 1000 to 8000.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Topic	String	No	/a1uZfYb****/A_Vol****/user/update	The custom revert-RPC (RRPC) topic. Before you can use a custom RRPC topic, you must configure the device. For more information, see Use custom topics. If you do not configure this parameter, the default RRPC topic is used.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
MessageId	Long	889455942124347392	The ID of the request. The request ID is generated by IoT Platform after the request is sent.
PayloadBase64Byte	String	d29ybGQgaGVsbG8=	The Base64 encoded payload that is returned by the device.

Parameter	Type	Example	Description
RequestId	String	41C4265E-F05D-4E2E-AB09-E031F501AF7F	The ID of the request.
RrpcCode	String	SUCCESS	The response code returned if the call is successful. Valid values: • **UNKNOWN**: A system error occurred. • **SUCCESS**: The request is successful. • **TIMEOUT**: The request times out. • **OFFLINE**: The device is offline. • **HALFCONN**: The device is offline. If the status of the device is HALFCONN, the device is offline but does not remain offline for a full heartbeat cycle.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=RRpc
&ProductKey=aldfeSe****
&DeviceName=device1
&RequestBase64Byte=dGhpcyBpcyBhbiBleGFtcGxl
&Timeout=1000
&<Common request parameters>
```

Sample success responses

`XML` format

```
<?xml version='1.0' encoding='UTF-8'?>
  <RRpcResponse>
      <RequestId>41C4265E-F05D-4E2E-AB09-E031F501AF7F<RequestId/>
      <Success>true</Success>
      <RrpcCode>SUCCESS</RrpcCode>
      <PayloadBase64Byte>d29ybGQgaGVsbG8=</PayloadBase64Byte>
      <MessageId>889455942124347392</MessageId>
  </RRpcResponse>
```

`JSON` format

```
{
      "RrpcCode":"SUCCESS",
      "PayloadBase64Byte":"d29ybGQgaGVsbG8=",
      "MessageId":889455942124347392,
      "RequestId":"41C4265E-F05D-4E2E-AB09-E031F501AF7F",
      "Success":true
}
```

4.15. Server-side subscription

4.15.1. CreateSubscribeRelation

Creates a Message Service (MNS) or AMQP server-side subscription.

Usage notes

Server-side subscriptions are categorized into the following two types:

- MNS subscription: pushes subscribed messages to MNS queues. Your server applications listen to MNS queues to receive device messages. For more information, see Use MNS server-side subscriptions. You can call this operation to create an MNS subscription.
- AMQP subscription: pushes subscribed messages to your server by using the AMQP channel. For more information, see Configure AMQP server-side subscriptions. To configure an AMQP subscription, perform the following steps:

  1. Call the CreateConsumerGroup operation to create a consumer group and obtain the returned consumer group ID. Messages are pushed to the specified consumer group. The AMQP client carries the consumer group ID to connect with IoT Platform. For more information, see Connect AMQP clients to IoT Platform.

  2. Call the CreateSubscribeRelation operation to create an AMQP subscription.

  3. Optional. Call the CreateConsumerGroupSubscribeRelation operation to add a consumer group to the AMQP subscription. You can also call the DeleteConsumerGroupSubscribeRelation operation to remove a specified consumer group from multiple consumer groups of the AMQP subscription.

  4. Optional. Call the QueryConsumerGroupStatus operation to query the status of a consumer group, including online client information, message consumption rate, number of accumulated message, and last message consumption time. You can also call the ResetConsumerGroupPosition operation to clear the accumulated messages of the consumer group.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateSubscribeRelation	The operation that you want to perform. Set the value to CreateSubscribeRelation.
ProductKey	String	Yes	a1fyXVF****	The **ProductKey** of the product that is specified for the subscription.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceDataFlag	Boolean	No	true	Specifies whether to push upstream device messages. Valid values: • **true**: yes • **false**: no Default value: **false**.
DeviceStatusChangeFlag	Boolean	No	true	Specifies whether to push messages about device status changes. Valid values: • **true**: yes • **false**: no Default value: **false**.

Parameter	Type	Required	Example	Description
DeviceTopoLifeCycleFlag	Boolean	No	true	Specifies whether to push messages about topological relationship changes of devices. Valid values: • **true**: yes This parameter is valid only for gateway products. • **false**: no Default value: **false**.
FoundDeviceListFlag	Boolean	No	true	Specifies whether to push messages if a gateway detects new sub-devices. Valid values: • **true**: yes This parameter is valid only for gateway products. • **false**: no Default value: **false**.
ThingHistoryFlag	Boolean	No	true	Specifies whether to push upstream historical Thing Specification Language (TSL) data. Valid values: • **true**: yes • **false**: no Default value: **false**.
DeviceLifeCycleFlag	Boolean	No	true	Specifies whether to push messages about device lifecycle changes. Valid values: • **true**: yes • **false**: no Default value: **false**.
OtaEventFlag	Boolean	No	true	Specifies whether to push notifications about the status of OTA update batches. Valid values: • **true**: yes • **false**: no Default value: **false**.

Parameter	Type	Required	Example	Description
DeviceTagFlag	Boolean	No	true	Specifies whether to push messages about topological relationship changes of devices. Valid values: • **true**: yes This parameter is valid only if the **Type** parameter is set to **AMQP**. • **false**: no Default value: **false**.
OtaVersionFlag	Boolean	No	true	Specifies whether to push messages about OTA module version numbers. Valid values: • **true**: yes This parameter is valid only if the **Type** parameter is set to **AMQP**. • **false**: no Default value: **false**.
OtaJobFlag	Boolean	No	true	Indicates whether notifications about OTA batch updates were pushed. Valid values: • **true**: yes This parameter is valid only if the **Type** parameter is set to **AMQP**. • **false**: no Default value: **false**.
Type	String	No	AMQP	The type of the subscription. Valid values: • **MNS** • **AMQP**

Parameter	Type	Required	Example	Description
ConsumerGroupIds.N	RepeatList	No	nJRaJPn5U1JITGfjBO9l00****	The IDs of the consumer groups that are created in the AMQP subscription. This parameter is required if the **Type** parameter is set to **AMQP**. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
MnsConfiguration	String	No	{ "queueName": "mns-test-topic1", "regionName": "cn-shanghai", "role": { "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole", "roleName": "AliyunIOTAccessingMNSRole" } }	The configurations of the MNS queue. This parameter is required if the **Type** parameter is set to **AMQP**. For more information, see the "Definition of the MnsConfiguration parameter" section.

Note You must set at least one Flag-related parameter to **true**.

Definition of the MnsConfiguration parameter

Parameter	Description
queueName	The name of the MNS topic that is used to receive data. You must create a queue in the MNS console and obtain the queue name. For more information, see Create a queue.
regionName	The code of the region in which MNS is deployed. Example: cn-shanghai.

Parameter	Description
role	The information about the RAM role. To grant IoT Platform the access to MNS, you can assign a RAM role to IoT Platform. The following script shows the syntax of a RAM role: `{"roleArn":"acs:ram::5645***:role/aliyuniotaccessingmnsrole","roleName":"AliyunIOTAccessingMNSRole"}` Replace `5645***` with your Alibaba Cloud account ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingMNSRole` is a service role specified in the RAM console. This role is used to grant IoT Platform access to MNS. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Example of the MnsConfiguration parameter

```
{
    "queueName": "mns-test-topic1",
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole",
        "roleName": "AliyunIOTAccessingMNSRole"
    }
}
```

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	21D327AF-A7DE-4E59-B5D1-ACAC8C024555	The globally unique ID that Alibaba Cloud generates for the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateSubscribeRelation
&OtaEventFlag=true
&ProductKey=a1Zkii7****
&Type=AMQP
&ConsumerGroupIds.1=Xs95KifeaSKbi8tKkcoD00****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateSubscribeRelationResponse>
        <RequestId>C21DA94F-07D7-482F-8A0C-5BB0E3CC1A82</RequestId>
        <Success>true</Success>
</CreateSubscribeRelationResponse>
```

`JSON` format

```
{
    "RequestId": "C21DA94F-07D7-482F-8A0C-5BB0E3CC1A82",
    "Success": true
}
```

4.15.2. UpdateSubscribeRelation

Modifies a Message Service (MNS) or AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateSubscribeRelation	The operation that you want to perform. Set the value to UpdateSubscribeRelation.
ProductKey	String	Yes	a1fyXVF****	The **ProductKey** of the product that is specified for the subscription.
Type	String	Yes	AMQP	The type of the subscription. Valid values: • **MNS** • **AMQP**
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeviceDataFlag	Boolean	No	true	Specifies whether to push upstream device messages. Valid values: • **true**: yes. • **false**: no. Default value: **false**.

Parameter	Type	Required	Example	Description
DeviceStatusChangeFlag	Boolean	No	true	Specifies whether to push messages about device status changes. Valid values: • **true**: yes. • **false**: no. Default value: **false**.
FoundDeviceListFlag	Boolean	No	true	Specifies whether to push messages if a gateway detects new sub-devices. Valid values: • **true**: yes. This parameter is valid only for gateway products. • **false**: no. Default value: **false**.
DeviceTopoLifeCycleFlag	Boolean	No	true	Specifies whether to push messages about topological relationship changes of devices. Valid values: • **true**: yes. This parameter is valid only for gateway products. • **false**: no. Default value: **false**.
DeviceLifeCycleFlag	Boolean	No	true	Specifies whether to push messages about device lifecycle changes. Valid values: • **true**: yes. • **false**: no. Default value: **false**.
ThingHistoryFlag	Boolean	No	true	Specifies whether to push upstream historical Thing Specification Language (TSL) data. Valid values: • **true**: yes. • **false**: no. Default value: **false**.

Parameter	Type	Required	Example	Description
OtaEventFlag	Boolean	No	true	Specifies whether to push notifications about the status of OTA update batches. Valid values: • **true**: yes. • **false**: no. Default value: **false**.
DeviceTagFlag	Boolean	No	true	Specifies whether to push messages about topological relationship changes of devices. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.
OtaVersionFlag	Boolean	No	true	Specifies whether to push messages about OTA module version numbers. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.
OtaJobFlag	Boolean	No	true	Specifies whether to push notifications about the statuses of OTA update batches. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.

Parameter	Type	Required	Example	Description
MnsConfiguration	String	No	{ "queueName": "mns-test-topic1", "regionName": "cn-shanghai", "role": { "roleArn": "acs:ram::5645****:role/aliyuniotaccessingmnsrole", "roleName": "AliyunIOTAccessingMNSRole" } }	The configurations of the MNS queue. This parameter is required if the **Type** parameter is set to **AMQP**. For more information, see the "Definition of the MnsConfiguration parameter" section.
ConsumerGroupIds.N	RepeatList	No	nJRaJPn5U1JITGfjBO9l00****	The IDs of the consumer groups that are created in the AMQP subscription. This parameter is required if the **Type** parameter is set to **AMQP**. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.

Note You must set at least one Flag-related parameter to **true**.

Definition of the MnsConfiguration parameter

Parameter	Description
queueName	The name of the MNS topic that is used to receive data. You must create a queue in the MNS console and obtain the queue name. For more information, see Create a queue.

Parameter	Description
regionName	The code of the region in which MNS is deployed. Example: cn-shanghai.
role	The information about the RAM role. To grant IoT Platform the access to MNS, you can assign a RAM role to IoT Platform. The following script shows the syntax of a RAM role: `{"roleArn":"acs:ram::5645***:role/aliyuniotaccessingmnsrole","roleName":"AliyunIOTAccessingMNSRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingMNSRole` is a service role specified in the RAM console. This role is used to grant IoT Platform access to MNS. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Example of the MnsConfiguration parameter

```
{
    "queueName": "mns-test-topic1",
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole",
        "roleName": "AliyunIOTAccessingMNSRole"
    }
}
```

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	21D327AF-A7DE-4E59-B5D1-ACAC8C024555	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateSubscribeRelation
&OtaEventFlag=true
&ProductKey=a1Zkii7****
&Type=AMQP
&ConsumerGroupIds.1=Xs95KifeaSKbi8tKkcoD00****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateSubscribeRelationResponse>
        <RequestId>C21DA94F-07D7-482F-8A0C-5BB0E3CC1A82</RequestId>
        <Success>true</Success>
</UpdateSubscribeRelationResponse>
```

`JSON` format

```
{
    "RequestId": "C21DA94F-07D7-482F-8A0C-5BB0E3CC1A82",
    "Success": true
}
```

4.15.3. QuerySubscribeRelation

Queries a Message Service (MNS) or AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QuerySubscribeRelation	The operation that you want to perform. Set the value to QuerySubscribeRelation.
ProductKey	String	Yes	a1fyXVF****	The ProductKey of the product that is specified for the subscription.
Type	String	Yes	AMQP	The type of the subscription. Valid values: • **MNS** • **AMQP**
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
DeviceDataFlag	Boolean	true	Indicates whether upstream device messages were pushed. • **true**: yes. • **false**: no.
DeviceStatusChangeFlag	Boolean	true	Indicates whether messages about device status changes were pushed. • **true**: yes. • **false**: no.
FoundDeviceListFlag	Boolean	true	Indicates whether messages were pushed if a gateway detected new sub-devices. • **true**: yes. The value **true** is returned only when you query a gateway product. • **false**: no.
DeviceTopoLifeCycleFlag	Boolean	true	Indicates whether messages about topological relationship changes of devices were pushed. • **true**: yes. The value **true** is returned only when you query a gateway product. • **false**: no.
DeviceLifeCycleFlag	Boolean	true	Indicates whether messages about device lifecycle changes were pushed. • **true**: yes. • **false**: no.
ThingHistoryFlag	Boolean	true	Indicates whether upstream historical Thing Specification Language (TSL) data was pushed. • **true**: yes. • **false**: no.
OtaEventFlag	Boolean	true	Indicates whether notifications about the status of OTA update batches were pushed. • **true**: yes. • **false**: no.

Parameter	Type	Example	Description
DeviceTagFlag	Boolean	true	Indicates whether messages about device tag changes were pushed. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.
OtaVersionFlag	Boolean	true	Indicates whether messages about the version numbers of OTA modules were pushed. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.
OtaJobFlag	Boolean	true	Indicates whether notifications about OTA batch updates were pushed. Valid values: • **true**: yes. This parameter takes effect only if the **Type** parameter is set to **AMQP**. • **false**: no. Default value: **false**.
ProductKey	String	a1fyXVF****	The ProductKey of the product that is specified for the subscription.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
ConsumerGroupIds	List	[DEFAULT_GROUP,br45A6A1amoRFGN7x1zP00****]	The IDs of the consumer groups that are created in the AMQP subscription. This parameter is returned if the **Type** parameter is set to **AMQP**.
Type	String	AMQP	The type of the subscription. Valid values: • **MNS** • **AMQP**

Parameter	Type	Example	Description
RequestId	String	21D327AF-A7DE-4E59-B5D1-ACAC8C024555	The ID of the request.
MnsConfiguration	String	{ "queueName": "mns-test-topic1", "regionName": "cn-shanghai", "role": { "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole", "roleName": "AliyunIOTAccessingMNSRole" } }	The configurations of the MNS queue. This parameter is returned if the **Type** parameter is set to **MNS**. For more information, see the "Definition of the MnsConfiguration parameter" section.

Definition of the MnsConfiguration parameter

Command	Description
queueName	The name of the MNS topic that is used to receive data.
regionName	The code of the region in which MNS is deployed. Example: cn-shanghai.
role	The information about the RAM role. To grant IoT Platform the access to MNS, you can assign a RAM role to IoT Platform. The following script shows the syntax of a RAM role: `{"roleArn":"acs:ram::5645***:role/aliyuniotaccessingmnsrole","roleName": "AliyunIOTAccessingMNSRole"}` Replace `6541***` with your Alibaba Cloud ID. You can log on to the Alibaba Cloud Management Console and view the account ID on the Security Settings page. `AliyunIOTAccessingMNSRole` is a service role specified in the RAM console. This role is used to grant IoT Platform access to MNS. You can go to the RAM Roles page of the RAM console to manage RAM roles.

Sample response

```
{
    "queueName": "mns-test-topic1",
    "regionName": "cn-shanghai",
    "role": {
        "roleArn": "acs:ram::5645***:role/aliyuniotaccessingmnsrole",
        "roleName": "AliyunIOTAccessingMNSRole"
    }
}
```

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QuerySubscribeRelation
&ProductKey=a1Zkii7****
&Type=AMQP
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QuerySubscribeRelationResponse>
       <ConsumerGroupIds>
              <e>Xs95KifeaSKbi8tKkcoD00****</e>
       </ConsumerGroupIds>
       <DeviceDataFlag>false</DeviceDataFlag>
       <DeviceLifeCycleFlag>false</DeviceLifeCycleFlag>
       <DeviceStatusChangeFlag>false</DeviceStatusChangeFlag>
       <DeviceTopoLifeCycleFlag>false</DeviceTopoLifeCycleFlag>
       <FoundDeviceListFlag>false</FoundDeviceListFlag>
       <OtaEventFlag>true</OtaEventFlag>
       <ProductKey>a1Zkii7****</ProductKey>
       <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
       <Success>true</Success>
       <ThingHistoryFlag>false</ThingHistoryFlag>
       <Type>AMQP</Type>
</QuerySubscribeRelationResponse>
```

`JSON` format

```
{
  "DeviceLifeCycleFlag": false,
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "DeviceDataFlag": false,
  "DeviceTopoLifeCycleFlag": false,
  "DeviceStatusChangeFlag": false,
  "ConsumerGroupIds": [
    "Xs95KifeaSKbi8tKkcoD00****"
  ],
  "Success": true,
  "ThingHistoryFlag": false,
  "Type": "AMQP",
  "FoundDeviceListFlag": false,
  "OtaEventFlag": true,
  "ProductKey": "a1Zkii7****"
}
```

4.15.4. DeleteSubscribeRelation

Deletes a Message Service (MNS) or AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteSubscribeRelation	The operation that you want to perform. Set the value to DeleteSubscribeRelation.
ProductKey	String	Yes	a1fyXVF****	The ProductKey of the product that is specified for the subscription.
Type	String	Yes	AMQP	The type of the subscription. Valid values: • **MNS** • **AMQP**

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteSubscribeRelation
&ProductKey=a1Zkii7****
&Type=AMQP
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteSubscribeRelationResponse>
       <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
       <Success>true</Success>
</DeleteSubscribeRelationResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.5. CreateConsumerGroup

Creates a consumer group that is required for an AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateConsumerGroup	The operation that you want to perform. Set the value to CreateConsumerGroup.
GroupName	String	Yes	Consumer group 1	The name of the consumer group. The name must be 4 to 30 characters in length and can contain letters, digits, and underscores (_).

