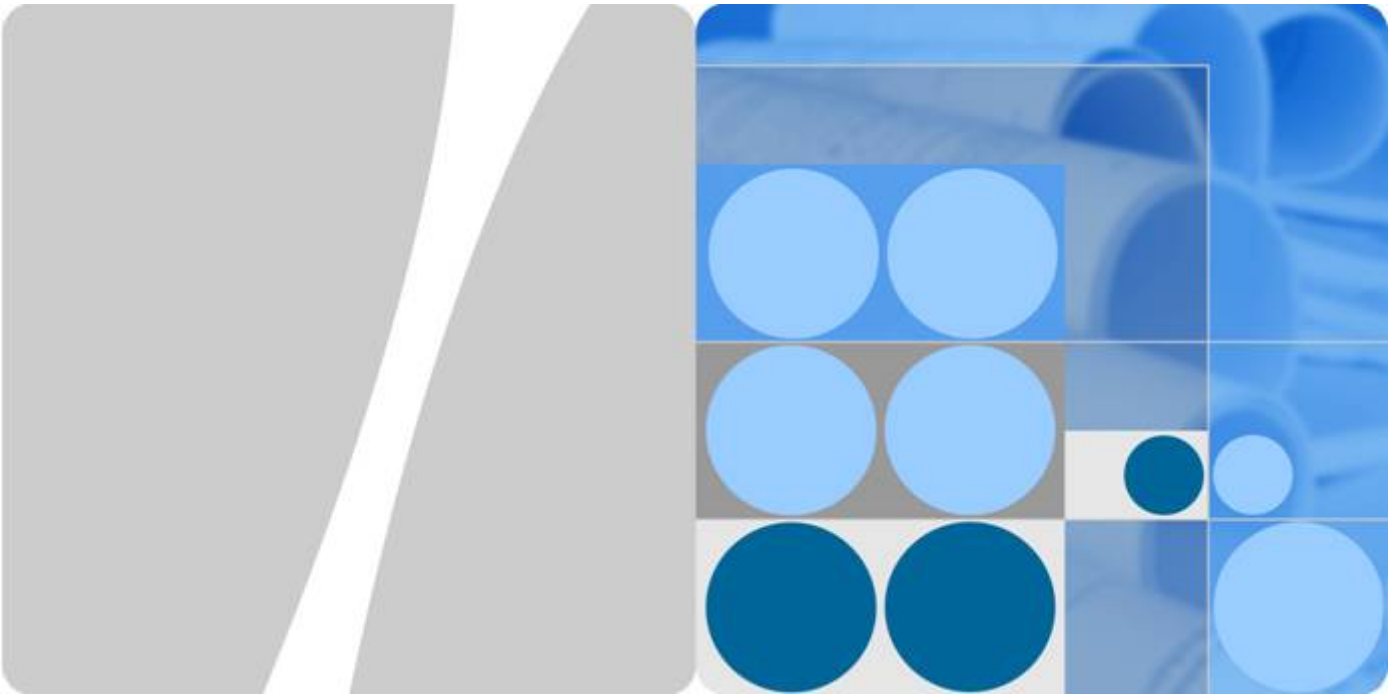

Video Analysis Service

User Guide

Issue 05

Date 2021-03-30

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HUAWEI

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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

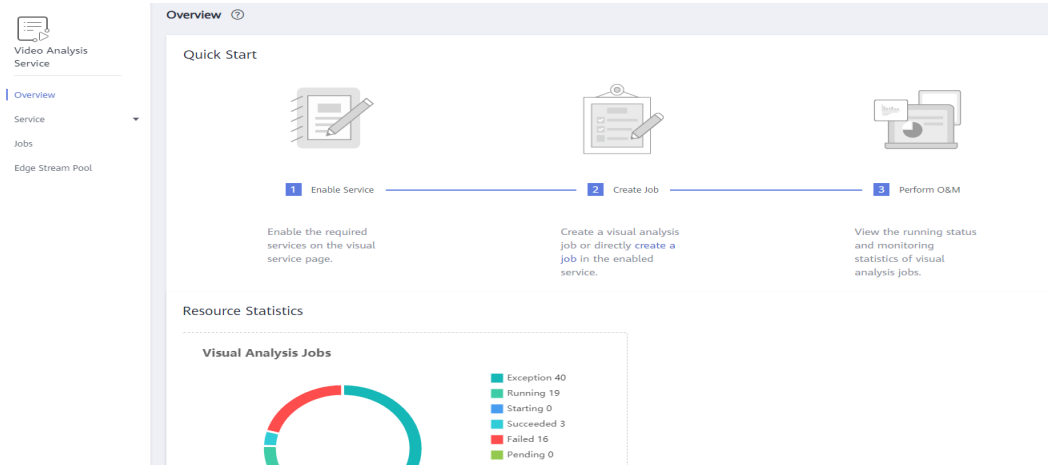
Contents

1 How to Use VAS

Video Analysis Service (VAS) performs intelligent analysis on videos based on AI technologies and provides functions such as video preprocessing, video moderation, video content analysis, video editing, video search, and video fingerprinting. The video analysis service provides capabilities such as object detection, tracking, attribute identification, behavior identification, content moderation, video synopsis, and video tagging. It provides you with efficient video analysis capabilities in various scenarios.

You can use VAS on the **management console**. **Figure 1-1** shows the service overview page displayed when you log in to the management console for the first time.

