

Optical Character Recognition

FAQs

Issue 01
Date 2024-09-23



Copyright © Huawei Cloud Computing Technologies Co., Ltd. 2024. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Cloud Computing Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: <https://www.huaweicloud.com/intl/en-us/>

Contents

1 Subscription	1
1.1 How Do I Purchase an API That Best Suits My Needs?	1
1.2 How Do I Unsubscribe from an OCR Service?	2
1.3 Why Is the Subscribe Button Dimmed?	3
1.4 Why Is Subscription Displayed as "Unsubscribed" Despite Having Already Subscribed to a Service?	3
1.5 How Do I Select a Region for an OCR Package?	5
2 Token-based Authentication	6
2.1 What Are the Username, Domain Name, and Project Name in the Token Message Body?	6
2.2 Why Is the Error Message "The account is locked." Displayed?	6
2.3 Why Is the Error Message "The username or password is wrong." Displayed?	7
2.4 Why Does the Token Retrieval Process Return a 401 Status Code?	9
2.5 Why Does the Token Fail to Be Obtained When I Use Postman to Call an ORC API?	10
2.6 Why Don't I Have Programming Access Permissions?	11
2.7 Why Does the Header Overflow When I Use Postman to Call an OCR API?	11
3 API	12
3.1 How Do I View the API Usage?	12
3.2 Why Is the Actual Number of API Calls Inconsistent with the Record Displayed on the Management Console?	12
3.3 Does OCR Support Batch Processing?	13
3.4 Can the OCR Results Be Converted into Word, TXT, or PDF Files?	13
3.5 How Do I Obtain the Base64 Code of an Image?	13
3.6 What Is the Number of Concurrent OCR API Calls?	13
3.7 How Do I Use OCR APIs?	14
3.8 Can the Region Where OCR Is Called Be Different from the Region Where OBS Resources Are Located?	14
3.9 Can the Input Data of OCR Be Stored Locally?	14
3.10 How Do I Improve the Recognition Speed?	14
3.11 How Do I Convert a PDF to an Image?	15
3.12 Can OCR Read Images from Non-Huawei Cloud Storage?	16
4 SDK	17
4.1 Do OCR SDKs Need to Be Purchased?	17
4.2 Do OCR SDKs Need Maven to Manage Dependency Packages?	17
4.3 How Do I Change the Response Type in Returned Results?	17

4.4 How Can I Fix an SSL Configuration Error?.....	18
4.5 How Can I Fix a "connect timed out" Error?.....	18
4.6 Why Does the Project ID Fail to Be Obtained?.....	19
4.7 What Should I Do if I Forget My AK and SK?.....	19
5 Error Code.....	21
5.1 Why Do I Fail to Call an OCR API?.....	21
5.2 How Do I Handle the Error APIG.0301?.....	21
5.3 How Do I Handle the Error APIG.0201?.....	22
5.4 How Do I Handle the Error APIG.0101?.....	23
5.5 How Do I Handle the Error APIG.0106?.....	23
5.6 How Do I Handle the Error APIG.0308?.....	24
5.7 How Do I Handle the Error ModelArts.0212?.....	24
5.8 How Do I Handle the Error ModelArts.4603 or ModelArts.4704?.....	25
5.9 How Do I Handle the Error ModelArts.4204?.....	26
6 Permissions.....	28
6.1 Why Am I Not Authorized to View Data on the Console Service Monitoring Page?.....	28
7 Data Security and Privacy.....	31
7.1 Will User Data Be Saved When OCR Is Used?.....	31
8 Regions and AZs.....	32
8.1 What Are Regions and AZs?.....	32
8.2 Can APIs Be Called Across Regions?.....	33
8.3 Does Accessing Services in Different Regions Cause Latency?.....	34
9 General Consulting.....	35
9.1 Can OCR Export Recognition Results Right After Images Are Uploaded?.....	35
9.2 Can OCR Identify Text in Video Streams in Real Time?.....	35
9.3 Must I Use Huawei Cloud to Store Images When I Use OCR?.....	35
9.4 Can OCR Recognize Text Files?.....	35
9.5 How Do I Accelerate the Response to a Service Call?.....	36
9.6 Can OCR Be Used Offline?.....	36

1 Subscription

1.1 How Do I Purchase an API That Best Suits My Needs?

OCR provides two types of APIs: general APIs and certificate APIs. For details, see [API Overview](#).

For details about the pricing, see [Price Calculator](#). For details about billing rules, see [Billing](#).

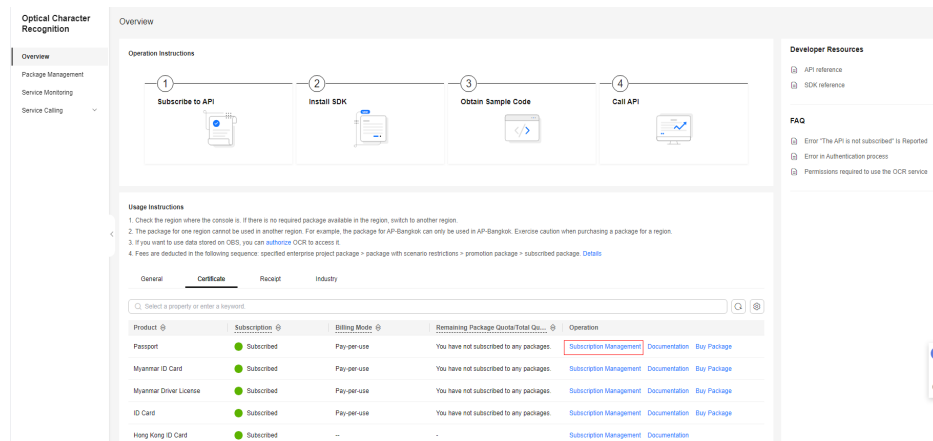
NOTE

- Note that when subscribing to an API, it is important to log in to the console using the appropriate account/IAM user, purchase the required API, select the appropriate endpoint and billing mode, so that you can use the same account to access the purchased endpoint and use the API with the selected billing mode.

How to Buy

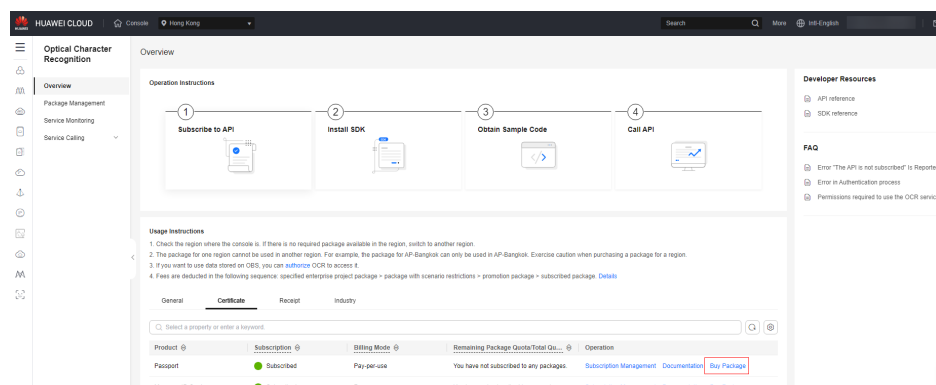
- Pay-per-use
 - OCR is billed on a pay-per-use basis by default.
 - To top up your account, log in to the Huawei Cloud console and choose [Billing & Costs](#).
 - Top up your account in advance to prevent service impact caused by arrears.

Figure 1-1 Subscribing to a service



- Package
 - a. Log in to the **OCR console**, select the region where you want to call an OCR service, locate the OCR service you need in the service list, and click **Buy Package** in the **Operation** column.
 - b. On the **Buy OCR Package** page that is displayed, select the region, service type, and package specifications.
 - c. Click **Next** and complete the payment.

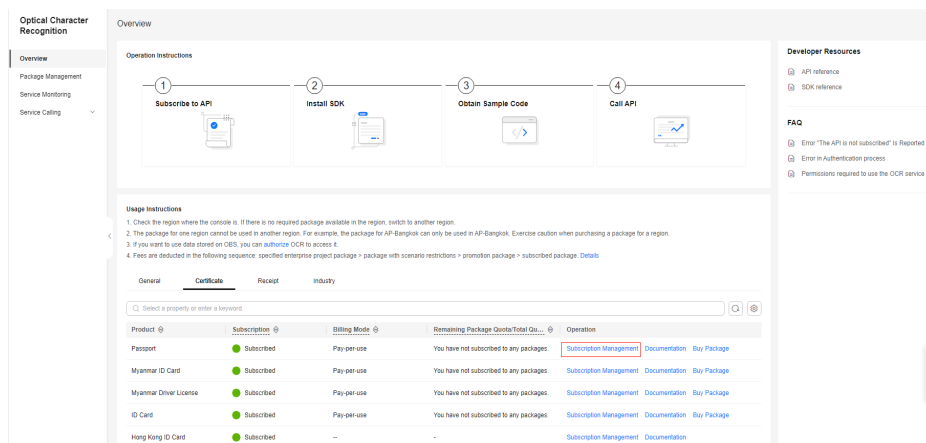
Figure 1-2 Buying a package



1.2 How Do I Unsubscribe from an OCR Service?

- The master account can subscribe to or unsubscribe from IAM users' services on the **Subscription Management** page.
- If an OCR service is no longer used, you can unsubscribe from it by logging in to the **OCR console** using the master account and clicking **Subscription Management** in the **Operation** column.