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
GroupId	String	nJRaJPn5U1JITGf*****	The ID of the consumer group.
RequestId	String	73B9DF43-7780-47DE-8BED-077729D28BD2	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateConsumerGroup
&GroupName=Consumer group 1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateConsumerGroupResponse>
    <GroupId>nJRaJPn5U1JITGf******</GroupId>
    <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
    <Success>true</Success>
</CreateConsumerGroupResponse>
```

`JSON` format

```
{
  "GroupId": "nJRaJPn5U1JITGf******",
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.6. UpdateConsumerGroup

Modifies a consumer group when you configure an AMQP server-side subscription.

Limits

- You cannot modify the default consumer group provided by IoT Platform.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateConsumerGroup	The operation that you want to perform. Set the value to UpdateConsumerGroup.

Parameter	Type	Required	Example	Description
GroupId	String	Yes	nJRaJPn5U1JITGf******	The consumer group ID. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
NewGroupName	String	Yes	Consumer group 2	The new name of the consumer group. The name must be 4 to 30 characters in length and can contain letters, digits, and underscores (_).
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	73B9DF43-7780-47DE-8BED-077729D28BD2	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateConsumerGroup
&GroupId=nJRaJPn5U1JITGf******
&GroupName=Consumer group 2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateConsumerGroupResponse>
    <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
    <Success>true</Success>
</UpdateConsumerGroupResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.7. QueryConsumerGroupByGroupId

Queries the detailed information about a consumer group based on the consumer group ID when you use an AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryConsumerGroupByGroupId	The operation that you want to perform. Set the value to QueryConsumerGroupByGroupId.
GroupId	String	Yes	nJRaJPn5U1JITGf******	The ID of the consumer group. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The details about the consumer group. This parameter is returned if the call is successful.
CreateTime	String	2020-05-20T00:05:20.000Z	The time when the consumer group was created. The time follows the ISO 8601 standard in the yyyy-MM-ddTHH:mm:ss.SSSZ format. The time is displayed in UTC and accurate to milliseconds.
GroupId	String	nJRaJPn5U1JITGf******	The ID of the consumer group.
GroupName	String	Consumer group 1	The name of the consumer group.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	73B9DF43-7780-47DE-8BED-077729D28BD2	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryConsumerGroupByGroupId
&GroupId=nJRaJPn5U1JITGf******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryConsumerGroupByGroupIdResponse>
    <Data>
        <GroupId>nJRaJPn5U1JITGf******</GroupId>
        <GroupName>Consumer group 1</GroupName>
        <CreateTime>2019-11-12T11:19:13.000Z</CreateTime>
    </Data>
    <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
    <Success>true</Success>
</QueryConsumerGroupByGroupIdResponse>
```

`JSON` format

```
{
  "Data": {
        "GroupId": "nJRaJPn5U1JITGf******",
        "GroupName": "Consumer Group 1",
        "CreateTime": "2019-11-12T11:19:13.000Z"
    },
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.8. QueryConsumerGroupList

Queries all consumer groups of the current account when you use AMQP server-side subscriptions. You can also call this operation to perform a fuzzy search by consumer group name.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryConsumerGroupList	The operation that you want to perform. Set the value to QueryConsumerGroupList.
CurrentPage	Integer	Yes	1	The number of the page to return. Pages start from page 1.

Parameter	Type	Required	Example	Description
PageSize	Integer	No	2	The number of entries to return on each page. Valid values: 1 to 1000.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Fuzzy	Boolean	No	false	Specifies whether to perform a fuzzy search. Valid values: • **true**: performs a fuzzy search. You must specify the **GroupName** parameter. • **false**: queries all consumer groups of the current account. Default value: **false**.
GroupName	String	No	Consumer groups of the A type	The name of the consumer group to be queried. This parameter is required if the **Fuzzy** parameter is set to **true**.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
CurrentPage	Integer	1	The number of the returned page.
Data	Array of ConsumerGroupDTO		The details about the consumer group. This parameter is returned if the call is successful. For more information, see ConsumerGroupDTO.
ConsumerGroupDTO			
CreateTime	String	2020-05-20T00:05:20.000Z	The time when the consumer group was created. The time follows the ISO 8601 standard in the yyyy-MM-ddTHH:mm:ss.SSSZ format. The time is displayed in UTC and accurate to milliseconds.
GroupId	String	nJRaJPn5U1JITGf******	The ID of the consumer group.
GroupName	String	Consumer Group 1	The name of the consumer group.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	4	The total number of returned pages.
PageSize	Integer	2	The number of entries returned per page.
RequestId	String	73B9DF43-7780-47DE-8BED-077729D28BD2	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	8	The total number of entries.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryConsumerGroupList
&CurrentPage=1
&PageSize=2
&Fuzzy=true
&GroupName=Consumer groups of the A type
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryConsumerGroupListResponse>
    <PageSize>2</PageSize>
    <PageCount>4</PageCount>
    <CurrentPage>1</CurrentPage>
    <Total>8</Total>
    <Data>
        <ConsumerGroupDTO>
            <GroupId>nJRaJPn5U1JITGf******</GroupId>
            <GroupName>Consumer Group 1</GroupName>
            <CreateTime>2020-05-29T03:37:56.000Z</CreateTime>
        </ConsumerGroupDTO>
        <ConsumerGroupDTO>
            <GroupId>qJRaJPndeefwgef******</GroupId>
            <GroupName>Consumer Group 2</GroupName>
            <CreateTime>2020-01-17T07:27:01.000Z</CreateTime>
        </ConsumerGroupDTO>
    </Data>
    <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
    <Success>true</Success>
</QueryConsumerGroupListResponse>
```

`JSON` format

```
{
    "PageSize": 2,
    "PageCount": 4,
    "CurrentPage": 1,
    "Total": 8,
    "Data": {
        "ConsumerGroupDTO": [
            {
                "GroupId": "nJRaJPn5U1JITGf******",
                "GroupName": "Consumer Group 1",
                "CreateTime": "2020-05-29T03:37:56.000Z"
            },
            {
                "GroupId": "qJRaJPndeefwgef******",
                "GroupName": "Consumer Group 2",
                "CreateTime": "2020-01-17T07:27:01.000Z"
            }
        ]
    },
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.9. QueryConsumerGroupStatus

Queries the status of a consumer group when you use an AMQP server-side subscription. The status information includes online client information, message consumption rate, number of accumulated messages, and last message consumption time.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryConsumerGroupStatus	The operation that you want to perform. Set the value to QueryConsumerGroupStatus.

Parameter	Type	Required	Example	Description
GroupId	String	Yes	nJRaJPn5U1JITGf******	The ID of the consumer group. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
AccumulatedConsumeCountPerMinute	Integer	10	The message consumption rate. Unit: messages/minute.
AccumulationCount	Integer	13	The number of accumulated messages.

Parameter	Type	Example	Description
ClientConnectionStatusList	Array of ConsumerGroupClientConnectionInfo		The details about the client. For more information, see **ConsumerGroupClientConnectionInfo**.
ConsumerGroupClientConnectionInfo			
AccumulatedConsumeCountPerMinute	Integer	10	The consumption rate of accumulated messages on a single client of the consumer group. Unit: messages/minute.
ClientId	String	868575026******	The ID of the client.
ClientIpPort	String	192.168.1.2:36918	The IP address and port of the client.
OnlineTime	Long	1591240546649	The last time when the client was online. This value is a UNIX timestamp representing the number of milliseconds that have elapsed since the epoch time January 1, 1970, 00:00:00 UTC.
RealTimeConsumeCountPerMinute	Integer	5	The consumption rate of real-time messages on a single client of the consumer group. Unit: messages/minute.
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ConsumerSpeed	Integer	14	The message consumption rate of the consumer group. Unit: messages/minute.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
LastConsumerTime	String	2020-05-29T03:37:56.000Z	The time when the last message was consumed. The time is in the yyyy-MM-dd'T'HH:mm:ss.SSSZ format. The time is displayed in UTC and accurate to milliseconds.

Parameter	Type	Example	Description
RealTimeConsumeCountPerMinute	Integer	14	The consumption rate of real-time messages in the consumer group. Unit: messages/minute.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryConsumerGroupStatus
&GroupId=nJRaJPn5U1JITGf******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryConsumerGroupStatusResponse>
  <ClientConnectionStatusList>
        <ConsumerGroupClientConnectionInfo>
              <ClientId>12345-1</ClientId>
              <AccumulatedConsumeCountPerMinute>8</AccumulatedConsumeCountPerMinute>
              <OnlineTime>1627624830193</OnlineTime>
              <ClientIpPort>192.168.1.2:55545</ClientIpPort>
              <RealTimeConsumeCountPerMinute>16</RealTimeConsumeCountPerMinute>
        </ConsumerGroupClientConnectionInfo>
        <ConsumerGroupClientConnectionInfo>
              <ClientId>12345-0</ClientId>
              <AccumulatedConsumeCountPerMinute>10</AccumulatedConsumeCountPerMinute>
              <OnlineTime>1627624829763</OnlineTime>
              <ClientIpPort>192.168.1.2:55526</ClientIpPort>
              <RealTimeConsumeCountPerMinute>14</RealTimeConsumeCountPerMinute>
        </ConsumerGroupClientConnectionInfo>
  </ClientConnectionStatusList>
  <RequestId>4EC250E4-70CE-546E-9D4A-31D06E04EAD8</RequestId>
  <AccumulatedConsumeCountPerMinute>10</AccumulatedConsumeCountPerMinute>
  <Success>true</Success>
  <RealTimeConsumeCountPerMinute>14</RealTimeConsumeCountPerMinute>
  <AccumulationCount>26</AccumulationCount>
  <ConsumerSpeed>14</ConsumerSpeed>
</QueryConsumerGroupStatusResponse>
```

`JSON` format

```
{
    "ClientConnectionStatusList": {
        "ConsumerGroupClientConnectionInfo": [
            {
                "ClientId": "12345-1",
                "AccumulatedConsumeCountPerMinute": 8,
                "OnlineTime": 1627624830193,
                "ClientIpPort": "192.168.1.2:55545",
                "RealTimeConsumeCountPerMinute": 16
            },
            {
                "ClientId": "12345-0",
                "AccumulatedConsumeCountPerMinute": 10,
                "OnlineTime": 1627624829763,
                "ClientIpPort": "192.168.1.2:55526",
                "RealTimeConsumeCountPerMinute": 14
            }
        ]
    },
    "RequestId": "4EC250E4-70CE-546E-9D4A-31D06E04EAD8",
    "AccumulatedConsumeCountPerMinute": 10,
    "Success": true,
    "RealTimeConsumeCountPerMinute": 14,
    "AccumulationCount": 26,
    "ConsumerSpeed": 14
}
```

4.15.10. ResetConsumerGroupPosition

Clears the accumulated messages of a consumer group when you use an AMQP server-side subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	ResetConsumerGroupPosition	The operation that you want to perform. Set the value to ResetConsumerGroupPosition.
GroupId	String	Yes	nJRaJPn5U1JITGf******	The ID of the consumer group. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ResetConsumerGroupPosition
&GroupId=nJRaJPn5U1JITGf******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ResetConsumerGroupPositionResponse>
       <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
       <Success>true</Success>
</ResetConsumerGroupPositionResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.11. DeleteConsumerGroup

Deletes a consumer group when you configure an AMQP server-side subscription.

Limits

- You cannot delete the default consumer group provided by IoT Platform.
- If the consumer group is associated with an AMQP subscription, you must disassociate the consumer group from the subscription. If the subscription has multiple consumer groups, you can call the DeleteConsumerGroupSubscribeRelation operation to remove the consumer group from the subscription. If the subscription has only one consumer group, you can call the UpdateSubscribeRelation operation to change the consumer group or call the DeleteSubscribeRelation operation to delete the subscription.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteConsumerGroup	The operation that you want to perform. Set the value to DeleteConsumerGroup.
GroupId	String	Yes	nJRaJPn5U1JITGf******	The ID of the consumer group. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	73B9DF43-7780-47DE-8BED-077729D28BD2	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteConsumerGroup
&GroupId=nJRaJPn5U1JITGf******
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteConsumerGroupResponse>
    <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
    <Success>true</Success>
</DeleteConsumerGroupResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.12. CreateConsumerGroupSubscribeRelation

Adds a consumer group to an AMQP subscription.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateConsumerGroupSubscribeRelation	The operation that you want to perform. Set the value to CreateConsumerGroupSubscribeRelation.
ConsumerGroupId	String	Yes	nJRaJPn5U1JITGfjBO9l00****	The ID of the consumer group. After you call the CreateConsumerGroup operation to create a consumer group, the consumer group ID is returned. You can call the QueryConsumerGroupList operation to query the consumer group ID by group name. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** > **Consumer Groups** to view the consumer group ID.
ProductKey	String	Yes	a1fyXVF****	The **ProductKey** of the product that is specified for the subscription.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateConsumerGroupSubscribeRelation
&ProductKey=a1Zkii7****
&ConsumerGroupId=nJRaJPn5U1JITGfjBO9l00****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateConsumerGroupSubscribeRelationResponse>
       <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
       <Success>true</Success>
</CreateConsumerGroupSubscribeRelationResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.15.13. DeleteConsumerGroupSubscribeRelation

Removes a consumer group from an AMQP subscription.

Limits

- If the AMQP subscription has only one consumer group, you cannot call this operation to remove the consumer group.
- Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteConsumerGroupSubscribeRelation	The operation that you want to perform. Set the value to DeleteConsumerGroupSubscribeRelation.

Parameter	Type	Required	Example	Description
ConsumerGroupId	String	Yes	nJRaJPn5U1JITGfjBO9l00****	The ID of the consumer group. You can call the QuerySubscribeRelation operation to query the consumer group ID in an AMQP subscription. You can also go to the IoT Platform console,and choose **Rules** > **Server-side Subscription** to view the consumer group ID.
ProductKey	String	Yes	a1fyXVF****	The **ProductKey** of the product that is specified for the subscription.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	E55E50B7-40EE-4B6B-8BBE-D3ED55CCF565	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteConsumerGroupSubscribeRelation
&ProductKey=a1Zkii7****
&ConsumerGroupId=nJRaJPn5U1JITGfjBO9l00****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteConsumerGroupSubscribeRelationResponse>
       <RequestId>73B9DF43-7780-47DE-8BED-077729D28BD2</RequestId>
       <Success>true</Success>
</DeleteConsumerGroupSubscribeRelationResponse>
```

`JSON` format

```
{
  "RequestId": "73B9DF43-7780-47DE-8BED-077729D28BD2",
  "Success": true
}
```

4.16. Device shadows

4.16.1. GetDeviceShadow

Queries the shadow information of a specified device.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GetDeviceShadow	The operation that you want to perform. Set the value to GetDeviceShadow.
DeviceName	String	Yes	device1	The DeviceName of the device.
ProductKey	String	Yes	a1T27vz****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	A56E345A-0978-4993-ACBA-3EF444ED187F	The ID of the request.
ShadowMessage	String	null	The shadow information returned if the call is successful. **Note** The structure of the shadow information varies depending on the status of the device. For more information, see Configure device shadows.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GetDeviceShadow
&ProductKey=a1T27vz****
&DeviceName=device1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GetDeviceShadowResponse>
        <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
        <Success>true</Success>
        <ShadowMessage>{"method":"update","state":{"desired":{"color":"green"},"reported":"
\"},"version":1}</ShadowMessage>
  </GetDeviceShadowResponse>
```

`JSON` format

```
{
    "ShadowMessage": {"method":"update","state":{"desired":{"color":"green"}},"version":1},
    "RequestId": "A56E345A-0978-4993-ACBA-3EF444ED187F",
    "Success": true
}
```

4.16.2. UpdateDeviceShadow

Modifies a device shadow.

Limits

Each Alibaba Cloud account can run a maximum of 500 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateDeviceShadow	The operation that you want to perform. Set the value to UpdateDeviceShadow.
DeviceName	String	Yes	device1	The name of the device whose shadow information needs to be modified.
ProductKey	String	Yes	a1T27vz****	The ProductKey of the product to which the device belongs.

Parameter	Type	Required	Example	Description
ShadowMessage	String	Yes	null	The expected shadow information. The shadow information includes the following parameters: • **method**: the type of the operation. Data type: string. Set the value to **update**. • **state**: the status of the device shadow. The **desired** parameter specifies the expected shadow status. • **version**: the version of the shadow. Data type: long. The specified version must be later than the current version.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
DeltaUpdate	Boolean	No	false	Specifies whether to incrementally update the **desired** parameter of the shadow. • **true**: performs an incremental update. • **false** (default): performs a full update.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	6754C0E7-A35D-4CC8-A684-45EB1F0008D9	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateDeviceShadow
&ProductKey=a1T27vz****
&DeviceName=device1
&ShadowMessage={"method":"update","state":{"desired":{"color":"green"}},"version":1}
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateDeviceShadowResponse>
        <RequestId>BB71E443-4447-4024-A000-EDE09922891E</RequestId>
        <Success>true</Success>
  </UpdateDeviceShadowResponse>
```

`JSON` format

```
{
    "RequestId": "6754C0E7-A35D-4CC8-A684-45EB1F0008D9",
    "Success": true
}
```

4.17. OTA update

4.17.1. GenerateOTAUploadURL

Generates the URL and other information that are required to upload an update package file to Object Storage Service (OSS).

