Face Recognition Service

Getting Started

Issue 01

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HUAWEI

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1 Introduction

Face Recognition Service (FRS) uses computers to process, analyze, and understand human facial features in images. You can obtain the facial image processing results by calling APIs in real time. FRS automatically recognizes, compares faces, and allow you to query the similarity.

FRS provides services through open APIs. To call APIs and process the results returned in JSON format, you need basic programming skills.

You can choose one of the following methods to call Face Recognition APIs:

- **Software tool such as curl or Postman**

  These are good options if you are more comfortable writing code, HTTP requests, and API calls. For details, see **Calling APIs for Face Detection**.
- **Software development kit (SDK)**

  Java SDK isavailable for quick integration.

  To use this method, you need to write and debug code, and install and configure the development environment. For details, see **Using an SDK for Face Detection**.

2 Calling APIs for Face Detection

This section describes how to call Face Detection APIs of FRS to help you get familiar with FRS.

To call an FRS API, there are four steps:

Step 1: Subscribe to the Service

Step 2: Configure the Environment

Step 3: Use a Token for Authentication

Step 4: Call the Service

Preparations

You have registered an account with HUAWEI CLOUD. Your account cannot be in arrears or frozen.

Step 1: Subscribe to the Service

1. Log in to the **FRS console**.
2. Click **Authorization** in the navigation pane on the left to authorize FRS to access data stored on OBS.
3. Select and subscribe to your desired APIs.

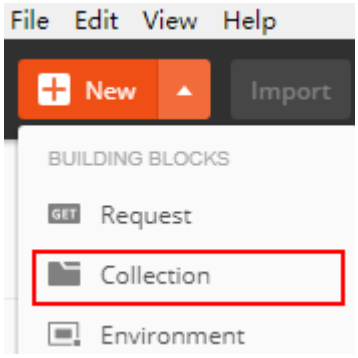
   In this example, subscribe to the Face Detection API.

Step 2: Configure the Environment

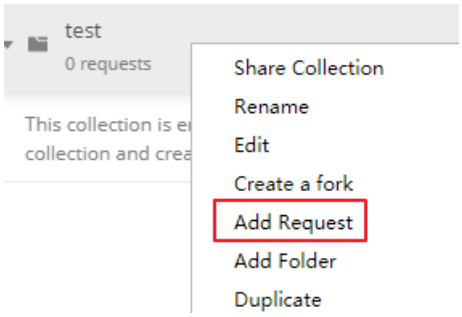
Download and install Postman 7.24.0.

Step 3: Use a Token for Authentication

1. On the Postman page, choose **New > Collection**, set the name, and click **Create**.



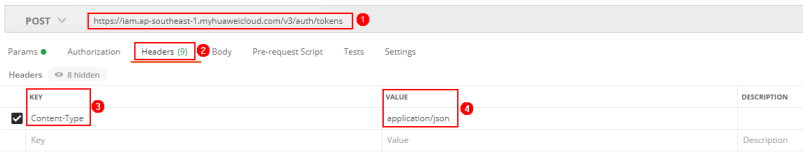
2. Right-click the created collection and choose **Add Request** from the shortcut menu. Set the request name and click **Save**.



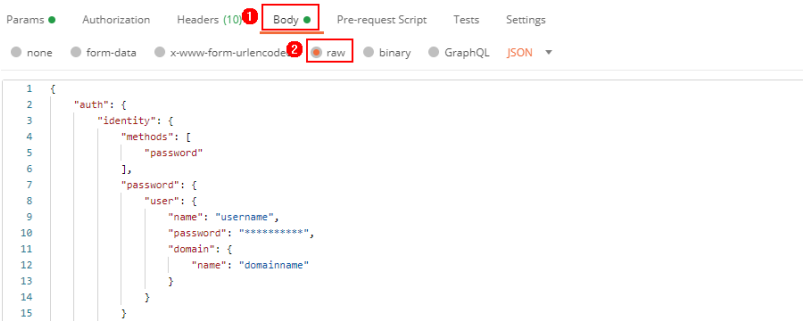
3. Change the request mode to **POST** and enter the URL.

   For example, if **ap-southeast-1** is used, the URL is **https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens**.

4. In the **Headers** list, set **KEY** to **Content-Type** and **VALUE** to **application/json**.



5. Click the **Body** configuration item, select **raw**, and enter the following code in the blank area.



Replace *username*, *domainname*, ******** (login password), and *name* (region where the service is deployed) with the actual values. To obtain the values of these parameters, log in to the management console and click **My Credentials**.

