

ImageSearch

Product Overview

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Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: <https://www.huawei.com>

Email: support@huawei.com

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1 What Is ImageSearch?

ImageSearch leverages deep learning and image recognition technologies to deliver service- and industry-specific feature vectorization and search capabilities. It helps your search of exact or fuzzy match images from the specified gallery.

ImageSearch is provided through open application programming interfaces (APIs). You can obtain an image search result by accessing and calling an API in real time.

Advantages

- High precision
ImageSearch adopts advanced deep learning algorithms and image recognition technologies for high precision in search jobs.
- Rapid response
ImageSearch provides a large-scale search engine that supports image search from hundreds of millions of images in seconds.
- Customizable search
ImageSearch supports customizable image search for more accurate results.
- High efficiency

ImageSearch provides standard APIs and helpful documents to simplify service use.

Functions

- Powerful engine
The large-scale search engine supports search from hundreds of millions of images.
- Preconfigured models
The preconfigured industry-specific feature extraction models help you quickly set up search services.
- Stability and Reliability
ImageSearch delivers enterprise-class search services with second-level response.
- Customization

ImageSearch is customizable so you can set the parameters you need for the specifics of your application.

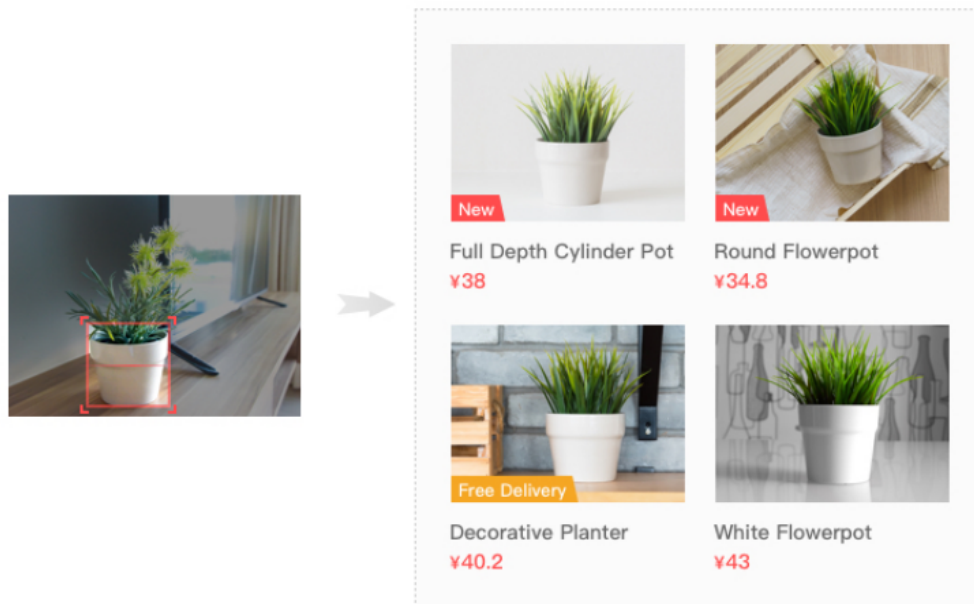
2 Application Scenarios

ImageSearch

- Merchandise image search

ImageSearch provides users with pairing and bundling recommendations. You can search for an image from hundreds of millions of images in seconds and update data in real time. ImageSearch simplifies merchandise search because detailed merchandise description is no longer required, helping increase sales while improving UX.

Figure 2-1 Merchandise image search



Merchandise Recommendation

ImageSearch provides users with pairing and bundling recommendations.

3 Constraints

- The service is available in the **CN-Hong Kong** region.
- Only images in PNG, JPEG, JPG, or BMP format are supported.
- The narrow edge of an image must contain more than or equal to 100 pixels and the wide edge must contain fewer than or equal to 2048 pixels.
- The system stores only image features rather than images.

4 Using ImageSearch

You can access ImageSearch on a web-based service management platform, that is, the management console, or using HTTPS-based APIs.

- You can subscribe to ImageSearch on the management console and view the number of successful and failed API calls.
- If you access ImageSearch through APIs, you need to integrate ImageSearch to a third-party system.

The procedure is as follows:

1. Obtain request authentication information.

You can use either of the following authentication methods to call an ImageSearch API:

- Token authentication: Requests are authenticated using tokens. For details, see [Token Authentication](#) in the *ImageSearch API Reference*.
- AK/SK authentication: Requests are encrypted using the access key (AK) and secret key (SK) to provide higher security. For details, see [AK/SK Authentication](#) in the *ImageSearch API Reference*.

2. (Optional) Authorize OBS.

If you want to use OBS to store data, log in to the ImageSearch management console and authorize the corresponding instance on the **Instance Management** page.