Usage notes

This operation can be used with other operations to create an update package. Procedure:

1. Call this API operation to generate the details of an update package file to be uploaded to OSS.

The response parameters of this API operation include:

- The following request parameters of the OSS PostObject operation that is used to upload the update package file: **Key**, **OSSAccessKeyId**, **Signature**, and **Policy**.
- The following request parameter of the CreateOTAFirmware operation that is used to create the update package: **FirmwareUrl**.

2. Use an OSS SDK to call the PostObject operation to upload the update package file. For more information about sample code, see the "Usage of response parameters" section.

> **Note** The parameter information that is returned by this operation is valid for 1 minute. You must upload the update package file within 1 minute. The maximum size of the uploaded update package file is 2,000 MB.

3. After the update package file is uploaded, call the CreateOTAFirmware operation to create an update package within 60 minutes.

If update package files are uploaded but you do not call the CreateOTAFirmware operation to create update packages for the files, these uploaded files are automatically deleted by the system on a regular basis.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GenerateOTAUploadURL	The operation that you want to perform. Set the value to GenerateOTAUploadURL.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
FileSuffix	String	No	apk	The file name extension of the update package file. Valid values: bin, dav, apk, tar, gz, tar.gz, zip, and gzip. Default value: bin.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The information returned if the call is successful. For more information, see the following parameters.
FirmwareUrl	String	https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.bin	The URL of the update package file that is stored in OSS. After the update package file is uploaded, this parameter is used to call the CreateOTAFirmware operation to create an update package.

Parameter	Type	Example	Description
Host	String	https://iotx-ota.oss-cn-shanghai.aliyuncs.com	The endpoint of OSS.
Key	String	ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.bin	The full path of the file in OSS. The file is uploaded by calling the OSS PostObject operation.
OSSAccessKeyId	String	cS8uRRy54Rsz****	The AccessKey ID of the bucket owner. This OSS bucket stores the update package file.
ObjectStorage	String	OSS	The type of object storage. Default value: OSS.
Policy	String	eyJleHBpcmF****	The parameter that is used by OSS to verify form fields for the request.
Signature	String	v6lViO4FBvfquajQjg20K5hK****	The signature that is calculated based on **AccessKeySecret** and **Policy**. When you call an OSS operation, OSS uses the signature information to verify the POST request.
UtcCreate	String	2019-11-04T06:21:54.607Z	The time when the URL of the update package file to be uploaded was generated. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Usage of response parameters

When you call the OSS PostObject operation to upload the update package file to OSS, specify the request parameters by using the values that are returned from the GenerateOTAUploadURL operation.

The following sample code that is written in Java shows how to upload the update package file to OSS.

- Add the following dependencies to the pom.xml file:

```
<dependency>
  <groupId>org.apache.httpcomponents</groupId>
  <artifactId>httpclient</artifactId>
  <version>4.5.3</version>
</dependency>
<dependency>
  <groupId>org.apache.httpcomponents</groupId>
  <artifactId>httpmime</artifactId>
  <version>4.5.10</version>
</dependency>
```

- Sample code:

```
public static boolean postObject(String key,
                                 String host,
                                 String policy,
                                 String ossAccessKeyId,
                                 String signature,
                                 String data) throws IOException {
  CloseableHttpClient httpClient = HttpClients.createDefault();
  HttpPost uploadFile = new HttpPost(host);
  MultipartEntityBuilder builder = MultipartEntityBuilder.create();
  builder.addTextBody("key", key, ContentType.TEXT_PLAIN);
  builder.addTextBody("policy", policy, ContentType.TEXT_PLAIN);
  builder.addTextBody("OSSAccessKeyId", ossAccessKeyId, ContentType.TEXT_PLAIN);
  builder.addTextBody("signature", signature, ContentType.TEXT_PLAIN);
  builder.addTextBody("success_action_status", "200", ContentType.TEXT_PLAIN);
  builder.addBinaryBody("file", data.getBytes());
  HttpEntity multipart = builder.build();
  uploadFile.setEntity(multipart);
  CloseableHttpResponse response = httpClient.execute(uploadFile);
  if (response.getStatusLine().getStatusCode() == 200) {
    return true;
  }
  return false;
}
```

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GenerateOTAUploadURL
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GenerateOTAUploadURLResponse>
    <Data>
        <Key>ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.bin</Key>
        <Host>https://iotx-ota.oss-cn-shanghai.aliyuncs.com</Host>
        <Policy>eyJleHBpcmF****</Policy>
        <OSSAccessKeyId>cS8uRRy54Rsz****</OSSAccessKeyId>
        <ObjectStorage>OSS</ObjectStorage>
        <UtcCreate>2019-11-04T06:21:54.607Z</UtcCreate>
        <Signature>PKmRTy40QxqIUUWy325SCT/****</Signature>
        <FirmwareUrl>https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836df
de585472****/ck2nfzljo00023g7kysg0****.bin</FirmwareUrl>
    </Data>
    <RequestId>B6E77674-09C4-4647-BF85-59CB72A72E4B</RequestId>
    <Success>true</Success>
</GenerateOTAUploadURLResponse>
```

`JSON` format

```
{
    "Data": {
        "Key": "ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.bin",
        "Host": "https://iotx-ota.oss-cn-shanghai.aliyuncs.com",
        "Policy": "eyJleHBpcmF****",
        "OSSAccessKeyId": "cS8uRRy54Rsz****",
        "ObjectStorage": "OSS",
        "UtcCreate": "2019-11-04T06:21:54.607Z",
        "Signature": "PKmRTy40QxqIUUWy325SCT/****",
        "FirmwareUrl": "https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be2983
6dfde585472****/ck2nfzljo00023g7kysg0****.bin"
    },
    "RequestId": "B6E77674-09C4-4647-BF85-59CB72A72E4B",
    "Success": true
}
```

4.17.2. GenerateDeviceNameListURL

Generates the URL and details of a device list file that you want to upload to Object Storage Service (OSS). When you create a static update batch, you can specify devices that you want to update in a device list file.

Requirements

- A device list file contains the names of devices. Separate multiple device names with line feeds. Each line contains only one device name. A device list file must be in the CSV format. The maximum size of a device list file is 5 MB.
- Each device list file can contain up to 10,000 names for the devices in a product that is related to an update package. If the number of device names in a device list file exceeds the limit, an error occurs when you use the file to create a static update batch.

Description

This operation can be used with other operations to upload a device list file. Procedure:

1. Call this operation to generate the information of a device list file that you want to upload to OSS.

The response parameters of this API operation include:

The following request parameters of the OSS PostObject operation that is used to upload the device list file: **Key**, **AccessKeyId**, **Signature**, and **Policy**.

2. Use an OSS SDK to call the PostObject operation to upload the device list file within 1 minute after a response is returned. For more information about sample code, see the "Usage of response parameters" section in this topic.

> **Note** The parameter information that is returned by this operation is valid for 1 minute. You must upload the device list file within 1 minute.

3. After you upload the device list file, call the CreateOTAStaticUpgradeJob operation of IoT Platform to create a static update batch within 60 minutes.

If you upload device list files but you do not call the CreateOTAStaticUpgradeJob operation to create a static update batch, the system automatically deletes the uploaded files. The system deletes files on a regular basis.

QPS limits

Each Alibaba Cloud account can run up to 10 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	GenerateDeviceNameListURL	The operation that you want to perform. Set the value to GenerateDeviceNameListURL.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails. • If your instance has no **Overview** page or ID, you do not need to configure this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The information returned if the call is successful. For more information, see the following parameters:
AccessKeyId	String	cS8uRRy54Rsz****	The AccessKey ID of the bucket owner. The OSS bucket stores the file.
FileUrl	String	https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.csv	The URL of the file that is stored in OSS. After the device list file is uploaded, this parameter is used to call the CreateOTAStaticUpgradeJob operation to create a static update batch.
Host	String	https://iotx-ota.oss-cn-shanghai.aliyuncs.com	The endpoint of OSS.

Parameter	Type	Example	Description
Key	String	ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.csv	The full path of the file in OSS. You can call the OSS PostObject operation to upload the file to OSS.
ObjectStorage	String	OSS	The type of the object storage. Default value: OSS.
Policy	String	eyJleHBpcmF****	The parameter that is used by OSS to verify form fields for the request.
Signature	String	v6lViO4FBvfquajQjg20K5hK****	The signature that is calculated based on **AccessKeySecret** and **Policy**. When you call an OSS operation, OSS uses the signature information to verify the POST request.
UtcCreate	String	2019-11-04T06:21:54.607Z	The time when the URL of the file that you want to upload was generated. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Usage of response parameters

When you call the OSS PostObject operation to upload the file to OSS, specify the values of the parameters that are returned by this operation for the request parameters of the PostObject operation.

The following sample code that is written in Java shows how to upload the device list file to OSS.

- Add the following dependencies to the pom.xml file:

```
<dependency>
  <groupId>org.apache.httpcomponents</groupId>
  <artifactId>httpclient</artifactId>
  <version>4.5.3</version>
</dependency>
<dependency>
  <groupId>org.apache.httpcomponents</groupId>
  <artifactId>httpmime</artifactId>
  <version>4.5.10</version>
</dependency>
```

- Sample code:

```
public static boolean postObject(String key,
                                 String host,
                                 String policy,
                                 String ossAccessKeyId,
                                 String signature,
                                 String data) throws IOException {
  CloseableHttpClient httpClient = HttpClients.createDefault();
  HttpPost uploadFile = new HttpPost(host);
  MultipartEntityBuilder builder = MultipartEntityBuilder.create();
  builder.addTextBody("key", key, ContentType.TEXT_PLAIN);
  builder.addTextBody("policy", policy, ContentType.TEXT_PLAIN);
  builder.addTextBody("ossAccessKeyId", ossAccessKeyId, ContentType.TEXT_PLAIN);
  builder.addTextBody("signature", signature, ContentType.TEXT_PLAIN);
  builder.addTextBody("success_action_status", "200", ContentType.TEXT_PLAIN);
  builder.addBinaryBody("file", data.getBytes());
  HttpEntity multipart = builder.build();
  uploadFile.setEntity(multipart);
  CloseableHttpResponse response = httpClient.execute(uploadFile);
  if (response.getStatusLine().getStatusCode() == 200) {
    return true;
  }
  return false;
}
```

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=GenerateDeviceNameListURL
&<Common request parameters>
```

Sample success responses

`XML` format

```
<GenerateDeviceNameListURLResponse>
      <Data>
            <Policy>eyJleHBpcmF****</Policy>
            <FileUrl>https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836df
de585472****/ck2nfzljo00023g7kysg0****.csv</FileUrl>
            <UtcCreate>2019-11-04T06:21:54.607Z</UtcCreate>
            <AccessKeyId>cS8uRRy54Rsz****</AccessKeyId>
            <Signature>v6lViO4FBvfquajQjg20K5hK****</Signature>
            <ObjectStorage>OSS</ObjectStorage>
            <Host>https://iotx-ota.oss-cn-shanghai.aliyuncs.com</Host>
            <Key>ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.csv</Key>
      </Data>
      <RequestId>74C2BB8D-1D6F-41F5-AE68-6B2310883F63</RequestId>
      <Success>true</Success>
</GenerateDeviceNameListURLResponse>
```

`JSON` format

```
{
    "Data": {
        "Policy": "eyJleHBpcmF****",
        "FileUrl": "https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836dfd
e585472****/ck2nfzljo00023g7kysg0****.csv",
        "UtcCreate": "2019-11-04T06:21:54.607Z",
        "AccessKeyId": "cS8uRRy54Rsz****",
        "Signature": "v6lViO4FBvfquajQjg20K5hK****",
        "ObjectStorage": "OSS",
        "Host": "https://iotx-ota.oss-cn-shanghai.aliyuncs.com",
        "Key": "ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.csv"
    },
    "RequestId": "74C2BB8D-1D6F-41F5-AE68-6B2310883F63",
    "Success": true
}
```

4.17.3. CreateOTAFirmware

Creates an over-the-air (OTA) update package after an update package file is uploaded to Object Storage Service (OSS).

Usage notes

Before you call this operation to create an update package, you must call the GenerateOTAUploadURL operation to generate the parameters that are required to upload an update package file and then call the OSS PostObject operation to upload the file.

Limits

- Each Alibaba Cloud account can have a maximum of 500 update packages.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateOTAFirmware	The operation that you want to perform. Set the value to CreateOTAFirmware.
DestVersion	String	Yes	2.0.0	The version number of the OTA update package. The value can contain letters, digits, periods (.), hyphens (-), and underscores (_). It must be 1 to 64 characters in length.
FirmwareName	String	Yes	Firmware2	The name of the OTA update package. The update package name must be unique within an Alibaba Cloud account. The update package name cannot be modified after the update package is added. The name must be 1 to 40 characters in length, and can contain letters, digits, hyphens (-), underscores (_), and parentheses (). The name must start with a letter or digit.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
FirmwareUrl	String	No	https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/bcd6142594d0183a16d825ad8225****/A6B3400B70CA4D6D872160D1A91A*****.bin	The URL of the OTA update package file. This parameter specifies the storage location of the update package in OSS. You can call the GenerateOTAUploadURL operation to generate the URL of the update package. **Notice** If the OTA update package contains a single file, this parameter is available and must be specified.
FirmwareSign	String	No	93230c3bde425a9d7984a594ac55*****	The signature of the OTA update package file. The value is calculated by using the specified signature method to sign the update package file. **Notice** If the OTA update package contains a single file, this parameter is available and must be specified. If you do not specify this parameter, the MD5 value of the update package in OSS is used.
SignMethod	String	No	MD5	The signature method of the OTA update package. Valid value: **MD5**. Default value: **MD5**.

Parameter	Type	Required	Example	Description
FirmwareSize	Integer	No	900	The size of the OTA update package file. Unit: bytes. **Notice** If the OTA update package contains a single file, this parameter is available. If you do not specify this parameter, the size of the update package file in OSS is used.
ProductKey	String	No	a1uctKe****	The **ProductKey** of the product to which the OTA update package belongs.
FirmwareDesc	String	No	OTA function updated	The description of the OTA update package. The description can be up to 100 characters in length.
Type	Integer	No	0	The type of the OTA update package. Valid values: • **0**: The uploaded file contains a full update package. IoT Platform pushes the full update package to a device for update. • **1**: The uploaded file contains only the differences between the latest update package and previous update package. IoT Platform pushes only the differences to a device for update. Default value: **0**.

Parameter	Type	Required	Example	Description
SrcVersion	String	No	1.0.0	The version number of the OTA module for a device to be updated. You can call the QueryDeviceDetail operation and view the **FirmwareVersion** parameter in the response. **Note** • If the **Type** parameter is set to **1**, you must specify this parameter, and the value cannot be the same as the update package version that is specified by the **DestVersion** parameter. • If the **Type** parameter is set to **0**, this parameter is optional.
ModuleName	String	No	WifiConfigModify	The name of the OTA module. OTA modules are the updatable units of the devices that belong to the same product. **Note** • If you do not specify this parameter, the default OTA module is used. The default value indicates that the complete device firmware is updated. • You can call the CreateOTAModule operation to create a custom OTA module. You can call the ListOTAModuleByProduct operation to query the existing OTA modules of a product.

Parameter	Type	Required	Example	Description
NeedToVerify	Boolean	No	true	Specifies whether to verify the update package before you create a batch update task. • **true** (default): verifies the update package • **false**: does not verify the update package
Udi	String	No	{"ota_notice":"Upgrade the underlying camera driver to solve the problem of blurred video images. "}	The custom information that is pushed to the device. The information can be up to 4,096 characters in length. No limit is applies to the content format. After you add the update package and create an update task, IoT Platform sends the custom information to the specified device when IoT Platform pushes the update notification.
MultiFiles.N.Name	String	No	Firmware1	The name of the OTA update package file. The name must be 1 to 32 characters in length. You can add up to 20 files. The names of multiple update package files must be unique. **Notice** If the OTA update package contains multiple files, you must specify this parameter.

Parameter	Type	Required	Example	Description
MultiFiles.N.Size	Integer	No	200	The size of the OTA update package file. Unit: bytes. **Note** If the OTA update package contains multiple files, this parameter is available. If you do not specify this parameter, the size of the update package file in OSS is used.
MultiFiles.N.Url	String	No	https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/bcd6142594d0183a16d825ad8225****/A6B3400B70CA4D6D872160D1A91A*****.bin	The URL of the update package file. This parameter specifies the storage location of the update package in OSS. You can call the GenerateOTAUploadURL operation to generate the URL of the update package. **Notice** If the OTA update package contains multiple files, you must specify this parameter.
MultiFiles.N.SignValue	String	No	93230c3bde425a9d7984a594ac45*****	The signature of the OTA update package file. The value is calculated by using the specified signature method to sign the update package file. **Note** If the OTA update package contains multiple files, this parameter is available. If you do not specify this parameter, the MD5 value of the update package in OSS is used.