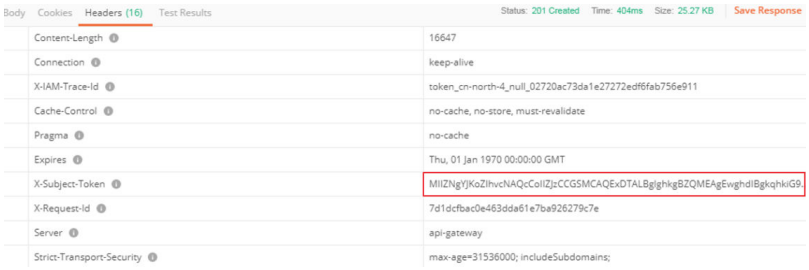
The region where FRS is deployed must be the same as the region where the called service is located. In this example, the region is **ap-southeast-1**.

```
{
   "auth": {
```



```
        "identity": {
            "methods": [
                "password"
            ],
            "password": {
                "user": {
                    "name": "username",
                    "password": "**********",
                    "domain": {
                        "name": "domainname"
                    }
                }
            }
        },
        "scope": {
            "project": {
                "name": "ap-southeast-1"
            }
        }
    }
}
```

6. Click **Send** in the upper right corner to send the request. Obtain the token value from the returned result. The token is valid for 24 hours.



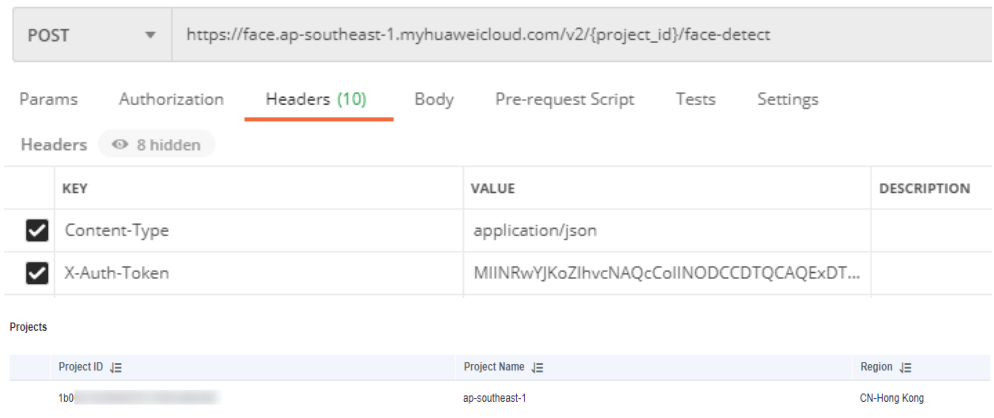
Step 4: Send API Calling Requests

1. Create a request, set the request mode to **POST**, and enter the URL as required.

   For example, if the Face Detection subservice is deployed in the **CN-Hong Kong** region, the request URL is **https://face.ap-southeast-1.myhuaweicloud.com/v2/{project_id}/face-detect**.

   Click **Headers** and copy the token value to **X-Auth-Token**.

   Log in to the **My Credential** page, query the ID of the project in the **CN-Hong Kong** region, and replace *{project_id}* in the URI with the queried project ID.



2. Click **Body** and enter the Base64 code of the image to the request body. For details about the APIs, see **Face Detection**.

```
{
    "image":"/9j/4AAQSkZJRgABAgEASABIAAD/4RFZRXhpZgAATU0AKgAAAA..."
}
```

3. Click **Send** in the upper right corner to send the request and view the results.

3 Using an SDK for Face Detection

FRS SDKs provide a range of RESTful APIs to simplify development.

This section provides an example of how to use a Java SDK to call the Face Detection API. You can directly call APIs to use SDK functions.

To call an FRS API using an SDK, do the following:

Step 1: Subscribe to the Subservice

Step 2: Configure the Environment

Step 3: Modify the Configuration

Step 4: Call the Service API

Preparations

You have registered an account with HUAWEI CLOUD. Your account cannot be in arrears or frozen.

Step 1: Subscribe to the Subservice

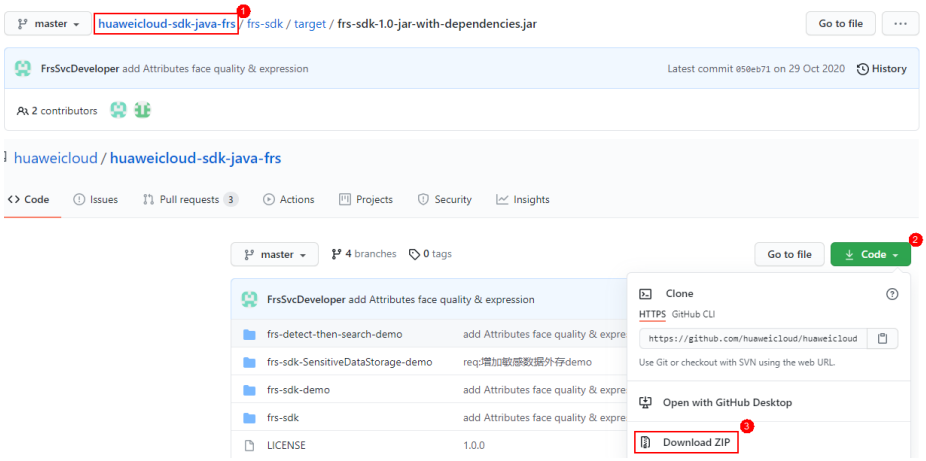
1. Log in to the **FRS console**.
2. Click **Authorization** in the navigation pane on the left to authorize FRS to access data stored on OBS.
3. Select and subscribe to your desired APIs.