3. Call an API.

ImageSearch is provided through open APIs. For details about how to use the APIs, see the [ImageSearch API Reference](#).

4. Query service usage.

You can view the API call statistics on the ImageSearch management console.

5 Metrics

Function

This chapter describes metrics reported by ImageSearch to Cloud Eye as well as their namespaces, list, and dimensions. You can use APIs provided by Cloud Eye to query the metric information generated for ImageSearch or click [Viewing Metrics](#) to view the metric information.

Namespace

SYS.IS

ImageSearch Metrics

Table 5-1 ImageSearch metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
CheckImage	Successful CheckImage API Calls	Times that the CheckImage API is successfully called. Check whether the image exists in the index library using the image path. Unit: Times/min	0-120 times/min	Instance	1 minute
DeletelImage	Successful DeletelImage API Calls	Times that the DeletelImage API is successfully called. Unit: Times/min	0-120 times/min	Instance	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
AddImage	Successful AddImage API Calls	Times that the AddImage API is successfully called. Unit: Times/min	0-120 times/min	Instance	1 minute
SearchImage	Successful SearchImage API Calls	Times that the SearchImage API is successfully called. Search for exact/fuzzy match images from the index library. Unit: Times/min	0-120 times/min	Instance	1 minute

Dimensions

Table 5-2 Dimension description

Key	Value
instanceName	Name of the instance

Viewing Metrics

The ImageSearch console records only the total number of instance API calls in the latest week. You can view the number of successful and failed calls on the Cloud Eye console.

1. Log in to the management console of Huawei Cloud.
2. In the service list, choose **AI > ImageSearch**. The **ImageSearch** console is displayed.
3. In the navigation tree on the left, click **Instance Management**.
4. Click **More** in the **Operation** column of the target instance and select **View Metric** from the drop-down list. On the Cloud Eye console, view the number of successful and failed calls.

You can select a period to view the monitoring data generated during this period. The monitoring data generated in the latest 1 hour, 3 hours, or 12 hours can be viewed.

6 Billing

Billing Modes

ImageSearch provides two billing modes: pay-per-use and yearly/monthly package.

You can use the price calculator provided by ImageSearch to quickly calculate the price of required resources. For details, see [Product Pricing Details](#).

- **Pay-per-use**

ImageSearch adopts tiered pricing based on the number of API calls. The tiered API calls are accumulated by calendar month. After a calendar month ends, the API calls are cleared. During the promotion period, each user can make API calls free of charge for different services each month. For details about the pricing, see [Product Pricing Details](#).

 **NOTE**

- Only successful API calls are counted for billing. The quota of free API calls at the end of the month does not roll over to subsequent months.
- Billing rule: tiered pricing based on the number of API calls. The tiered API calls are accumulated by calendar month and settled by the end of each month. After a calendar month ends, the API calls are cleared.
- Billing cycle: hourly. Bills are generally issued within 1 hour after each billing period ends, depending on how fast the system can process them.

- **Yearly/Monthly**

You can also purchase a discount resource package for a better price. However, if your usage exceeds the package quota, subsequently used resources will be billed on a pay-per-use basis. For details about the pricing, see [Product Pricing Details](#).

Compared with the pay-per-use mode, this mode provides a larger discount. You can enjoy higher discounts for longer use. Yearly/Monthly packages are recommended for long-term users.

 NOTE

- After you determine the required duration and API calls, ImageSearch automatically calculates the fees to pay. Packages are paid in full, take effect immediately upon payment, and become unavailable upon expiration. You cannot specify the date when the package takes effect. For example, if you purchase a one-year discount package on January 1, the package automatically expires on January 1 in the next year. The validity period will not be extended and the fees cannot be refunded even though you have not made any API calls in the year.
- Packages can be subscribed to multiple times and can be used together.
- The fees for API calls can be deducted from the discount package quota only when the API calls are made within the validity period of the discount package. The excess part is billed on a pay-per-use basis.

The fees for API calls beyond the discount package quota are settled in pay-per-use mode according to tiered pricing.

Overdue Payment

In pay-per-use mode, API fees are deducted every hour. If your account balance is insufficient to pay for the expense occurred in the last hour, your account will be in arrears and enter the [grace period and retention period](#).

If you top up your account within the retention period, the APIs will be available and billed from the original expiration date.

 NOTE

If your account is in arrears, some operations will be restricted. You can top up your account as soon as possible. The restricted operations are as follows:

- APIs in pay-per-use mode cannot be called.
- Remaining API calls in a discount package can still be used, but the package cannot be subscribed again or renewed.
- Services cannot be subscribed.

Renewal

You can renew a resource package upon its expiration, or you can set auto-renewal rules for a resource package. For more information about renewing resource packages, see [Renewal Management](#).

