

VIAS

User Guide (New Version)

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1 Overview

Video Intelligent Analysis Service (VIAS) is an integrated platform that provides multiple capabilities such as AI analysis, event reporting and warning, and edge resource pool management. By combining Huawei Cloud's leading AI and big data technologies, VIAS enables event detection, analysis, and decision-making for smart campus, city governance, smart water, and smart transportation.

It provides you with various AI algorithms for quick and efficient video analysis, which is applicable in a range of scenarios including intrusion detection, crowd density monitoring, mask detection, work gear and helmet detection, fire detection, violence detection, and shared bicycle detection.

You can use VIAS on the [management console](#). Authorization is required when you log in to the management console for the first time. The overview page appears after the authorization.

- [Query, create, and delete permissions with ModelArts](#)
- [Query, create, and delete permissions with Intelligent EdgeFabric \(IEF\)](#)
- [Read permission with Video Ingestion Service \(VIS\)](#)
- [Read permission with Object Storage Service \(OBS\)](#)
- [Write, read, and query permissions with Data Ingestion Service \(DIS\)](#)

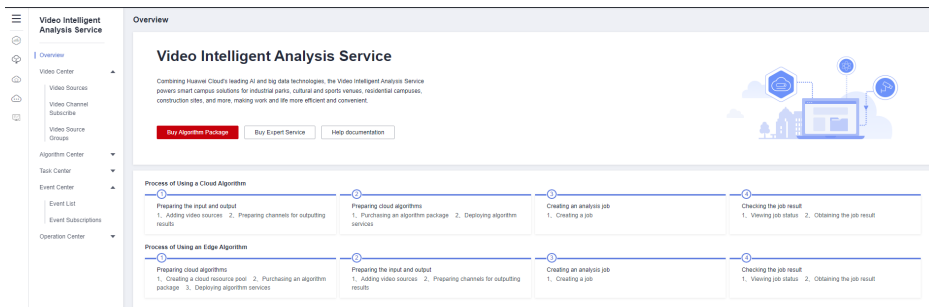


NOTE

Authorization must be done using a tenant account.

After purchasing an algorithm service package, click **Home**. The homepage displays five VIAS modules, as shown in [Figure 1-1](#). This document describes the functions and usage of [Video Center](#), [Algorithm Center](#), [Task Center](#), [Event Center](#), and [Operation Center](#).

Figure 1-1 Overview



2 Preparations

Creating a Huawei Cloud Account


Before using Huawei Cloud services, apply for a Huawei Cloud account and perform real-name authentication. This account gives you access to all Huawei Cloud services, but you only pay for the services you use.

1. Go to the Huawei Cloud homepage, and click **Register** in the upper right corner.
2. Enter your phone number and the SMS verification code, set a password, and select **I have read and agree to the Privacy Statement and HUAWEI CLOUD Customer Agreement**.
3. Click **Register**.
A message is displayed, indicating that the registration is successful.
4. After the registration, you are automatically logged in to Huawei Cloud.

Logging In to the Management Console

Log in to the VIAS console with your Huawei Cloud account to use VIAS.

Alternatively, log in to the Huawei Cloud management console. In the navigation

pane, hover over  and choose **AI > Video Intelligent Analysis Service**.

3 Getting Started

Process of Using an Edge Algorithm

Table 3-1 Process

Task	Subtask	Description	Instruction
Preparing an edge algorithm	Creating an edge resource pool	An edge resource pool is a group of edge nodes used to process analysis tasks. Before creating an analysis task, create an edge resource pool.	Creating an Edge Resource Pool
	Purchasing an algorithm package	Purchase an edge algorithm package based on service requirements.	Purchasing an Algorithm Package
	Deploying an algorithm service	Before using an edge algorithm, deploy it in an edge resource pool.	Deploying an Algorithm Service
Setting input and output modes	Adding video data	To use an algorithm service on VIAS, add video sources, and use the video sources to create an analysis task that the algorithm service can analyze and output results. Edge algorithms support three video source origins: camera, Restful, and VCN.	Adding a Video Source
	Choosing an output channel	Prepare channels before outputting task analysis results to DIS channels or webhook URLs.	Choosing an Output Channel