   In this example, subscribe to the Face Detection API.

Step 2: Configure the Environment

1. Download the **FRS Java SDK**.

   Select the **huaweicloud-sdk-java-frs** directory and choose **Code > Download ZIP** to download **frs-sdk-demo**.



2. Prepare a Java development environment.
   - Download a JDK from the **Oracle official website** and install it.
   - Download Eclipse IDE for Java Developers of the latest version from the **Eclipse official website** and install it.
3. Import the FRS Java SDK into the project.
   a. Copy the downloaded **frs-sdk-demo** file to the Eclipse project folder.
   b. Open the project in Eclipse, right-click the project, and choose **Properties**.
   c. In the displayed dialog box, click **Java Build Path**. On the **Libraries** tab, click **Add JARs** to add the downloaded JAR file.

Step 3: Modify the Configuration

In this demo, the AK/SK is used for authentication.

1. Obtain an AK/SK.

   The AK/SK is the access key. To obtain the AK/SK, log in to the **My Credentials** page, choose **Access Keys** in the left navigation pane, and click **Create Access Key** in the right pane.
2. Use the AK/SK for authentication.

   Change the values of **AK** and **SK** of the **Main** function in the **frs-sdk-demo** file of the demo project to the obtained AK/SK.

Figure 3-1 Configuring the AK/SK

```
private static void demoV2() {
    /**
     * ##########################sdk brief##########################
     *
     * com.huaweicloud.frs.client.service.FrsClient # Main class, should be initialized first
     * com.huaweicloud.frs.client.service.* # Correspond to rest api
     * com.huaweicloud.frs.client.result.* # Correspond to api response
     *
     * ##########################sdk brief##########################
     */

    //Step.1 Create frs client
    String ak = "ak";
    String sk = "sk";
    String endpoint = "https://face.cn-north-1.myhuaweicloud.com";
    String region = "cn-north-1";
    String projectId = "projectId";
```


3. Modify the **frs-sdk-demo** configuration file.

Figure 3-2 frs-sdk-demo file

```
private static void demoV2() {
    /**
     * ##########################sdk brief##########################
     *
     * com.huaweicloud.frs.client.service.FrsClient # Main class, should be initialized first
     * com.huaweicloud.frs.client.service.* # Correspond to rest api
     * com.huaweicloud.frs.client.result.* # Correspond to api response
     *
     * ##########################sdk brief##########################
     */

    //Step.1 Create frs client
    String ak = "ak";
    String sk = "sk";
    String endpoint = "https://face.cn-north-1.myhuaweicloud.com";
    String region = "cn-north-1";
    String projectId = "projectId";

    AuthInfo authInfo = new AuthInfo(endpoint, region, ak, sk);

    ProxyHostInfo proxyHostInfo = new ProxyHostInfo("127.0.0.1", 8080, "user name", "pwd");

    FrsClient frsClient = new FrsClient(authInfo, projectId/*, proxyHostInfo*/);

    //Step.2 Get v2 service
    frsClient.getV2().getCompareService();
    frsClient.getV2().getDetectService();
    frsClient.getV2().getFaceService();
    frsClient.getV2().getFaceSetService();
    frsClient.getV2().getSearchService();

    //Step.3 User api

    //Face detect
    try {
        DetectFaceResult detectFaceResult = frsClient.getV2().getDetectService().detectFaceByObsUrl("data/image1.jpg");
        //detectFaceResult; //Http response
    } catch (FrsException e) { //While http status code is not http_ok
        e.printStackTrace();
    } catch (IOException e) {
        e.printStackTrace();
    }
```

Table 3-1 Parameters in the Main function

Parameter	Description	Value
ak	Access Key ID (AK)	Log in to the **My Credentials** page and choose **Access Keys** > **Add Access Key** to obtain it.
sk	Secret access key (SK)	Log in to the **My Credentials** page and choose **Access Keys** > **Add Access Key** to obtain it.
endpoint	Endpoint	Select the endpoint of the region where the service is enabled.
region	Region where the service locates	Select the region where the service is enabled.
projectId	Project ID	Project ID. For details about how to obtain the project ID, see **Obtaining a Project ID**.

NOTE

- The demo contains example calls of all FRS APIs. If you verify the Face Detection API only, you need to comment out or delete other APIs in the **Main.java** file.
- Change the image path in **detectFaceByObsUrl** to the OBS bucket path of the image.

Step 4: Send API Calling Requests

Execute the **Main.java** file. If status code **200** is displayed on the console, the program is successfully executed.

The face detection result is returned in JSON format.

```
{
  "faces": [
    {
      "bounding_box": {
        "width": 174,
        "top_left_y": 37,
        "top_left_x": 22,
        "height": 174
      }
    }
  ]
}
```