Figure 1-3 Unsubscribing from a service



1.3 Why Is the Subscribe Button Dimmed?

Symptom

After logging in to the OCR console, I cannot subscribe to an OCR service because the **Subscribe** button is dimmed.

Possible Causes

The possible cause is that the current user is an IAM user who does not have the permission to subscribe to the service. An account and its IAM users share a parent-child relationship. The account owns the resources and makes payments for resources used by IAM users. It has full access permissions for these resources.

Solution

Use an account to log in to the OCR console and subscribe to an OCR service.

1.4 Why Is Subscription Displayed as "Unsubscribed" Despite Having Already Subscribed to a Service?

Symptom

When I logged in to the OCR **console**, I noticed that the subscription status for the General Table OCR service, which I had subscribed to for an IAM user, was displaying as **Unsubscribed**.

Figure 1-4 Subscribing to General Table OCR for an IAM user

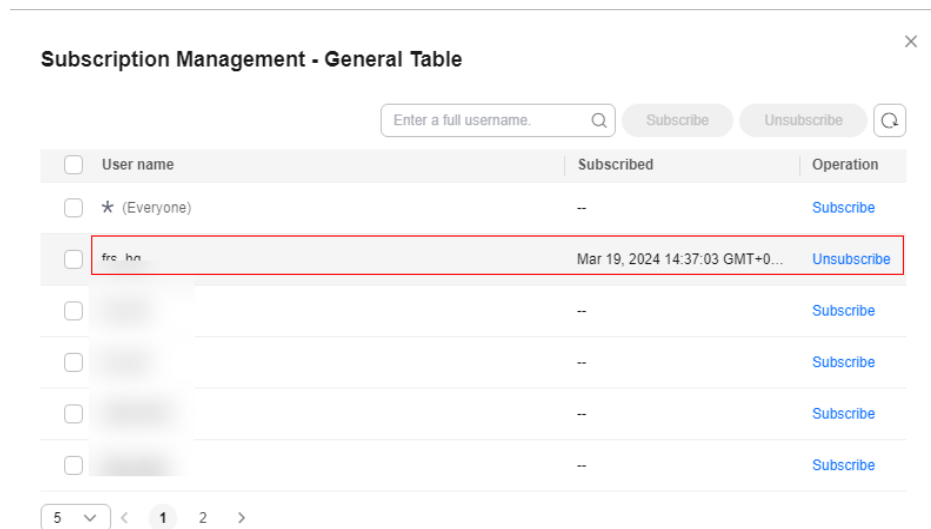
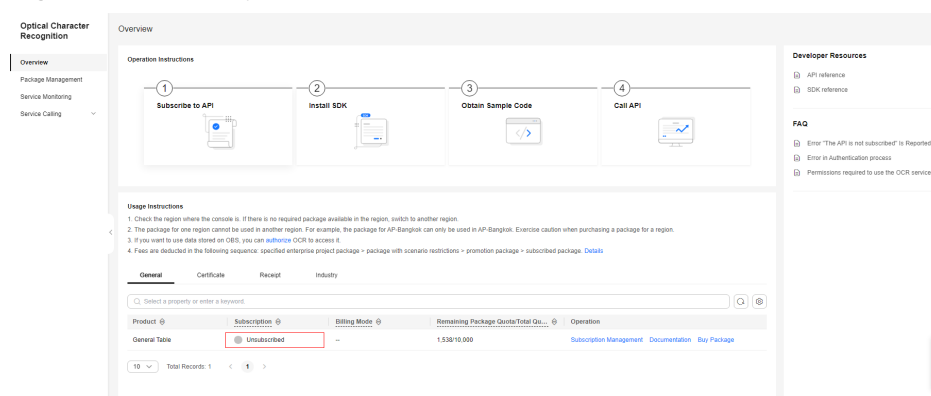


Figure 1-5 Subscription



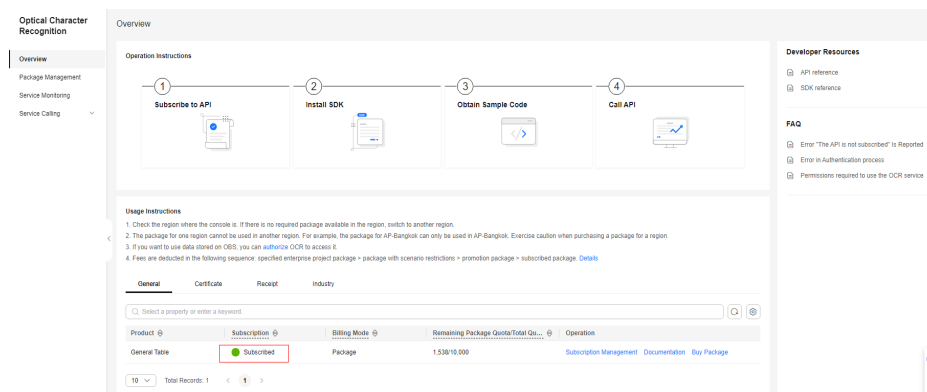
Possible Causes

The above operation was performed by the master account or an IAM user (user 1) with full OCR permissions (**OCR FullAccess**), to individually subscribe to the General Table OCR service for a specific IAM user (user 2), and not for the current account. Therefore, the subscription status on the current page will not change.

Solution

Log in to the OCR account as user 2. You will find the subscription status is **Subscribed**.

Figure 1-6 Subscription



NOTE

If a master account or an IAM user with full OCR permissions (**OCR FullAccess**) needs to subscribe to an OCR service for themselves, they do so by accessing the subscription management dialog box and subscribing to the service for their own account or an account marked as **Everyone**. Subscribing to a service for **Everyone** will subscribe to the service for all IAM users under this account, including any future IAM users who may be added.

1.5 How Do I Select a Region for an OCR Package?

Resource packages in different regions are isolated. Select a region according to your business requirements. For details about the regions where services are deployed, see [Endpoints](#).

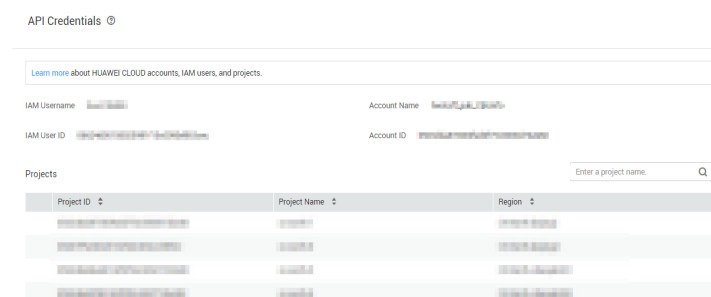
Determine the service region before purchasing a service package.

2 Token-based Authentication

2.1 What Are the Username, Domain Name, and Project Name in the Token Message Body?

username indicates the name of the user, and *domainname* indicates the name of the account to which the user belongs. If the token is obtained by an account, **user name** and **domain name** are the same. If the token is obtained by an IAM user (multiple IAM users can be created under an account), **user name** is a real-world username and is different from **domain name**.

The project name can be set to **cn-north-4**. For details about how to obtain a project name, see [Obtaining the Username, User ID, Project Name, and Project ID](#).



2.2 Why Is the Error Message "The account is locked." Displayed?

If your Huawei Cloud account is locked, **wait for 15 minutes and log in to the account again**. If you need to change your account password, see [\(Optional\) Resetting a Password](#).

(Optional) Resetting a Password

- If you remember your password:

- If your Huawei Cloud account has not been upgraded to a Huawei ID and you remember the password, you can change the password on the **Basic Information** page of My Account.
- If your Huawei Cloud account has been upgraded to a Huawei ID and you remember the password, you can change the password on the Huawei ID website. To do this, go to the **Basic Information** page of My Account, and click **Manage** next to **HUAWEI ID Information**. You are automatically redirected to the Huawei ID website. Choose **Account & security**, and reset the password in the **Security center** area.
- If you are an IAM user and remember the password, hover the cursor over the username in the upper right corner of the console and choose **Security Settings**. Then change the password on the **Basic Information** tab page.
- If you have forgotten your password:
 - Reset the password by referring to [How Do I Reset My Password?](#)
 - If you are an IAM user who is not bound with any email address or mobile number, contact the administrator to [reset your password](#).

2.3 Why Is the Error Message "The username or password is wrong." Displayed?

Symptom

"The username or password is wrong." is displayed when you obtain the token.

