Access Guide 2.0

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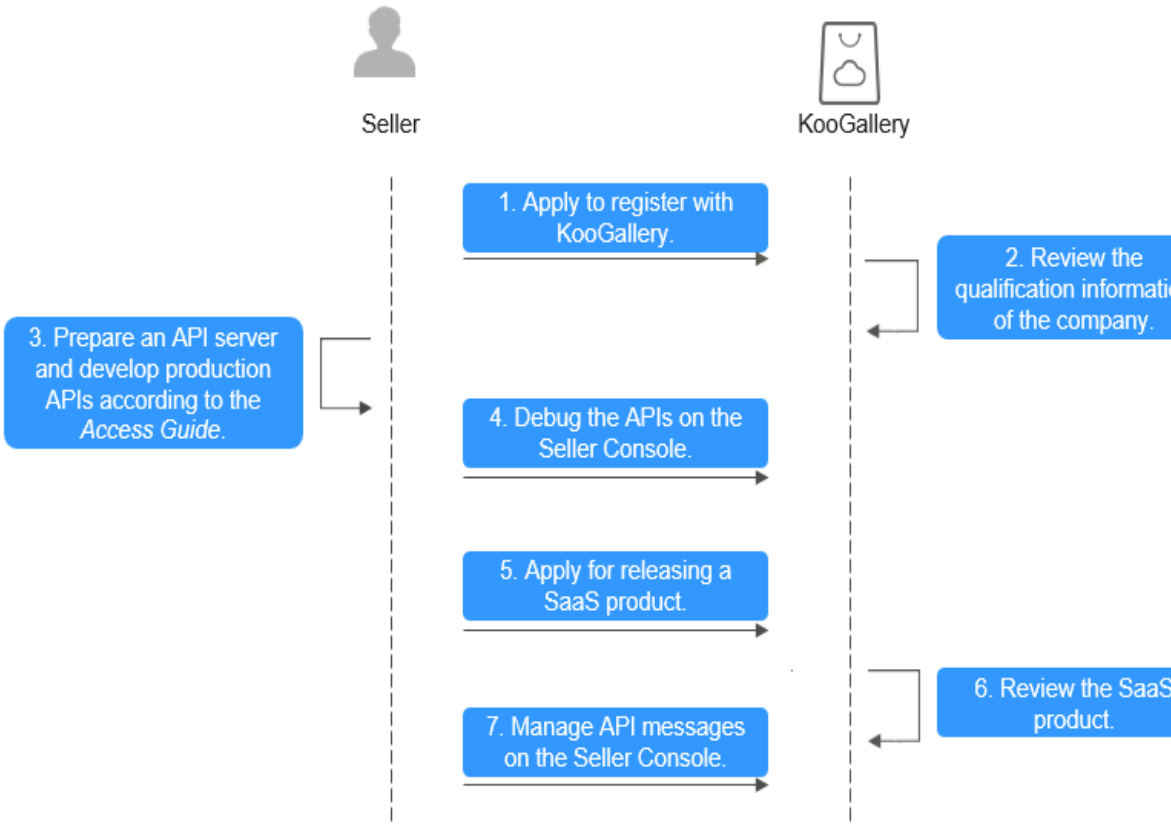
Contents

1 SaaS Product Access Guide

1.1 Access Process

The following figure shows the process of software as a service (SaaS) products accessing KooGallery.



The process is as follows:

1. **Register with KooGallery** and become a seller.
2. The KooGallery operations team reviews your company qualification.
3. Prepare a server and develop APIs on the server based on this guide.
4. Debug the APIs on the **Seller Console**.
5. Apply for releasing a SaaS product on the **Seller Console**.
6. The KooGallery operations team reviews the SaaS product. Once approved, the product is released successfully.
7. Manage notifications of APIs on the **Seller Console**.

1.2 API Description

Before releasing a SaaS product to KooGallery, develop a production API on your server by referring to this access guide.

NOTE

- You can configure only one production API address for a SaaS product to accommodate different scenarios, including instance creation, query, update, release, and upgrade.
- Before releasing a yearly/monthly/daily product, implement the APIs for instance creation, query, update, status update, and release. In addition, call the KooGallery API for querying an order.
- Before releasing a product billed by one-time payment, implement the APIs for instance creation, query, and release. In addition, call the KooGallery API for querying an order.
- If a product can be upgraded, implement the API for instance upgrade.

API Calling Scenarios

1. Instance creation: A customer purchases and pays for a product.
   - KooGallery calls the instance creation API to ask you to create an instance based on the order ID.
   - After receiving the request, your system calls the KooGallery API for querying an order to obtain the subscription information and subscribe to the instance.
   - KooGallery calls the instance query API to obtain instance information.
2. Instance query: Queries information about an instance (**instanceId**).
   - After obtaining the instance ID (**instanceId**) returned by the instance creation API, KooGallery continuously calls the instance query API until the seller successfully returns the instance information.
   - When a customer queries resource information in KooGallery, KooGallery synchronously calls the instance query API and returns the information.
3. Instance update: Customers change their trial use to commercial use, renew their resources, or cancel their renewals.
   - KooGallery calls the instance update API to notify the seller system of the resource expiration time. The seller system performs the corresponding action and returns the execution result to KooGallery.
4. Instance status update: If an instance of a customer expires or the customer violates regulations, the instance will be frozen. After the instance is renewed or the violation is canceled, the instance will be unfrozen.
   - KooGallery calls the instance status update API to ask the seller system to freeze or unfreeze the corresponding resource and returns the execution result to KooGallery.

   NOTE

   After an order expires, the resource is frozen for 15 days. During the frozen period, the resource cannot be used, but the customer can renew the order to unfreeze the resource. Therefore, the seller needs to set a 15-day frozen period for SaaS products and retain the customer data during that period.
5. Instance release: A customer releases an instance of a purchased product (in scenarios such as no renewal upon expiration and unsubscription).
   - KooGallery calls the instance release API to ask the seller system to release the corresponding resource and returns the execution result to KooGallery.
6. Instance upgrade: A customer upgrades purchased resources and pays for the upgrade order.

- KooGallery calls the instance upgrade API to ask the seller system to upgrade the corresponding resource.
- The seller system calls the order query API of KooGallery to obtain the upgrade information, upgrades the instance, and returns the execution result to KooGallery.

API Failure Scenarios and Retry Mechanism

If an API fails to respond, the system sends an email to the email address bound to your KooGallery account. You can query the exception information on the **Service Interface Messages** page of the Seller Console. Handle the exceptions as soon as possible to avoid unsubscription due to order failure.

1. When the instance creation API fails to be called,
   - if service supervision is involved, KooGallery retries to call the API for 3 consecutive hours (once an hour) and sends a notification each time the API fails to be called. During this period, you can click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page. If the API exception persists after 3 hours, the system determines that the order fails and cancels the order.
   - if service supervision is not involved, KooGallery retries to call the API for 3 consecutive hours (once every 3 minutes) and sends a notification every five times the API fails to be called. During this period, you can click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page. If the API exception persists after 3 hours, the system determines that the order fails and cancels the order.
2. When the instance update API fails to be called, KooGallery retries to call it for one hour. You can query the exception information on the **Service Interface Messages** page of the Seller Console. After rectifying the exception, click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page.
3. When the instance status update API fails to be called, KooGallery retries to call it for one hour. You can query the exception information on the **Service Interface Messages** page of the Seller Console. After rectifying the exception, click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page.
4. When the instance upgrade API fails to be called,
   - if service supervision is involved, KooGallery retries to call the API for 3 consecutive hours (once an hour) and sends a notification each time the API fails to be called. During this period, you can click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page. If the API exception persists after 3 hours, the system determines that the order fails and cancels the order.
   - if service supervision is not involved, KooGallery retries to call the API for 3 consecutive hours (once every 3 minutes) and sends a notification every five times the API fails to be called. During this period, you can click **Restart** in the **Operation** column on the right of the order on the **Service Interface Messages** page. If the API exception persists after 3 hours, the system determines that the order fails and cancels the order.