Task	Subtask	Description	Instruction
Creating an analysis task	Creating a task	To create a task, specify a video source and an algorithm service, configure the algorithm parameters and task execution plan, and select the output mode.	Creating a Task
Viewing the analysis result	Viewing task status	After a task is created, check its status. After it succeeds, obtain the task analysis result.	Viewing Task Status
	Obtaining the task result	Obtain the task analysis result based on the output mode.	Obtaining the Task Result

Process of Using a Cloud Algorithm

Table 3-2 Process

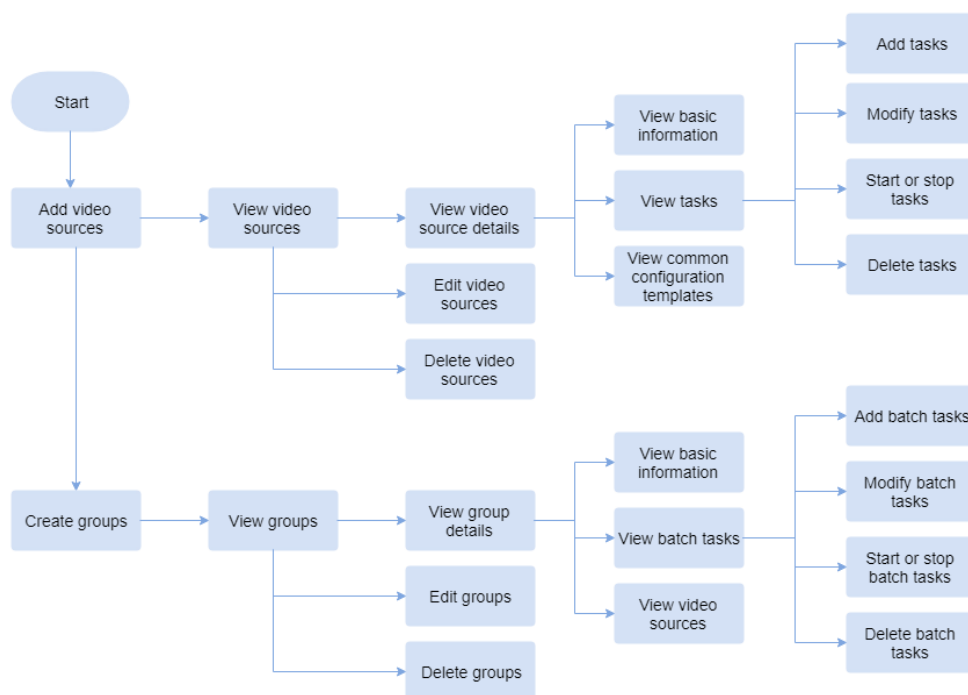
Task	Sub Task	Description	Instruction
Setting input and output modes	Adding video sources	To use an algorithm service on VIAS, add video sources, and use the video sources to create an analysis task that the algorithm service can analyze and output results. Cloud algorithms support video source origins including OBS, URL, Restful, VCN, and IVM.	Adding a Video Source
	Choosing an output channel	Prepare channels before outputting task analysis results to DIS channels or webhook URLs. To export results to OBS, you must enable OBS beforehand.	Choosing an Output Channel
Preparing a cloud algorithm	Creating a cloud resource pool	To use a cloud algorithm that is not developed by Huawei, purchase a resource pool to deploy the algorithm.	N/A
	Purchasing an algorithm package	Purchase a cloud algorithm package based on service requirements.	Purchasing an Algorithm Package

Task	Sub Task	Description	Instruction
	Deploying an algorithm service	To use a cloud algorithm that is not developed by Huawei, deploy the algorithm.	Deploying an Algorithm Service
Creating an analysis task	Creating a task	To create a task, specify a video source and an algorithm service, configure the algorithm parameters and task execution plan, and select the output mode.	Creating a Task
Viewing the analysis result	Viewing task status	After a task is created, check its status. After it succeeds, obtain the task analysis result.	Viewing Task Status
	Obtaining the task result	Obtain the task analysis result based on the output mode.	Obtaining the Task Result

4 Video Center

4.1 Overview

Video Center allows you to add and manage video sources. You can select the added video sources when you create a task in Task Center, facilitating intelligent video analysis.