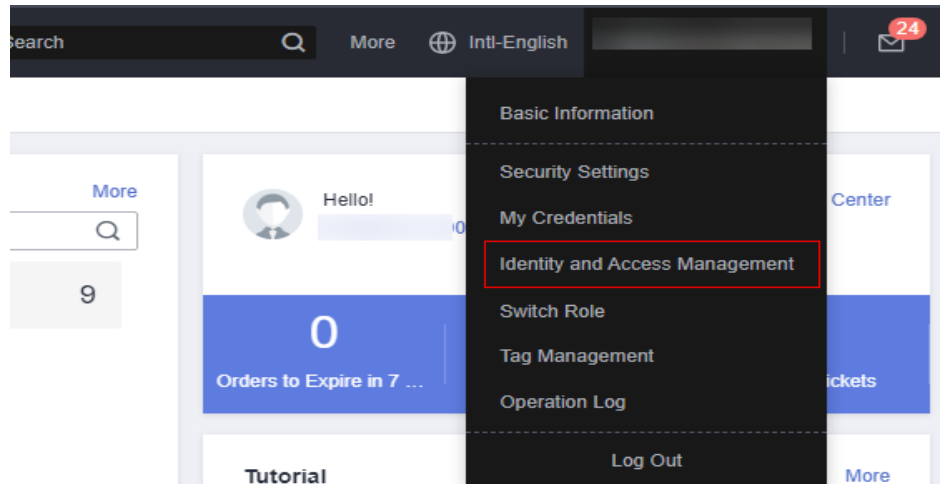
Check whether your Huawei Cloud account has been upgraded to a Huawei ID. If you log in to your Huawei Cloud account through the Huawei ID entry, you will be prompted to upgrade your account.

If your **Huawei Cloud account** has been upgraded to a **Huawei ID**, you cannot obtain an account token. Create an IAM user and use it to obtain a token.

Step 1: Create an IAM User

1. Log in to the Huawei Cloud [management console](#), hover your cursor over the username in the upper right corner of the page, and choose **Identity and Access Management** from the drop-down list.

Figure 2-1 Selecting Identity and Access Management



2. On the **Users** page, click **Create User**. On the displayed page, set the username and password to create an IAM user.

Figure 2-2 Create User

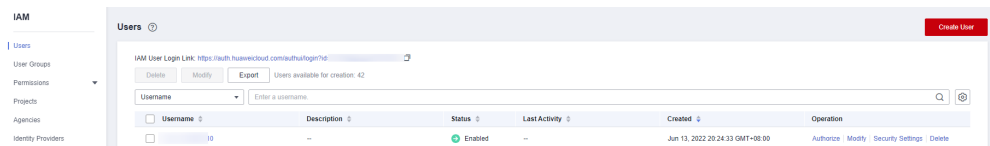
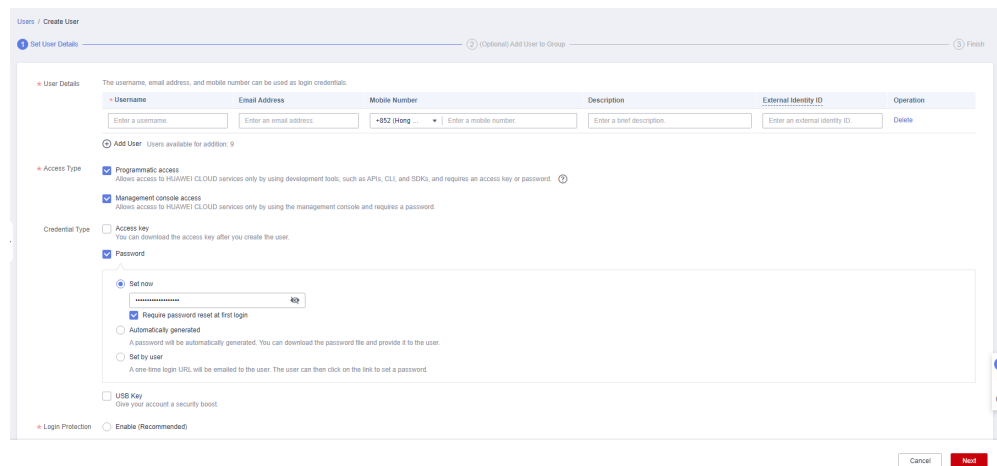
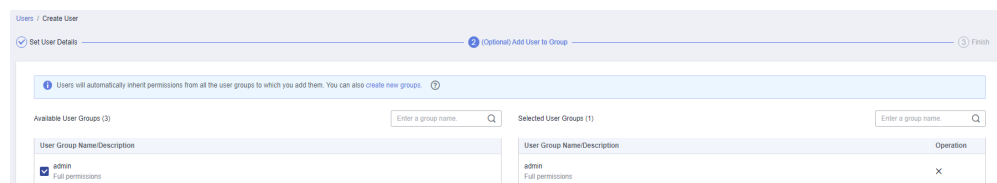


Figure 2-3 Setting the username and password



3. Grant the **admin** permission to the IAM user.

Figure 2-4 Joining a user group

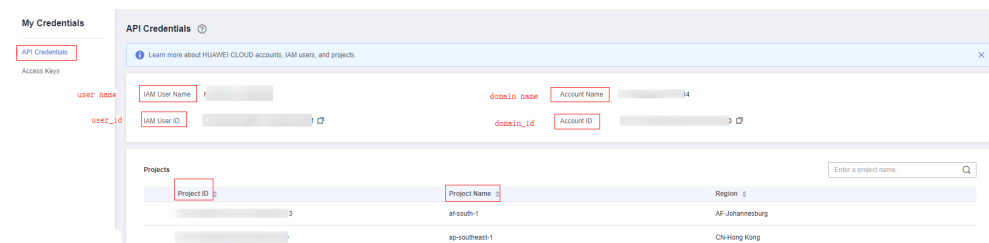


Step 2: Use the IAM User to Obtain a Token

The following uses obtaining a token in the **AP-Bangkok (ap-southeast-2)** region as an example.

You can log in to the console and choose **My Credentials > API Credentials** to obtain the values of **username**, **domainname**, and **project name**. **password** indicates the user password.

Figure 2-5 API Credentials



POST <https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens> //Uses obtaining the token in the AP-Bangkok region as an example.

Request Header:

Content-Type: application/json

Request Body:

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username", //IAM username
          "password": "*****", //IAM user password
          "domain": {
            "name": "domainname" //Master account name
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "project name" //Region name, for example, ap-southeast-2
      }
    }
  }
}
```

2.4 Why Does the Token Retrieval Process Return a 401 Status Code?

There are several reasons.

1. A token is valid for 24 hours. If you receive a 401 status code when calling the OCR service using a token, it means that the token has expired. To continue using the OCR service, you should obtain a new token.

The retry mechanism has been configured in the OCR SDK to update the token. If the token is invalid and status code 401 is returned, the OCR SDK sends a request to obtain a token again.

For details about how to use Python to obtain a token again when the existing one has expired, see the `HWOcrClientToken.py` code in the **SDK(Python)** file.