Figure 1-1 VAS management console



You can enable existing visual services based on service needs. The process is as follows:

1. **Preparing Video Data**
2. **Enabling VAS**
3. **Creating a Job**
4. **Obtaining the Job Result**

2 Preparing Video Data

You need to prepare video data before using visual service algorithms to analyze videos and obtain results. For details about the video format requirements, see **Constraints and Limitations**

3 Visual Services

3.1 Enabling VAS

In accordance with the release phase of the service functions, the service provisioning modes are as follows:

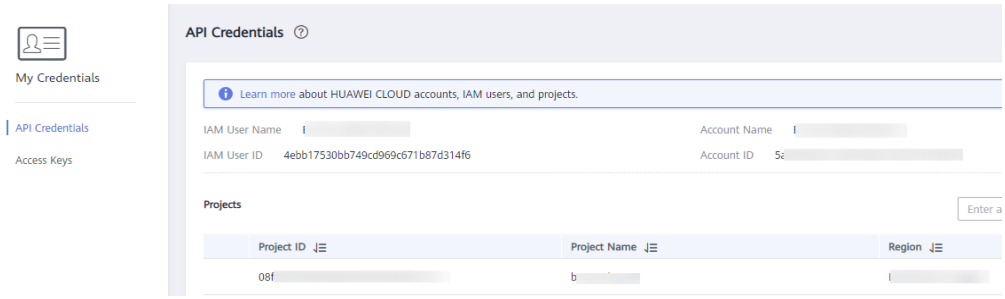
- Closed beta test/Commercial use: At present, you must provide account details to the contact personnel for the corresponding function for technical support. Then, you can use the algorithm functions of the service. For details, see **Enabling the Functions in Closed Beta Test or in Commercial Use**.
- Open Beta Test (OBT): In the OBT phase, you can enable services on the console. For details, see **Enabling OBT Functions**.

For details about the release phase of each function, see **Function Release Phase**.

Enabling the Functions in Closed Beta Test or in Commercial Use

1. Log in to the **My Credentials** page on the console, as shown in **Figure 3-1**.

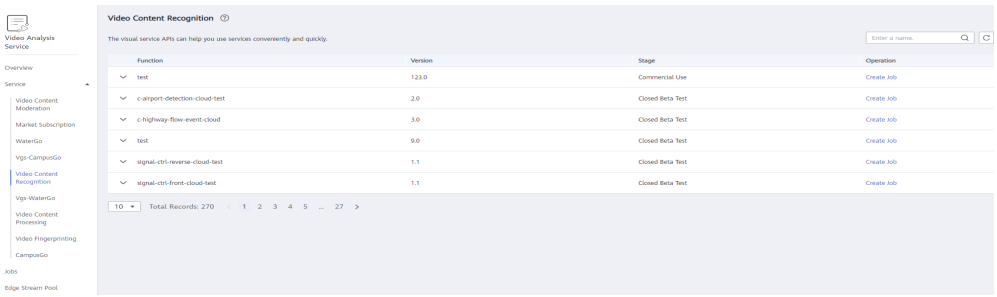
   Figure 3-1 My Credentials page

2. Obtain the user account details. The information required for the closed beta test is different from that of the commercial use.
   - Closed beta test: The username and project ID are required.
   - Commercial use: The account name and project ID are required.
3. Provide the account details to the contact personnel of the corresponding function for technical support.

4. After technical support is provided, you can log in to the **Video Analysis Service management console** and view the specified service functions. If you see **Create Job** for a specific function in the **Operation** column, that function is enabled, as shown in **Figure 3-2**.

Figure 3-2 Service function display



Enabling OBT Functions

1. Log in to the HUAWEI CLOUD Video Analysis Service management console.
2. Choose **Service** to display the service list.

   When you visit the **Visual Services** page for the first time, apply for OBT entry, and wait 1 to 2 business days for approval.
3. Select a function (for example, Video OCR) to be enabled based on your requirements, and click **Open Beta** in the **Operation** column to apply for an open beta test.

   You will become an OBT user of the function right away.
4. Then you will see **Create a Job** in the **Operation** column, indicating that you have successfully enabled the OBT function.

   You only need to apply for the service once.

Function Release Phase

Table 3-1 Release phase

Service	Function	Release Phase
Video Content Recognition (VCR)	Careless Sorting Recognition	Commercial use
	Video OCR	Open beta test (OBT)
	Video Celebrity Analysis	Open beta test (OBT)
Video Content Processing	Video Topics Segmentation	Commercial use
	Video Cover Selection	Closed beta test
Video Fingerprinting	Video Fingerprinting	Closed beta test
Video Content Moderation	Video Content Moderation	Open beta test (OBT)

Service	Function	Release Phase
Campus Intelligent Twins (CampusGo)	Intrusion Detection, Crowd Density Monitoring, Mask Detection, Work Gear and Helmet Detection, Fire Detection, Fight Detection, and Bicycle Sharing Detection	Closed beta test

3.2 (Optional) Buying a Visual Service Package

Currently, you have access only to buy the visual service packages of **WaterGo** and **CampusGo** based on service needs.

Buying a Package

1. Log in to the HUAWEI CLOUD Video Analysis Service management console.
2. Choose **Service**, click **WaterGo** or **CampusGo** to access the **Visual Service Packages** page.
3. Select a visual service package based on your service needs and click **Buy**. The **Configure** page is displayed.
4. After confirming the specifications, click **Next**. On the **Confirm** page that is displayed, confirm the order information and click **Pay Now**. After the payment is successful, the visual service package is purchased.

   NOTE

   The purchased visual service packages cannot be unsubscribed. Confirm that you need to buy the visual service package before purchasing it.