Expiration

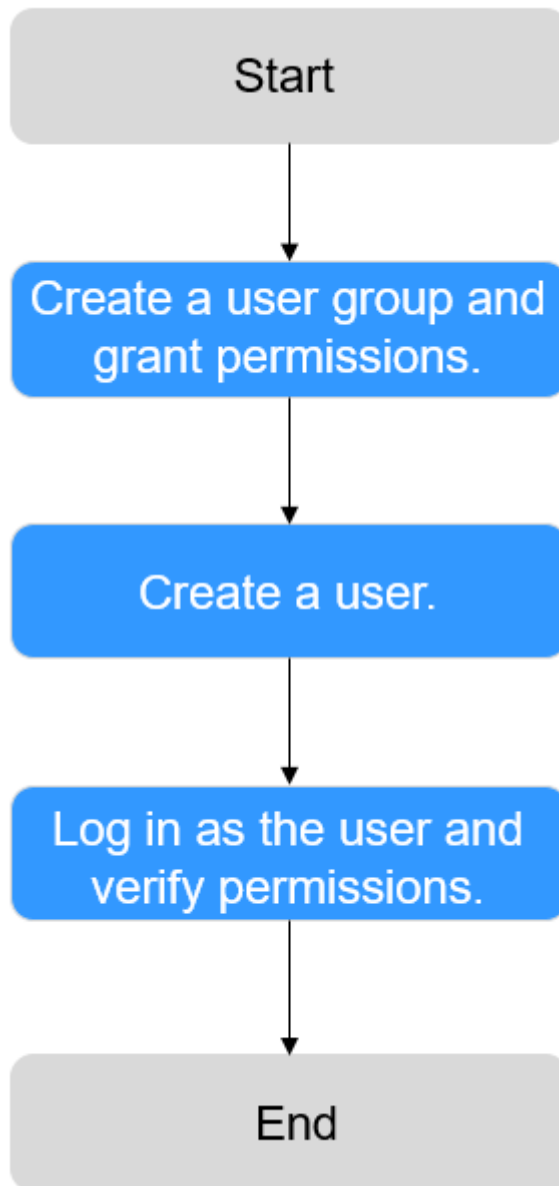
- After a yearly/monthly package expires, you will be billed for subsequently used resources on a pay-per-use basis.
- If the account is not topped up or the resource package is not renewed before the retention period expires, your data will be deleted and cannot be recovered.

7 (Optional) Authorizing Subaccounts to Use ImageSearch

This section describes how to grant the **Tenant Guest** permission of ImageSearch and the **OBS Buckets Viewer** policy of OBS to a user group, and add users to the user group. In this way, subaccounts have corresponding operation rights. The operation process is shown in [Figure 7-1](#).

Process Flow

Figure 7-1 Process for granting ImageSearch permissions



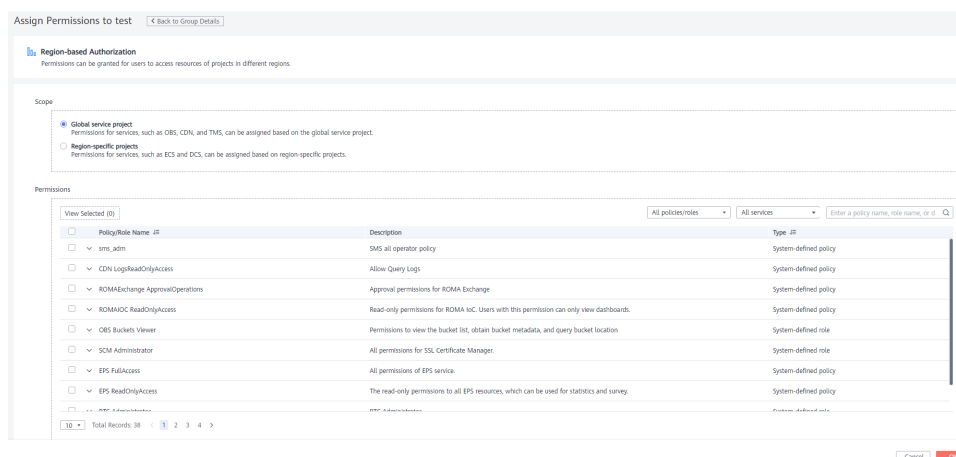
 NOTE

For details about the **Tenant Guest** permission and how to apply for the permission, see [System Permissions](#) and [Creating a User Group and Assigning Permissions](#) in the *Identity and Access Management User Guide*.