4.2 Adding a Video Source

You can click **Add Video Source** above the video source list to add a video source.

On the **Add Video Source** page, you can select the video source type based on the access mode. Cloud access supports **OBS**, **URL**, **Restful**, **VCN**, and **IVM**. Edge access supports **Camera**, **Restful**, and **VCN**. You need to set mandatory

parameters. After verification, a video source is added and displayed in the video source list.

By default, a user can add a maximum of 5,000 video sources. To increase that quota, contact service operations personnel.

Procedure

1. On the console, choose **Video Center > Video Sources**. Click **Add Video Source** above the video source list.
2. Set parameters by referring to [Table 4-1](#) and click **OK**.

Table 4-1 Parameters for adding a video source

Parameter	Description
Source Name	Enter a camera name.
Type	Select the algorithm type, which can be Cloud or Edge .
Source Origin	Cloud and edge algorithms support different video source origins. For details, see Table 4-2 .
OBS Path	The parameter to be set varies according to the setting of Source Origin .
Edge camera	This parameter is displayed when Type is set to Edge . The parameter varies depending on the setting of Source Origin .
Longitude & Latitude	Location (longitude and latitude) of the video source. This parameter is optional.
Label	Labels of the video source. Enter a maximum of four labels, each of which contains up to 10 characters. After entering a label, press Enter .
Group	You can add the video source to an existing group.

Before adding a video source, ensure that you have ingestion service permissions so that the video source can be added and managed. You can check whether you have enabled related cloud services on the Huawei Cloud console.

The following table lists the video data types that can be ingested in Video Center.

Table 4-2 Video source origins supported by cloud and edge algorithms

Algorithm Type	Video Source Origin	Description	Preparation	Operation Reference
Edge algorithm	Camera	Video data is read from a specified edge camera.	<ul style="list-style-type: none"> • A registered and managed edge node • A registered edge camera 	N/A
	RESTful	Video data is read from a user-specified streaming server.	URL of the REST API	Obtaining a RESTful Video Source Address
	VCN	Video data is read from Video Cloud Node (VCN).	<ul style="list-style-type: none"> • IP address of a VCN server • Port number • Username • Password • Camera ID 	Obtain the values from the VCN administrator.
Cloud algorithm	OBS	Video data is read from Object Storage Service (OBS).	Enabled OBS	Select video files from OBS.
	URL	Video data is read from a real-time video stream push address provided by ISV.	Video stream push address	N/A

Algorithm Type	Video Source Origin	Description	Preparation	Operation Reference
	RESTful	Video data is read from a user-specified streaming server provided by ISV.	<ul style="list-style-type: none"> • URL of the REST API • Relative RTSP address 	Restful URLs for videos supported by cloud algorithms must be accessed through Huawei Cloud servers, and Restful URLs for videos supported by edge algorithms must be accessed through your edge servers. For details, see Obtaining a RESTful Video Source Address .
	VCN	Video data is read from Video Cloud Node (VCN).	<ul style="list-style-type: none"> • IP address of a VCN server • Port number • Username • Password • Camera ID 	Obtain the values from the VCN administrator.
	IVM	Video data is read from Industry Video Management (IVM).	Enabled IVM	Select an existing video source on the IVM platform.

Editing a Video Source

On the video source list page, click **Edit** in the **Operation** column of the target video source to modify the video source name and path.

Creating a Task Using a Video Source

On the video source list page, click **Add Task** in the **Operation** column of the target video source. On the task creation page that appears, create a video analysis task. For details, see [Creating a Task](#).