3.3 Creating a Job

Create a job corresponding to the service you have purchased to analyze and process target videos.

Log in to the Video Analysis Service management console and use either of the following method to create a job:

- Choose **Overview** and click **create a job** in the **Quick Start** area.
- Choose **Service** and click **Create Job** in the **Operation** column of the desired service on the **Market Subscription** page.
- Choose **Jobs** and click **Add**.

The algorithm configuration structure and data input/output type of the job are determined by default when the algorithm is created.

Procedure

1. Log in to the **Video Analysis Service management console**.

- Choose **Overview** and click **create a job** in the **Quick Start** area.
- Choose **Service** and click **Create Job** in the **Operation** column of the desired service on the **Market Subscription** page.
- Choose **Jobs** and click **Add**.

2. Set the parameters on the **Create Visual Analysis Job** page that is displayed, as described in **Table 3-2**.

Table 3-2 Setting visual analysis service job parameters

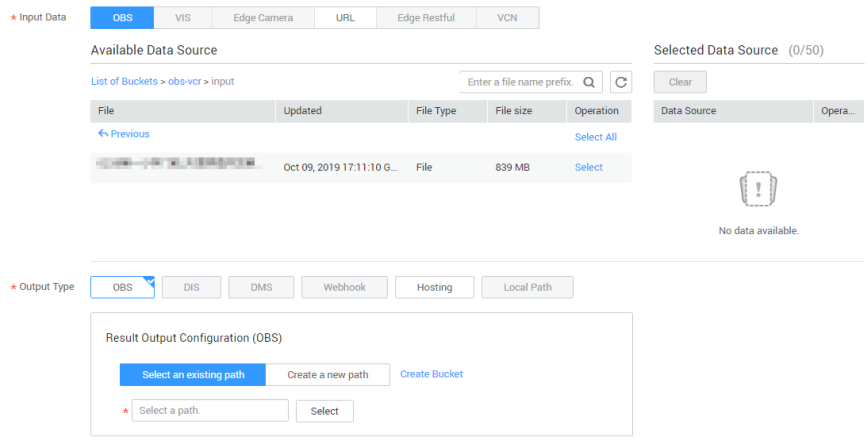
Parameter	Description	Example Value
Name	Specify a job name.	Work02
Description	Customize memorable and distinguishable job description.	N/A
Job Type	**Job Type** can be **Normal** or **Scheduled**.	Normal
Service Category	Select a visual analysis service.	Video Content Recognition
Function	• If you create this job through the **Service** page, **Function** and **Version** are automatically set to the latest. • If you create this job through the **Jobs** page, you need to set **Function** and **Version**. When you select a service function, the system prompts you to authorize the service. The purpose is to allow the job to read video data from the OBS bucket and path you specified, and save the result file to the OBS bucket and directory you specified after the job is successfully executed. When you authorize the service, if the message "The number or agencies has reached the maximum." is displayed, you need to delete the agency or create an agency on the **IAM management console**.	Careless Sorting Recognition
Version	Select a version.	1.0
Edge Stream Pool	If the function you selected for **Function** requires an edge stream pool, you need to set **Edge Stream Pool**. For details about edge stream pools, see **Edge Stream Pool**.	N/A

Parameter	Description	Example Value
Visual Service Package	Select the visual service package you purchased. The total number of video channels for creating jobs cannot exceed the number of video channels corresponding to the capability package. If an algorithm service requires a visual capability package (for example, edge transportation intelligent algorithm capability package), you need to purchase the package and provides the package name and order number when you use the service to deliver a job. For details about how to purchase a visual capability package, contact Huawei technical support.	N/A
Algorithm Template Settings	The parameters for configuring the algorithm template vary depending on the function. For details, see **Algorithm Template Settings**.	N/A
Input Data	Select the path to the video data to be processed. The options are as follows. For details, see **Step 3**. • **OBS**: When video data is stored on OBS, you only need to select a bucket and a path. In the **Operation** column, select some or all video files. • **VIS**: When real-time data is accessed through VIS, you need to enter the name of the VIS data stream. • **Edge Camera**: Read data from a specified edge camera. • **URL**: Read data from a specified URL. Currently, only the URL of OBS is supported. You need to grant the anonymous users the permission to read the URL.For details, see **Bucket ACLs and Object ACLs**. • **Edge Restful**: Read data from the custom streaming media server. • **VCN**: Read data from VCN. **NOTE** The available input data path sources are related to the algorithm service. For details, see the related documents of each algorithm service.	OBS

Parameter	Description	Example Value
Output Type	Select the path for storing the result files generated after the videos are processed. The options are as follows: For details, see **Step 4**. • **OBS**: To export the results to OBS, you can select an existing bucket and path or create a path. 1. **Select an existing path**: After selecting an existing bucket and path, you can obtain the job results file. 2. **Create a new path**: Select the corresponding storage address and enter the storage path to obtain the job result file. • **DIS**: Output the result data to the specified channel of DIS. • **DMS**: Not supported. • **Webhook**: Send the job result directly to the terminal address Webhook URL set by the user through a post request. • **Local Path**: Save the job result on an edge node running Linux. The path must be a Linux path, for example, **/opt/cloud/**. This path is in accordance with the **Mount Source Path** set by the user when creating the job. • **Hosting**: Store the result data on OBS, with the OBS bucket and path specified by the service owner. For details, see **Obtaining the Job Result**.	OBS