Parameter	Type	Required	Example	Description
MultiFiles.N.FileMd5	String	No	93230c3bde425a9d7984a594ac56****	The MD5 value of the OTA update package file. **Note** If the OTA update package contains multiple files, this parameter is available. If you do not specify this parameter, the MD5 value of the update package file in OSS is used.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The update package information returned if the call succeeds. For more information, see **Data**.
FirmwareId	String	s8SSHiKjpBfrM3BSN0z803****	The ID of the update package. The package ID is issued by IoT Platform.
UtcCreate	String	2019-11-04T06:21:54.607Z	The time when the update package was created. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	291438BA-6E10-4C4C-B761-243B9A0D324F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. This value indicates that the OTA update package is created. • **false**: The call failed. This value indicates that the OTA update package failed to be created.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateOTAFirmware
&ProductKey=aluctKe****
&FirmwareName=Firmware2
&DestVersion=2.0.0
&FirmwareUrl=https%3A%2F%2iotx-ota.oss-cn-shanghai.aliyuncs.com%2Fota%2F****%2F****.bin
&SignMethod=MD5
&FirmwareSign=93230c3bde425a9d7984a594ac55****
&FirmwareSize=900
&FirmwareDesc=OTA function updated
&Type=0
&ModuleName=WifiConfigModify
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateOTAFirmwareResponse>
    <Data>
        <FirmwareId>s8SSHiKjpBfrM3BSN0z803****</FirmwareId>
        <UtcCreate>2019-11-04T06:21:54.607Z</UtcCreate>
    </Data>
    <RequestId>E4BD5A12-7C1D-4712-A7D5-B2432331165E</RequestId>
    <Success>true</Success>
</CreateOTAFirmwareResponse>
```

`JSON` format

```
{
  "Data": {
    "FirmwareId": "s8SSHiKjpBfrM3BSN0z803****",
    "UtcCreate": "2019-11-04T06:21:54.607Z"
  },
  "RequestId": "291438BA-6E10-4C4C-B761-243B9A0D324F",
  "Success": true
}
```

4.17.4. DeleteOTAFirmware

Deletes an over-the-air (OTA) update package.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteOTAFirmware	The operation that you want to perform. Set the value to DeleteOTAFirmware.
FirmwareId	String	Yes	s8SSHiKjpBfrM3BSN0z803****	The unique ID of the OTA update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	9B7BF858-7686-496E-B8B0-BF9E5D7F86CE	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteOTAFirmware
&FirmwareId=s8SSHiKjpBfrM3BSN0z803****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteOTAFirmwareResponse>
    <RequestId>9B7BF858-7686-496E-B8B0-BF9E5D7F86CE</RequestId>
    <Success>true</Success>
</DeleteOTAFirmwareResponse>
```

`JSON` format

```
{
  "RequestId": "9B7BF858-7686-496E-B8B0-BF9E5D7F86CE",
  "Success": true
}
```

4.17.5. ListOTAFirmware

Queries over-the-air (OTA) update packages.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAFirmware	The operation that you want to perform. Set the value to ListOTAFirmware.
CurrentPage	Integer	Yes	1	The number of the page to return. Pages start from page 1.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 100.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
ProductKey	String	No	a19mzPZ****	The **ProductKey** of the product to which the OTA update package belongs. If you specify this parameter, IoT Platform returns the OTA update packages of the specified product. If you do not specify this parameter, IoT Platform returns the OTA update packages of the current Alibaba Cloud account.
DestVersion	String	No	4.0.0	The version number of the OTA update package. If you specify this parameter, only the OTA update package of the specified version number is returned.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The number of the returned page.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
FirmwareInfo	Array of SimpleFirmwareInfo		The OTA update packages returned if the call is successful. For more information, see SimpleFirmwareInfo.
SimpleFirmwareInfo			
DestVersion	String	4.0.0	The version number of the OTA update package.
FirmwareDesc	String	firmwareDesc	The description of the OTA update package.
FirmwareId	String	UfuxnwygsuSkVE0VCN****0100	The unique ID of the OTA update package.

Parameter	Type	Example	Description
FirmwareName	String	t3q5rkNm	The name of the OTA update package.
FirmwareSign	String	3d04ab6462633508606e5f3daac8****	The signature of the OTA update package.
FirmwareSize	Integer	924	The size of the update package. Unit: bytes.
ModuleName	String	module1234	The name of the module.
ProductKey	String	a19mzPZ****	The ProductKey of the product to which the OTA update package belongs.
ProductName	String	MyProduct	The name of the product to which the OTA update package belongs.
SignMethod	String	MD5	The signature method of the OTA update package.
SrcVersion	String	V1.0.0	The version number of the original update package to be updated. **Note** The return value is null if you perform a full update.
Status	Integer	0	The status of the OTA update package. Valid values: • **0**: unverified • **1**: verified • **2**: verifying • **3**: failed to be verified
Type	Integer	0	The type of the OTA update package. Valid values: • **0**: complete firmware • **1**: differential firmware

Parameter	Type	Example	Description
UtcCreate	String	2019-12-28T02:42:22.000Z	The time when the update package was created. The time is displayed in UTC.
UtcModified	String	2019-12-28T02:42:22.000Z	The time when the update task was last modified. The time is displayed in UTC.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	A01829CE-75A1-4920-B775-921146A1AB79	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	1	The total number of OTA update packages.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAFirmware
&CurrentPage=1
&PageSize=10
&ProductKey=a19mzPZ****
&DestVersion=4.0.0
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTAFirmwareResponse>
  <PageCount>1</PageCount>
  <PageSize>10</PageSize>
  <RequestId>A01829CE-75A1-4920-B775-921146A1AB79</RequestId>
  <FirmwareInfo>
        <SimpleFirmwareInfo>
              <SrcVersion>1.0.0</SrcVersion>
              <FirmwareSign>3d04ab6462633508606e5f3daac8****</FirmwareSign>
              <ProductKey>a19mzPZ****</ProductKey>
              <Type>0</Type>
              <UtcModified>2019-12-28T02:42:22.000Z</UtcModified>
              <SignMethod>MD5</SignMethod>
              <UtcCreate>2019-12-28T02:42:22.000Z</UtcCreate>
              <FirmwareSize>924</FirmwareSize>
              <Status>0</Status>
              <FirmwareId>UfuxnwygsuSkVE0VCN****0100</FirmwareId>
              <FirmwareDesc>firmwareDesc</FirmwareDesc>
              <DestVersion>4.0.0</DestVersion>
              <ProductName>MyProduct</ProductName>
              <FirmwareName>t3q5rkNm</FirmwareName>
              <ModuleName>module1234</ModuleName>
        </SimpleFirmwareInfo>
  </FirmwareInfo>
  <CurrentPage>1</CurrentPage>
  <Success>true</Success>
  <Total>1</Total>
</ListOTAFirmwareResponse>
```


`JSON` format

```
{
  "PageCount": 1,
  "PageSize": 10,
  "RequestId": "A01829CE-75A1-4920-B775-921146A1AB79",
  "FirmwareInfo": {
    "SimpleFirmwareInfo": [{
      "SrcVersion": "1.0.0",
      "FirmwareSign": "3d04ab6462633508606e5f3daac8****",
      "ProductKey": "a19mzPZ****",
      "Type": 0,
      "UtcModified": "2019-12-28T02:42:22.000Z",
      "SignMethod": "MD5",
      "UtcCreate": "2019-12-28T02:42:22.000Z",
      "FirmwareSize": 924,
      "Status": 0,
      "FirmwareId": "UfuxnwygsuSkVE0VCN****0100",
      "FirmwareDesc": "firmwareDesc",
      "DestVersion": "4.0.0",
      "ProductName": "MyProduct",
      "FirmwareName": "t3q5rkNm",
      "ModuleName": "module1234"
    }]
  },
  "CurrentPage": 1,
  "Success": true,
  "Total": 1
}
```


4.17.6. QueryOTAFirmware

Queries the details of a specified OTA update package, including the name, type, and status of the update package.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryOTAFirmware	The operation that you want to perform. Set the value to QueryOTAFirmware.
FirmwareId	String	Yes	s8SSHiKjpBfrM3BSN0z803****	The unique ID of the OTA update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
FirmwareInfo	Struct		The update package information returned if the call succeeds. For more information, see **FirmwareInfo**.
DestVersion	String	4.0.0	The version number of the OTA update package.
FirmwareDesc	String	modified-WiFi-module	The description of the OTA update package.
FirmwareId	String	UfuxnwygsuSkVE0VCN****0100	The unique ID of the OTA update package.
FirmwareName	String	t3q5rkNm	The name of the OTA update package.
FirmwareSign	String	3d04ab6462633508606e5f3daac8****	The signature of the OTA update package. **Note** This parameter is available if the OTA update package contains a single file.
FirmwareSize	Integer	924	The size of the OTA update package file. Unit: bytes. **Note** This parameter is available if the OTA update package contains a single file.
FirmwareUrl	String	https://ota-***.aliyuncs.com/ota/572ef2fd12ca4791a5b21a9eb948****/5E962CF83DB1495E8337E9C8A4D1****.bin?Expires=1577587360&OSSAccessKeyId=cS8uRRy54Rsz****&Signature=farzC8%2FVMN4HYdEtXvdiC2OevH****	The URL of the update package file that is stored in Object Storage Service (OSS). **Note** This parameter is available if the OTA update package contains a single file.

Parameter	Type	Example	Description
ModuleName	String	WifiConfigModify	The name of the module. OTA updates are based on the firmware modules of a device. For more information, see Add a custom OTA module to an update package.
MultiFiles	Array of OtaPackageFileDTO		The information about the OTA update package files. This parameter is available if the OTA update package contains multiple files.
FileMd5	String	3d04ab6462633508606e5f3d****	The MD5 value of the OTA update package file.
Name	String	firmware1	The name of the OTA update package file.
SignValue	String	3d04ab6462633508606e5f3d****	The signature of the OTA update package file.
Size	Integer	200	The size of the OTA update package file. Unit: bytes.
Url	String	https://ota-***.aliyuncs.com/ota/572ef2fd12ca4791a5b21a9eb948****/5E962CF83DB1495E8337E9C8A4D1****.bin?Expires=1577587360&OSSAccessKeyId=cS8uRRy54Rsz****&Signature=farzC8%2FVMN4HYdEtXvdiC2OevH****	The URL of the update package file that is stored in Object Storage Service (OSS).
ProductKey	String	a19mzPZ****	The **ProductKey** of the product to which the OTA update package belongs.
ProductName	String	MyProduct	The name of the product to which the OTA update package belongs.
SignMethod	String	MD5	The signature method of the OTA update package.

Parameter	Type	Example	Description
SrcVersion	String	1.0.0	The version number of the original update package to be updated. **Note** This parameter is returned if you perform a delta update. For more information about update package types, see the description of the **Type** parameter.
Status	Integer	2	The status of the OTA update package. Valid values: • **-1**: no verification is required • **0**: unverified • **1**: verified • **2**: verifying • **3**: failed to be verified
Type	Integer	0	The type of the OTA update package. Valid values: • **0**: The uploaded file contains a full update package. IoT Platform pushes the full update package to a device for update. • **1**: The uploaded file contains only the differences between the latest update package and previous update package. IoT Platform pushes only the differences to a device for update.
Udi	String	{"ota_notice":"Upgrade the underlying camera driver to solve the problem of blurred video images. "}	The custom information that was pushed to the device. The information can be up to 4,096 characters in length. No limit is applies to the content format. After you add the update package and create an update task, IoT Platform sends the custom information to the specified device when IoT Platform pushes the update notification.

Parameter	Type	Example	Description
UtcCreate	String	2019-12-28T02:42:22.000Z	The time when the OTA update package was created. The time is displayed in UTC.
UtcModified	String	2019-12-28T02:42:41.000Z	The time when the update task was last modified. The time is displayed in UTC.
VerifyProgress	Integer	0	The verification status of the OTA update package. Valid values: • **0**: unverified • **100**: verified • A value N between 0 and 100 indicates that the update task is N percent completed. You can check the response parameter **Status** to see the verification status.
RequestId	String	A01829CE-75A1-4920-B775-921146A1AB79	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryOTAFirmware
&FirmwareId=s8SSHiKjpBfrM3BSN0z803****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryOTAFirmwareResponse>
  <RequestId>A01829CE-75A1-4920-B775-921146A1AB79</RequestId>
  <FirmwareInfo>
        <SrcVersion></SrcVersion>
        <FirmwareSign>3d04ab6462633508606e5f3daac8****</FirmwareSign>
        <ProductKey>a19mzPZ****</ProductKey>
        <Type>0</Type>
        <UtcModified>2019-12-28T02:42:41.000Z</UtcModified>
        <SignMethod>MD5</SignMethod>
        <UtcCreate>2019-12-28T02:42:22.000Z</UtcCreate>
        <FirmwareSize>924</FirmwareSize>
        <Status>2</Status>
        <FirmwareId>UfuxnwygsuSkVE0VCN****0100</FirmwareId>
        <FirmwareDesc>modified-WiFi-module</FirmwareDesc>
        <FirmwareUrl>https://ota-***.aliyuncs.com/ota/572ef2fd12ca4791a5b21a9eb948****/5E96
2CF83DB1495E8337E9C8A4D1****.bin?Expires=1577587360&amp;OSSAccessKeyId=cS8uRRy54Rsz****&amp
;Signature=farzC8%2FVMN4HYdEtXvdiC2OevH****</FirmwareUrl>
        <DestVersion>4.0.0</DestVersion>
        <ProductName>MyProduct</ProductName>
        <FirmwareName>t3q5rkNm</FirmwareName>
        <ModuleName>WifiConfigModify</ModuleName>
        <Udi>{"ota_notice":"Upgrade the underlying camera driver to solve the problem of bl
urred video images. "}</Udi>
        <VerifyProgress>0</VerifyProgress>
  </FirmwareInfo>
  <Success>true</Success>
</QueryOTAFirmwareResponse>
```

`JSON` format

```
{
  "RequestId": "A01829CE-75A1-4920-B775-921146A1AB79",
  "FirmwareInfo": {
    "SrcVersion": "",
    "FirmwareSign": "3d04ab6462633508606e5f3daac8****",
    "ProductKey": "a19mzPZ****",
    "Type": 0,
    "UtcModified": "2019-12-28T02:42:41.000Z",
    "SignMethod": "MD5",
    "UtcCreate": "2019-12-28T02:42:22.000Z",
    "FirmwareSize": 924,
    "Status": 2,
    "FirmwareId": "UfuxnwygsuSkVE0VCN****0100",
    "FirmwareDesc": "modified-WiFi-module",
    "FirmwareUrl": "https://ota-***.aliyuncs.com/ota/572ef2fd12ca4791a5b21a9eb948****/5E962
CF83DB1495E8337E9C8A4D1****.bin?Expires=1577587360&OSSAccessKeyId=cS8uRRy54Rsz****&Signatur
e=farzC8%2FVMN4HYdEtXvdiC2OevH****",
    "DestVersion": "4.0.0",
    "ProductName": "MyProduct",
    "FirmwareName": "t3q5rkNm",
    "ModuleName": "WifiConfigModify",
    "Udi":"{\"ota_notice\":\" Upgrade the underlying camera driver to solve the problem of
blurred video images. \"}",
    "VerifyProgress": 0
  },
  "Success": true
}
```


4.17.7. CreateOTAVerifyJob

Creates a task to verify an over-the-air (OTA) update package.

Usage notes

- You must verify an update package before you push the package to devices for a batch update. Only verified update packages can be used to update devices in batches. You can call the QueryOTAFirmware operation to view the status of a verification task.
- You cannot initiate a verification task for an update package that is being verified or has been verified.
- You can specify a maximum of 10 devices for a verification task.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateOTAVerifyJob	The operation that you want to perform. Set the value to CreateOTAVerifyJob.
FirmwareId	String	Yes	nx3xxVvFdwvn6dim50PY03****	The ID of the update package. The **FirmwareId** parameter is returned when you call the CreateOTAFirmware operation to create an OTA update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
ProductKey	String	Yes	a1VJwBw****	The ProductKey of the product to which the OTA update package belongs.
Tag.N.Key	String	Yes	key1	The key of the update batch tag. The key must be 1 to 30 characters in length and can contain letters, digits, and periods (.). You can add up to 10 tags for each update batch. The tags of an update batch are sent to devices when IoT Platform pushes update notifications to these devices. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair.

Parameter	Type	Required	Example	Description
Tag.N.Value	String	Yes	value1	The value of the update batch tag. The value must be 1 to 1,024 characters in length. You can add up to 10 tags for each update batch. The total tag keys and values cannot exceed 4,096 characters in length. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair.
TargetDeviceName.N	RepeatList	Yes	testdevice	The list of devices to be verified. **Note** • The devices in the list must belong to the same product as the update package. • Device names must be unique. • You can specify a maximum of 10 devices.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
TimeoutInMinutes	Integer	No	1440	The timeout period for a device to update the firmware. Unit: minutes. Valid values: 1 to 1440.
NeedPush	Boolean	No	true	Specifies whether to automatically push update tasks from IoT Platform to devices. • **true** (default): yes. After an update batch is created, IoT Platform automatically pushes update tasks to the specified online devices. In this case, a device can still initiate a request to obtain the information about the over-the-air (OTA) update task from IoT Platform. • **false**: no. A device must initiate a request to obtain the information about the OTA update task from IoT Platform.
NeedConfirm	Boolean	No	false	Specifies whether to control the update by using a mobile app. You must develop the mobile app as needed. • **false** (default): no. A device obtains the information about the OTA update task based on the **NeedPush** parameter. • **true**: yes. To perform an OTA update on a device, you must confirm the update by using your mobile app. Then, the device can obtain the information about the OTA update task based on the **NeedPush** parameter.