NOTE

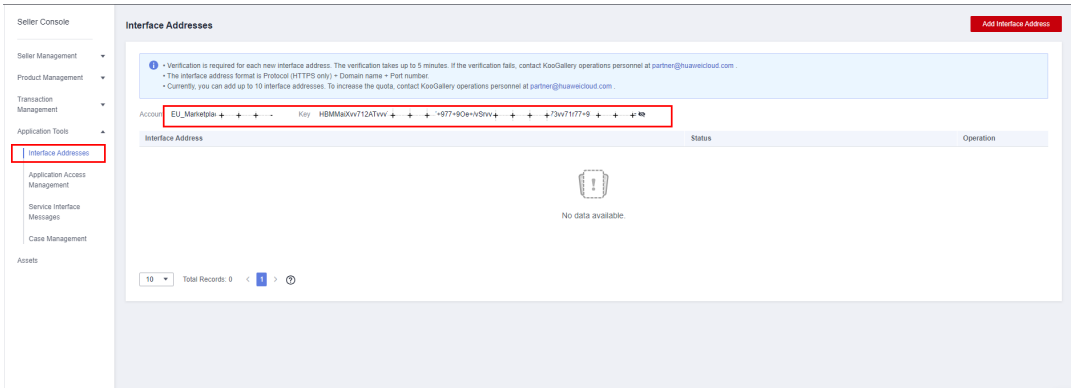
- If an API fails to respond, an email, SMS message, or private message will be sent to you. Check the email address and mobile number bound to your account and the Message Center on Huawei Cloud.
- If more than five orders of a product failed in a month due to API failures, KooGallery will remove the product from the catalog.
- If an order is automatically canceled due to an API failure, contact the customer at the earliest to handle the problem.
- If a customer can still use expired resources due to an API failure, you shall bear the resource loss incurred.

1.3 Preparations

1.3.1 Obtaining the Key

Step 1 Go to the **Seller Console**.

Step 2 In the navigation pane, choose **Application Tools > Interface Addresses**. On the **API Addresses** page, click the eye icon next to **Key**.



----End

NOTE

The key displayed on the Seller Console is obtained after Base64 encoding of the original value. Reverse the coding of the key to obtain the original value.

1.3.2 authToken Value

Overall API requirements:

1. Only HTTPS is supported. The protocol version must be 1.2 or later. The certificate must be issued by an authority.
2. Only domain names are supported.
3. Only POST requests are supported.
4. API requests and details are in JSON format.
5. UTF-8 is used.
6. The signature algorithm is HmacSHA256.

7. KooGallery requests use signatures. You need to verify the signatures to ensure that the requests are not tampered with.
8. The information you return must be signed. KooGallery verifies the signature to ensure that the returned information is not tampered with.
9. The request timeout interval is 5 seconds.

1.3.3 HTTP Body Signature

Definition

Each time KooGallery calls your API, KooGallery generates a signature for the request based on certain rules and adds the signature to the URL as a URL parameter. After receiving the request, you need to recalculate the signature for the request body based on the same rules, compare the signature with the signature transferred by KooGallery. If they are the same, the verification succeeds. The following table lists the parameters transferred.

Parameter	Value	Description
signature	String	Encrypted signature, which is generated by signing a request based on certain rules.
timestamp	Long	UNIX timestamp, in seconds. The difference between the timestamp and the current time does not exceed 60 seconds.
nonce	String	Randomly generated by KooGallery each time an API is called. You can cache it to defend against replay attacks.

Generation Rules

- Sort request parameters by name (from Z to A). For example, a parameter whose name starts with **a** is placed after a parameter whose name starts with **b**.
- Obtain the standard request character string.

```
canonicalRequest = accessKey + nonce + timestamp + Lowercase(HexEncode(HMAC_SHA256(RequestPayload)))
```

- Obtain the **signature** value for the key.

```
signature = HexEncode(HMAC_SHA256(canonicalRequest))
```

Example

The following is an example of the request received by you:

```
curl -X POST -H 'Content-Type: application/json' 'https://www.isvwebsite.com/saasproduce?signature=af71c5a7ef45310b8dc05ab15f*******379ebaa5eb61155c0&timestamp=1666677988730&nonce=RLLUammMSInlrNWb' --data '{"activity":"newInstance","buyerInfo":{"customerId":"688055******f1aa90f1858","customerName":"CBC_marketplace_mw*******1","userId":"1e8**********7df834e4fe","userName":"CBC_marketplace_********1","mobilePhone":"1865*********","email":"********@huawei.com"},"orderInfo":[{"businessId":"8a2***********88-f41090522646","orderId":"CS**********","trialFlag":"0","orderAmount":12.78,"chargingMode":"PERIOD","periodType":"month","periodNumber":5,"provisionType":1,"productInfo":[{"skuCode":"a63ee5c9-4f86-11ed-9f95-
```


fa163e8cb3b2","productId":"OFFI7889636*********8","linearValue":20}],"createTime":"20221024194509","expireTime":"20221224194509","extendParams":[{"name":"emailDomainName","value":"test.xxxx.com"},{"name":"extendParamName","value":"extendParamValue"}]}],"testFlag":"1"}'

1.4 APIs

1.4.1 Creating an Instance

Description

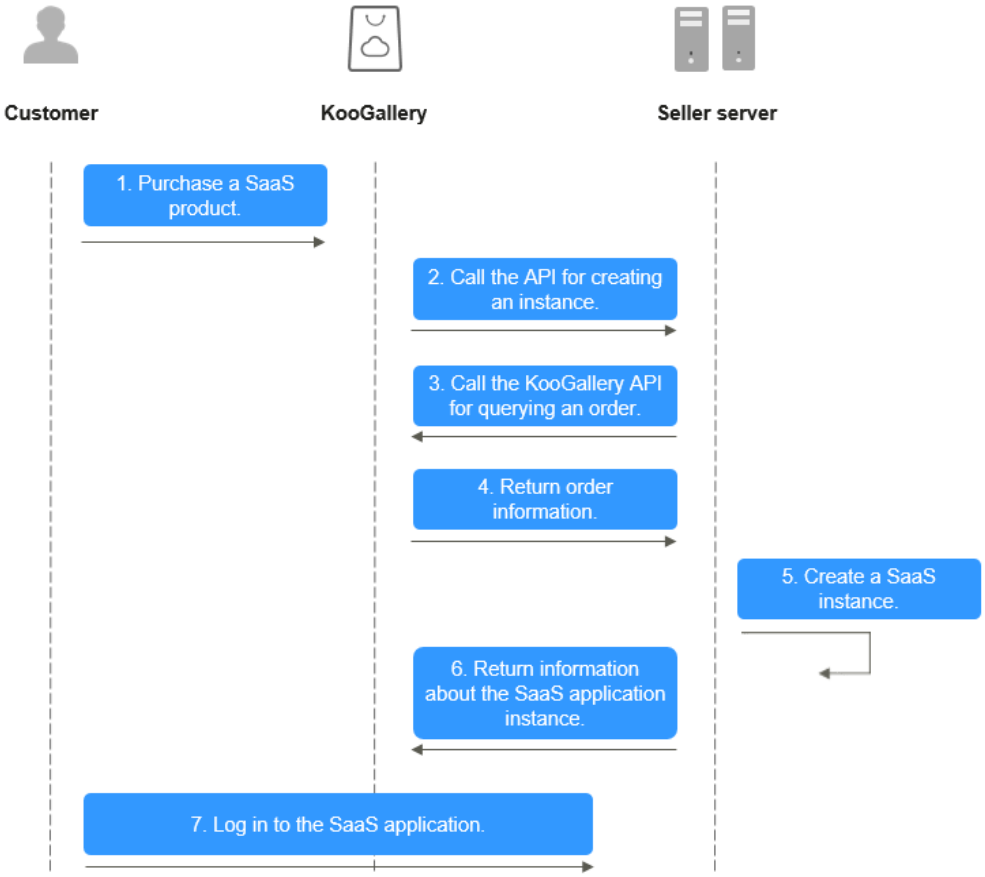
After a customer purchases and pays for a product, KooGallery calls this API to ask you to create an instance.

- You must return the unique ID (**instanceId**) of the order. Use the **businessId** provided by KooGallery to ensure that the **instanceId** is globally unique.
- Do not block this API. If instance creation is time-consuming, create the instance asynchronously. You can generate an instance ID first and then return a response immediately. KooGallery will use the API for querying instance information to query the instance provisioning result.
- For details about how to obtain order information, see **2 KooGallery Open APIs**.