Obtaining Details About a Video Source

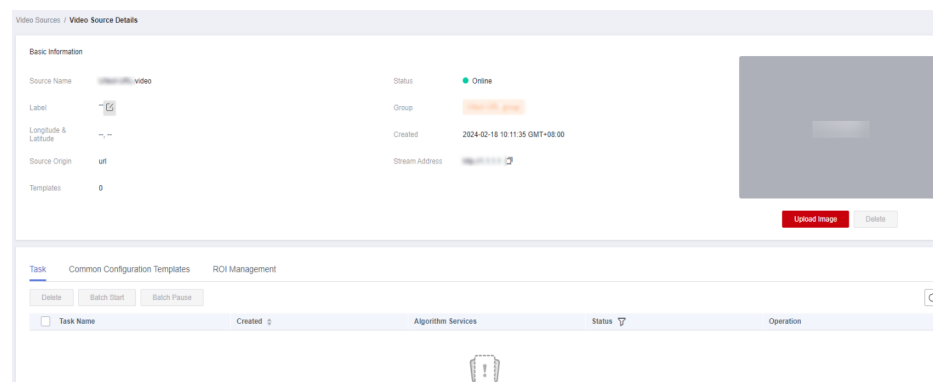
On the video source list page, you can view basic information about all created video sources, such as status and type.

To obtain details about a specified video source, perform fuzzy search by video source name, video source group, or label name, filter video sources by algorithm type, status, and video source origin, or sort video sources by creation time, task quantity, or template quantity in ascending or descending order. Then, click the name of a video source to obtain its details on the video source details page.

The video source details page displays basic video source information, including the video source name, video status, labels, group name, video stream longitude and latitude, creation time, video source origin, stream address, and video snapshot information. You can click the modify button next to labels to modify the labels.

You can view the information about tasks created for the video source and saved common configuration templates of algorithm services.

Figure 4-1 Obtaining details about a specified video source



4.3 Creating a Video Source Group

To process video sources in batches, you can add them to a group. You can create a batch task for the group to perform video analysis.

Creating a Group

1. In the navigation pane on the left, choose **Video Source Groups**.
2. On the page that is displayed, click **Group Add** and set parameters. For details about the parameters, see [Table 4-3](#).

Table 4-3 Parameters for creating a video source group

Parameter	Description
Group	Enter the name of the video source group.

Parameter	Description
Type	Select Cloud or Edge . Cloud access supports OBS, URL, cloud VCN, cloud RESTful, and IVM. Edge access supports edge camera, edge VCN, and edge RESTful.
Source Origin	A video source list is displayed based on the access mode you selected. You can select video sources from the list or enter a video source name to search for a video source.
Description	Description of the group. This parameter is optional.

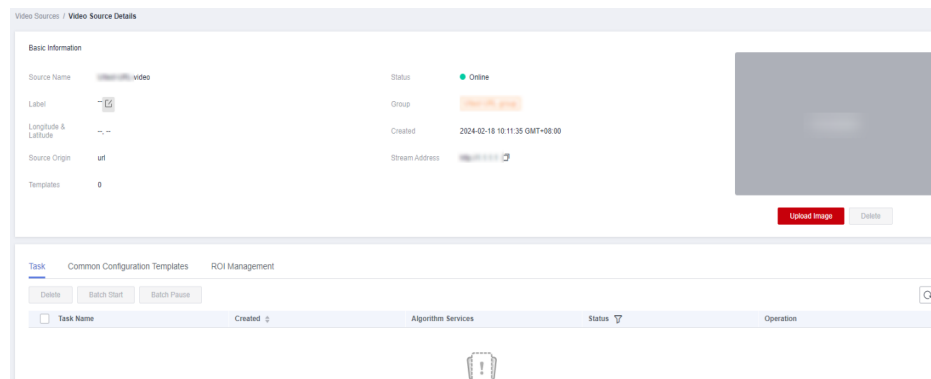
Obtaining Details About a Group

On the **Video Source Groups** page, you can view basic group information such as status, number of video sources, and number of batch tasks.