Parameter	Type	Required	Example	Description
DownloadProtocol	String	No	HTTPS	The download protocol of the update package. Valid values: **HTTPS** and **MQTT**. Default value: HTTPS. After the device receives the update package information pushed by IoT Platform, this protocol is used to download the update package. **Notice** If you need to download the update package over MQTT, take note of the following items: • Your service must be deployed in China (Shanghai), China (Beijing), or China (Shenzhen). • The OTA update package can contain only one file and the size of the file cannot exceed 16 MB. • You must use the latest version of Link SDK for C to develop the device features to perform OTA updates and download files over MQTT. For more information, see Sample code.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The task information returned if the call is successful. For more information, see the following parameters.

Parameter	Type	Example	Description
JobId	String	wahVIzGkCMuAUE2gDERM02****	The ID of the verification task.
UtcCreate	String	2019-11-04T06:22:19.566Z	The time when the verification task was created. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateOTAVerifyJob
&FirmwareId=nx3xxVvFdwvn6dim50PY03****
&ProductKey=a1VJwBw****
&TargetDeviceNames.1=testdevice
&TimeoutInMinutes=1440
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateOTAVerifyJobResponse>
   <Data>
       <JobId>wahVIzGkCMuAUE2gDERM02****</JobId>
       <UtcCreate>2019-11-04T06:22:19.566Z</UtcCreate>
   </Data>
   <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
   <Success>true</Success>
</CreateOTAVerifyJobResponse>
```

`JSON` format

```
{
  "Data": {
    "JobId": "wahVIzGkCMuAUE2gDERM02****",
    "UtcCreate": "2019-11-04T06:22:19.566Z"
  },
  "RequestId": "29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1",
  "Success": true
}
```

4.17.8. CreateOTAStaticUpgradeJob

Creates a static update batch.

Description

- You can specify that an update package does not need to be verified when you call the CreateOTAFirmware operation. Otherwise, you must make sure that the update package is verified before you call the CreateOTAStaticUpgradeJob operation to create an update batch. For more information about how to create a task to verify an update package, see CreateOTAVerifyJob.
- You can initiate update tasks for a maximum of 200 devices in each call. If you use a device list file, you can initiate update tasks for a maximum of 1,000,000 devices. However, you must call the GenerateDeviceNameListURL operation to generate a URL for the device list file. Then, you can perform the operations as prompted to upload the device list file.
- When you initiate update tasks for multiple devices, the devices that already have the destination firmware versions are skipped.
- Each device can be in the pending or updating status only in one update job. If you initiate another update task for a device that is in the pending or updating status, the update task fails.
- You can create multiple static update batches by using a single update package.
- Only devices in the China (Shanghai), China (Beijing), and China (Shenzhen) regions can upload update packages by using the MQTT protocol.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateOTAStaticUpgradeJob	The operation that you want to perform. Set the value to CreateOTAStaticUpgradeJob.
FirmwareId	String	Yes	nx3xxVvFdwvn6dim50PY03****	The ID of the update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
ProductKey	String	Yes	a1Le6d0****	The **ProductKey** of the product to which the update package belongs.
Tag.N.Key	String	Yes	key1	The key of the update batch tag. The key must be 1 to 30 characters in length and can contain letters, digits, and periods (.). You can add up to 10 tags for each update batch. The tags of an update batch are sent to devices when IoT Platform pushes update notifications to these devices. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair.

Parameter	Type	Required	Example	Description
Tag.N.Value	String	Yes	value1	The value of the update batch tag. The value must be 1 to 1,024 characters in length. You can add up to 10 tags for each update batch. The total tag keys and values cannot exceed 4,096 characters in length. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair.
TargetSelection	String	Yes	ALL	The scope of the update. Valid values: • **ALL**: updates all devices. • **SPECIFIC**: updates specified devices. • **GRAY**: performs a phased update. • **GROUP**: updates specified groups.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
SrcVersion.N	RepeatList	No	V1.0.1	The list of firmware versions to be updated. **Note** • This parameter is available if you set the TargetSelection parameter to `ALL` or `GRAY`. • If you use a differential update package to perform a complete update or phased update, the value of this parameter must be the same as the value of the **SrcVersion** parameter. • This parameter is unavailable if you set the TargetSelection parameter to `SPECIFIC` or `GROUP`. • You can call the QueryDeviceDetail operation and view the **FirmwareVersion** parameter in the response. • The version numbers must be unique in the list. • You can specify a maximum of 10 version numbers.

Parameter	Type	Required	Example	Description
ScheduleTime	Long	No	1577808000000	The time to start the over-the-air (OTA) update. The scheduled time ranges from 5 minutes to seven days later than the current time. The value must be a 13-digit timestamp. If you do not specify this parameter, the update immediately starts.
RetryInterval	Integer	No	60	The automatic retry interval if a device fails to be updated. Unit: minutes. Valid values: • **0**: An automatic retry is immediately performed. • **10**: An automatic retry is performed after 10 minutes. • **30**: An automatic retry is performed after 30 minutes. • **60**: An automatic retry is performed after 60 minutes (1 hour). • **1440**: An automatic retry is performed after 1,440 minutes (24 hours).

Parameter	Type	Required	Example	Description
				Notice The value of the **RetryInterval** parameter must be less than the value of the **TimeoutInMinutes** parameter. Examples: • If the value of the **TimeoutInMinutes** parameter is set to 60, the maximum value of the **RetryInterval** parameter is 30. • If the value of the **TimeoutInMinutes** parameter is set to 1440, the maximum value of the **RetryInterval** parameter is 60. If the value of the **RetryInterval** parameter is set to 1440, we recommend that you do not specify the **TimeoutInMinutes** parameter. If an update times out, no retry is performed.
RetryCount	Integer	No	1	The number of automatic retries. If you specify the **RetryInterval** parameter, you must specify this parameter. Valid values: • 1: retries once. • 2: retries twice. • 5: retries five times. If you do not specify this parameter, no retry is performed.

Parameter	Type	Required	Example	Description
TimeoutInMinutes	Integer	No	1440	The timeout period of the update. If the device is not updated within the specified period, a timeout error occurs. Unit: minutes. Valid values: 1 to 1440. **Note** • The timeout period starts from the time when the specified device submits the update progress for the first time. During the update, the update package may be repeatedly pushed to the specified device because the device goes online and offline multiple times. However, the start time of the update period does not change. • If an update fails due to timeout, no retry is triggered. If you do not specify this parameter, timeout errors do not occur.
MaximumPerMinute	Integer	No	1000	The maximum number of devices to which the download URL of the update package is pushed per minute. Valid values: 10 to 10000. Default value: 10000.

Parameter	Type	Required	Example	Description
GrayPercent	String	No	33.33	The ratio of the phased update. The value is a percentage in the string format. It can be up to three decimal places. The calculated number of devices is rounded down to the nearest integer. You must specify at least one device for a phased update. For example, if you set the phased update ratio to 33.33 for 100 devices, the number of devices to be updated is 33. You must specify this parameter if you set the TargetSelection parameter to `GRAY`.
TargetDeviceName.N	RepeatList	No	deviceName1	The list of device names. **Note** • If you set the TargetSelection parameter to `SPECIFIC`, you must specify this parameter or the **DnListFileUrl** parameter. You cannot specify the two parameters at the same time. • If you use a differential update package to perform a specific update, the OTA module version of the device to be updated must be the same as the value of the **SrcVersion** parameter. • You can call the QueryDeviceDetail operation and view the **FirmwareVersion** parameter in the response. • The devices in the list must belong to the same product as the update package. • The device names must be unique in the list. • The list can contain up to 200 device names.

Parameter	Type	Required	Example	Description
ScheduleFinishTime	Long	No	1577909000000	The time to end the update. The end time must be 1 hour to 30 days later than the start time that is specified by the **ScheduleTime** parameter. The value must be a 13-digit timestamp. If you do not specify this parameter, the update is not forcibly ended.
OverwriteMode	Integer	No	1	Specifies whether to overwrite the previous update task. Valid values: • **1** (default): The previous update task is not overwritten. If a device already has an update task, the previous update task is implemented. • **2**: The previous update task is overwritten. Only the current update task is implemented. In this case, you cannot set **MultiModuleMode** to **true**. **Note** The update task that is in progress is not overwritten.

Parameter	Type	Required	Example	Description
DnListFileUrl	String	No	https://iotx-ota.oss-cn-shanghai.aliyuncs.com/ota/65dfcda0473be29836dfde585472****/ck2nfzljo00023g7kysg0****.bin	The URL of the device list file that is used to perform a specific update. **Note** • If you set the TargetSelection parameter to `SPECIFIC`, you must specify this parameter or the **TargetDeviceName.N** parameter. You cannot specify the two parameters at the same time. • You can call the GenerateDeviceNameListURL operation to generate a file URL. Then, you can perform the operations as prompted to upload the device list file. • During a full update, the devices that have been updated are skipped. • During a delta update, the devices that have been updated and the devices whose initial version numbers are different from the update package are skipped.
NeedPush	Boolean	No	true	Specifies whether to automatically push update tasks from IoT Platform to devices. • **true** (default): yes. After an update batch is created, IoT Platform automatically pushes update tasks to the specified online devices. In this case, a device can still initiate a request to obtain the information about the over-the-air (OTA) update task from IoT Platform. • **false**: no. A device must initiate a request to obtain the information about the OTA update task from IoT Platform.

Parameter	Type	Required	Example	Description
NeedConfirm	Boolean	No	false	Specifies whether to control the update by using a mobile app. You must develop the mobile app as needed. • **false** (default): no. A device obtains the information about the OTA update task based on the **NeedPush** parameter. • **true**: yes. To perform an OTA update on a device, you must confirm the update by using your mobile app. Then, the device can obtain the information about the OTA update task based on the **NeedPush** parameter.
GroupId	String	No	CtjzCkNuOx***	The ID of the group. If you set the TargetSelection parameter to `GROUP`, you must specify this parameter and the **GroupType** parameter. You can call the QueryDeviceGroupList operation to query the **GroupId** parameter.
GroupType	String	No	LINK_PLATFORM	The type of the group. Valid value: **LINK_PLATFORM**. If you set the TargetSelection parameter to `GROUP`, you must specify this parameter and the **GroupId** parameter.

Parameter	Type	Required	Example	Description
DownloadProtocol	String	No	HTTPS	The download protocol of the update package. Valid values: **HTTPS** and **MQTT**. Default value: HTTPS. After the device receives the update package information pushed by IoT Platform, this protocol is used to download the update package. **Notice** If you need to download the update package over MQTT, take note of the following items: • Your service must be deployed in China (Shanghai), China (Beijing), or China (Shenzhen). • The OTA update package can contain only one file and the size of the file cannot exceed 16 MB. • You must use the latest version of Link SDK for C to develop the device features to perform OTA updates and download files over MQTT. For more information, see Sample code.

Parameter	Type	Required	Example	Description
MultiModuleMode	Boolean	No	false	Specifies whether the device supports simultaneous updates of multiple modules. • **false** (default): no. • **true**: yes. In this case, do not set **OverwriteMode** to **2**. The update tasks for the same module are overwritten. The update tasks that are in progress are not overwritten. **Notice** • Only Enterprise Edition instances and new public instances are supported. • You must use Link SDK for C 4.x to develop the device. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	MissingFirmwareId	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The update batch information returned if the call is successful. For more information, see Data.
JobId	String	wahVIzGkCMuAUE2gDERM02****	The ID of the update batch. This parameter is used to uniquely identify the update batch.
UtcCreate	String	2019-11-04T06:22:19.566Z	The time when the update batch was created. The time is displayed in UTC.
ErrorMessage	String	FirmwareId is mandatory for this action.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateOTAStaticUpgradeJob
&FirmwareId=nx3xxVvFdwvn6dim50PY03****
&MaximumPerMinute=1000
&ProductKey=a1Le6d0****
&RetryCount=1
&RetryInterval=60
&TargetSelection=ALL
&TimeoutInMinutes=1440
&SrcVersion.1=V1.0.1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateOTAStaticUpgradeJobResponse>
   <Data>
       <JobId>wahVIzGkCMuAUE2gDERM02****</JobId>
       <UtcCreate>2019-11-04T06:22:19.566Z</UtcCreate>
   </Data>
   <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
   <Success>true</Success>
</CreateOTAStaticUpgradeJobResponse>
```

`JSON` format

```
{
  "Data": {
    "JobId": "wahVIzGkCMuAUE2gDERM02****",
    "UtcCreate": "2019-11-04T06:22:19.566Z"
  },
  "RequestId": "29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1",
  "Success": true
}
```

4.17.9. CreateOTADynamicUpgradeJob

Creates a dynamic update batch.

Usage notes

- You can specify that an update package does not need to be verified when you call the CreateOTAFirmware operation. Otherwise, you must make sure that the update package is verified before you call the CreateOTADynamicUpgradeJob operation to create an update batch. For more information about how to create a task to verify an update package, see CreateOTAVerifyJob.
- Each device can be in the pending or updating state only in one update job. If you initiate another update task for a device that is in the pending or updating state, the update task fails.
- Each update package can have only one dynamic update task that is in the running state.
- If a device is included in dynamic update policies of different update packages, the device performs the latest dynamic update.
- After a dynamic update batch is created, IoT Platform automatically creates the related dynamic update policy. You can call the CancelOTAStrategyByJob operation to cancel a dynamic update policy.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates a sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateOTADynamicUpgradeJob	The operation that you want to perform. Set the value to CreateOTADynamicUpgradeJob.
FirmwareId	String	Yes	nx3xxVvFdwvn6dim50PY03****	The ID of the update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.

Parameter	Type	Required	Example	Description
ProductKey	String	Yes	a1Le6d0****	The **ProductKey** of the product to which the update package belongs.
SrcVersion.N	RepeatList	Yes	V1.0.1	The list of firmware versions to be updated. **Note** • If you use a differential update package to perform dynamic update tasks, the value of this parameter must be the same as the value of the **SrcVersion** parameter. • You can call the QueryDeviceDetail operation and view the **FirmwareVersion** parameter in the response. • The version numbers must be unique in the list. • You can specify a maximum of 10 version numbers.

Parameter	Type	Required	Example	Description
Tag.N.Key	String	Yes	key1	The key of the update batch tag. The key must be 1 to 30 characters in length and can contain letters, digits, and periods (.). An update batch tag is sent to devices when IoT Platform pushes an update notification to these devices. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair.
Tag.N.Value	String	Yes	value1	The value of the update batch tag. The value must be 1 to 1,024 characters in length. **Note** Update batch tags are optional. If you want to specify a tag, you must specify the Tag.N.Value and Tag.N.Key parameters in pair. The total tag keys and values cannot exceed 4,096 characters in length.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
RetryInterval	Integer	No	60	The automatic retry interval if a device fails to be updated. Unit: minutes. Valid values: • **0**: An automatic retry is immediately performed. • **10**: An automatic retry is performed after 10 minutes. • **30**: An automatic retry is performed after 30 minutes. • **60**: An automatic retry is performed after 60 minutes (1 hour). • **1440**: An automatic retry is performed after 1,440 minutes (24 hours).

Parameter	Type	Required	Example	Description
				Notice The value of the **RetryInterval** parameter must be less than the value of the **TimeoutInMinutes** parameter. Examples: • If the value of the **TimeoutInMinutes** parameter is set to 60, the maximum value of the **RetryInterval** parameter is 30. • If the value of the **TimeoutInMinutes** parameter is set to 1440, the maximum value of the **RetryInterval** parameter is 60. If the value of the **TimeoutInMinutes** parameter is set to 1440, we recommend that you do not specify the **TimeoutInMinutes** parameter. If an update times out, no retry is performed.
RetryCount	Integer	No	1	The number of automatic retries. If you specify the **RetryInterval** parameter, you must specify this parameter. Valid values: • 1: retries once • 2: retries twice • 5: retries five times If you do not specify this parameter, no retry is performed.

Parameter	Type	Required	Example	Description
TimeoutInMinutes	Integer	No	1440	The timeout period of the update. If the device is not updated within the specified period, a timeout error occurs. Unit: minutes. Valid values: 1 to 1440. **Note** • The timeout period starts from the time when the specified device submits the update progress for the first time. During the update, the update package may be repeatedly pushed to the specified device because the device goes online and offline multiple times. However, the start time of the update period does not change. • If an update fails due to timeout, no retry is triggered. If you do not specify this parameter, timeout errors do not occur.
MaximumPerMinute	Integer	No	1000	The maximum number of devices to which the download URL of the update package is pushed per minute. Valid values: 10 to 1000. Default value: 1000.

Parameter	Type	Required	Example	Description
OverwriteMode	Integer	No	2	Specifies whether to overwrite the previous update task. Valid values: • 1: The previous update task is not overwritten. If a device already has an update task, the previous update task is implemented. This value is used by default. • 2: The previous update task is overwritten. Only the current update task is implemented. Note The update task that is in progress is not overwritten.
DynamicMode	Integer	No	1	The mode of dynamic update. Valid values: • 1: constantly updates the devices that meet the conditions. This value is used by default. • 2: updates only the devices that subsequently submit the latest firmware versions.
NeedPush	Boolean	No	true	Specifies whether to automatically push update tasks from IoT Platform to devices. • true: yes. After an update batch is created, IoT Platform automatically pushes update tasks to the specified online devices. In this case, a device can still initiate a request to obtain the information about the over-the-air (OTA) update task from IoT Platform. • false: no. A device must initiate a request to obtain the information about the OTA update task from IoT Platform.