  NOTE

  KooGallery may resend a request. For the same order ID (**orderId**) and order line (**orderLineId**), your server should return the same **instanceId** without creating a new SaaS instance.

  The following figure shows the process of creating an instance.



Request Message

The following table describes the request parameters. KooGallery initiates requests based on the sales mode of your product. You need to execute production based on the request information.

Request method: POST

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	20	Request ID, which is used to distinguish the scenario. For new subscriptions, the value is **newInstance**.
orderId	Yes	String	64	KooGallery order ID.
orderLineId	Yes	String	64	KooGallery order line ID.

Parameter	Mandatory	Type	Maximum Length	Description
businessId	Yes	String	64	KooGallery business ID. The value of **businessId** is different for each request.
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=11C4CD6279191DE931DEF5C51531DFFA9D37969F4E356B*********8&timestamp=1680508066618
&nonce=50D83FDECAED6CCD8EF597F2A577950527928BA287D04E6036E92B2806FD17DA' -H
'Accept:application/json' -H 'Content-Type:application/json;charset=utf8' -
d'{"activity":"newInstance","businessId":"87b947*********-69420d60e3c8","orderId":"CS221118******","orderLin
eId":"CS22111********-000001","testFlag":"0"}'
```

Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. • **000000**: The resource is enabled synchronously. • **000004**: The resource is enabled asynchronously. For details, see **1.5 Result Codes**. Return **0000004** if it takes a long time to create an instance. KooGallery will call the instance information query API to query the instance provisioning result.
resultMsg	No	String	255	Invocation result description.

Parameter	Mandatory	Type	Maximum Length	Description
instanceId	Yes	String	64	KooGallery business ID.

Example response:

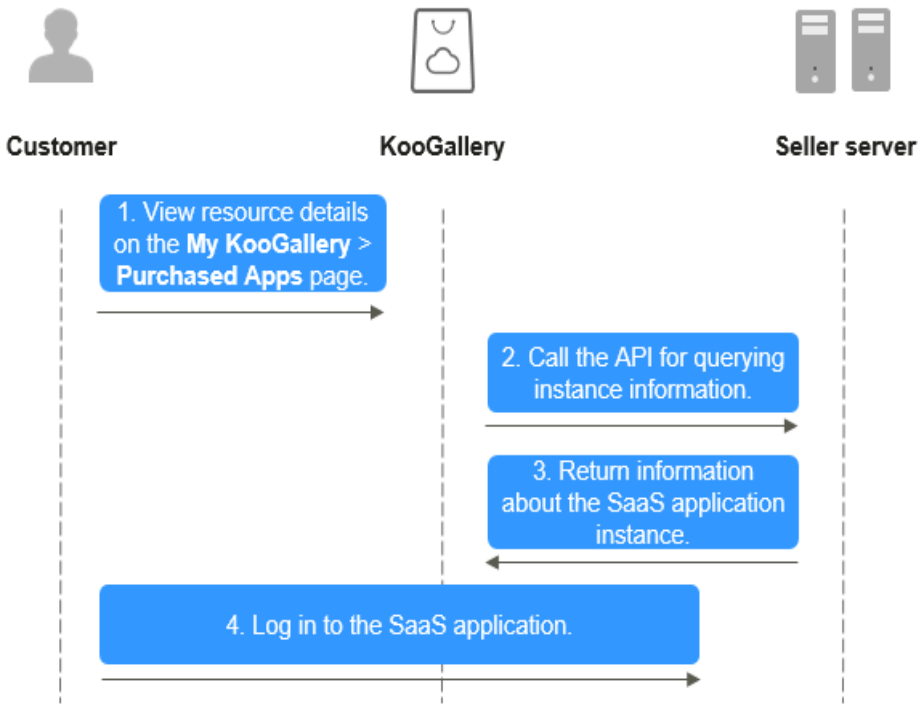
```
{
   "resultCode":"000000",
   "resultMsg":"success." ,
   "instanceId":"03pf80c2bae96vc49*********"
}
```

1.4.2 Querying Instance Information

Description

After you create an instance, KooGallery queries the instance information based on the instance ID.

- The following figure shows the process of querying instance information.



Request Message

The following table describes the request parameters.

Request method: POST

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	20	Request ID, which is used to distinguish the scenario. In the upgrade scenario, the value is **queryInstance**.
instanceId	Yes	String	100	Instance IDs separated by commas (,). Up to 100 instances can be queried at a time.

Parameter	Mandatory	Type	Maximum Length	Description
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=9C61F188C3C2889C2DD201B00E42041BDCE4751F**********A7829C&timestamp=1680508237508&
nonce=9FB42E04DF4594B1FAA50B304E647AD7154AB9B4F144A65F1168886540A8B24C' -H
'Accept:application/json' -H 'Content-Type:application/json;charset=utf8' -
d'{"activity":"queryInstance","instanceId":"10e758d0********-81d03469a10e","testFlag":"0"}'
```

Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. For details, see **1.5 Result Codes**.
resultMsg	No	String	255	Invocation result description.
info	No	InstanceInfo[]		Instance details.

The following table describes the **InstanceInfo** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
instanceId	Yes	String	64	Instance ID.

Parameter	Mandatory	Type	Maximum Length	Description
appInfo	No	AppInfo	N/A	Application instance information. After a customer purchases a product, you need to return the login address (website address) or an address that does not require login for the customer to perform subsequent operations. **NOTE** You must provide customers who purchase your SaaS products with the application usage information, including the addresses, accounts, and passwords. If the usage information can be sent through SMS messages, emails, or other methods, this parameter is not required in the API response. Otherwise, this parameter must be returned in the API response. You can use the **memo** parameter to specify usage instructions or other information if any. For details about the **appInfo** data structure, see the following table.

The following table describes the **AppInfo** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
frontEndUrl	Yes	String	512	Frontend URL. URL of the website that the customer can access to use the purchased product.
adminUrl	No	String	512	Management URL. URL of the backend website that the customer can access to manage the purchased product.
userName	No	String	128	Administrator account.
password	No	String	128	Initial password of the administrator.
memo	No	String	1024	Remarks.

Example response:

```
{
   "resultCode": "000000",
```



```
   "resultMsg": "success.",
   "encryptType": "1",
   "Info": [
{
          "instanceId": "huawei*******",
          "appInfo": {
              "frontEndUrl": "https://www.******.com",
              "userName": "3Zpq806E2********ipbcQ==",
              "password": "x4E1********7TDxbv4babJM+MQ==",
              "memo": "Test"
}
          ]
```

1.4.3 Updating an Instance

Description

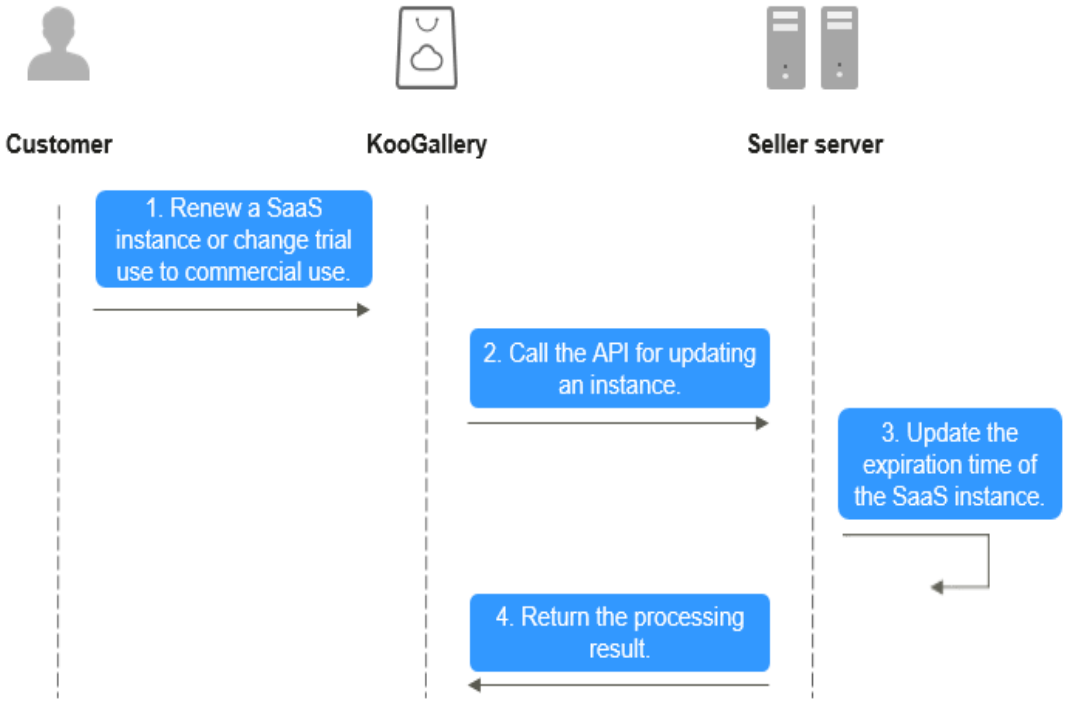
KooGallery calls this API to update the expiration date of an instance after a customer purchases a product after trial use, renews the product, or cancels the renewal.