```
def request_ocr_service_base64(self,uri,filepath,options=None):
    """
    :param uri: the uri for the http request to be called
    :param filepath: the fullpath of the file to be recognized
    :param options: optional parameter in the ocr http request
    :return:None
    """
    if filepath == "" or uri == "":
        raise ValueError("the parameter for request_ocr_service_base64 cannot be empty")
    self.get_token()
    if self.token is not None:
        try:
            url="https://" + self.endpoint + uri
            headers = {
                'Content-Type' : 'application/json',
                'X-Auth-Token' : self.token
            }
            with open(filepath, 'rb') as bin_data:
                image_data=bin_data.read()
            image_base64= base64.b64encode(image_data).decode("utf-8")
            payload = {}
            payload['image'] = image_base64
            if options:
                payload.update(options)
            response = requests.post(url, json=payload, headers=headers)
            if 401 == response.status_code and ("Token expired" in response.text):
                #token expired,refresh token
                self.refresh_token()
                return self.request_ocr_service_base64(uri, filepath, options)
            elif 403 == response.status_code and ("The authentication token is abnormal." in response.text):
                # token expired,refresh token
                self.refresh_token()
                return self.request_ocr_service_base64(uri, filepath, options)
            return response
        except Exception as e:
            print(e)
            return None
    return None
```

2. Your IAM username matches the master account name. For security reasons, the token for this account is restricted and cannot be used to ensure the safety of your assets. You are advised to create a new IAM user with a different name and grant it the necessary permissions before proceeding with any related operations. For details, see [Creating an IAM User](#) and [Assigning Permissions to IAM Users](#).
3. You have recently changed your password, subscribed to a new service, or modified your permissions. As a result, your token may have become invalid. You will need to obtain a new token in this case.

2.5 Why Does the Token Fail to Be Obtained When I Use Postman to Call an ORC API?

Select a solution based on the error message.

- Check whether the service region in the body and the corresponding key value are correct.
- Error message "[The username or password is wrong.](#)" is displayed.
- If error message "The userInfo is wrong" is displayed, do the following:

Set **username** and **domainname** correctly. Typically, the value of **username** is the same as that of **domainname**. If you are not sure about the value, log in to the [My Credentials](#) page. If you log in as an IAM user, set the parameters as follows:

username[IAM username](#) (subaccount name)

domainname: account name

- If error code "APIGW.0101" is displayed, do the following:

Check whether the URL used to obtain the token is correct. For example, if you use a POST request to obtain the token in the **AP-Bangkok** region, the URL is as follows:

POST <https://iam.ap-southeast-2.myhuaweicloud.com/v3/auth/tokens>

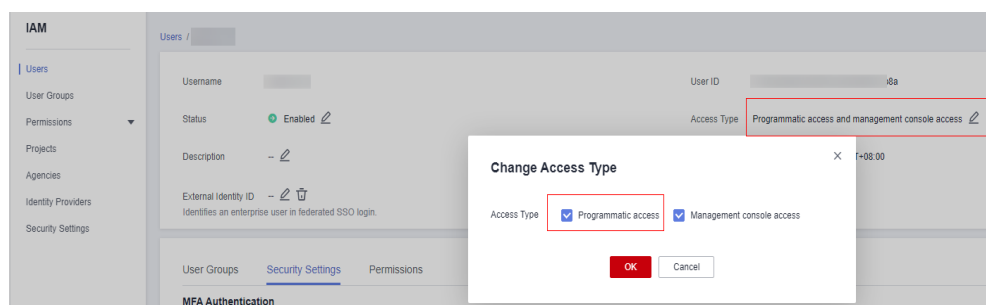
2.6 Why Don't I Have Programming Access Permissions?

When calling an API, if you receive the error message "code":403,"message": "This user only supports console access, not programmatic access.", it means that you do not have programming access permissions.

IAM users do not have programmatic access permissions. You need to contact the master account holder to adjust the permissions.

The master account holder can log in to the **IAM** console, click **Security Settings** in the **Operation** column for the corresponding IAM user, and enter the settings page.

Figure 2-6 Setting programming access permissions



2.7 Why Does the Header Overflow When I Use Postman to Call an OCR API?

When an API is used to call Postman to obtain a token for authentication, if the error message "Error:Header overflow" is displayed, the header overflows. In this case, perform the following operations to rectify the fault:

In Windows 10, right click **This PC** and choose **Properties**. Click **Advanced system settings**. On the **Advanced** tab, click **Environment Variables...**. In the **Environment Variables** dialog box, click **New...** in the **System variables** area. Configure **Variable name** and **Variable value** as follows:

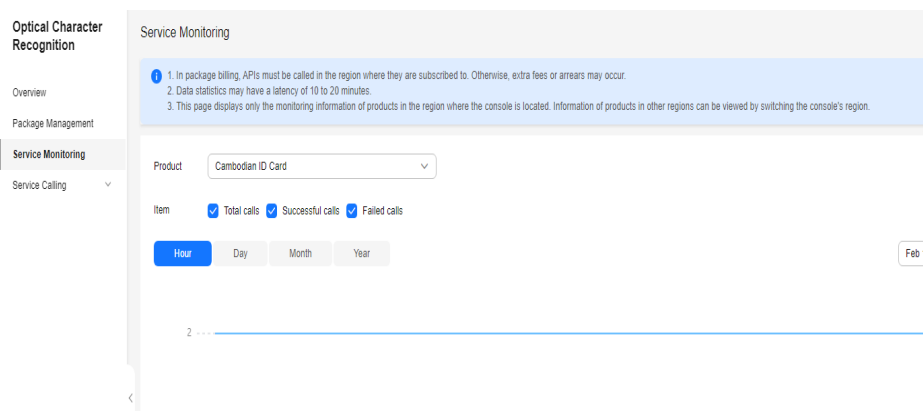
- **Variable name:** NODE_OPTIONS
- **Variable value:** --max-http-header-size=16384

3 API

3.1 How Do I View the API Usage?

1. Log in to the OCR management console.
2. In the navigation pane on the left, choose **Service Monitoring**, and view the API usage.

Figure 3-1 Service Monitoring page



3.2 Why Is the Actual Number of API Calls Inconsistent with the Record Displayed on the Management Console?

The OCR console only records the number of successful API calls. The number of failed API calls is not recorded.

To view the number of failed calls, perform the following operations:

1. Log in to the management console.
2. On the **Console** page, choose **Optical Character Recognition**. The **Optical Character Recognition** management console is displayed.

3. Click the target service. Click **View Monitoring Graph** to go to the Cloud Eye console and view detailed service usage such as the number of successful or failed API calls.

3.3 Does OCR Support Batch Processing?

Currently, you can only use an OCR API call to recognize one image at a time. For batch processing, you would need to do some additional coding that enabled an OCR API to be called repeatedly.

3.4 Can the OCR Results Be Converted into Word, TXT, or PDF Files?

OCR results are returned in JSON format, but they can be saved to Word, TXT, or PDF format.

3.5 How Do I Obtain the Base64 Code of an Image?

An image needs to be converted to its Base64 code for recognition. This section uses Python as an example to describe how to convert a local image to the Base64 code. You can also use an online conversion tool.

Replace `d:\demo.jpg` in the code with the actual image path.

```
import base64
with open("d:/demo.jpg", "rb") as image_file:
    encoded_string = base64.b64encode(image_file.read()).decode()
print(encoded_string)
```

3.6 What Is the Number of Concurrent OCR API Calls?

OCR is a public cloud service that offers resources sharable to all online users. The number of concurrent API calls is dynamically adjusted based on the call requests of online users.

If the number of concurrent API calls is insufficient during peak hours, you can use either of the following methods:

- Use the retry mechanism to rectify the fault by checking the return value in the code and retrying the requests after a short period of time (for example, 2 to 5 seconds).
- Alternatively, check whether the results of the previous request were returned at the backend. If they were, send the next request. This helps prevent excessively frequent requests.

If you need more concurrent API calls, especially continuous concurrent API calls, contact your Huawei Cloud customer service and describe your application scenarios and concurrency requirements in detail.

3.7 How Do I Use OCR APIs?

You can use OCR APIs in the following ways:

- **cURL**
cURL is a command-line tool used to perform URL operations and transfer files. It serves as the HTTP client that can send HTTP requests to the HTTP server and receive response messages. cURL is suitable for use in API tuning scenarios.
- **Code**
You can call APIs through code to assemble, send, and process request messages.
- **REST client**
Both Mozilla Firefox and Google Chrome provide a graphical browser plug-in, that is, REST client, to send and process requests.

3.8 Can the Region Where OCR Is Called Be Different from the Region Where OBS Resources Are Located?

OBS must be deployed in the same region where OCR is called.

OBS resources for which **public read authorization is enabled** are accessible through the Internet and can be called across regions, which is convenient. However, OCR involves sensitive information and personal private data, so OCR and OBS must be deployed in the same region.

3.9 Can the Input Data of OCR Be Stored Locally?

When using OCR, you can store input data locally. After the local data is read, the image is converted into Base64 code and transferred to the API as input parameters. You can also store input data in an OBS bucket and transfer the data to the API.

3.10 How Do I Improve the Recognition Speed?

The speed of the OCR API depends on the image size, which affects the time needed for network transmission and Base64 decoding. Therefore, you are advised to compress the images before using OCR to process them while ensuring the required level of resolution. This will accelerate image processing by the OCR API. The JPG image format is recommended.

Based on empirical data, it is recommended to keep small images (such as ID cards with sparse text) under 1 MB, and large images (such as dense documents of the A4 paper size) under 2 MB.

For details about how to compress an image, see the following code:

```
import cv2
def resize_image(image, max_size):
```

```
"""
    This code is used to expand or downsize an image proportionally. It compares the long side of the image
    with the input parameter max_size. If the long side of the image exceeds max_size, the image is downsized
    proportionally. Otherwise, the original image is returned.
    :param max_size: maximum length of the long side of an image. (Set this parameter based on site
    requirements. You are advised to set this parameter to a value as small as possible as long as the resolution
    requirement is met.)
    :return: returns the downsized image or the original image.
    """

    height, width = image.shape[:2]
    max_side = max(height, width)
    if max_side > max_size:
        scale = max_size / max_side
        image = cv2.resize(image, None, fx=scale, fy=scale)

    return image

image = cv2.imread('test.png')
image = resize_image(image, max_size=1024)
```

3.11 How Do I Convert a PDF to an Image?