To obtain details about a specified group, perform fuzzy search by group name, filter groups by algorithm type and status, or sort groups by video source quantity, task quantity, creation time, or update time in ascending or descending order.

Then, click a group name to go to the group details page. The group details page displays the basic information about the group, video sources in the group, and batch tasks, as shown in **Figure 4-2**.

Figure 4-2 Obtaining details about a specified video source group



- **Basic Information** displays the group name, number of video sources, number of batch tasks, and video source status.
- **Video Source Groups** displays the list of video sources in the group.

On the **Video Source Groups** page, you can click **Group Remove** in the **Operation** column to remove a video source from the group. The removed video source is deleted from the group, but the video source itself is not deleted. If a video source group has been associated with batch tasks, its video source cannot be removed.

- **Batch Configuration** displays the batch tasks that have been configured for the group.

Editing a Group

On the **Video Source Groups** page, click **Edit** in the **Operation** column to edit a group's information, including the group name, video sources, and group description. Then click **OK**. In the dialog box that is displayed, enter **Delete** and click **OK**.

Deleting a Group

- Group with tasks
If the number of tasks is greater than 0, click **Delete** in the **Operation** column. In the dialog box that appears, enter **Delete** and click **OK** to delete the video source group. All group tasks are deleted accordingly.
- Group without tasks
If the number of tasks is 0, click **Delete** in the **Operation** column. In the dialog box that appears, click **OK**.

5 Algorithm Center

On the VIAS console, you can view the list of algorithm service packages, purchase commercial algorithm packages, and view and deploy algorithm services in the purchased algorithm packages.

5.1 Purchasing an Algorithm Package

Description

VIAS provides algorithm packages for you to purchase. An algorithm package contains multiple algorithms.

Procedure

1. Log in to [the VIAS console](#), and click **Buy Algorithm Package**.
Alternatively, choose **Algorithm Center > Algorithm Service Packages** and select the required algorithm package (this entry is available only when you have purchased an algorithm service). The **Buy Package** page is displayed.
2. Select the required algorithm package, set **Billing Mode** and **Quantity**, and click **Buy Now**.
 - **Billing Mode:** Yearly/Monthly
 - **Quantity:** includes the number of video channels and the purchase duration. The default number of video channels is **1**. The price increases as video channels increase.
3. Confirm the order and click **Buy Now**. Then, click **Pay Now** and complete the payment. After the payment, the package is purchased.
After the purchase, you can choose **Algorithm Center > Algorithm Service Packages** to view the number of purchased channels of the algorithm package and choose **Algorithm Center > My Algorithm Services** to view the list of algorithms contained in the purchased algorithm package.

5.2 Deploying an Algorithm Service

Viewing the Algorithm Service List

After purchasing an algorithm service package, you can choose **Algorithm Center** > **My Algorithm Services** to view the list of available algorithm services.

Algorithm services can be classified into Huawei-developed cloud algorithms, Huawei-developed edge algorithms, non-Huawei-developed cloud algorithms, and non-Huawei-developed edge algorithms by scenario and source. A Huawei-developed cloud algorithm can be directly used for video analysis tasks without the need to deploy it. The deployment status of a Huawei developed cloud algorithm is displayed as /.

Procedure

Huawei-developed edge algorithms and non-Huawei-developed cloud and edge algorithms must be deployed before being used. An algorithm can be used only when its deployment status is **Running**.

1. On the **My Algorithm Services** page, locate the target algorithm service and click **Deploy** in the **Operation** column.
2. Set parameters according to [Table 5-1](#).

Table 5-1 Parameters for deploying an algorithm

Parameter	Description
Channels	Maximum number of channels required. The system will allocate and create enough algorithm resources in the backend to run your tasks.
Resource Pool	Select the resource pool used for the deployment.
Service Startup Parameters	Parameters for this deployment. The startup parameters vary depending on the algorithm service. For details about the parameter functions, contact the algorithm developer.