- When this API is called, update the expiration date and return a notification to KooGallery.
- Ensure that this API is normal. If the API fails to be called, customer services may be released.

NOTE

- If you receive an email indicating that the API fails to be called in your email address of customer service or that one bound to your KooGallery account, handle the API exception in a timely manner.
- KooGallery monitors API exceptions. If freezing a SaaS product frequently fails due to exceptions, KooGallery will remove the product from the catalog.

The following figure shows the process of updating an instance.



Request Message

The following table describes the request parameters.

Request method: POST

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	20	Request ID, which is used to distinguish the scenario. For renewals, the value is **refreshInstance**.

Parameter	Mandatory	Type	Maximum Length	Description
scene	Yes	String	64	Scenario where the instance change is triggered. • **TRIAL_TO_FORMAL**: trial use to commercial use. • **RENEWAL**: renewal. • **UNSUBSCRIBE_RENEWAL_PERIOD**: renewal cancellation.
orderId	Yes	String	64	KooGallery order ID. The commercial order ID is transferred when the customer purchases the product after trial use. The renewal order ID is transferred during renewal. The ID of the renewal order to be cancelled is transferred during unsubscription.
orderLineId	Yes	String	64	KooGallery order line ID.
instanceId	Yes	String	64	Instance ID.
productId	No	String	64	Product ID. If a customer renews a product and changes the billing cycle or a customer purchases a product after trial use, a new **productId** is provided.
expireTime	Yes	String	20	Expiration time. Format: yyyyMMddHHmmss
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=3F6E6652B7BE26B27ABFC3D112**********20174FE8DE062&timestamp=1680509496350&nonce=8BF8496A350E37BDB0E8956D39D433ED417C3FC9459DCFFE7F03BFBF69B12085' -H 'Accept:application/json' -H 'Content-Type:application/json;charset=utf8' -
d'{"activity":"refreshInstance","expireTime":"20221124023618256","instanceId":"10e758d0-31ad*******03469a10e","orderId":"CS2211*******VS","orderLineId":"CS221******000001","productId":"OFFI461******240","scene":"RENEWAL","testFlag":"0"}'
```


Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. For details, see **1.5 Result Codes**.
resultMsg	No	String	255	Invocation result description.

Example response:

```
{
   "resultCode":"000000",
   "resultMsg":"success."
}
```

1.4.4 Updating the Instance Status

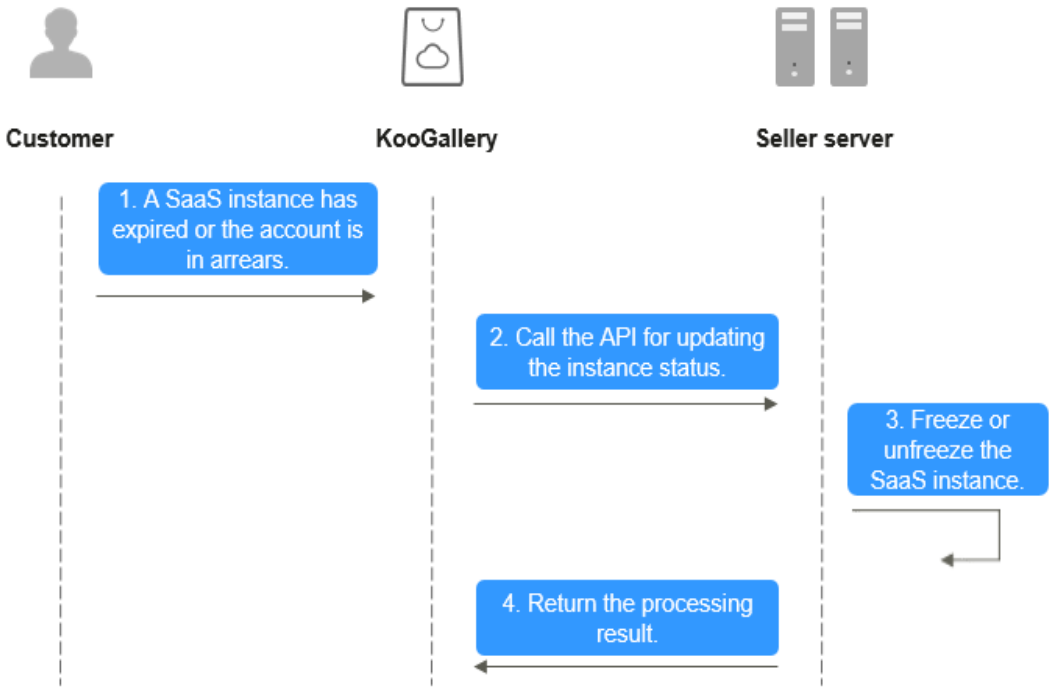
Description

After a customer purchases a yearly/monthly/daily product and the instance expires or the customer violates regulations, KooGallery calls this API to freeze the instance.

NOTE

- If you receive an email indicating that the API fails to be called in your email address of customer service or that one bound to your KooGallery account, handle the API exception in a timely manner.
- KooGallery monitors API exceptions. If a product has frequent instance exceptions, KooGallery will remove the product from the catalog.

The following figure shows the process of updating the instance status.



Request Message

Request method: POST

The following table describes the request parameters.

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	32	Request ID, which is used to distinguish the scenario. For instance status updates, the value is **updateInstanceStatus**.
instanceId	Yes	String	64	Instance ID.
status	Yes	String	32	New status. • **FREEZE**: frozen. • **UNFREEZE**: unfrozen.

Parameter	Mandatory	Type	Maximum Length	Description
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=95DD9FA6A8C**********5290919BCA3F78B9A254428A692CDF26E&timestamp=1680509558159&nonce=9F26B85CAEB3A8439221BA293E9250BC5EA689225B523C291EA75CC76B469510' -H 'Accept:application/json' -H 'Content-Type:application/json;charset=utf8' -d'{"activity":"updateInstanceStatus","instanceId":"10e75*********1b-81d03469a10e","status":"FREEZE","testFlag":"1"}'
```

Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. For details, see **1.5 Result Codes**.
resultMsg	No	String	255	Invocation result description.

Example response:

```
{
    "resultCode":"000000",
    "resultMsg":"success."
}
```