```
# -*- coding: utf-8 -*-
import os
import base64
import fitz
import io
from PIL import Image
from glob import glob

class ConvertPdfToJpg:
    def __init__(self, file_path, save_root):
        self.file_path = file_path
        self.save_root = save_root

    @staticmethod
    def open_pdf(file):
        return fitz.open(file)

    @staticmethod
    def get_trans(doc, page, min_side=0, max_side=0, rotate=0.0):
        """ Create a scale object. """
        region = doc[page].rect
        scale = 1
        if max_side > min_side > 0:
            scale = min_side / min(region.width, region.height)
            if max(region.width, region.height) * scale > max_side:
                scale = max_side / max(region.width, region.height)
        trans = fitz.Matrix(scale, scale).preRotate(rotate)
        return trans

    def page2pix(self, doc, page, trans):
        """ Parse the current page as image data based on given parameters. """
        # Obtain the PDF format of a specified page. Note that page parameters need to be pre-parsed to
        avoid any issues.
        return doc[page].getPixmap(matrix=trans, alpha=False)

    def pdf_to_jpg(self, width=1024, height=1400):
        doc = self.open_pdf(self.file_path)
        save_dir = os.path.join(self.save_root)
        if not os.path.exists(save_dir):
            os.makedirs(save_dir)
        print("document", len(doc), doc.pageCount)
        for i in range(len(doc)):
            trans = self.get_trans(doc, i, width, height, rotate=0)
            try:
                pdf = self.page2pix(doc, i, trans)
```

```
except:
    continue
image = pdf.getPNGData()
image = Image.open(io.BytesIO(image))
print(os.path.join(
    save_dir, os.path.basename(self.file_path).replace('.pdf', '') + '_' + str(i + 1) + '.jpg'))
image.save(
    os.path.join(save_dir, os.path.basename(self.file_path).replace('.pdf', '') + '_' + str(i + 1) + '.jpg'))
return
```

3.12 Can OCR Read Images from Non-Huawei Cloud Storage?

OCR can read images from public HTTP and HTTPS URLs. If non-Huawei Cloud storage is used, ensure that the images are accessible via the Internet.

4 SDK

4.1 Do OCR SDKs Need to Be Purchased?

No. OCR SDKs are free of charge.

4.2 Do OCR SDKs Need Maven to Manage Dependency Packages?

- Some packages on which the Python SDK depends, such as **requests**, need to be installed in the local environment. If the Python SDK is connected to the external network, you can use the **pip install + package name** to install the packages.
- Java SDK does not need Maven to manage local dependency packages and can be directly used.

4.3 How Do I Change the Response Type in Returned Results?

When using Python to call an OCR API, if you need to change the response type in the returned results, you can run the **to_dict()** or **to_str()** command to convert the format to JSON or str, respectively.

Figure 4-1 Example response

```
print(response)
print(type(response))
response = response.to_dict()
#response = response.to_str()
print(response)
```

4.4 How Can I Fix an SSL Configuration Error?

Java SDK

The SSL configuration is optional, and you can determine whether SSL certificate verification is required based on your specific needs. See details below:

```
// Configure whether to skip SSL certificate verification as needed.  
// If the "javax.net.ssl.SSLHandshakeException: Received fatal alert: handshake_failure" error is reported  
during SDK execution, add the config.withIgnoreSSLVerification(true) code to skip SSL certificate  
verification.
```

Other SDKs

Table 4-1 Fixing SSL configuration errors

Programming Language	Fixing SSL Configuration Error
Python	See Python SDK .
Node.js	See Node.js SDK .
PHP	See PHP SDK .
C++	See C++ SDK .
Go	See Go SDK .
.NET SDK	See .NET SDK .

4.5 How Can I Fix a "connect timed out" Error?

Symptom

```
"n" com.huaweicloud.sdk.core.exception.SdkException: java.net.SocketTimeoutException: connect timed out  
ud.sdk.core.internal.Iam.getCredentialFromMetadata(Iam.java:73)
```

Possible Causes

The network connection is abnormal.

Solution

Check the network environment on your own.

4.6 Why Does the Project ID Fail to Be Obtained?

Symptom

The following error information is displayed during SDK calling:

```
INFO com.huaweicloud.sdk.core.HcClient - project id of region 'ap-southeast-2' not found in BasicCredentials, trying to obtain project id from IAM service: https://iam.myhuaweicloud.com
```

Possible Causes

The project ID under the endpoint corresponding to the service being called is not generated.

Solution

1. On the **My Credentials** page, check whether the project ID of the endpoint is generated.
2. On the **OCR console**, switch the endpoint to that where the service is called. Then, go to the **My Credentials** page to view the project ID.

Figure 4-2 Selecting an endpoint

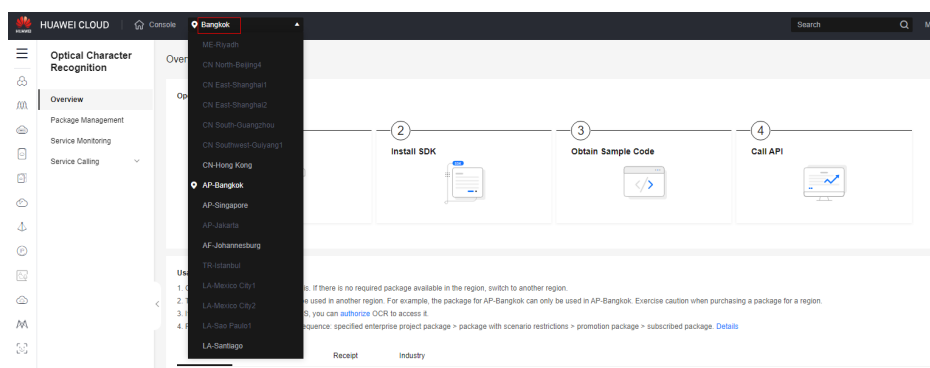
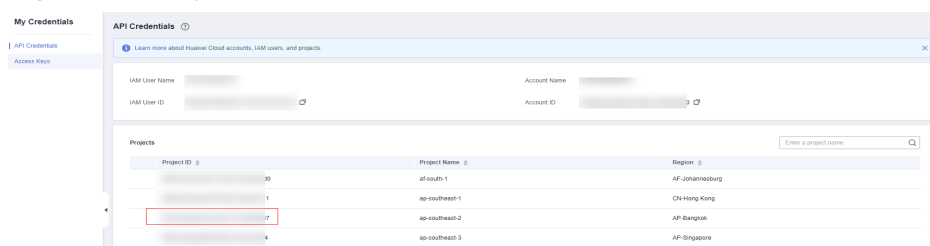


Figure 4-3 Project ID



4.7 What Should I Do if I Forget My AK and SK?

Each access key can only be downloaded once, so for account security, we recommend regularly changing and securely storing your access keys.

If you have lost your access key, create a new one and replace the old one used for applications and other services. After confirming that there are no other service impacts, you can then disable or delete the lost access key. For details, see [Access Keys](#).

5 Error Code

5.1 Why Do I Fail to Call an OCR API?

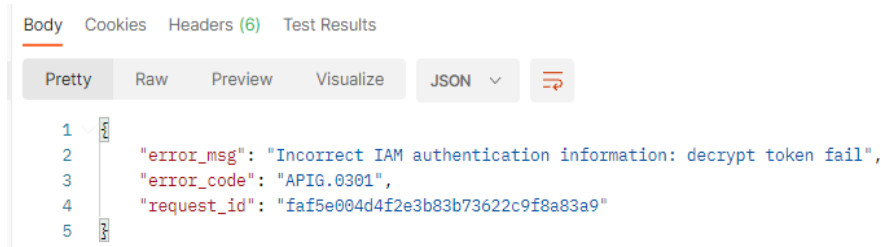
Fault Locating

1. Locate the fault according to the returned result or error code.
2. Check whether the API has been subscribed to.
3. Check whether the AK and SK have been successfully obtained.
4. Check whether the token has been correctly entered or expired.
5. Check whether the API has been correctly invoked.

5.2 How Do I Handle the Error APIG.0301?

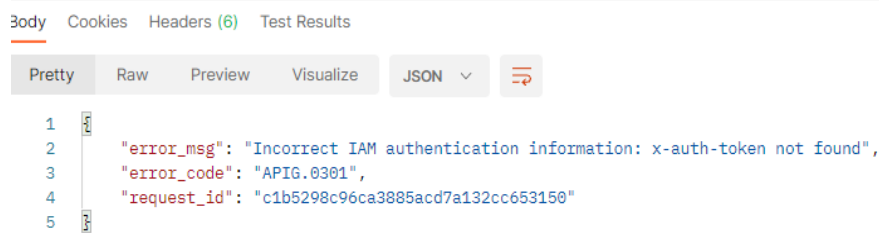
If an error message and error code are returned when an API is called:

- If the error message "Incorrect IAM authentication information: decrypt token fail" and error code "APIG.0301" are displayed, the token fails to decrypt.



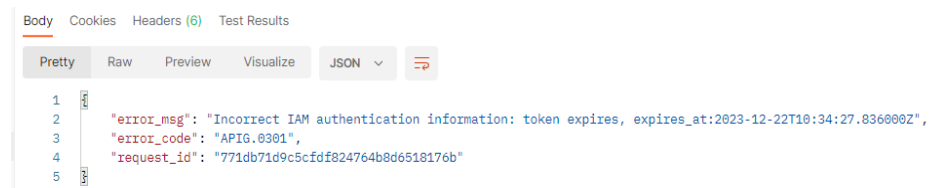
```
Body Cookies Headers (6) Test Results
Pretty Raw Preview Visualize JSON
1
2 "error_msg": "Incorrect IAM authentication information: decrypt token fail",
3 "error_code": "APIG.0301",
4 "request_id": "faf5e004d4f2e3b83b73622c9f8a83a9"
5
```

If the error message "Incorrect IAM authentication information: x-auth-token not found" and error code "APIG.0301" are displayed, X-Auth-Token is not included in the request header.