Parameter	Type	Required	Example	Description
NeedConfirm	Boolean	No	false	Specifies whether to control the update by using a mobile app. You must develop the mobile app as needed. • **false**: no. A device obtains the information about the OTA update task based on the **NeedPush** parameter. This value is used by default. • **true**: yes. To perform an OTA update on a device, you must confirm the update by using your mobile app. Then, the device can obtain the information about the OTA update task based on the **NeedPush** parameter.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The update batch information returned if the call is successful. For more information, see Data.
JobId	String	XUbmsMHmkqv0PiAG****010001	The ID of the update batch.
UtcCreate	String	2019-05-10T02:18:53.000Z	The time when the update batch was created. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	9F41D14E-CB5F-4CCE-939C-057F39E688F5	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateOTADynamicUpgradeJob
&FirmwareId=nx3xxVvFdwvn6dim50PY03****
&MaximumPerMinute=1000
&ProductKey=a1Le6d0****
&RetryCount=1
&RetryInterval=60
&TimeoutInMinutes=1440
&SrcVersion.1=V1.0.1
&OverwriteMode=2
&<Common request parameters>
```

Sample success response

`XML` format

```
<CreateOTADynamicUpgradeJobResponse>
   <Data>
       <JobId>wahVIzGkCMuAUE2gDERM02****</JobId>
       <UtcCreate>2019-11-04T06:22:19.566Z</UtcCreate>
   </Data>
   <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
   <Success>true</Success>
</CreateOTADynamicUpgradeJobResponse>
```

`JSON` format

```
{
  "Data": {
    "JobId": "XUbmsMHmkqv0PiAG****010001",
    "UtcCreate": "2019-05-10T02:18:53.000Z"
  },
  "RequestId": "9F41D14E-CB5F-4CCE-939C-057F39E688F5",
  "Success": true
}
```

4.17.10. ListOTAJobByFirmware

Queries the update batches of an update package.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAJobByFirmware	The operation that you want to perform. Set the value to ListOTAJobByFirmware.
CurrentPage	Integer	Yes	1	The number of the page to return. Pages start from page 1.
FirmwareId	String	Yes	FJFx8JzpnhpIsKftRjjm03****	The ID of the update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 200.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The number of the returned page.
Data	Array of SimpleOTAJobInfo		The update batch information returned if the call is successful. For more information, see **SimpleOTATaskInfo**.
SimpleOTAJobInfo			
FirmwareId	String	UfuxnwygsuSkVE0VCN****0100	The ID of the update package.
JobId	String	HvKuBpuk3rdk6E92CP****0200	The ID of the update batch.

Parameter	Type	Example	Description
JobStatus	String	IN_PROGRESS	The status of the update batch. • **PLANNED**: The update batch is being planned. The batch is created, but the scheduled time has not arrived. This parameter is returned only if you perform a static update. • **IN_PROGRESS**: The update batch is running. • **COMPLETE**: The update batch is completed. • **CANCELED**: The update batch is canceled.
JobType	String	UPGRADE_FIRMWARE	The type of the batch. Valid values: • **VERFIY_FIRMWARE**: update package verification. • **UPGRADE_FIRMWARE**: batch update.
ProductKey	String	a19mzPZ****	The ProductKey of the product to which the update package belongs.
SelectionType	String	STATIC	The update policy of the update batch. Valid values: • **DYNAMIC**: dynamic update. This value is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch. • **STATIC**: static update. This value is returned if you call the CreateOTAStaticUpgradeJob API operation to create an update batch.
Tags	Array of OtaTagDTO		The tags of the update batch.
OtaTagDTO			
Key	String	key1	The key of each tag.
Value	String	value1	The value of the tag.

Parameter	Type	Example	Description
TargetSelection	String	SPECIFIC	The scope of the update batch. Valid values: • **ALL**: updates all devices. • **SPECIFIC**: updates specified devices. • **GRAY**: performs a phased update. **Note** The value ALL is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch.
UtcCreate	String	2019-12-28T02:43:10.000Z	The time when the update batch was created. The time is displayed in UTC.
UtcEndTime	String	2019-12-29T02:43:10.000Z	The end time of the update batch. The time is displayed in UTC. This parameter is returned only after the update batch is completed.
UtcModified	String	2019-12-28T02:43:10.000Z	The time when the update batch was last modified. The time is displayed in UTC.
UtcStartTime	String	2019-12-28T02:43:10.000Z	The start time of the update batch. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	5D58AC86-D5BF-4B39-834E-913E7F2C985D	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	1	The total number of update jobs returned.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAJobByFirmware
&FirmwareId=FJFx8JzpnhpIsKftRjjm03****
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTAJobByFirmwareResponse>
    <PageCount>1</PageCount>
    <Data>
        <SimpleOTAJobInfo>
            <SelectionType>STATIC</SelectionType>
            <TargetSelection>SPECIFIC</TargetSelection>
            <JobType>UPGRADE_FIRMWARE</JobType>
            <FirmwareId>yLYuCqfqQNQ1JOqkDa****0100</FirmwareId>
            <UtcStartTime>2019-12-28T02:43:10.000Z</UtcStartTime>
            <UtcEndTime>2019-12-29T02:43:10.000Z</UtcEndTime>
            <ProductKey>a19mzPZ****</ProductKey>
            <JobId>HvKuBpuk3rdk6E92CP****0200</JobId>
            <UtcModified>2019-12-28T02:43:10.000Z</UtcModified>
            <JobStatus>IN_PROGRESS</JobStatus>
            <UtcCreate>2019-12-28T02:43:10.000Z</UtcCreate>
        </SimpleOTAJobInfo>
    </Data>
    <PageSize>10</PageSize>
    <RequestId>5D58AC86-D5BF-4B39-834E-913E7F2C985D</RequestId>
    <CurrentPage>1</CurrentPage>
    <Success>true</Success>
    <Total>1</Total>
</ListOTAJobByFirmwareResponse>
```

`JSON` format

```
{
  "PageCount": 1,
  "Data": {
    "SimpleOTAJobInfo": [{
      "SelectionType": "STATIC",
      "TargetSelection": "SPECIFIC",
      "JobType": "UPGRADE_FIRMWARE",
      "FirmwareId": "UfuxnwygsuSkVE0VCN****0100",
      "UtcStartTime": "2019-12-28T02:43:10.000Z",
      "UtcEndTime": "2019-12-29T02:43:10.000Z",
      "ProductKey": "a19mzPZ****",
      "JobId": "HvKuBpuk3rdk6E92CP****0200",
      "UtcModified": "2019-12-28T02:43:10.000Z",
      "JobStatus": "IN_PROGRESS",
      "UtcCreate": "2019-12-28T02:43:10.000Z"
    }]
  },
  "PageSize": 10,
  "RequestId": "5D58AC86-D5BF-4B39-834E-913E7F2C985D",
  "CurrentPage": 1,
  "Success": true,
  "Total": 1
}
```


4.17.11. ListOTAJobByDevice

Queries all the update batches of a device by update package.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAJobByDevice	The operation that you want to perform. Set the value to ListOTAJobByDevice.

Parameter	Type	Required	Example	Description
CurrentPage	Integer	Yes	1	The number of the page to return. Pages start from page 1.
DeviceName	String	Yes	light1	The DeviceName of the device.
FirmwareId	String	Yes	FJFx8JzpnhpIsKftRjjm03****	The ID of the update package. The ID is the unique identifier for the update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
PageSize	Integer	Yes	10	The number of entries to return on each page. Maximum value: 100.
ProductKey	String	Yes	a19mzPZ****	The ProductKey of the product to which the device belongs.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	MissingFirmwareId	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The number of the returned page.
Data	Array of SimpleOTAJobInfo		The update batch information returned if the call is successful. For more information, see the following **SimpleOTAJobInfo** parameter.
SimpleOTAJobInfo			
FirmwareId	String	FJFx8JzpnhpIsKftRjjm03****	The ID of the update package.
JobId	String	HvKuBpuk3rdk6E92Cp****	The ID of the update batch.
JobStatus	String	COMPLETED	The status of the update batch. Valid values: • **IN_PROGRESS**: The update batch is running. • **COMPLETE**: The update batch is completed. • **CANCELED**: The update batch is canceled.
JobType	String	UPGRADE_FIRMWARE	The type of the task. Valid values: • **VERFIY_FIRMWARE**: update package verification. • **UPGRADE_FIRMWARE**: batch update.
ProductKey	String	a19mzPZ****	The ProductKey of the product to which the update package belongs.

Parameter	Type	Example	Description
SelectionType	String	STATIC	The update policy of the update batch. Valid values: • DYNAMIC: dynamic update. This value is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch. • STATIC: static update. This value is returned if you call the CreateOTAStaticUpgradeJob API operation to create an update batch.
Tags	Array of OtaTagDTO		The tags of the update batch.
OtaTagDTO			
Key	String	key1	The key of each tag.
Value	String	value1	The value of the tag.
TargetSelection	String	ALL	The scope of the update. Valid values: • **ALL**: updates all devices. • **SPECIFIC**: updates specified devices. • **GRAY**: performs a phased update. **Note** The value ALL is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch.
UtcCreate	String	2019-12-28T02:43:10.000Z	The time when the update batch was created. The time is displayed in UTC.
UtcEndTime	String	2019-12-29T02:43:10.000Z	The end time of the update batch. The time is displayed in UTC. **Note** This parameter is returned only after the update batch is completed.
UtcModified	String	2019-12-29T02:43:10.000Z	The time when the task was last modified. The time is in UTC.

Parameter	Type	Example	Description
UtcStartTime	String	2019-12-29T02:43:10.000Z	The start time of the update batch. The time is in the UTC format.
ErrorMessage	String	FirmwareId is mandatory for this action	The error message returned if the call fails.
PageCount	Integer	1	The total number of pages.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	A01829CE-75A1-4920-B775-921146A1AB79	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	1	The total number of update packages returned.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAJobByDevice
&FirmwareId=FJFx8JzpnhpIsKftRjjm03****
&ProductKey=a19mzPZ****
&DeviceName=light
&PageSize=10
&CurrentPage=1
&Common request parameter
```

Sample success responses

`XML` format

```
<ListOTAJobByDeviceResponse>
  <PageCount>1</PageCount>
  <Data>
        <SimpleOTAJobInfo>
              <SelectionType>STATIC</SelectionType>
              <TargetSelection>SPECIFIC</TargetSelection>
              <JobType>UPGRADE_FIRMWARE</JobType>
              <FirmwareId>FJFx8JzpnhpIsKftRjjm03****</FirmwareId>
              <UtcStartTime>2019-12-28T02:43:10.000Z</UtcStartTime>
              <ProductKey>a19mzPZ****</ProductKey>
              <JobId>HvKuBpuk3rdk6E92CPQN02****</JobId>
              <UtcModified>2019-12-28T02:43:10.000Z</UtcModified>
              <JobStatus>IN_PROGRESS</JobStatus>
              <UtcCreate>2019-12-28T02:43:10.000Z</UtcCreate>
        </SimpleOTAJobInfo>
  </Data>
  <PageSize>10</PageSize>
  <RequestId>5D58AC86-D5BF-4B39-834E-913E7F2C985D</RequestId>
  <CurrentPage>1</CurrentPage>
  <Success>true</Success>
  <Total>1</Total>
</ListOTAJobByDeviceResponse>
```

`JSON` format

```
{
  "PageCount": 1,
  "Data": {
    "SimpleOTAJobInfo": [{
      "SelectionType": "STATIC",
      "TargetSelection": "SPECIFIC",
      "JobType": "UPGRADE_FIRMWARE",
      "FirmwareId": "FJFx8JzpnhpIsKftRjjm03****",
      "UtcStartTime": "2019-12-28T02:43:10.000Z",
      "ProductKey": "a19mzPZ****",
      "JobId": "HvKuBpuk3rdk6E92CPQN02****",
      "UtcModified": "2019-12-28T02:43:10.000Z",
      "JobStatus": "IN_PROGRESS",
      "UtcCreate": "2019-12-28T02:43:10.000Z"
    }]
  },
  "PageSize": 10,
  "RequestId": "5D58AC86-D5BF-4B39-834E-913E7F2C985D",
  "CurrentPage": 1,
  "Success": true,
  "Total": 1
}
```

4.17.12. ListOTATaskByJob

Queries the update tasks of a device by update batch.

QPS limits

Each Alibaba Cloud account can run up to 10 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the Alibaba Cloud account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTATaskByJob	The operation that you want to perform. Set the value to ListOTATaskByJob.
JobId	String	Yes	7glPHmaDYLAYMD1HHutT02****	The ID of the update batch. This ID uniquely identifies the update batch. You can obtain the ID from the value of the **JobId** parameter that is returned after you call the CreateOTAVerifyJob, CreateOTAStaticUpgradeJob, or CreateOTADynamicUpgradeJob operation. You can also view the batch ID on the **Firmware Details** page of the IoT Platform console.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the **ID** of the instance on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must specify the ID for this parameter. Otherwise, the call fails. • If no **Overview** page or ID is generated for your instance, you do not need to configure this parameter. For more information, see Overview.
PageSize	Integer	No	10	The number of entries to return on each page. Maximum value: 100. **Notice** The product of the value of the **CurrentPage** parameter and the value of the **PageSize** parameter must be less than or equal to 100,000.

Parameter	Type	Required	Example	Description
TaskStatus	String	No	FAILED	If you specify a value for this parameter, only the update tasks that are in the specified state are queried. Valid values: • **CONFIRM**: The update task is pending confirmation. • **QUEUED**: The update notification is to be pushed. • **NOTIFIED**: The update notification is pushed to the device. • **IN_PROGRESS**: The update task is in progress. • **SUCCEEDED**: The update is successful. • **FAILED**: The update failed. • **CANCELED**: The update batch is canceled. If you do not specify a value for this parameter, all update tasks of the specified batch are queried.
CurrentPage	Integer	No	1	The number of the page to return. Pages start from page 1. **Notice** The product of the value of the **CurrentPage** parameter and the value of the **PageSize** parameter must be less than or equal to 100,000.

Parameter	Type	Required	Example	Description
DeviceNames.N	RepeatList	No	device1	The names of the devices that you want to query. **Note** • You can specify up to 50 device names. • If you specify a value for this parameter, you do not need to configure the **PageSize** or **CurrentPage** parameter. If you specify values for the **DeviceNames. N**, **PageSize**, and **CurrentPage** parameters at the same time, the value of the **DeviceNames.N** parameter is used.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
CurrentPage	Integer	1	The number of the returned page.
Data	Array of SimpleOTATaskInfo		The update task information returned if the call is successful. For more information, see **SimpleOTATaskInfo**.
SimpleOTATaskInfo			
DestVersion	String	1.0.1	The version of the destination over-the-air (OTA) update package.
DeviceName	String	testDevice2	The name of the device.

Parameter	Type	Example	Description
FirmwareId	String	q3j9OYBjUAZMv1hlMgdo03****	The ID of the update package.
IotId	String	nadRdeffljdEndlfadgadfse****	The ID of the device.
JobId	String	7glPHmaDYLAYMD1HHutT02****	The ID of the update batch.
ProductKey	String	a1GUfrM****	The ProductKey of the product to which the device belongs.
ProductName	String	MyProduct	The name of the product to which the device belongs.
Progress	String	0.00	The current update progress.
SrcVersion	String	1.0.0	The firmware version before the update.
TaskDesc	String	report version is not conform	The description of the update task. This parameter displays an error message if the device update times out or the update task is canceled.
TaskId	String	y3tOmCDNgpR8F9jnVEzC01****	The ID of the update task.
TaskStatus	String	FAILED	The update status of the device. • **CONFIRM**: The update task is pending confirmation. • **QUEUED**: The update notification is to be pushed. • **NOTIFIED**: The update notification is pushed to the device. • **IN_PROGRESS**: The update task is in progress. • **SUCCEEDED**: The update is successful. • **FAILED**: The update failed. • **CANCELED**: The update batch is canceled.

Parameter	Type	Example	Description
Timeout	String	1440	The timeout period of the device update. Unit: minutes. **Note** If no timeout period is specified for the update batch, the return value is null.
UtcCreate	String	2019-11-04T03:38:22.000Z	The time when the update task was created. The time is displayed in UTC.
UtcModified	String	2019-11-04T03:38:22.000Z	The time when the update task was last modified. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
PageCount	Integer	1	The total number of pages returned.
PageSize	Integer	10	The number of entries returned per page.
RequestId	String	A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.
Total	Integer	2	The total number of update tasks.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListOTATaskByJob
&JobId=7glPHmaDYLAYMD1HHutT02****
&PageSize=10
&CurrentPage=1
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTATaskByJobResponse>
  <PageCount>1</PageCount>
  <Data>
        <SimpleOTATaskInfo>
              <SrcVersion>1.0.0</SrcVersion>
              <DeviceName>testDevice1</DeviceName>
              <FirmwareId>q3j9OYBjUAZMv1hlMgdo03****</FirmwareId>
              <IotId>SR8FiTu1R9tlUR2V1bmi00105****</IotId>
              <ProductKey>a1GUfrM****</ProductKey>
              <JobId>7glPHmaDYLAYMD1HHutT02****</JobId>
              <TaskDesc>report version is not conform</TaskDesc>
              <DestVersion>1.0.1</DestVersion>
              <Timeout>1440</Timeout>
              <UtcCreate>2019-11-04T03:38:15.000Z</UtcCreate>
              <UtcModified>2019-11-04T03:38:15.000Z</UtcModified>
              <TaskStatus>FAILED</TaskStatus>
              <ProductName>MyProduct</ProductName>
              <TaskId>y3tOmCDNgpR8F9jnVEzC01****</TaskId>
              <Progress>0.00</Progress>
        </SimpleOTATaskInfo>
        <SimpleOTATaskInfo>
              <SrcVersion>1.0.0</SrcVersion>
              <DeviceName>testDevice2</DeviceName>
              <FirmwareId>q3j9OYBjUAZMv1hlMgdo03****</FirmwareId>
              <IotId>nadRdeffljdEndlfadgadfse****</IotId>
              <ProductKey>a1GUfrM****</ProductKey>
              <JobId>7glPHmaDYLAYMD1HHutT02****</JobId>
              <TaskDesc></TaskDesc>
              <DestVersion>1.0.1</DestVersion>
              <Timeout>1000</Timeout>
              <UtcCreate>2019-11-04T03:38:22.000Z</UtcCreate>
              <UtcModified>2019-11-04T03:38:22.000Z</UtcModified>
              <TaskStatus>SUCCEEDED</TaskStatus>
              <ProductName>MyProduct</ProductName>
              <TaskId>ZS9sNBb1ahsu6khqr9II01****</TaskId>
              <Progress>100.00</Progress>
        </SimpleOTATaskInfo>
  </Data>
  <PageSize>10</PageSize>
  <RequestId>A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B</RequestId>
  <CurrentPage>1</CurrentPage>
  <Success>true</Success>
  <Total>2</Total>
</ListOTATaskByJobResponse>
```