1.4.5 Releasing an Instance

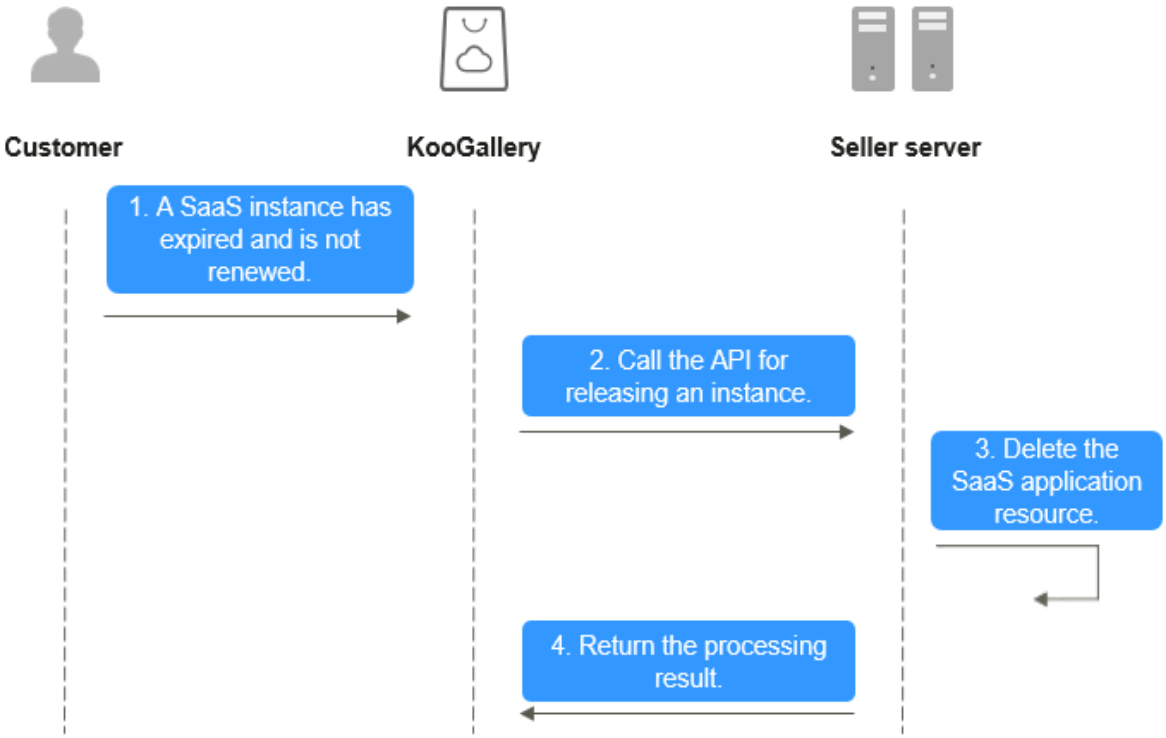
Description

When an instance of a purchased product is released (for example, the instance is not renewed upon expiration or unsubscribed from), KooGallery calls this API to delete the instance.

NOTE

- If you receive an email indicating that the API fails to be called in your email address of customer service or that one bound to your KooGallery account, handle the API exception in a timely manner.
- KooGallery monitors API exceptions. If a product has frequent instance exceptions, KooGallery will remove the product from the catalog.

The following figure shows the process of expiration.



Request Message

The following table describes the request parameters.

Request method: POST

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	32	Request ID, which is used to distinguish the scenario. For expiration, the value is **releaseInstance**.

Parameter	Mandatory	Type	Maximum Length	Description
instanceId	Yes	String	64	Instance ID.
orderId	No	String	64	If an instance is released due to unsubscription, the value of this parameter is the ID of the order to be cancelled.
orderLineId	No	String	64	KooGallery order line ID.
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=C4E5F264C92F737DEBECB**********80202B59027CEEFC4932&timestamp=1680509885590&nonce=
A49E8F86EE5BCAFBDFD3E53F1E09A29C6D9E8DACC67382EBCDD02CD55CBBB7AE' -H 'Accept:application/
json' -H 'Content-Type:application/json;charset=utf8' -
d'{"activity":"releaseInstance","instanceId":"10e758d0*********-81d03469a10e","orderId":"CS22111********VS","
orderLineId":"CS221118*******S-000001","testFlag":"0"}'
```

Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. For details, see **1.5 Result Codes**.
resultMsg	No	String	255	Invocation result description.

NOTE

- If you receive an email indicating that the API fails to be called in your email address of customer service or that one bound to your KooGallery account, handle the API exception in a timely manner.
- KooGallery monitors API exceptions. If a product has frequent instance exceptions, KooGallery will remove the product from the catalog.

Example response:

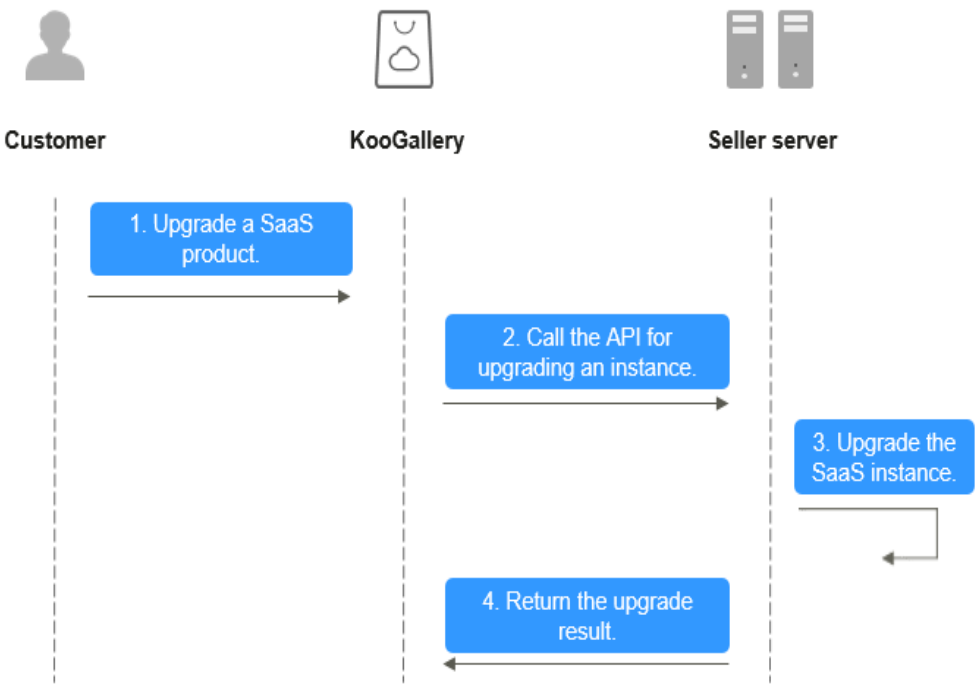
```
{
   "resultCode":"000000",
   "resultMsg":"success."
}
```

1.4.6 Upgrading an Instance

API Description

A customer upgrades a purchased resource. After the upgrade order is paid, KooGallery calls this API to ask you to upgrade the resource and record the upgraded product data.

The following figure shows the process of upgrading a product.



Request Message

The following table describes the request parameters.

Request method: POST

Parameter	Mandatory	Type	Maximum Length	Description
activity	Yes	String	32	Request ID, which is used to distinguish the scenario. For upgrades, the value is **upgradeInstance**.
instanceId	Yes	String	64	Instance ID. **NOTE** The upgrade does not change **instanceId**.
orderId	Yes	String	64	Upgrade order ID. **NOTE** An order is generated for the upgrade.
orderLineId	Yes	String	64	KooGallery order line ID.
testFlag	No	String	2	Whether a request is submitted for debugging. • **1**: debugging request. • **0**: non-debugging request. The default value is **0**.

Example request:

```
curl -X POST 'https://www.isvwebsite.com/saasproduce?
signature=9D49F9BF09D69F7A*********0E07AF95FEE9E5BEF5218DA407&timestamp=1680510876429&nonce
=D8FE86FA6ABE90CA63A72B3256743D3D869648FE99A96354E635F032629F6C21' -H 'Accept:application/
json' -H 'Content-Type:application/json;charset=utf8' -
d'{"activity":"upgradeInstance","instanceId":"10e75********b-81d03469a10e","orderId":"CS2*******4LVS","order
LineId":"CS221118*******-000001","testFlag":"0"}'
```

Response Message

The following table describes the response parameters.

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	6	Invocation result code. For details, see **1.5 Result Codes**.
resultMsg	No	String	255	Invocation result description.

Example response:

```
{
   "resultCode":"000000",
```



```
    "resultMsg":"success."
}
```

1.5 Result Codes

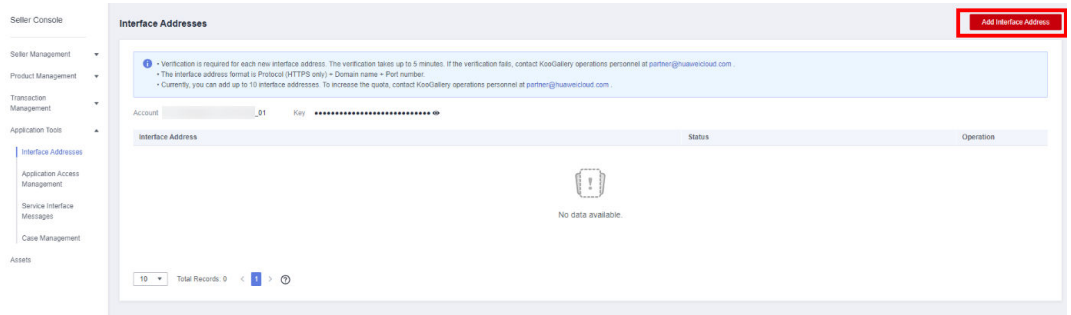
Module	Result Code	Description
Common	000000	Succeeded.
	000001	Access denied.
	000002	Invalid request parameter.
	000003	The instance ID does not exist. (This code may be returned by the API for updating the instance, updating the instance status, or releasing the instance.)
	000004	The request is being processed.
	000005	Other internal errors.
Subscription	000100	No instance resource can be allocated.

1.6 Debugging an API

To ensure that a SaaS product can be accessed, KooGallery provides a debugging page on the Seller Console. You can debug SaaS APIs in five scenarios (instance creation, query, status update, release, and upgrade). The following uses the API for creating an instance as an example.

Procedure

Step 1 Choose **Seller Console** > **Application Tools** > **Interface Addresses**, add an API address, and complete the verification.



Step 2 Preset parameters in your system by referring to the parameter description in **#section31291646**.

Step 3 In the navigation pane, choose **Application Tools** > **Application Access Management** and enter or select the corresponding debugging URL.

Step 4 On the first tab, enter values of parameters preset in **Step 2** and click **Generate Request Command** to generate a request example. For details about the parameters, see **1.4 APIs**.

Step 5 Click **Debug and Save Case**. The system calls the debugging URL to test the API. If the test is successful, the system displays a message indicating debugging is successful and the case is saved. If the test fails, the error message is displayed in the lower part of the page. You can modify the API based on the error message.

NOTE

- To release a yearly/monthly/daily product, debug and save cases of instance creation, query, update, status update, and release.
- To release a product billed by one-time payment, debug and save cases of instance creation, query, and release.

Step 6 When the debugging is successful, choose **Application Tools** > **Case Management** in the navigation pane and view the test case.

----End

2 KooGallery Open APIs

2.1 Using APIs

2.1.1 Usage

Huawei Cloud provides RESTful APIs.

REST allocates Uniform Resource Identifiers (URIs) to dispersed resources so the resources can be located. Applications on clients use unified resource locators (URLs) to access the resources.

A URL is in the format of https://*Endpoint*/*uri*.

Table 2-1 describes the parameters in a URL.

Table 2-1 URL parameters

Parameter	Description
Endpoint	The endpoint of KooGallery is **mkt-euro.myhuaweicloud.com**.
uri	Resource path, that is, the API access path. Obtain this value from the URI of the API, for example, **v1.0/*{partner_id}*/billing/bill-mgr/push-usage-data**. When the user ID in the URI is *partner_id*, the API can be called only using the AK/SK or token of the partner (seller).

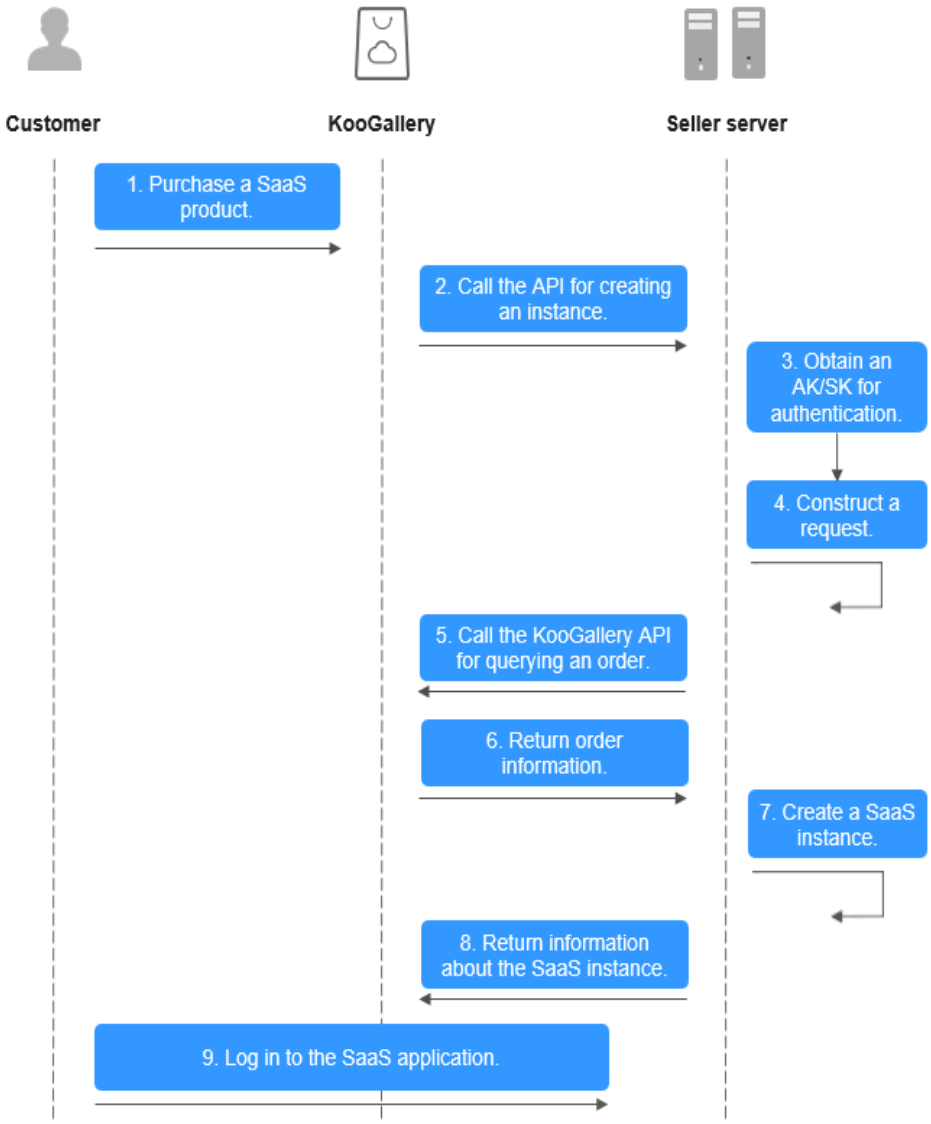
Huawei Cloud APIs use the HTTP transmission protocol and have the following restrictions:

1. Request and response messages are encoded using UTF-8 and in the JSON format.
2. The media type is Application/json.
3. Optional parameters do not need to be encoded in message bodies.
4. UTC time (including the time zone) is used in requests and responses. The format is yyyyMMdd'T'HHmmss'Z'.

   HH ranges from 0 to 23, and *mm* and *ss* range from 0 to 59.

2.1.2 Calling

The following figure shows the process of calling an API.



1. **Obtain an AK/SK for authentication**.

   Request authentication is required for calling an API. After successful authentication, the authentication field is filled into the next method to request for message construction.

   AK/SK authentication is used for calling APIs.

AK/SK authentication: Requests are encrypted using AK/SK pairs.

When you send requests to underlying services through the API gateway, the requests must be signed using access key ID (AK) and secret access key (SK).

- AK: access key ID, which is a unique identifier used with a secret access key to sign requests cryptographically.
- SK: secret access key. It is used together with an access key ID to identify a sender who initiates a request and to cryptographically sign requests, preventing the request from being modified.

NOTE

1. For details about how to obtain the SDK, see **Calling APIs Through App Authentication**.
2. For details about how to obtain an AK/SK, see **AK/SK Authentication**.

2. **Construct a request**.

   Configure the request parameters to construct a request.
3. **Initiate the request**.
4. **Parse the response**.

2.1.3 AK/SK Authentication

2.1.3.1 Generating an AK and SK

1. Register with Huawei Cloud and log in to the management console.
2. Click the username and choose **My Credentials** from the drop-down list.
3. In the navigation pane, choose **Access Keys**.
4. Click **Create Access Key**.
5. Enter the verification code sent to your email address, click **OK**, and download the access key. Keep the access key secure.

2.1.3.2 Signing a Request

API requests sent by third-party applications to Huawei Cloud must be authenticated using signatures.

Preparation

1. **Download** the API Gateway signing tool and decompress it.
2. Create a Java project and reference the decompressed JAR file to the dependency path.

Procedure

1. Create a **com.cloud.sdk.DefaultRequest (JAVA)** request used for signing.
2. Set the destination API URL, HTTPS method, and content of **DefaultRequest**.
3. Sign **DefaultRequest**.
   a. Call **SignerFactory.getSigner(String serviceName, String regionName)** to obtain a signature tool instance.

Call **Signer.sign(Request<?> request, Credentials credentials)** to sign the request created in step 1.

The following code shows the details.