```
Body Cookies Headers (6) Test Results
Pretty Raw Preview Visualize JSON ↕
1
2   "error_msg": "Incorrect IAM authentication information: x-auth-token not found",
3   "error_code": "APIG.0301",
4   "request_id": "c1b5298c96ca3885acd7a132cc653150"
5
```

If the error message "Incorrect IAM authentication information: token expires, expires_at: xxx" and error code "APIG.0301" are displayed, the token has expired.



```
Body Cookies Headers (6) Test Results
Pretty Raw Preview Visualize JSON ↕
1
2   "error_msg": "Incorrect IAM authentication information: token expires, expires_at:2023-12-22T10:34:27.836000Z",
3   "error_code": "APIG.0301",
4   "request_id": "771db71d9c5cfd824764b8d6518176b"
5
```

Solution:

- a. Check if the token has expired.
 - b. Check if the method used to obtain the token is correct and if the request body information is filled in correctly, and if the token is complete and accurate.
 - c. Check if the environment used to obtain the token and the environment where the token is being called are consistent and located in the same region.
 - d. Check the account permissions, for example, whether the account is in arrears or frozen.
- If the error message "Incorrect IAM authentication information: verify aksk signature fail" and error code "APIG.0301" are displayed, AK/SK fails to authenticate.

Solution:

- a. Check whether the AK/SK pair is correct. For example, the SK for the AK is incorrect; an extra space is entered in the AK/SK pair.
- b. AK/SK authentication errors occur frequently. If an AK/SK pair fails to be authenticated for more than five consecutive times, it is locked for 5 minutes (the AK/SK authentication is considered as an abnormal authentication request within 5 minutes). After 5 minutes, the AK/SK pair is unlocked and re-authenticated.
- c. Check the account permissions, for example, whether the account is in arrears or frozen.

5.3 How Do I Handle the Error APIG.0201?

If error message "Backend timeout." and error code "APIG.0201" are displayed when you call an OCR API, the request timed out.

To rectify the fault, use a tool, such as Postman, to call the service and check whether the call is successful. If the call is successful, the service API is normal. Perform the following steps to proceed:

1. Check whether the original API call requests are excessively frequent.
If they are, use the retry mechanism to rectify the fault by checking the return value in the code and retrying the requests after a short period of time (for example, 2 to 5 seconds). Alternatively, check whether the results of the previous request were returned at the backend. If they were, send the next request. This helps prevent excessively frequent requests.
2. Check whether the image is too large or the network delay is too long.
If the image is too large, compress the image, but make sure the image definition is preserved. If there is too much network delay, you can increase the network transmission speed.

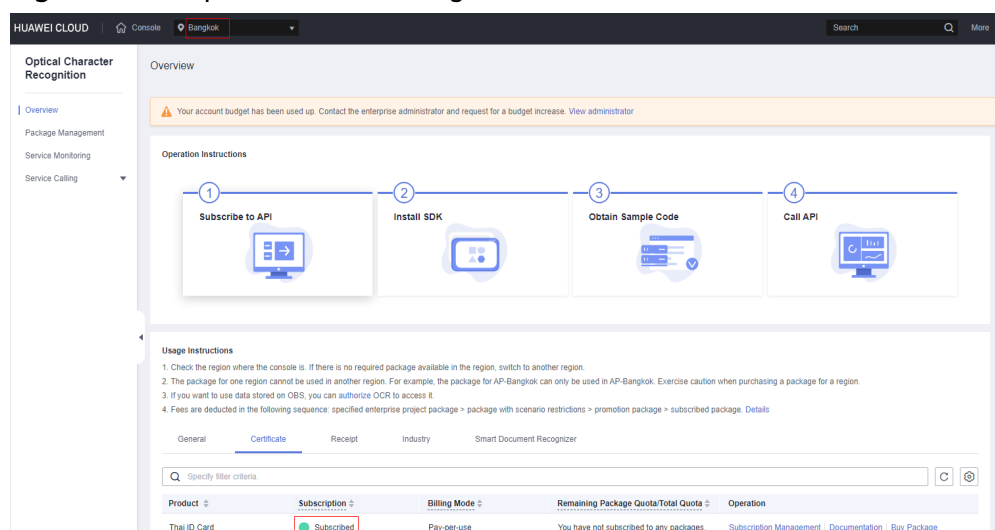
If you cannot rectify the fault, [contact us](#).

5.4 How Do I Handle the Error APIG.0101?

The error message "The API does not exist or has not been published in the environment." is displayed.

- Check whether the API URL is correct. For example, check whether the project ID is included in the URL.
- Check whether the region information in the URI is consistent with the endpoint for subscribing to the service.

Figure 5-1 Endpoint for subscribing to the service



- Check whether the HTTP request method (such as POST and GET) is correct.
- For details about the URI, see the corresponding API page.

5.5 How Do I Handle the Error APIG.0106?

If error message and error code "error_msg":"Orchestration error.,"error_code":"APIG.0106" are returned when an API is called, check whether the frontend and backend parameters configured for the API are correct.

This error is reported when the verification rule configured for frontend parameters of APIs is not met during API calling.

Rectify the fault using either of the following methods:

- Check whether all mandatory parameters are configured.
- Check whether parameter configuration rules are met. For example, the parameter value must be a number.

5.6 How Do I Handle the Error APIG.0308?

If error message "The throttling threshold has been reached: policy user over ratelimit,limit:XX,time:1 minute" and error code "APIG.0308" are displayed when you call an OCR API, the maximum number of concurrent API calls specific to the service, for example, *XX* calls per minute, has been reached.

Rectify the fault using either of the following methods:

1. Use the retry mechanism to rectify the fault by checking the return value in the code and retrying the requests after a short period of time (for example, 2 to 5 seconds).
2. Alternatively, check whether the results of the previous request were returned at the backend. If they were, send the next request. This helps prevent excessively frequent requests.

If you need higher concurrency, [contact us](#).

5.7 How Do I Handle the Error ModelArts.0212?

If error message "Invalid Token header. The Token not contain project item." and error code "ModelArts.0212" are displayed when you call an OCR API, the token is invalid because the project information is missing.

OCR is a project-level service. When calling the API for obtaining a token, you need to set **scope** to **project**. For example, if you have obtained the token of the **AP-Bangkok** region, set **scope** to **ap-southeast-2**.