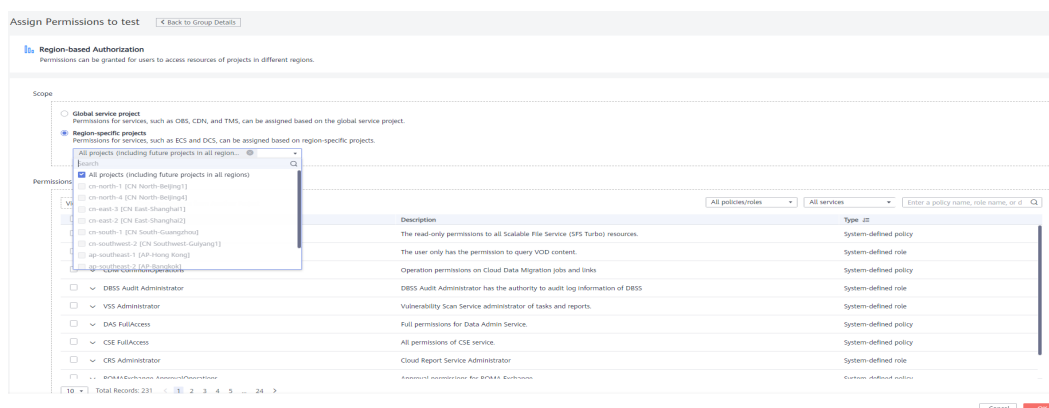
Step 1: Create a User Group and Grant Permissions

User groups facilitate centralized user management and streamlined permission management. Users in the same user group have the same permissions. Users created in IAM inherit permissions from the groups to which they belong. To create a user group and grant it permissions, perform the following steps:

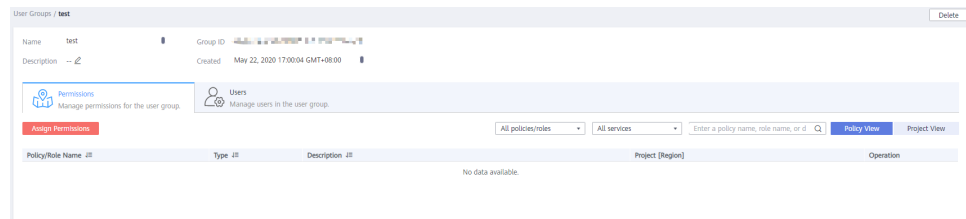
1. Log in to Huawei Cloud using an account.
2. On the management console, mouse over the username on the upper right corner and then choose **Identity and Access Management**.
3. On the IAM console, choose **User Groups** in the navigation pane. Then click **Create User Group**.
4. Enter a user group name, and click **OK**.
The user group is displayed in the user group list.
5. In the row of the created user group, click **Manage Permissions** in the **Operation** column. The **Permissions Assigned** tab page is displayed. Click **Assign**. Select **Global service project** for **Scope**. Select **Tenant Guest** and click **OK**, as shown in [Figure 7-2](#).

Figure 7-2 Global service configuration

6. In the row of the user group you created, click **Manage Permissions** in the **Operation** column. The **Permissions Assigned** tab page is displayed. Click **Assign**. Set **Scope** to **Region-specific projects** and select **All projects (including future projects in all regions)**. Select **Tenant Guest** and click **OK**, as shown in [Figure 7-3](#).

Figure 7-3 Region-specific service configuration

7. Return to the user group list, click **Manage Permissions** under the **Operation** column in the row that contains the newly created user group. On the **Permissions** tab page, view the configured permissions, as shown in [Figure 7-4](#).

Figure 7-4 Permissions management

Step 2: Create an IAM User

IAM users can be created for employees or applications of an enterprise. Each IAM user has their own security credentials, and inherits permissions from the groups it is a member of. To create an IAM user, perform the following steps:

1. In the navigation pane of the IAM console, choose **Users**. Then click **Create User**.
2. Set user information and click **Next**. For details about the parameters, see [Creating an IAM User](#).
3. On the next page, set a password type, an email address, and a mobile number, and click **OK**.
4. Add users to user groups so that the users inherit permissions from the groups to which they belong. For details about how to add users, see [Adding Users to a User Group](#).

Step 3: Log In and Verify Permissions

After the user is created, use the username and identity credential to log in to HUAWEI CLOUD, and verify that the user has the permissions.

1. On the HUAWEI CLOUD login page, click **IAM User Login**.
2. Enter the account name, username, and password, and click **Log In**.
 - The account name is the name of the Huawei Cloud account that created the IAM user.
 - The username and password are those set by the account when creating the IAM user.
 - If the login fails, contact the entity owning the account to verify the username and password. Alternatively, you can reset the password.
3. After successful login, switch to a region where the user has been granted permissions on the management console. The default region is **CN North-Beijing4**.
4. In **Service List**, select **ImageSearch**. If the instance creation, offline import, and service test and calling can all be performed properly, the permissions are granted successfully.