```
// Select the signing algorithm for signing the request.
 Signer signer = SignerFactory.getSigner(serviceName, region);
// Sign the request. The request will change after being signed.
 signer.sign(request, new BasicCredentials(this.ak, this.sk));
```

4. Convert the request signed in the previous step to one that can be used to make an API call and copy the header of the signed request to the new request.
5. For example, for Apache HttpClient, convert **DefaultRequest** into **HttpRequestBase** and copy the header of the signed **DefaultRequest** to **HttpRequestBase**.

2.1.4 Constructing a Request

A request consists of three parts: a request line, request header, and request body (optional).

Request Line

A request line starts with the request method, which is followed by the uniform resource identifier (URI) and protocol version. The request method and URI are separated by a space. The request line format is as follows:

```
Method Request-URI HTTP-Version CRLF
```

- **Method**: request method. All methods are capitalized and their meanings are as follows:
  - GET: obtains the resource identified by the Request-URI.
  - POST: suffixes new data to the resource identified by the Request-URI.
  - PUT: stores a resource identified by the Request-URI.
  - DELETE: deletes the resource identified by Request-URI.
- **Request-URI**: uniform resource identifier.

  NOTE

  A combination of different query conditions can be added at the end of the URI by using question marks (?) and ampersands (&). The content contained in **{}** in the URI is the parameters of the URI, where **?** is contained. The part preceding **?** is the path parameter, and the part following **?** is the query parameter. **HTTP-Version**: version of the HTTP protocol used by a request.
- **CRLF**: carriage return and line feed characters. CRLF is placed only at the end of a line. CR and LF must be present at the same time.

Request Header

A request header consists of several fields, each including a domain name, colon (:), and field value. For details, see **2.2.1 Common Request Header Fields**.

Request Body

A request body is a JSON-based, nested *key:value* pair. The mandatory and optional fields of an HTTP request body vary depending on the URI.

2.1.5 Initiating a Request

You can initiate a request using the constructed request message in one of the following ways:

- cURL

  cURL is a command-line tool used to perform URL operations and transmit information. It serves as an HTTP client that can send HTTP requests to the server and receive response messages. cURL is used for API debugging. For more information about cURL, visit **https://curl.haxx.se/**.

- Encoding

  You can call APIs using code to assemble, send, and process request messages.

- REST client

  Both Mozilla and Google Chrome provide a graphical browser plug-in REST client to send and process requests. For Mozilla Firefox, see **Firefox RESTClient**. For Chrome, search for **REST Client** from **Chrome Web Store**.

2.1.6 Parsing a Response

After receiving and interpreting a request message, the server returns an HTTP response message.

A response consists of three parts: status line, response header, and response body.

Status Line

The format of the status line is as follows:

```
HTTP-Version Status-Code Reason-Phrase CRLF
```

- **HTTP-Version**: version of the HTTP protocol used by the server.
- **Status-Code**: status code in the response returned by the server.

  A status code consists of three digits. The first digit defines the class of response. There are five values for the first digit:

  - **1*xx***: informational. The request was received, continuing process.
  - **2*xx***: successful. The request was successfully received, understood, and accepted.
  - **3*xx***: redirection. Further action needs to be taken to complete the request.
  - **4*xx***: client error. The request contains bad syntax or cannot be fulfilled.
  - **5*xx***: server error. The server failed to fulfill an apparently valid request.

- **Reason-Phrase**: text description of a status code.

Response Header

Table 2-4 describes the headers in most responses.

Response Body

The response body is in JSON format.

2.1.7 Status Codes

Table 2-2 describes HTTP response status codes.

Table 2-2 HTTP response status codes

Status Code	Message	Description
100	Continue	Continue sending requests. This temporary response is used to inform the client that some requests have been received and not rejected by the server.
101	Switching Protocols	Switch the protocol. The target protocol must be more advanced than the original one. For example, the protocol in use is switched to a later version of HTTP.
201	Created	The request for creating resources has been fulfilled.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
203	Non-Authoritative Information	The request was successful but the response has been modified by a transforming proxy.
204	No Content	The request has been fulfilled, but the HTTP response does not contain a response body. The status code is returned in response to an HTTP OPTIONS request.
205	Reset Content	The server has fulfilled the request and requires the client to reset the content.
206	Partial Content	The server has fulfilled a range GET request.
300	Multiple Choices	There are multiple options for the requested resource. The response contains a list of resource characteristics and addresses from which the user or user agent (such as a browser) can choose the most appropriate one.
301	Moved Permanently	The requested resource has been assigned with a new permanent URI. This new URI is contained in the response.
302	Found	The requested resource resides temporarily under a different URI.

Status Code	Message	Description
303	See Other	The server is redirecting the client to a different address. The client should use a GET or POST method to obtain the resource.
304	Not Modified	The requested resource has not been modified. When the server returns this status code, no resource is returned.
305	Use Proxy	The requested resource is available only through a proxy.
306	Unused	This HTTP status code is no longer used.
400	Bad Request	Invalid request. The client should not repeat this request without modification.
401	Unauthorized	The authentication information provided by the client is incorrect or invalid.
402	Payment Required	This status code is reserved for future use.
403	Forbidden	The request has been rejected. The server received and understood the request but refused to fulfill it, because the request is set to deny access. The client should not repeat this request without modification.
404	Not Found	The requested resource could not be found. The client should not repeat this request without modification.
405	Method Not Allowed	The method specified in the request is not allowed for the requested resource. The client should not repeat this request without modification.
406	Not Acceptable	The server cannot implement the request based on the content characteristics of the request.
407	Proxy Authentication Required	This status code is similar to 401, but the client must be authenticated using a proxy.
408	Request Time-out	The client does not produce a request within the time that the server was prepared to wait. The client may repeat the request without modifications at any time later.

Status Code	Message	Description
409	Conflict	The request cannot be processed due to a conflict. The resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request.
410	Gone	The requested resource is no longer available. The requested resource has been deleted permanently.
411	Length Required	The server fails to process the request which does not contain the **Content-Length** header field.
412	Precondition Failed	The server does not meet one of the requirements that the requester puts on the request.
413	Request Entity Too Large	The request is larger than that the server can process. The server may close the connection to prevent the client from continuously sending the request. If the server cannot process the request temporarily, the response will contain a **Retry-After** header field.
414	Request-URI Too Large	The Request-URI is too long for the server to process.
415	Unsupported Media Type	The server cannot process the media format in the request.
416	Requested Range Not Satisfiable	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the **Expect** request header field.
422	Unprocessable Entity	The request is well-formed but is unable to be processed due to semantic errors.
429	Too Many Requests	The client sends too many requests to the server within a given time, exceeding the client's access frequency limit or beyond the server's processing capability. In this case, the client should retry after the time period specified in the **Retry-After** response header.
500	Internal Server Error	The server is able to receive the request but unable to understand it.

Status Code	Message	Description
501	Not Implemented	The server does not support the function required to fulfill the request.
502	Bad Gateway	The server was acting as a gateway or proxy and received an invalid request from a remote server.
503	Service Unavailable	The requested service is invalid. The client should not repeat this request without modification.
504	Server Timeout	The request cannot be fulfilled within a given amount of time. The response will reach the client only if the request carries a timeout parameter.
505	HTTP Version Not Supported	The server does not support the HTTP protocol version used in the request.

2.2 Common Parameters

2.2.1 Common Request Header Fields

Table 2-3 Common request header fields

Name	Description	Mandatory	Example
x-sdk-date	Time when a request is sent. The format is yyyyMMdd'T'HHmmss'Z'. The value is the current GMT time of the system.	No Mandatory for AK/SK authentication	20160629T101459Z
Authorization	Authentication information. It is the result of request signing. For details, see **2.1.3.2 Signing a Request**.	No Mandatory for AK/SK authentication	-
Host	Information about the requested server, in the *hostname[:port]* format. The value can be obtained from the URL of the service API. If the port number is not specified, the default port is used. The default port number for **https** is **443**.	No Mandatory for AK/SK authentication	mkt-euro.myhuaweicloud.com

Name	Description	Mandatory	Example
Content-type	MIME type of the body in the request.	Yes	application/json

2.2.2 Common Response Header Fields

Table 2-4 Common response header fields

Name	Description	Example
Date	Standard HTTP header, which indicates the date and time when a message is sent. The value is in the format defined in RFC822.	Mon, 12 Nov 2007 15:55:01 GMT
Server	Standard HTTP header, which contains information about the software that the server uses to process requests.	Nginx
Content-Length	Standard HTTP header, which indicates the representation's data length as a decimal number of octets.	xxx
Content-Type	Standard HTTP header, which indicates the media type of the entity body sent to the recipient.	application/json

2.3 APIs

2.3.1 Querying an Order

Function

KooGallery sellers can use this API to query all order information.

URI

GET:

https://mkt.myhuaweicloud.eu/api/mkp-openapi-public/global/v1/order/query

Response Message describes the parameters.

NOTE

Only the HTTPS protocol is supported.

Request Message

Request parameters

Request method: GET

Parameter	Mandatory	Type	Maximum Length	Description
orderId	Yes	String	64	KooGallery order ID.
orderLineId	No	String	64	KooGallery order line ID.

To facilitate interconnection and commissioning, KooGallery provides simulated order data. The simulated orders vary according to scenarios.

- Yearly/monthly subscription

orderId	MOCKPERIODYEARNEW
orderLine	MOCKPERIODYEARNEW-000001

- One-time subscription

orderId	MOCKONETIMENEW
orderLine	MOCKONETIMENEW-000001

- Trial use

orderId	MOCKPERIODDAYTRIAL
orderLine	MOCKPERIODDAYTRIAL-000001

- Change from trial use to commercial use

orderId	MOCKMONTYTRIALTOFORMAL
orderLine	MOCKMONTYTRIALTOFORMAL-000001

- Unsubscription

orderId	MOCKMONTYUNSUBSCRIBE
orderLine	MOCKMONTYUNSUBSCRIBE-000001

- Renewal

orderId	MOCKMONTYRENEW
orderLine	MOCKMONTYRENEW-000001

- Change

orderId	MOCKMONTYCHANGE
orderLine	MOCKMONTYCHANGE-000001

CAUTION

Strong verification must be performed on the mkt.myhuaweicloud.eu HTTPS certificate to ensure that the real KooGallery service instead of a forged KooGallery service is called.

Example request