```
    "auth": {
      "identity": {
        "password": {
          "user": {
            "name": "{{user_name}}",
            "password": "{{password}}",
            "domain": {
              "name": "{{domain_name}}"
            }
          }
        },
        "methods": [
          "password"
        ]
      },
      "scope": {
        "project": {
          "name": "{{region}}"
        }
      }
    }
  }
```

5.8 How Do I Handle the Error ModelArts.4603 or ModelArts.4704?

There are two possibilities to check:

1. If error message "Obtaining the file from the URL failed." and error code "ModelArts.4603" are displayed, the image data fails to be obtained from the URL.

Check if:

The URL supports the HTTP/HTTPS request protocol. The format should be **http/https url**.

The server for storing images is stable and reliable, the network connection is normal, and if the server is accessible to the Internet.

The content type of the image to be downloaded complies with the **content-type** format in the HTTP or HTTPS header, for example, **image/gif**, **image/jpeg**, **image/png**, or **image/tiff** (Suggestion: Use the URL of OBS).

2. If error message "Obtaining the file from the OBS failed." and error code "ModelArts.4704" are displayed, the image data fails to be obtained from OBS.

Check if:

The OBS path for storing images exists and is accessible. If the path exists, ensure that the OBS bucket for storing images is a public bucket.

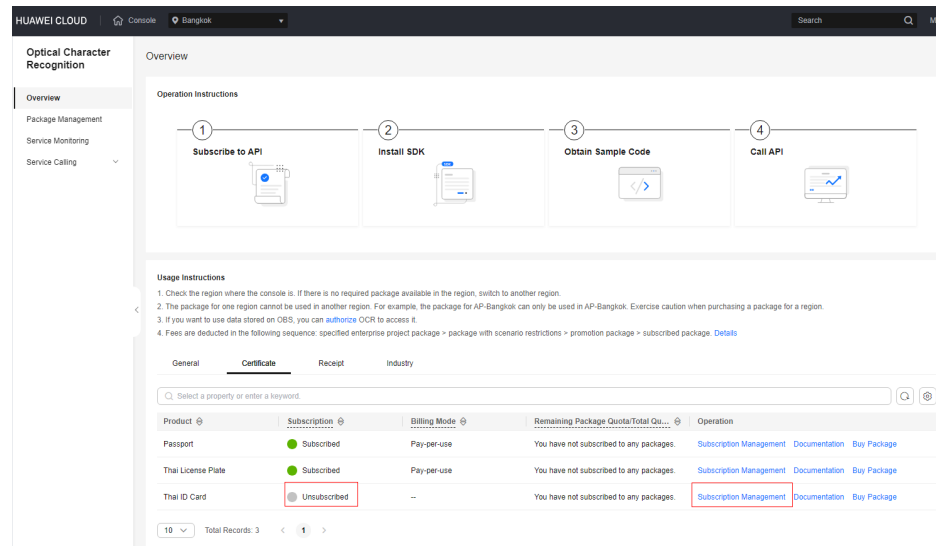
Do not use an OBS path across regions.

OBS and the region where the service to be called is deployed are not in the same region. If they are in different regions, download the image to a local host and then call the service using the image method.

5.9 How Do I Handle the Error ModelArts.4204?

If "error_code":"ModelArts.4204" and "error_msg":"Request api error! The API XXX is not subscribed." are displayed when you call an API, you have not subscribed to the API.

Figure 5-2 Subscribing to an OCR API



If the service has been subscribed to, check whether the region (or account) where the service is subscribed to is the same as the region (or account) where the service is called. If they are the same, check whether the URL of the API is spelled correctly.

Figure 5-3 Checking region information

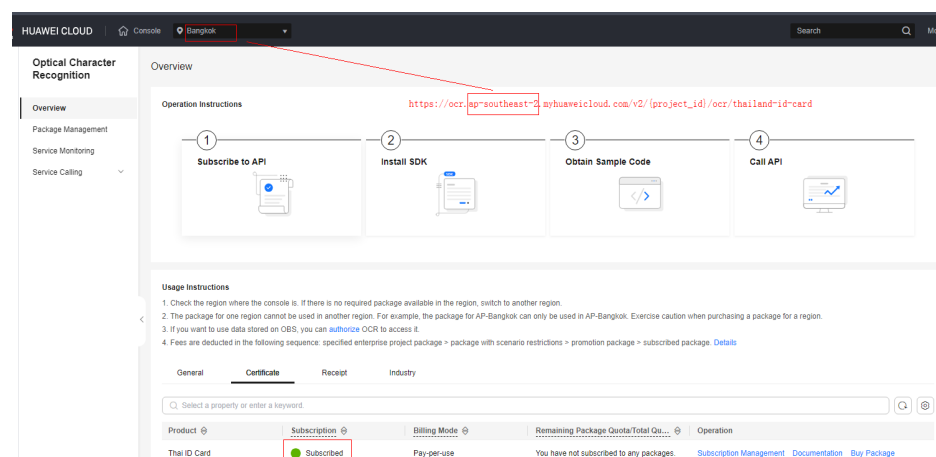
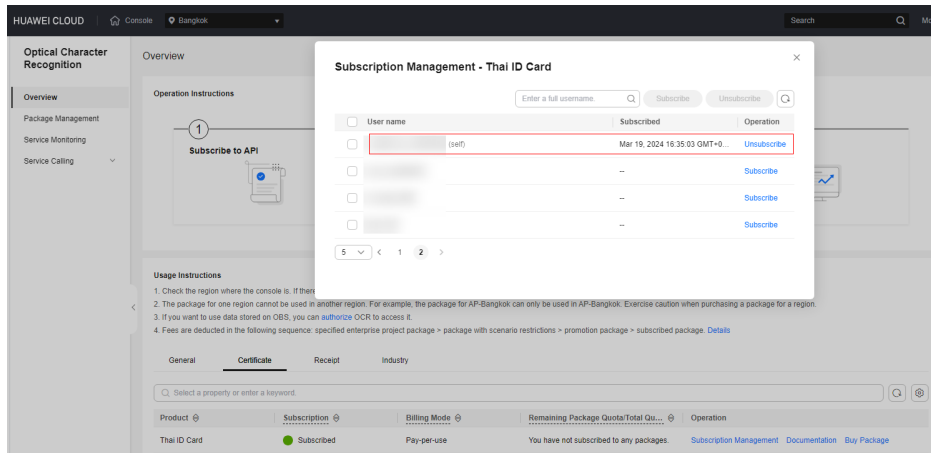


Figure 5-4 Checking account information



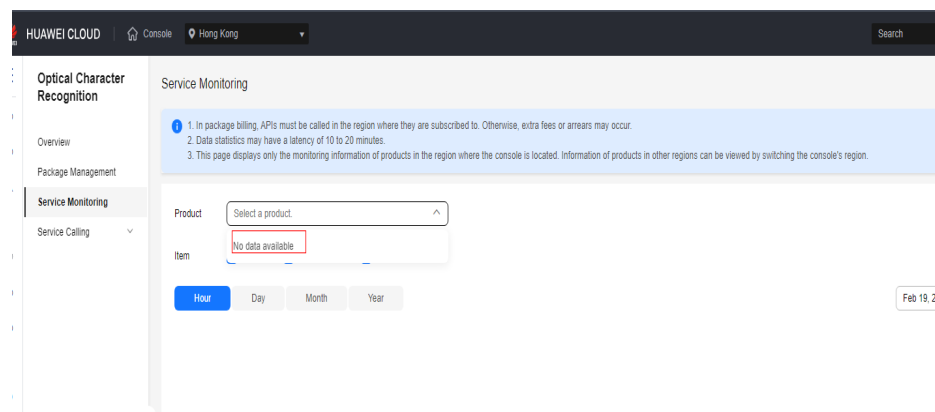
6 Permissions

6.1 Why Am I Not Authorized to View Data on the Console Service Monitoring Page?

Symptom

The **Product** drop-down list on the **Service Monitoring** page of the OCR console has no data available.

Figure 6-1 Service Monitoring page



Possible Causes

The IAM user does not have the permission to view service monitoring data.

Solution

Request the master account holder to either subscribe to an OCR service or grant the required permission to the IAM user. Do as follows:

1. Log in to the OCR **console** using the master account and subscribe to a service (for example, General Table) for the IAM user. Once this is done, the

IAM user has the permission to view data of the General Table OCR service on the **Service Monitoring** page.

Figure 6-2 Subscribing to General Table

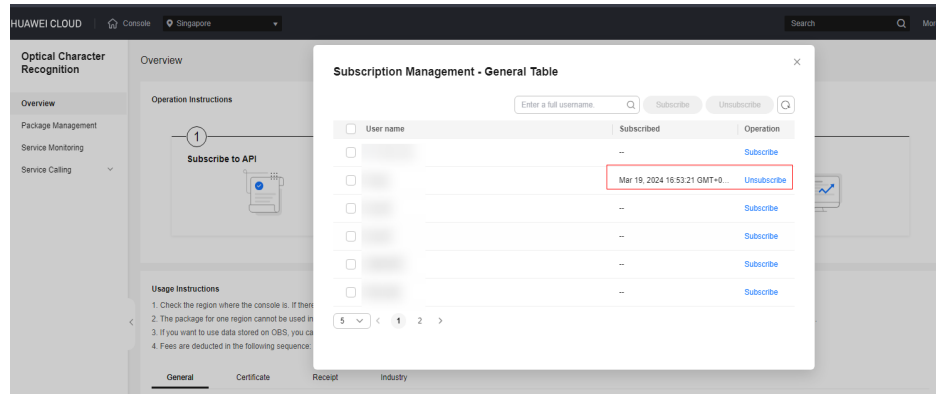
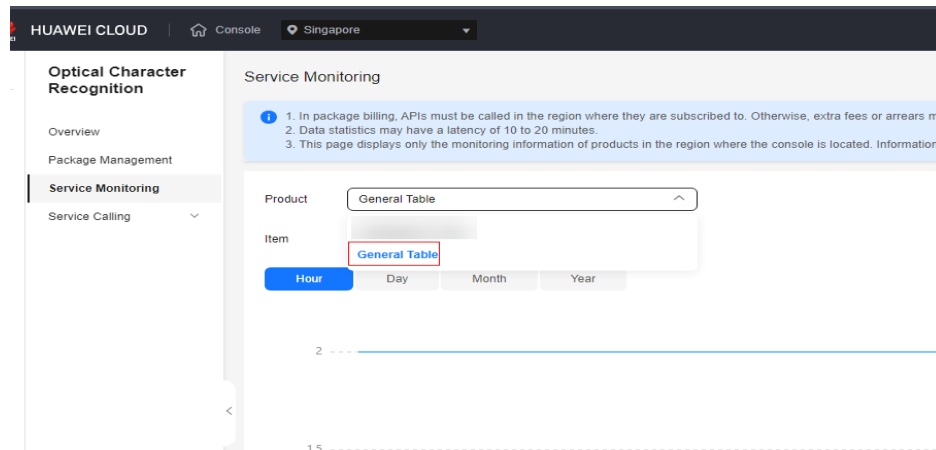
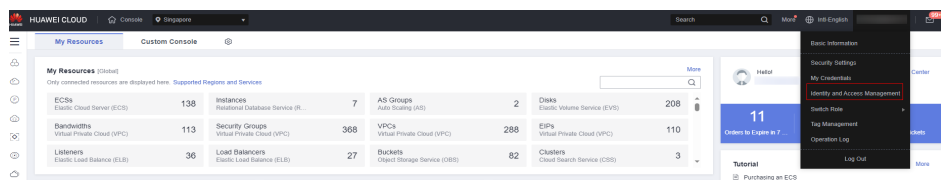


Figure 6-3 Service Monitoring page



2. Grant the **admin** or **Full Access** permission to the IAM user. Perform the following operations:
 - Log in to the OCR **console** using the master account. In the upper right corner of the page, hover the cursor over the username and select **Identity and Access Management**.

Figure 6-4 Selecting Identity and Access Management



- Grant the **admin** or **Full Access** permission to the IAM user. Once done, the IAM user can view service monitoring data.

Figure 6-5 Authorization 1

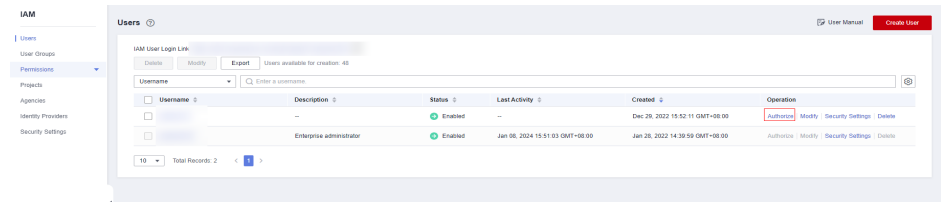


Figure 6-6 Authorization 2

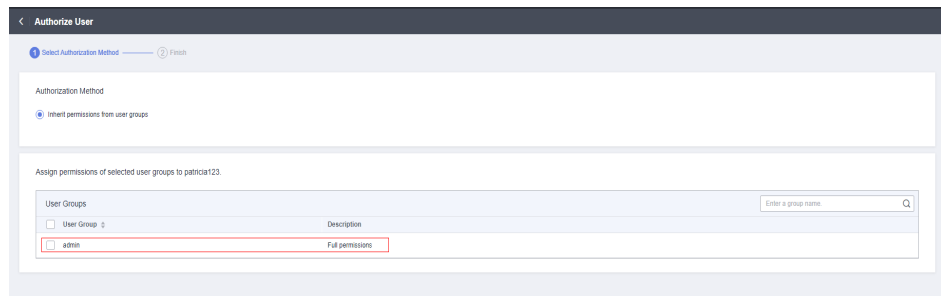
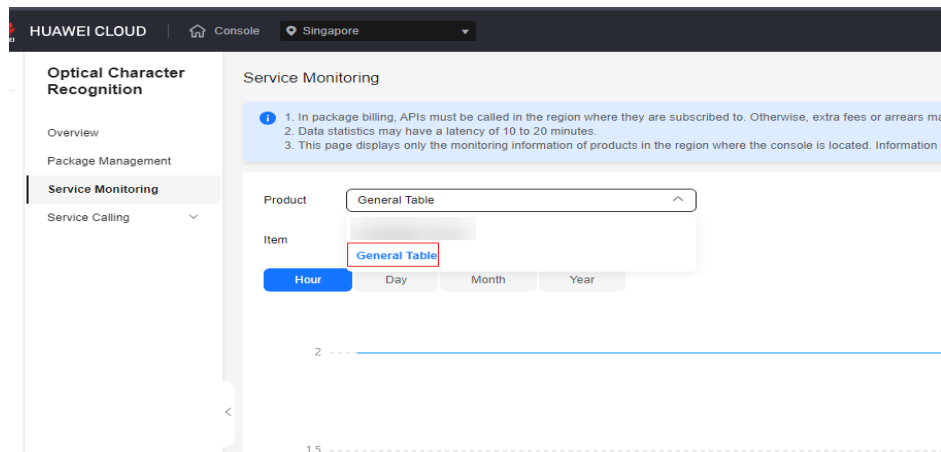


Figure 6-7 Service Monitoring page



NOTE

Granting an IAM user **admin** or **Full Access** permission will give them the same level of access as the master account, so it should be done with caution.

7 Data Security and Privacy

7.1 Will User Data Be Saved When OCR Is Used?

1. With trustedness as the core quality concept, OCR provides you with cutting-edge, future-facing, and trusted cloud services by meeting the requirements on security, compliance, privacy, resilience, and transparency.
2. OCR promises that all the uploaded images and the recognition results are not retained in any form and will be deleted immediately after the recognition results are returned.
3. For details about the statement, see [Privacy Statement](#) and [Site Terms](#). For trusted resources, see the [White Papers](#).

8 Regions and AZs

8.1 What Are Regions and AZs?

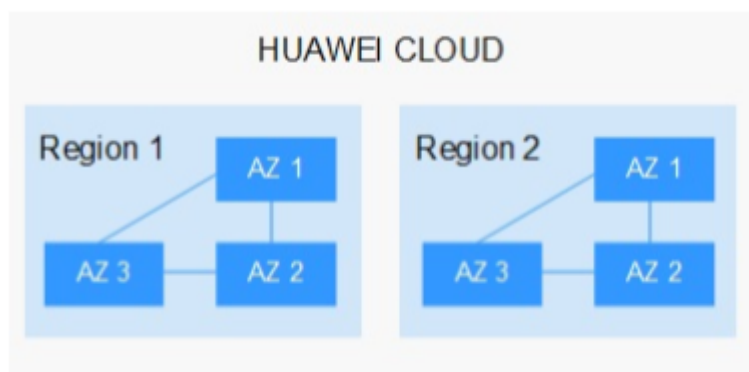
Concept