When the deployment status is **Running** or **Deploying**, you can click **Stop Deployment** to stop the deployment.

6 Task Center

6.1 Managing a Task

6.1.1 Creating a Task

Context

You can create a video analysis task to use an algorithm service to analyze and process a specified video source.

Task management allows you to create video analysis tasks, view task details and list, and delete tasks.

There are two ways to create a task:

- Choose **Task Center > Task List** and click **Add Task**.
- Choose **Video Center > Video Sources** and click **Add Task** in the **Operation** column of the target video source.

Prerequisites

- An algorithm service is available. For details, see [Purchasing an Algorithm Package](#).
- A video source is available. For details, see [Adding a Video Source](#).

Procedure

1. Log in to the VIAS console.
2. Choose **Task Center > Task List** and click **Add Task**.
 - a. Set parameters according to [Table 6-1](#).

Table 6-1 Basic task parameters

Parameter	Description	Example
Task Name	Enter a task name containing 1 to 100 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.	Intrusion detection
Type	Select Cloud or Edge .	N/A
Video Sources	Select a video source to be analyzed from the drop-down list.	Campus camera A
Visual Capability Package	Select a purchased algorithm package.	Common cloud algorithm package
Order ID	Select the order ID of the algorithm package from the drop-down list. This parameter is only displayed for commercial algorithm packages.	cd80eef0611843ad99eee3b833xxxxxx
Algorithm Services	Select the algorithm to be used.	Intrusion detection (cloud)
Service Version	Select a function version.	1.0

- b. After the algorithm service and service version are selected, the ROI configuration and common parameters of the algorithm are displayed.
 - **ROI:** For details about ROI configuration, see [Configuring the ROI](#). Some algorithms do not require ROI configuration.
 - **Common Parameters:** The parameters vary depending on the algorithm service version. For details about the parameters, see *API Overview*
 - **Common Configuration Templates:** You can save a common configuration template. After the template is saved, the current algorithm configuration will be used when you select the algorithm for video analysis next time.
3. Click **Next** to set the task execution plan.


Table 6-2 Basic task parameters

Parameter	Description
Always	The task starts immediately and runs continuously.

Parameter	Description
Periodic	You can choose this option to schedule the task by adjusting a chart. Each time slot on the chart is at least 15 minutes long.

- Click **Next** to select a mode for storing task results.
The options are **OBS**, **DIS**, **Webhook**, and **Event Center**.

Table 6-3 Task output parameters

Output Mode	Configure Output	Description	Example
OBS	File path	Select an OBS folder or path to store the task result. You must enable OBS beforehand. For details about how to enable OBS, see Getting Started with OBS .	N/A
DIS	Channel	Enter a channel for outputting the task result. You must create a DIS stream before using it here. For details, see Creating a DIS Stream .	N/A
Webhook	URL	Enter your webhook service URL starting with http://, https://, rtsp://, rtmp://, ftp://, or file:// with a maximum of 1000 characters. The task result can be directly sent to the webhook URL through a POST request. For details about how to start a webhook service, see Starting a Webhook Service .	http://10.10.10.1:6006
	Header	Add at least one and at most ten headers. Click  to add more.	content-type; application/json
Event Center		Result output service provided by the platform. For details, see Event List .	N/A

- After you finish the configuration, click **OK**.
You will see the **Task List** page, where you can check the status and basic information of your task.
After a task is created, you can click **Edit** in the **Operation** column to modify its name, video source, and common parameters.

6.1.2 Deleting a Task

There are two ways to delete tasks:

- To delete a task, go to the **Task List** page and choose **More > Delete** next to the task you want to remove. To delete multiple tasks at a time, select the tasks you want to delete and click **Delete** in the top left corner.
- To delete the tasks associated with a video source, choose **Video Center > Video Sources** and click **Delete** next to the video source you want to remove. If the video source has any tasks, enter **Delete** in the dialog box that appears to confirm your operation. If the video source has no tasks, click **Delete** and then **OK** in the dialog box.