```
GET /api/mkp-openapi-public/global/v1/order/query?
orderId=CS2207261447AUY4H&orderLineId=CS2207261447AUY4H-000001
Host: Host Server
Content-Type: application/json charset=UTF-8
X-Sdk-Date: request time
Authorization: authorization
```

Response Message

Table 2-5 Response parameters

Parameter	Mandatory	Type	Maximum Length	Description
resultCode	Yes	String	16	Result code.
resultMsg	Yes	String	1024	Result message.
orderInfo	No	OrderInfo	/	Additional information. OrderInfo data structure definition.

The following table describes the **OrderInfo** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
orderId	Yes	String	64	KooGallery order ID.
orderType	Yes	String	32	Order type. The options are as follows: • **NEW**: new subscription. • **TRIAL**: trial use. • **TRIAL_TO_FORMAL**: commercial use after trial use. • **UNSUBSCRIBE**: unsubscription. • **RENEW**: renewal. • **CHANGE**: change.
createTime	Yes	DateTime	20	Time when an order is created. Format: yyyyMMddHHmmss It is not the time when the order takes effect but the time when the order is placed.
orderLine		List<OrderLine>		Order line information.
buyerInfo	No	BuyerInfo	/	Customer information.

The following table describes the **OrderLine** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
orderLineId	Yes	String	64	KooGallery order line ID.
chargingMode	Yes	String	25	Billing mode. The options are as follows: **ON_DEMAND**: pay-per-use. **ONE_TIME**: one-time payment. **PERIOD**: yearly/monthly/daily. **ON_DEMAND_PKG**: pay-per-use package.

Parameter	Mandatory	Type	Maximum Length	Description
expireTime	No	DateTime	20	Expiration time. Format: yyyyMMddHHmmss • This parameter is requested if the product is billed by yearly/monthly/daily. • This parameter is not requested if the product is billed by one-time payment. This parameter is determined based on the order creation time and the subscription duration and may differ from the actual expiration time of the order. It is for reference only.
periodType	No	String	2	Period type. **NOTE** This parameter is only required for yearly/monthly/daily subscriptions (the value of **chargingMode** is set to **PERIOD**). Daily subscription: **day** Yearly subscription: **year** Monthly subscription: **month**
extendParams	No	List<ExtendParam>	/	Extension parameters. An extension parameter is an array in the key/value format. Example: [{"name":"emailDomainName","value":"test.xxxx.com"}, {"name":"ip","value":"192.168.1.1"}] In the preceding information, **emailDomainName** and **ip** are set during product release.
periodNumber	No	integer	5	Number of periods. **NOTE** This parameter is only required for yearly/monthly/daily subscriptions (the value of **chargingMode** is set to **PERIOD**). Enter a positive integer, for example, **1**, **2**, and **3**.

Parameter	Mandatory	Type	Maximum Length	Description
productInfo	Yes	List<ProductInfo>		Product information associated with the order line.

The following table describes the **ProductInfo** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
productId	Yes	String	64	Product ID. The value of **productId** varies between product specifications of the same **skuCode** depending on the billing mode. For example, when you release a product and add a new specification, an **skuCode** value is generated. After yearly and monthly billing prices are configured, two **productId** values are generated. Log in to the Seller Console. Then, choose **Product Management** > **My Products**. In the row of your product, click **Details** in the **Operation** column. On the product details page, you can view the value of this parameter.
skuCode	Yes	String	64	Specification ID. When renewing the subscription of a yearly/monthly product, a customer can change the billing mode (for example, from monthly to yearly). In this case, the **productId** corresponding to the **instanceId** of the instance enabled by the customer changes, but the value of **skuCode** does not change. Log in to the Seller Console. Then, choose **Product Management** > **My Products**. In the row of your product, click **Details** in the **Operation** column. On the product details page, you can view the value of this parameter.
linearValue	No	Integer		Linear value that the customer selected when placing the order for a product with the quantity attribute.

Parameter	Mandatory	Type	Maximum Length	Description
productName	Yes	String		Product name.

The following table describes the **ExtendParam** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
name	Yes	String	64	Parameter name.
value	Yes	String	64	Parameter value.

The following table describes the **BuyerInfo** data structure.

Parameter	Mandatory	Type	Maximum Length	Description
mobilePhone	No	String	64	Mobile number of the customer.
customerId	No	String	64	Customer ID.
customerName	No	String	64	Customer account name.
email	No	String	64	Email address of the customer.

Successful response example

```
{
   "resultCode": "MKT.0000",
   "resultMsg": "Success",
   "orderInfo": {
      "orderId": "MOC*******RNEW",
      "orderType": "NEW",
      "createTime": "20230713082130",
      "orderLine": [
         {
            "orderLineId": "MOCKP*********001",
            "chargingMode": "PERIOD",
            "periodType": "year",
            "periodNumber": 1,
```



```
            "expireTime": "20240713082130",
            "productInfo": [
               {
                  "productId": "OFFI84******911168",
                  "skuCode": "0a4d1578-5295-46a7-92d4-7c803dccc51d",
                  "linearValue": 50,
                  "productName": "****,*****,*****,******"
               }
            ],
            "extendParams": [
               {
                  "name": "emailDomainName",
                  "value": "test.xxxx.com"
               },
               {
                  "name": "ip",
                  "value": "127.0.0.1"
               }
            ]
         }
      ],
      "buyerInfo": {
         "mobilePhone": "1868*****88",
         "email": "*****t.com",
         "customerId": "459bbbec25********37b602a8",
         "customerName": "mock_******"
      }
   }
}
```

Failed response example

```
HTTP/1.1 401 UnauthorizedContent-Type: application/json;charset=UTF-8Content-Length: lengthDate:
response time {
   "resultCode": "CBC.0150",
   "resultMsg": "Illegal operation. param[isvId] and param[instanceId] does not match."
}
```