`JSON` format

```
{
  "PageCount": 1,
  "Data": {
    "SimpleOTATaskInfo": [{
      "SrcVersion": "1.0.0",
      "DeviceName": "testDevice1",
      "FirmwareId": "q3j9OYBjUAZMv1hlMgdo03****",
      "IotId": "SR8FiTu1R9tlUR2V1bmi00105****",
      "ProductKey": "a1GUfrM****",
      "JobId": "7glPHmaDYLAYMD1HHutT02****",
      "TaskDesc": "report version is not conform",
      "DestVersion": "1.0.1",
      "Timeout":"1440",
      "UtcCreate": "2019-11-04T03:38:15.000Z",
      "UtcModified": "2019-11-04T03:38:15.000Z",
      "TaskStatus": "FAILED",
      "ProductName": "MyProduct",
      "TaskId": "y3tOmCDNgpR8F9jnVEzC01****",
      "Progress": "0.00"
    }, {
      "SrcVersion": "1.0.0",
      "DeviceName": "testDevice2",
      "FirmwareId": "q3j9OYBjUAZMv1hlMgdo03****",
      "IotId": "nadRdeffljdEndlfadgadfse****",
      "ProductKey": "a1GUfrM****",
      "JobId": "7glPHmaDYLAYMD1HHutT02****",
      "TaskDesc": "",
      "DestVersion": "1.0.1",
      "Timeout":"1000",
      "UtcCreate": "2019-11-04T03:38:22.000Z",
      "UtcModified": "2019-11-04T03:38:22.000Z",
      "TaskStatus": "SUCCEEDED",
      "ProductName": "MyProduct",
      "TaskId": "ZS9sNBb1ahsu6khqr9II01****",
      "Progress": "100.00"
    }]
  },
  "PageSize": 10,
  "RequestId": "A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B",
  "CurrentPage": 1,
  "Success": true,
  "Total": 2
}
```


4.17.13. QueryOTAJob

Queries the details of an update batch.

Usage notes

After you call the CreateOTAVerifyJob, CreateOTAStaticUpgradeJob, or CreateOTADynamicUpgradeJob API operation to create an update batch, the **JobId** parameter is returned. You can use this parameter to query the details of the update batch.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	QueryOTAJob	The operation that you want to perform. Set the value to QueryOTAJob.
JobId	String	Yes	wahVIzGkCMuAUE2gDERM02****	The ID of the update batch. After you call the CreateOTAVerifyJob, CreateOTAStaticUpgradeJob, or CreateOTADynamicUpgradeJob API operation to create the update batch, you can obtain the **JobId** parameter. You can also view the batch ID on the **Update Package Details** page of the IoT Platform console.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Struct		The update batch information returned if the call is successful. For more information, see the following parameters.
DestVersion	String	1.0.1	The destination firmware version of the update.
DownloadProtocol	String	HTTPS	The download protocol of the update package.

Parameter	Type	Example	Description
DynamicMode	Integer	1	The mode of dynamic update. Valid values: • **1**: constantly updates the devices that meet the conditions. • **2**: updates only the devices that subsequently submit the latest firmware versions. This parameter is returned only if you perform a dynamic update.
FirmwareId	String	UfuxnwygsuSkVE0VCN****0100	The ID of the update package.
GrayPercent	String	50.00	The phase ratio of the phased update. This parameter is returned only if you perform a phased update.
GroupId	String	CtjzCkNuOxUR***	The ID of the device group to be updated.
GroupName	String	test	The name of the device group to be updated.
JobDesc	String	batch upgrade	The description of the update batch.
JobId	String	HvKuBpuk3rdk6E92CP****0200	The ID of the update batch.
JobStatus	String	IN_PROGRESS	The status of the update batch. • **PLANNED**: The update batch is being planned. The batch is created, but the scheduled time has not arrived. This parameter is returned only if you perform a static update. • **IN_PROGRESS**: The update batch is running. • **COMPLETED**: The update batch is completed. • **CANCELED**: The update batch is canceled.
JobType	String	UPGRADE_FIRMWARE	The type of the batch. Valid values: • **VERFIY_FIRMWARE**: update package verification. • **UPGRADE_FIRMWARE**: batch update.

Parameter	Type	Example	Description
MaximumPerMinute	Integer	1000	The maximum number of devices to which the download URL of the update package is pushed per minute.
MultiModuleMode	Boolean	false	Specifies whether the device supports simultaneous updates of multiple modules. • **false** (default): no. • **true**: yes. For more information, see Overview.
Name	String	Firmware2	The name of the update package.
NeedConfirm	Boolean	false	Specifies whether to confirm the update by using your mobile app.
NeedPush	Boolean	true	Specifies whether to automatically push update tasks from IoT Platform to devices.
OverwriteMode	Integer	1	Specifies whether to overwrite the previous update task. Valid values: • **1**: The previous update task is not overwritten. If a device already has an update task, the previous update task is implemented. • **2**: The previous update task is overwritten. Only the current update task is implemented. The update task that is in progress is not overwritten.
ProductKey	String	a19mzPZ****	The ProductKey of the product to which the update package belongs.
RetryCount	Integer	1	The number of automatic retries after a device fails to be updated. This parameter is returned if a retry policy is set when you create the update batch.

Parameter	Type	Example	Description
RetryInterval	Integer	60	The automatic retry interval after a device fails to be updated. Unit: minutes. This parameter is returned if a retry policy is set when you create the update batch.
SelectionType	String	STATIC	The update policy of the update batch. Valid values: • **DYNAMIC**: dynamic update. This value is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch. • **STATIC**: static update. This value is returned if you call the CreateOTAStaticUpgradeJob API operation to create an update batch.
SrcVersions	List	null	The list of firmware versions to be updated.
Tags	Array of OtaTagDTO		The tags of the update batch.
OtaTagDTO			
Key	String	key1	The key of each tag.
Value	String	value1	The value of the tag.
TargetSelection	String	SPECIFIC	The scope of the update batch. Valid values: • **ALL**: updates all devices. • **SPECIFIC**: updates specified devices. • **GRAY**: performs a phased update. **Note** The value ALL is returned if you call the CreateOTADynamicUpgradeJob API operation to create an update batch.
TimeoutInMinutes	Integer	5	The timeout period of the device update. Unit: minutes. This parameter is returned if the timeout period is set when you create the update batch.

Parameter	Type	Example	Description
UtcCreate	String	2019-12-28T02:43:10.000Z	The time when the update batch was created. The time is displayed in UTC.
UtcEndTime	String	2019-12-29T02:43:10.000Z	The end time of the update batch. The time is displayed in UTC. This parameter is returned only after the update batch is completed.
UtcModified	String	2019-12-28T02:43:10.000Z	The time when the update batch was last modified. The time is displayed in UTC.
UtcScheduleFinishTime	String	2019-12-30T02:43:10.000Z	The end time of the scheduled update batch. This parameter is returned only if the update batch is scheduled and the end time of the scheduled update batch is specified.
UtcScheduleTime	String	2019-12-29T02:43:10.000Z	The start time of the scheduled update batch. This parameter is returned only for scheduled update batches.
UtcStartTime	String	2019-12-28T02:43:10.000Z	The start time of the update batch. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	30F1BB8D-EDBF-44FD-BBC0-BE97DEA73991	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=QueryOTAJob
&JobId=wahVIzGkCMuAUE2gDERM02****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<QueryOTAJobResponse>
  <Data>
        <TimeoutInMinutes>5</TimeoutInMinutes>
        <JobDesc>batch upgrade</JobDesc>
        <DownloadProtocol>HTTPS</DownloadProtocol>
        <UtcStartTime>2019-12-28T02:43:10.000Z</UtcStartTime>
        <UtcEndTime>2019-12-29T02:43:10.000Z</UtcEndTime>
        <ProductKey>a19mzPZ****</ProductKey>
        <UtcModified>2019-12-28T02:43:10.000Z</UtcModified>
        <JobStatus>IN_PROGRESS</JobStatus>
        <UtcCreate>2019-12-28T02:43:10.000Z</UtcCreate>
        <SelectionType>STATIC</SelectionType>
        <TargetSelection>SPECIFIC</TargetSelection>
        <JobType>UPGRADE_FIRMWARE</JobType>
        <GroupId></GroupId>
        <GroupName></GroupName>
        <RetryInterval>60</RetryInterval>
        <RetryCount>1</RetryCount>
        <OverwriteMode>1</OverwriteMode>
        <MultiModuleMode>true</MultiModuleMode>
        <MaximumPerMinute>1000</MaximumPerMinute>
        <SrcVersions>
              <SrcVersion>1.0.0</SrcVersion>
        </SrcVersions>
        <Name>firmware2</Name>
        <NeedConfirm>true</NeedConfirm>
        <NeedPush>false</NeedPush>
        <FirmwareId>UfuxnwygsuSkVE0VCN****0100</FirmwareId>
        <JobId>HvKuBpuk3rdk6E92CP****0200</JobId>
        <DestVersion>1.0.1</DestVersion>
  </Data>
  <RequestId>30F1BB8D-EDBF-44FD-BBC0-BE97DEA73991</RequestId>
  <Success>true</Success>
</QueryOTAJobResponse>
```

`JSON` format

```
{
  "Data": {
    "TimeoutInMinutes": 5,
    "JobDesc": "batch upgrade",
    "DownloadProtocol":"HTTPS",
    "UtcStartTime": "2019-12-28T02:43:10.000Z",
    "UtcEndTime": "2019-12-29T02:43:10.000Z",
    "ProductKey": "a19mzPZ****",
    "UtcModified": "2019-12-28T02:43:10.000Z",
    "JobStatus": "IN_PROGRESS",
    "UtcCreate": "2019-12-28T02:43:10.000Z",
    "SelectionType": "STATIC",
    "TargetSelection": "SPECIFIC",
    "JobType": "UPGRADE_FIRMWARE",
    "GroupId":"",
    "GroupName":"",
    "RetryInterval":60,
    "RetryCount":1,
    "OverwriteMode":1,
    "MultiModuleMode":true,
    "MaximumPerMinute":1000,
    "SrcVersions": {
      "SrcVersion": ["1.0.0"]
    },
    "Name":"firmware2",
    "NeedConfirm":true,
    "NeedPush":false,
    "FirmwareId": "UfuxnwygsuSkVE0VCN****0100",
    "JobId": "HvKuBpuk3rdk6E92CP****0200",
    "DestVersion": "1.0.1"
  },
  "RequestId": "30F1BB8D-EDBF-44FD-BBC0-BE97DEA73991",
  "Success": true
}
```


4.17.14. CancelOTAStrategyByJob

Cancels a dynamic update policy.

Limits

- You can cancel only the dynamic update policy that is attached to a dynamic update batch. This operation is not applicable to static update batches.

  After the operation is successful, the **JobStatus** parameter is set to CANCELED.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CancelOTAStrategyByJob	The operation that you want to perform. Set the value to CancelOTAStrategyByJob.
JobId	String	Yes	HvKuBpuk3rdk6E92CP****0200	The ID of the update batch. After you call the CreateOTADynamicUpgradeJob operation to create an update batch, the **JobId** parameter is returned. You can also view the batch ID on the **Firmware Details** page of the IoT Platform console.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	291438BA-6E10-4C4C-B761-243B9A0D324F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CancelOTAStrategyByJob
&JobId=HvKuBpuk3rdk6E92CP****0200
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CancelOTAStrategyByJobResponse>
    <RequestId>A01829CE-75A1-4920-B775-921146A1AB79</RequestId>
    <Success>true</Success>
</CancelOTAStrategyByJobResponse>
```

`JSON` format

```
{
  "RequestId": "291438BA-6E10-4C4C-B761-243B9A0D324F",
  "Success": true
}
```

4.17.15. CancelOTATaskByJob

Cancels update tasks of a specified batch.

Limits

Each Alibaba Cloud account can run a maximum of 5 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CancelOTATaskByJob	The operation that you want to perform. Set the value to CancelOTATaskByJob.
JobId	String	Yes	7glPHmaDYLAYMD1HHutT02****	The ID of the update batch. After you call the CreateOTAStaticUpgradeJob or CreateOTADynamicUpgradeJob operation to create an update batch, the **JobId** parameter is returned. You can also view the batch ID on the **Firmware Details** page of the IoT Platform console.
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

Parameter	Type	Required	Example	Description
CancelScheduledTask	Boolean	No	false	Specifies whether to cancel update tasks of a scheduled update batch. If you specify the ScheduleTime parameter when you call the **CreateOTAStaticUpgradeJob** operation, a scheduled update batch is created. Valid values: • **true**: cancel update tasks of a scheduled update batch. • **false**: does not cancel update tasks of a scheduled update batch. Default value: false.
CancelQueuedTask	Boolean	No	false	Specifies whether to cancel the update tasks that are in the **QUEUED** state in an update batch. Valid values: • **true**: cancels the update tasks that are in the QUEUED state. • **false**: does not cancel the update tasks that are in the QUEUED state. Default value: **false**. **Notice** If you set this parameter to **true** and specify the **CancelUnconfirmedTask** parameter, only the update tasks that are in the QUEUED state are canceled. If you do not specify the **CancelUnconfirmedTask** parameter, the update tasks that are in the QUEUED or CONFIRM state are canceled.
CancelInProgressTask	Boolean	No	false	Specifies whether to cancel the update tasks that are in the **IN_PROGRESS** state in an update batch. Valid values: • **true**: cancels the update tasks that are in the IN_PROGRESS state. • **false**: does not cancel the update tasks that are in the NOTIFIED state. Default value: **false**.

Parameter	Type	Required	Example	Description
CancelNotifiedTask	Boolean	No	false	Specifies whether to cancel the update tasks that are in the **NOTIFIED** state in an update batch. Valid values: • **true**: cancels the update tasks that are in the NOTIFIED state. • **false**: does not cancel the update tasks that are in the NOTIFIED state. Default value: **false**.
CancelUnconfirmedTask	Boolean	No	false	Specifies whether to cancel the update tasks that are in the **CONFIRM** state in an update batch. Valid values: • **true**: cancels the update tasks that are in the CONFIRM state. • **false**: does not cancel the update tasks that are in the CONFIRM state. By default, this parameter is left empty. **Notice** If you do not specify this parameter and set the **CancelQueuedTask** parameter to **true**, the update tasks that are in the CONFIRM state are canceled. If you set the **CancelQueuedTask** parameter to **false**, the update tasks that are in the CONFIRM state are not canceled.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	291438BA-6E10-4C4C-B761-243B9A0D324F	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CancelOTATaskByJob
&JobId=7glPHmaDYLAYMD1HHutT02****
&CancelScheduledTask=false
&CancelQueuedTask=true
&CancelNotifiedTask=false
&CancelInProgressTask=false
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CancelOTATaskByJobResponse>
    <RequestId>A01829CE-75A1-4920-B775-921146A1AB79</RequestId>
    <Success>true</Success>
</CancelOTATaskByJobResponse>
```

`JSON` format

```
{
  "RequestId": "291438BA-6E10-4C4C-B761-243B9A0D324F",
  "Success": true
}
```

4.17.16. CancelOTATaskByDevice

Cancels the pending device update tasks of an OTA update package.

Limits

- This operation can cancel only the pending update tasks.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CancelOTATaskByDevice	The operation that you want to perform. Set the value to CancelOTATaskByDevice.
DeviceName.N	RepeatList	Yes	device1	The list of device names that you want to query. Device names must be unique. The list can contain up to 200 device names.
FirmwareId	String	Yes	T0F5b5tpFnHQrgfk****030100	The unique ID of the OTA update package. An update package ID is returned when you call the CreateOTAFirmware operation to create the update package. You can call the ListOTAFirmware operation and view the update package ID in the response.
ProductKey	String	Yes	a1V4kde****	The ProductKey of the product to which the device belongs.

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot_instc_pu****_c*-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
JobId	String	No	wahVIzGkCMuAUE2gDERM02****	The ID of the update batch. If you specify this parameter, only the device update tasks in the specified batch are deleted. After you call the CreateOTAVerifyJob, CreateOTAStaticUpgradeJob, or CreateOTADynamicUpgradeJob operation to create an update task, you can obtain the **JobId** parameter. You can also view the batch ID on the **Firmware Details** page of the IoT Platform console.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	A01829CE-75A1-4920-B775-921146A1AB79	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CancelOTATaskByDevice
&FirmwareId=T0F5b5tpFnHQrgfk****030100
&ProductKey=a1V4kde****
&DeviceName.1=deviceName1
&DeviceName.2=deviceName2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CancelOTATaskByDeviceResponse>
    <RequestId>A01829CE-75A1-4920-B775-921146A1AB79</RequestId>
    <Success>true</Success>
</CancelOTATaskByDeviceResponse>
```

`JSON` format

```
{
  "RequestId": "A01829CE-75A1-4920-B775-921146A1AB79",
  "Success": true
}
```

4.17.17. CreateOTAModule

Creates an over-the-air (OTA) module for a product.