A region and availability zone (AZ) identify the location of a data center. You can create resources in a specific region and AZ.

- Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified as universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.
- An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, compute, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

Figure 8-1 shows the relationship between regions and AZs.

Figure 8-1 Regions and AZs



Huawei Cloud offers cloud services in a variety of regions around the world. You can select a region and AZ as needed.

How to Select a Region?

When selecting a region, consider the following factors:

- Location

You are advised to select a region close to you or your target users. This reduces the network latency and improves the access speed. However, Chinese mainland regions provide basically the same infrastructure, BGP network quality, as well as operations and configurations on resources. Therefore, if you or your target users are in the Chinese mainland, you do not need to consider the network latency differences when selecting a region.

The countries and regions outside the Chinese mainland, such as Bangkok and Hong Kong (China), provide services for users outside the Chinese mainland. If you or your target users are in the Chinese mainland, these regions are not recommended due to high access latency.

- If you or your target users are in Asia Pacific excepting the Chinese mainland, select the **CN-Hong Kong**, **AP-Bangkok**, or **AP-Singapore** region.
- If you or your target users are in Africa, select the **AF-Johannesburg** region.
- If you or your target users are in Europe, select the **EU-Paris** region.

- Relationship between cloud services

When using multiple cloud services, pay attention to the following restrictions:

- ECSs, RDS instances, and OBS buckets in different regions cannot communicate with each other through an internal network.
- ECSs in different regions cannot be bound to the same load balancer.

- Resource price

Resource prices may vary in different regions. For details, see [Product Pricing Details](#).

How to Select an AZ?

When determining whether to deploy resources in the same AZ, consider your application's requirements on disaster recovery (DR) and network latency.

- For high DR capability, deploy resources in different AZs in the same region.
- For low network latency, deploy resources in the same AZ.

Regions and Endpoints

Before using an API to call resources, specify its region and endpoint. For more details, see [Regions and Endpoints](#).

8.2 Can APIs Be Called Across Regions?

No.

APIs subscribed in one region cannot be used in another region. The package for one region cannot be used in another region.

8.3 Does Accessing Services in Different Regions Cause Latency?

Regions are divided based on geographical location and network latency. Within the same region, there are shared public services such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP, and Image Management Service (IMS).

Typically, it is recommended to choose a region that is close to you or your target users. This helps reduce network latency and improve access speed.

9 General Consulting

9.1 Can OCR Export Recognition Results Right After Images Are Uploaded?

After uploading images, you can export recognition results by calling the service API. For details, see [Optical Character Recognition Getting Started](#).

9.2 Can OCR Identify Text in Video Streams in Real Time?

OCR cannot read data from video streams. You can extract frame images from video streams for recognition.

9.3 Must I Use Huawei Cloud to Store Images When I Use OCR?

OCR allows you to input images by entering the Base64 codes or URLs of images.

If you use URLs, you can upload the images to OBS and use the URLs provided by OBS.

- For details about how to use OBS, see [Configuring OBS Access Permissions](#).
- When calling OCR to recognize images stored in private OBS buckets, ensure that the account used to call OCR is the same as the one used to call OBS.

In addition, you can use HTTP or HTTPS URLs to input images.

9.4 Can OCR Recognize Text Files?

OCR detects and extracts text only from images and cannot directly extract text from files such as Word, PDF, and Excel. You can convert these files to images.

9.5 How Do I Accelerate the Response to a Service Call?

1. Check the image size. If the image size is too large, it takes a long time to transmit the image over the network. You are advised to zoom in or out the image in proportion without changing the image quality.
2. Check whether the network bandwidth is stable and whether the network fluctuates. You are advised to increase the network bandwidth to avoid long network delay.

9.6 Can OCR Be Used Offline?

No. OCR cannot be used offline. This is because OCR SDKs can be called only through the Internet and OCR APIs are deployed on Huawei Cloud and can be called only when your network can access the Internet.