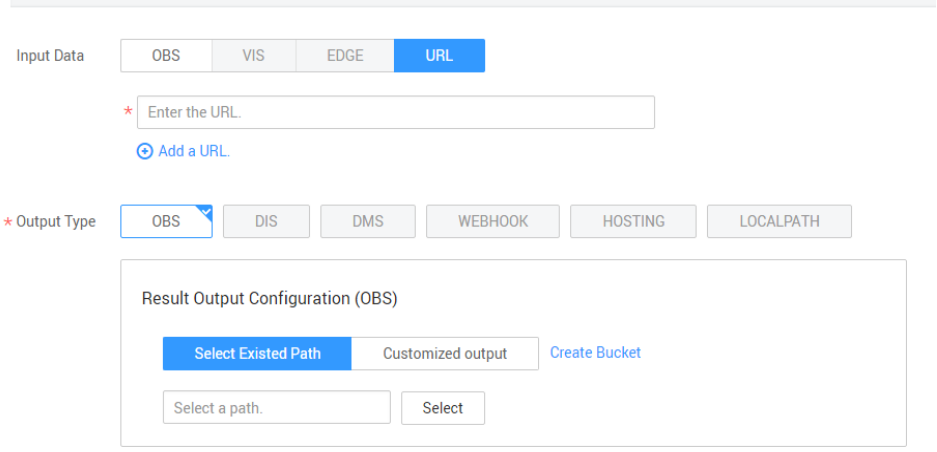
3. **Version**, **Input Data**, and **Output Type** are matched by default. You can also manually set **Input Data** to either of the following values as needed:
   a. **OBS**: When you select this value, you only need to select the OBS bucket and path and then click **Select** or **Select All** in the **Operation** column to select one video file or all video files on this page.

Figure 3-3 Setting **Input Data** to **OBS**



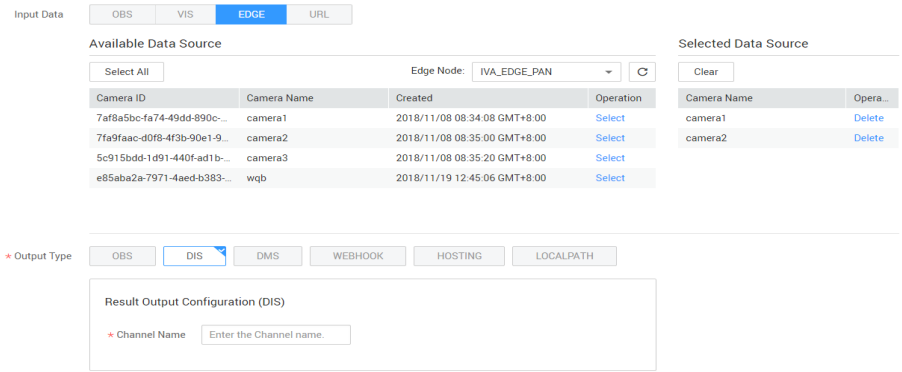
b. **URL**: Read video data from the URL of OBS, for example, **https://obs-vcm.obs.cn-north-1.myhuaweicloud.com/videos/est_h264.mp4**.

Figure 3-4 Setting **Input Data** to **URL**



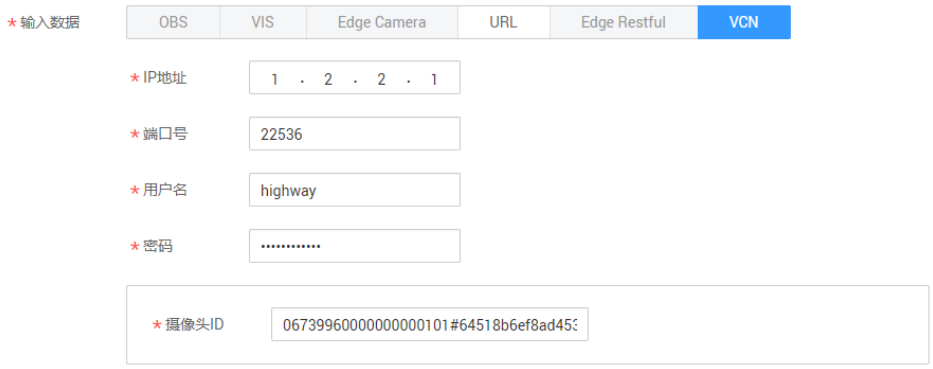
c. **Edge Camera**: When you select this value, you need to select the edge node and edge camera, and then click **Select** in the **Operation** column or **Select All** under **Available Data Source** to select one camera or all cameras on this page.

Figure 3-5 Setting **Input Data** to **Edge Camera**



d. **VCN**: When you select this value, you need to set **IP Address**, **Port Number**, **Username**, **Password**, and **Camera ID**.

Figure 3-6 Setting **Input Data** to **VCN**

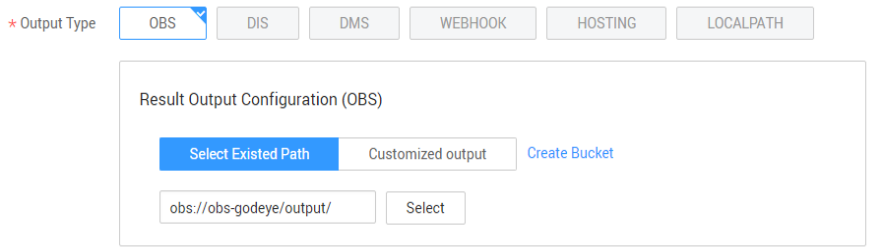


4. Set **Output Type** to either of the following values:

a. **OBS**: When you select this value, you can use either of the following two methods to output the job result file:

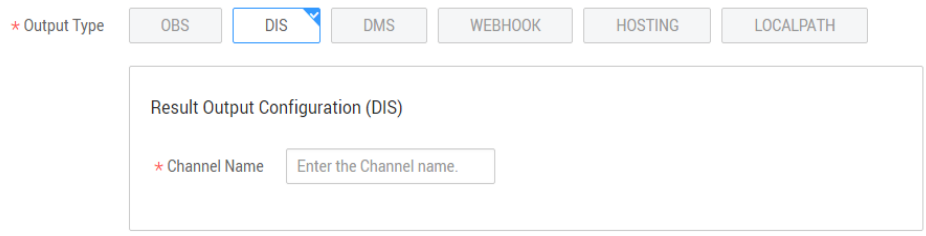
- **Select an existing**: Select an existing bucket and path to obtain the job result file.
- **Create a new path**: Select the corresponding storage address and enter the storage path to obtain the job result file.

Figure 3-7 Setting **Output Type** to **OBS**



b. **DIS**: When you select this value, you need to specify a stream name for the output result.

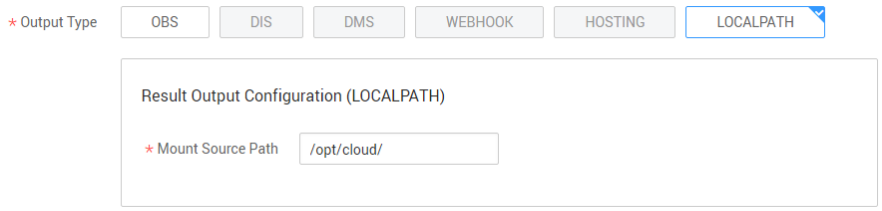
Figure 3-8 Setting **Output Type** to **DIS**



c. **Hosting**: When you select this value, you need to view the output result in the **Algorithm Result Output** column on the job details page. For details, see **Obtaining the Job Result**.

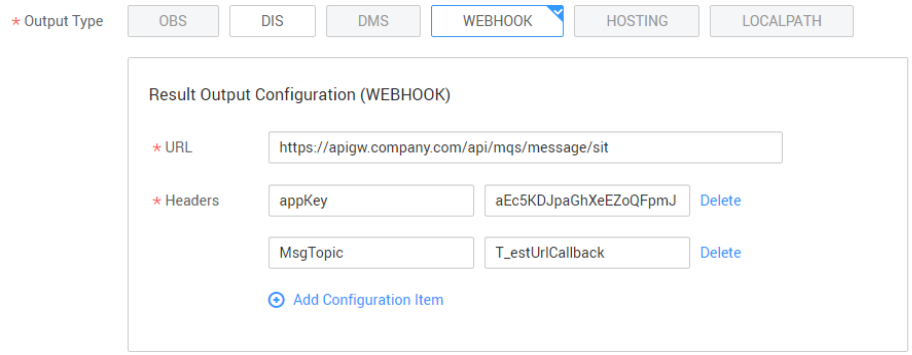
d. **Local Path**: You can select this value only when creating an edge job. When you select this value, the output result data will be stored on the edge node running Linux. You need to enter the local path of the edge node for storing the result data. The path must be a Linux path, for example, **/opt/cloud/**.

Figure 3-9 Setting **Output Type** to **Local Path**



e. **Webhook**: You can select this value only when creating an edge job. When you select this value, the service sends the job result to the endpoint you preconfigured through a post request. You need to set **URL** and **Headers**.

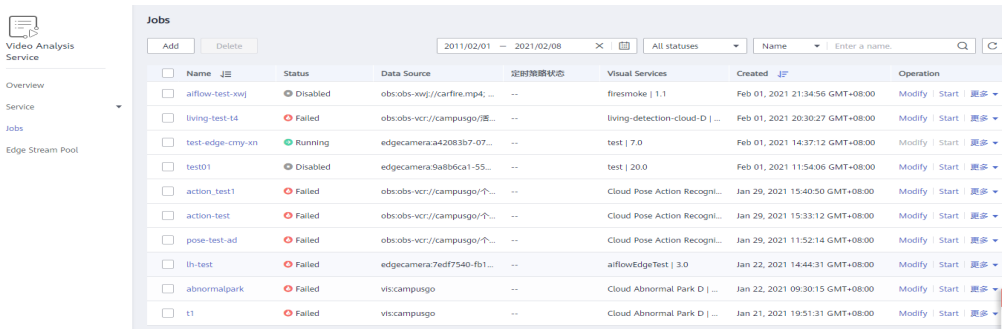
Figure 3-10 Setting **Output Type** to **Webhook**



5. After the configuration is complete, click **Create**.

   The **Jobs** page is displayed. You can click the name of the created job to view its details.