Limits

OTA modules are the updatable units of the devices that belong to the same product. The default module indicates the entire firmware of a device. You can call this operation to create a custom OTA module.

- You can create a maximum of 10 custom OTA modules for each product.
- After an OTA module is created, you cannot modify its name. You can call the UpdateOTAModule operation to modify the module alias and description.

- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	CreateOTAModule	The operation that you want to perform. Set the value to CreateOTAModule.
ModuleName	String	Yes	barcodeScanner	The name of the OTA module. The name is unique in a product and cannot be modified. The name can contain letters, digits, periods (.), hyphens (-), and underscores (_). The name must be 1 to 64 characters in length. **Note** Letters are not case-sensitive. For example, you cannot use the module names scanner and Scanner at the same time.
ProductKey	String	Yes	a1Le6d0****	The ProductKey of the product to which the OTA module belongs.
AliasName	String	No	Barcode_scanner	The alias of the OTA module. The alias must be 1 to 64 characters in length, and can contain letters, digits, periods(.), hyphens (-), and underscores (_).

Parameter	Type	Required	Example	Description
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Desc	String	No	The firmware module of the barcode scanner.	The description of the OTA module. The description can be up to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.

Parameter	Type	Example	Description
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=CreateOTAModule
&ModuleName=barcodeScanner
&ProductKey=a1Le6d0****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<CreateOTAModuleResponse>
     <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
     <Success>true</Success>
</CreateOTAModuleResponse>
```

`JSON` format

```
{
  "RequestId": "9F41D14E-CB5F-4CCE-939C-057F39E688F5",
  "Success": true
}
```

4.17.18. UpdateOTAModule

Modifies the alias and description of an OTA module.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	UpdateOTAModule	The operation that you want to perform. Set the value to UpdateOTAModule.
ModuleName	String	Yes	barcodeScanner	The name of the OTA module.
ProductKey	String	Yes	a1Le6d0****	The **ProductKey** of the product to which the OTA module belongs.
AliasName	String	No	Barcode_scanner_2	The new alias of the OTA module. The alias must be 1 to 64 characters in length, and can contain letters, digits, periods(.), hyphens (-), and underscores (_).
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
Desc	String	No	The firmware module of the barcode scanner.	The new description of the OTA module. The description can be up to 100 characters in length.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=UpdateOTAModule
&ModuleName=barcodeScanner
&ProductKey=a1Le6d0****
&AliasName=Barcode_scanner_2
&<Common request parameters>
```

Sample success responses

`XML` format

```
<UpdateOTAModuleResponse>
     <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
     <Success>true</Success>
</UpdateOTAModuleResponse>
```

`JSON` format

```
{
  "RequestId": "9F41D14E-CB5F-4CCE-939C-057F39E688F5",
  "Success": true
}
```

4.17.19. DeleteOTAModule

Deletes a custom OTA module.

Limits

- The default module cannot be deleted.

- If an update package exists in an OTA module, you cannot delete the OTA module.
- Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	DeleteOTAModule	The operation that you want to perform. Set the value to DeleteOTAModule.
ModuleName	String	Yes	barcodeScanner	The name of the OTA module.
ProductKey	String	Yes	a1uctKe****	The **ProductKey** of the product to which the OTA module belongs.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=DeleteOTAModule
&ModuleName=barcodeScanner
&ProductKey=a1uctKe****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<DeleteOTAModuleResponse>
       <RequestId>29EC7245-0FA4-4BB6-B4F5-5F04818FDFB1</RequestId>
       <Success>true</Success>
</DeleteOTAModuleResponse>
```

`JSON` format

```
{
   "RequestId": "9F41D14E-CB5F-4CCE-939C-057F39E688F5",
   "Success": true
}
```

4.17.20. ListOTAModuleByProduct

Queries all OTA modules of a product.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAModuleByProduct	The operation that you want to perform. Set the value to ListOTAModuleByProduct.
ProductKey	String	Yes	a1uctKe****	The ProductKey of the product.
IotInstanceId	String	No	iot-cn-0pp1n8t****	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.

Parameter	Type	Example	Description
Data	Array of OtaModuleDTO		The OTA modules returned if the call is successful.
AliasName	String	Barcode_scanner	The alias of the OTA module.
Desc	String	This module represents the firmware of the barcode scanner.	The description of the OTA module.
GmtCreate	String	2020-10-13T09:46Z	The time when the OTA module was created. The time is displayed in UTC.
GmtModified	String	2020-10-19T09:46Z	The last time when the OTA module was updated. The time is displayed in UTC.
ModuleName	String	barcodeScanner	The name of the OTA module.
ProductKey	String	aluctKe****	The ProductKey of the product.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	74C2BB8D-1D6F-41F5-AE68-6B2310883F63	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
https://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAModuleByProduct
&ProductKey=aluctKe****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTAModuleByProductResponse>
      <RequestId>74C2BB8D-1D6F-41F5-AE68-6B2310883F63</RequestId>
      <Data>
            <Desc>This module represents the firmware of the barcode scanner.</Desc>
            <GmtCreate>2020-10-13T09:46Z</GmtCreate>
            <ModuleName>barcodeScanner</ModuleName>
            <AliasName>Barcode_scanner</AliasName>
            <GmtModified>2020-10-19T09:46Z</GmtModified>
            <ProductKey>a1uctKe****</ProductKey>
      </Data>
      <Success>true</Success>
</ListOTAModuleByProductResponse>
```

`JSON` format

```
{
    "Data": {
        "Desc": "This module represents the firmware of the barcode scanner.",
        "GmtCreate": "2020-10-13T09:46Z",
        "ModuleName": "barcodeScanner",
        "AliasName": "Barcode_scanner",
        "GmtModified": "2020-10-19T09:46Z",
        "ProductKey": "a1uctKe****"
    },
    "RequestId": "74C2BB8D-1D6F-41F5-AE68-6B2310883F63",
    "Success": true
}
```

4.17.21. ConfirmOTATask

Confirms the device update tasks that are in the pending confirmation status.

Usage notes

To confirm update tasks in a scheduled update batch, you must call this operation within the specified time range.

Limits

Each Alibaba Cloud account can run a maximum of 20 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ConfirmOTATask	The operation that you want to perform. Set the value to ConfirmOTATask.
TaskId.N	RepeatList	Yes	y3tOmCDNgpR8F9jnVEzC01****	The ID of the update task to be confirmed. You can specify a maximum of 10 task IDs.
IotInstanceId	String	No	iot-v64********	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=ConfirmOTATask
&TaskId.1=y3tOmCDNgpR8F9jnVEzC01****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ConfirmOTATask>
  <RequestId>A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B</RequestId>
  <Success>true</Success>
</ConfirmOTATask>
```

`JSON` format

```
{
    "RequestId": "A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B",
    "Success": true
}
```

4.17.22. ListOTAUnfinishedTaskByDevice

Queries uncompleted update tasks of a specified device.

Limits

Each Alibaba Cloud account can run a maximum of 10 queries per second (QPS).

> **Note** RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListOTAUnfinishedTaskByDevice	The operation that you want to perform. Set the value to ListOTAUnfinishedTaskByDevice.

Parameter	Type	Required	Example	Description
TaskStatus	String	Yes	CONFIRM	The status of the update task. • **CONFIRM**: The update task is pending confirmation. • **QUEUED**: The update notification is to be pushed. • **NOTIFIED**: The update notification is pushed to the device. • **IN_PROGRESS**: The update task is in progress.
IotInstanceId	String	No	iot-c3j***	The ID of the instance. You can view the instance **ID** on the **Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Overview.
ModuleName	String	No	WifiConfigModify	The name of the OTA module. • If you specify this parameter, update tasks of the specified module are queried. • If you do not specify this parameter, update tasks of all modules are queried.
ProductKey	String	No	a19mzPZ****	The ProductKey of the product to which the device belongs. **Notice** If you specify this parameter, you must also specify the **DeviceName** parameter.

Parameter	Type	Required	Example	Description
DeviceName	String	No	light	The DeviceName of the device. **Notice** If you specify this parameter, you must also specify the **ProductKey** parameter.
IotId	String	No	TfmUAeJjQQhCPH84UVNn0010c6****	The ID of the device. **Notice** If you specify this parameter, you do not need to specify **ProductKey** or **DeviceName**. The **IotId** parameter specifies a globally unique identifier (GUID) of the device, which corresponds to a combination of **ProductKey** and **DeviceName**. If you specify both **IotId** and the combination of **ProductKey** and **DeviceName**, **IotId** takes precedence.

In addition to the preceding operation-specific request parameters, you must specify common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails. For more information, see Error codes.
Data	Array of SimpleOTATaskInfo		The update task information returned if the call is successful. For more information, see the following **SimpleOTATaskInfo**.
SimpleOTATaskInfo			
DestVersion	String	1.0.1	The firmware version after the update.

Parameter	Type	Example	Description
DeviceName	String	light	The DeviceName of the device.
FirmwareId	String	q3j9OYBjUAZMv1hlMgdo03****	The ID of the update package.
IotId	String	nadRdeffljdEndlfadgadfse****	The ID of the device. The ID is a unique identifier that is issued by IoT Platform to the device.
JobId	String	7glPHmaDYLAYMD1HHutT02****	The ID of the update batch.
ModuleName	String	WifiConfigModify	The name of the OTA module.
ProductKey	String	a1GUfrM****	The ProductKey of the product to which the device belongs.
ProductName	String	MyProduct	The name of the product to which the device belongs.
SrcVersion	String	1.0.0	The firmware version before the update.
TaskId	String	y3tOmCDNgpR8F9jnVEzC01****	The ID of the update task.
TaskStatus	String	CONFIRM	The status of the update task. • **CONFIRM**: The update task is pending confirmation. • **QUEUED**: The update notification is to be pushed. • **NOTIFIED**: The update notification is pushed to the device. • **IN_PROGRESS**: The update task is in progress.
UtcCreate	String	2019-11-04T03:38:22.000Z	The time when the update task was created. The time is displayed in UTC.
UtcModified	String	2021-11-04T03:38:22.000Z	The time when the update task was last modified. The time is displayed in UTC.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.

Parameter	Type	Example	Description
RequestId	String	A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B	The ID of the request.
Success	Boolean	true	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=ListOTAUnfinishedTaskByDevice
&ProductKey=a19mzPZ****
&DeviceName=light
&TaskStatus=CONFIRM
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ListOTAUnfinishedTaskByDevice>
  <Data>
        <SimpleOTATaskInfo>
              <SrcVersion>1.0.0</SrcVersion>
              <DeviceName>testDevice1</DeviceName>
              <FirmwareId>q3j9OYBjUAZMv1hlMgdo03****</FirmwareId>
              <IotId>SR8FiTu1R9tlUR2V1bmi00105****</IotId>
              <ProductKey>a1GUfrM****</ProductKey>
              <JobId>7glPHmaDYLAYMD1HHutT02****</JobId>
              <DestVersion>1.0.1</DestVersion>
              <UtcCreate>2019-11-04T03:38:15.000Z</UtcCreate>
              <UtcModified>2019-11-04T03:38:15.000Z</UtcModified>
              <TaskStatus>QUEUED</TaskStatus>
              <ProductName>MyProduct</ProductName>
              <TaskId>y3tOmCDNgpR8F9jnVEzC01****</TaskId>
              <ModuleName>WifiConfigModify</ModuleName>
        </SimpleOTATaskInfo>
        <SimpleOTATaskInfo>
              <SrcVersion>1.0.0</SrcVersion>
              <DeviceName>testDevice2</DeviceName>
              <FirmwareId>q3j9OYBjUAZMv1hlMgdo03****</FirmwareId>
              <IotId>nadRdeffljdEndlfadgadfse****</IotId>
              <ProductKey>a1GUfrM****</ProductKey>
              <JobId>7glPHmaDYLAYMD1HHutT02****</JobId>
              <DestVersion>1.0.1</DestVersion>
              <UtcCreate>2019-11-04T03:38:22.000Z</UtcCreate>
              <UtcModified>2019-11-04T03:38:22.000Z</UtcModified>
              <TaskStatus>CONFIRM</TaskStatus>
              <ProductName>MyProduct</ProductName>
              <TaskId>ZS9sNBb1ahsu6khqr9II01****</TaskId>
              <ModuleName>ConfigModify</ModuleName>
        </SimpleOTATaskInfo>
  </Data>
  <RequestId>A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B</RequestId>
  <Success>true</Success>
</ListOTAUnfinishedTaskByDevice>
```


`JSON` format

```
{
  "Data": {
    "SimpleOTATaskInfo": [{
      "SrcVersion": "1.0.0",
      "DeviceName": "testDevice1",
      "FirmwareId": "q3j9OYBjUAZMv1hlMgdo03****",
      "IotId": "SR8FiTu1R9tlUR2V1bmi00105****",
      "ProductKey": "a1GUfrM****",
      "JobId": "7glPHmaDYLAYMD1HHutT02****",
      "DestVersion": "1.0.1",
      "UtcCreate": "2019-11-04T03:38:15.000Z",
      "UtcModified": "2019-11-04T03:38:15.000Z",
      "TaskStatus": "QUEUED",
      "ProductName": "MyProduct",
      "TaskId": "y3tOmCDNgpR8F9jnVEzC01****",
      "ModuleName": "WifiConfigModify"
    }, {
      "SrcVersion": "1.0.0",
      "DeviceName": "testDevice2",
      "FirmwareId": "q3j9OYBjUAZMv1hlMgdo03****",
      "IotId": "nadRdeffljdEndlfadgadfse****",
      "ProductKey": "a1GUfrM****",
      "JobId": "7glPHmaDYLAYMD1HHutT02****",
      "DestVersion": "1.0.1",
      "UtcCreate": "2019-11-04T03:38:22.000Z",
      "UtcModified": "2019-11-04T03:38:22.000Z",
      "TaskStatus": "CONFIRM",
      "ProductName": "MyProduct",
      "TaskId": "ZS9sNBb1ahsu6khqr9II01****",
      "ModuleName": "ConfigModify"
    }]
  },
  "RequestId": "A59D3BE1-E9A3-43F3-9B50-B7C8DE165D9B",
  "Success": true
}
```


4.17.23. ReupgradeOTATask

Reruns one or more failed or canceled device update tasks in a specified update batch.

QPS limits

Each Alibaba Cloud account can run up to 20 queries per second (QPS).

> **Note** The RAM users of an Alibaba Cloud account share the quota of the account.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ReupgradeOTATask	The operation that you want to perform. Set the value to ReupgradeOTATask.
JobId	String	Yes	7glPHmaDYLAYMD1HHutT02****	The ID of the update batch. After you call the CreateOTAStaticUpgradeJob or CreateOTADynamicUpgradeJob operation to create an update batch, the **JobId** parameter is returned. You can view the **batch ID** on the **Firmware Details** page in the IoT Platform console.
TaskId.N	RepeatList	Yes	y3tOmCDNgpR8F9jnVEzC01****	The ID of the device update task that you want to re-run. Valid values of **N**: 1 to 10.
IotInstanceId	String	No	iot-v64***	The ID of the instance. You can view the **ID** of the instance on the **Instance Overview** page in the IoT Platform console. **Notice** • If your instance has an ID, you must configure this parameter. If you do not set this parameter, the call fails. • If your instance has no **Overview** page or ID, you do not need to set this parameter. For more information, see Instance overview.

In addition to the preceding operation-specific request parameters, you must configure common request parameters when you call this operation. For more information, see Common request parameters.

Response parameters

Parameter	Type	Example	Description
Code	String	iot.system.SystemException	The error code returned if the call fails.
ErrorMessage	String	A system exception occurred.	The error message returned if the call fails.
RequestId	String	291438BA-6E10-4C4C-B761-243B9A0D324F	The ID of the request.
Success	Boolean	false	Indicates whether the call was successful. • **true**: The call was successful. • **false**: The call failed.

Examples

Sample requests

```
http(s)://iot.cn-shanghai.aliyuncs.com/?Action=ReupgradeOTATask
&JobId=7glPHmaDYLAYMD1HHutT02****
&TaskId.1=y3tOmCDNgpR8F9jnVEzC01****
&<Common request parameters>
```

Sample success responses

`XML` format

```
<ReupgradeOTATaskResponse>
  <RequestId>291438BA-6E10-4C4C-B761-243B9A0D324F</RequestId>
  <Success>true</Success>
</ReupgradeOTATaskResponse>
```

`JSON` format

```
{
    "RequestId": "291438BA-6E10-4C4C-B761-243B9A0D324F",
    "Success": true
}
```