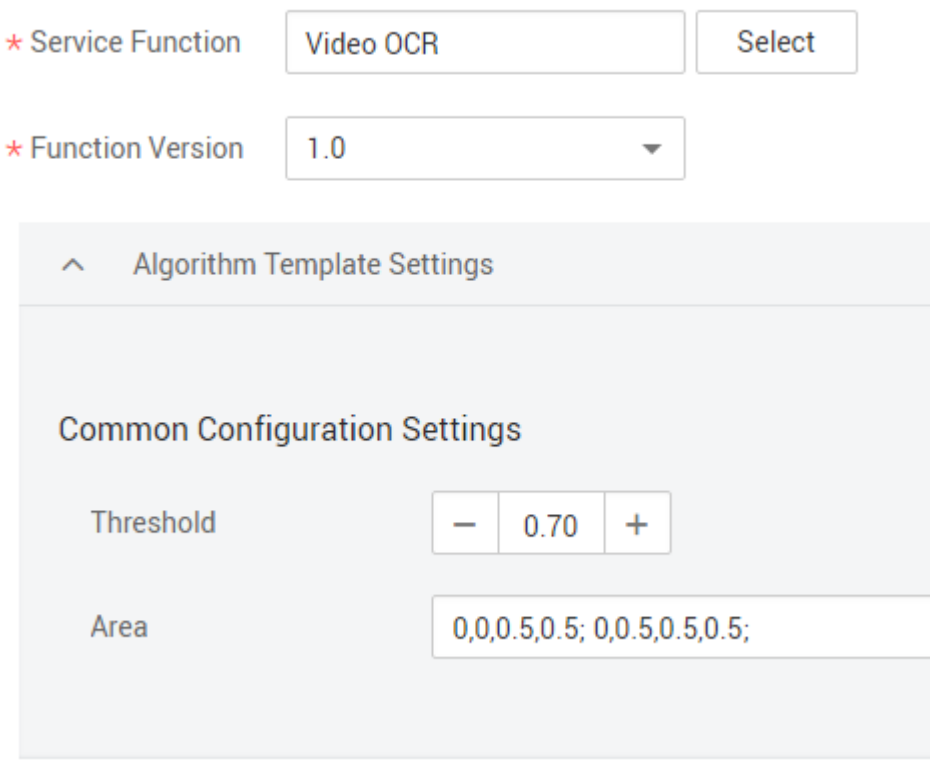
Figure 3-11 Job list



3.4 Algorithm Template Settings

When creating a visual service job, the system defines the structure and configuration items of the algorithm template. You only need to enter the values as required, as shown in **Figure 3-12**.

Figure 3-12 Algorithm template settings



Video OCR

Parameter	Description	Example Value
Text confidence threshold	Confidence threshold of the output text. A higher threshold means a more accurate output and a lower recall rate. The value ranges from 0 to 1.00, with the default value set to 0.50.	0.70
Selecting a text area	Text area. Use **semicolons (;)** as the division symbols of different areas. The first two values of each area represent the percentage coordinates of (x, y) in the upper left corner of the area. The last two digits indicate the percentage of the width and height of the selected area. This value ranges from 0 to 1. There is no default value.	0,0,0.5,0.5; 0,0.5,0.5,0.5;

3.5 (Optional) Market Subscription

If you have purchased a VAS application from the AI Market, you can access the **Market Subscription** page and use the VAS service to create a job.

Buying a VAS Application

1. Log in to HUAWEI CLOUD and choose **Marketplace** > **AI Market**.
2. Select your desired VAS application from the AI application list. Click the offering to access the details page, which contains tab pages **Description**, **Pricing**, **Support**, and **Customer Case**.
3. On the details page, select your desired specifications, purchase mode, and package. Click **Buy Now**. The page for confirming the purchase order is displayed. View the order details on the page, select the agreement and authorization content, and click **Pay Now**.
4. Confirm the order information. After the payment is complete, a message is displayed, indicating that the order is paid successfully. Click **Back to My Marketplace**. The **My Marketplace** > **Purchased Apps** page is displayed by default.
5. In the list of purchased apps, confirm the VAS application that you have purchased based on the offering name. Click **Resource Details** in the **Operation** column of the offering you want to use to go to the offering details page. The offering details page displays the application information, basic information, and vendor information.

Creating a Job

On the offering details page, click the service link next to the applicable platform. The VAS subscription page is displayed.

You can use the purchased VAS services to create jobs.

NOTE

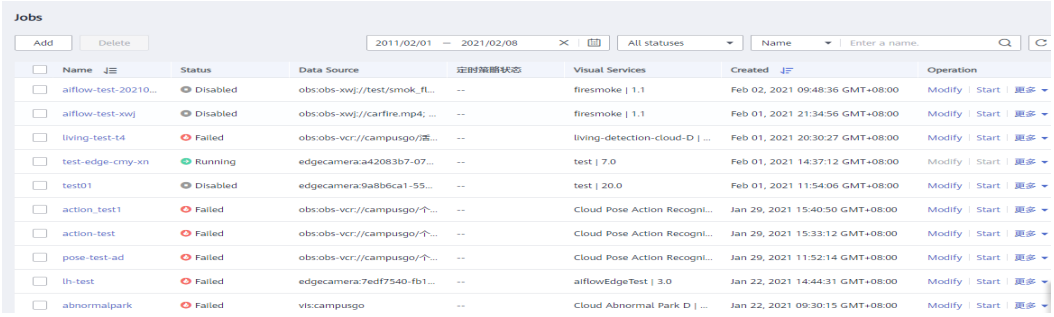
Currently, this function is available only in CN North-Beijing4.

4 Visual Analysis Job

4.1 Viewing Job Status

After creating jobs, you can view the statuses, data sources, visual services, and operation buttons of all jobs on the **Jobs** page.

Figure 4-1 Job list



You can filter and search for specified jobs by time, status, and name on the IVA platform. Currently, jobs created by the algorithm service have the following statuses:

- **Pending**: The job failed to apply for resources and waits in a queue.
- **Restoring**: The job is being restored.
- **Starting**: The job is being started.
- **Updating**: The job is being automatically upgraded.
- **Creation failed**: Failed to create the job.
- **Start failed**: Failed to start the job.
- **Running**: The job is running properly.
- **Stopping**: The job is being stopped.
- **Stopped**: The job has been stopped.
- **Abnormal**: The job may be automatically restored.
- **Succeeded**: The job is executed successfully.

- **Failed**: The job failed to be executed.
- **Deleting**: The job is being deleted.
- **Freezing**: If you are in arrears, your running jobs will be frozen. The freezing process hasn't been finished.
- **Frozen**: The job has been successfully deleted at the bottom layer. However, it can be restarted after topping up your account in the retention period.

You can determine whether a job is running properly based on the preceding job statuses. After a visual analysis job is created and processed, view the job result based on the output type and path selected during the job creation. You can click a job name to view the job details, including the output path of the job result.

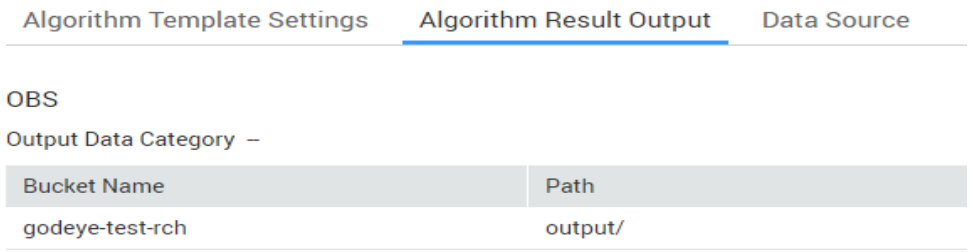
4.2 Obtaining the Job Result

You can determine whether a job is running properly based on the job status. After a visual analysis job is created and processed, view the job result based on the output type and path selected during the job creation. You can click the job name to go to the job details page. In addition, you can view job details such as the job result output path.

Setting Output Type to OBS/DIS/Webhook/Local Path

If you set **Output Type** to **OBS**, **DIS**, **Webhook**, or **Local Path** when creating a visual job, you can view the result file path you specified on the **Algorithm Result Output** tab page after you click the job name, as shown in **Figure 4-2**.

Figure 4-2 Job result path



Setting Output Type to Hosting

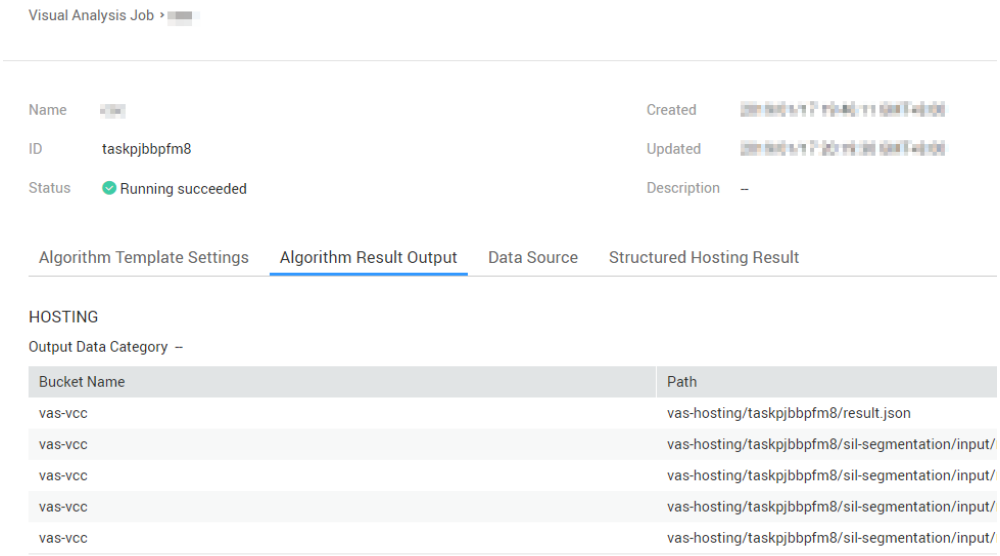
If you select Hosting as the output type when creating a visual job, you need to click the job name to go to the job details page and obtain the specific algorithm running result or path after the job is successfully executed.

You can obtain the job result files using either of the following methods:

- Obtain the algorithm result files on the **Algorithm Result Output** tab page. The result files of all input videos are merged into structured file **result.json**. The file is saved for 48 hours by default.

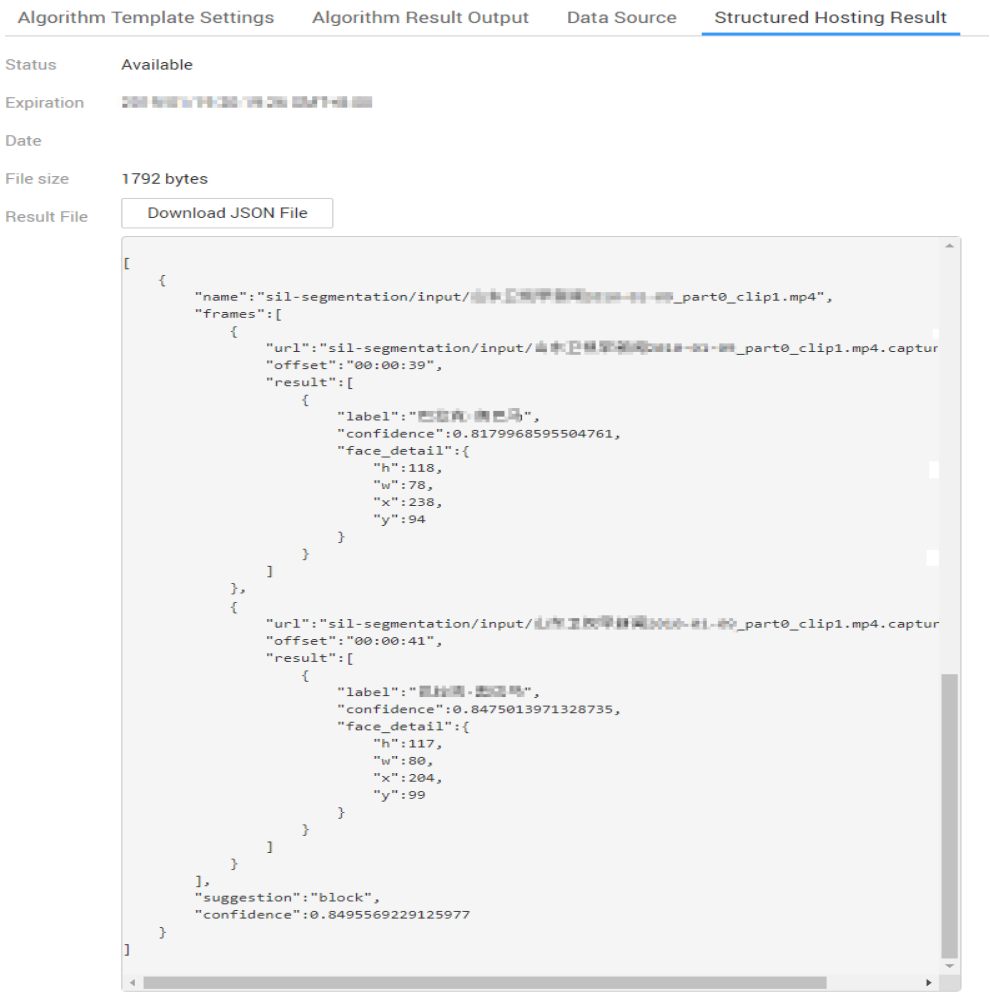
  If you only need to view the overall result of all videos, you can download **result.json** from OBS or obtain **result.json** using **method 2**.

Figure 4-3 Result output path



- Obtain result file **result.json** on the **Structured Hosting Result** tab page. You can click **Download JSON File** to download the file. Note that you must download it within 48 hours (default storage duration). Otherwise, it will become invalid.

Figure 4-4 Obtaining the JSON result file



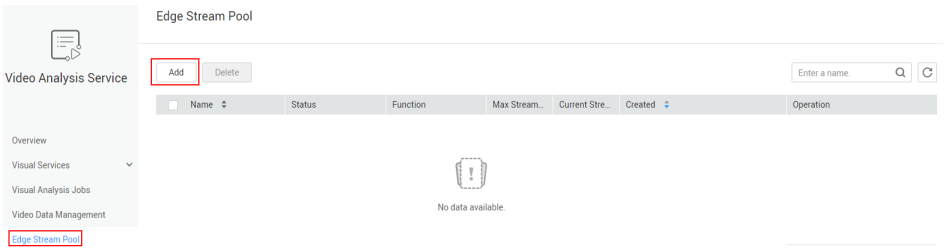
5 Edge Stream Pool

An edge stream pool is a collection of user edge nodes. You need to set the video service and maximum number of video streams that are expected to run in the edge stream pool. After you create a video service job, VAS schedules and selects a proper node to run the video algorithm container to process the video job.

Creating an Edge Stream Pool

1. Log in to the Video Analysis Service management console.
2. Choose **Edge Stream Pool** and click **Add**.

Figure 5-1 Adding an edge stream pool



3. On the **Create Edge Stream Pool** page, set related parameters.

Table 5-1 Parameters for creating an edge stream pool

Parameter	Description
Name	The name of the edge stream pool. Enter 1 to 100 characters. Only Chinese characters, uppercase and lowercase letters, digits, hyphens (-), and underscores (_) are allowed.
Description	The description of the edge stream pool for easy memorization and differentiation.
Function	Select the service function of the edge stream pool.

Parameter	Description
Version	After a service function is selected, the function version is automatically matched.
Resource Type	Currently, only **Edge Node** is supported.
Edge Node	Select one or more edge nodes to be ingested. If the edge node has not been connected, add it by referring to **Registering an Edge Node**.
Service Instance ID	ID of a platinum instance registered by the IEF service. To avoid errors, you are advised to copy the service instance ID directly.
Max Streams Allowed	The maximum number of video streams that are allowed. The value of this parameter is the total number of video streams ingested by all edge nodes.
Container Mount Path	A directory set on the host. When the container is started, the directory can be mounted to the container. Enter a maximum of 64 characters.

4. After the configuration is complete, click **Create**.

   You can view information about the created edge stream pool on the **Edge Stream Pool** page.

A Change History

Release Date	Description
2021-01-30	This issue is the eighth official release. Added **(Optional) Buying a Visual Service Package**.
2020-09-17	This issue is the seventh official release. Added **Market Subscription**.
2020-09-09	This issue is the sixth official release. Deleted contents related to video face detection, people flow counting, vehicle detection, and intrusion detection.
2020-04-26	This issue is the fifth official release. Modified **Edge Stream Pool**.
2019-12-25	This issue is the fourth official release. Added **Edge Stream Pool**.
2019-11-28	This issue is the third official release. Added Video Content Moderation and added corresponding algorithm configuration in **Algorithm Template Settings**.
2019-05-31	This issue is the second official release. • Updated **Enabling VAS**. • Added the algorithm configuration in **Algorithm Template Settings** for latest OBT functions, including Face Detection, People Flow Counting, Vehicle Detection, and Intrusion Detection.
2018-12-30	This issue is the first official release.