6.1.3 Starting or Stopping Tasks in Batches

You can start or stop tasks in either of the following ways:

- Starting or stopping a task
Choose **Task Center > Task List**. Then, click **Start** or **Pause** next to the task you want to change.
- Starting or stopping tasks in batches
Choose **Task Center > Task List**. Then, select one or more tasks and click **Batch Start** or **Batch Pause** in the top left corner. In the dialog box that appears, verify the information, enter **Confirm**, and click **OK**.

6.1.4 Viewing Task Details

On the **Task List** page, you can view the status, video source, algorithm service, vendor, and creation time of each task. To view specified tasks, you need to perform fuzzy search by task name or video source name, or filter tasks by task status, algorithm service, and vendor. Then, you can sort the tasks by creation time in ascending or descending order.

You can click the name of a task to view the task details, including the algorithm configuration template used by the task and the task output configuration.

If a task is in the **Running** or **Succeeded** status, the task status is normal. After a task succeeds, you can view the task result based on the output mode and path selected during the task creation. For details, see [Obtaining Task Results](#).

There are 15 task statuses, as shown in [Table 6-4](#).

Table 6-4 Task running status

Status	Description
Running	The task is running properly.
Starting	The task is waiting for the resource scheduling.
Succeeded	The task is executed.
Failed	The task failed.
Create Failed	Creating the task failed.

Status	Description
Deleting	The task is being deleted.
Pending	The task is queuing and awaiting resource allocation.
Upgrading	The task is being automatically upgraded.
Freezing	The task is being frozen because you are in arrears.
Frozen	The task has been deleted on the edge node. However, it will be restarted after your account is topped up in the retention period.
Recovering	The task is being recovered.
Stopped	The task is stopped.
Stopping	The task is being stopped.
Abnormal	The task is abnormal.
Start Failed	Starting the task failed.

6.1.5 Obtaining Task Results

After a task is executed, obtain the task result based on the output path set during task creation.

If **Output Mode** is set to **Event Center**, obtain the task result in Event Center. For details, see [Event List](#).

To obtain the task result when the output mode is **DIS** or **Webhook**, follow the steps in this chapter.

Step 1 Obtain the Task Output Path

After a task is executed, click the task name on the task list page and obtain the task output path in the **Configure Output** tab.

- Obtain the DIS channel for DIS output mode.
- Obtain the webhook URL for webhook output mode.

Step 2 Obtain the Task Result

View the task result in the obtained output path.

DIS

1. Log in to the DIS console.
2. Click the obtained DIS stream, and check whether any incoming stream is generated.
3. Obtain the result data through a DIS dump task. For details, see [Creating a Dump Task](#).

Webhook

The service uses a POST request to send the task result, including structured data and images, as data streams in JSON format to the specified webhook URL.

As an example, the script in [Starting a Webhook Service](#) saves the webhook message that it receives in the `post.txt` file, which is in the same folder as the script.

Take the intrusion detection algorithm as an example. The following is an example of the JSON result output by the algorithm, indicating that an intrusion is detected in a specified area in the video.

```
{
  "event_type":196609,
  "timestamp":1581753322,
  "stream_id":"44000000581314000234#15#9f63890660f24175871c861b345e852d",
  "message_id":"849D1326-4FC8-11EA-8F73-0242AC110004",
  "image_base64":"/9j/4AAQSkZJRgA...",
  "task_id":"63eac48bf3704e8bb30af7f244fdcf3d",
  "data":{
    "event_set":[
      {
        "start_position":"in",
        "end_position":"in",
        "bounding_box":{
          "y":327,
          "h":216,
          "x":876,
          "w":105
        },
        "category":0,
        "detection_id":"83BFC020-4FC8-11EA-9F93-0242AC110004"
      }
    ]
  }
}
```

Table 6-5 JSON result fields

Field	Description
task_id	Task ID.
data	Recognition result output by the task.
bounding_box	Rectangle for the alarm object. <ul style="list-style-type: none"> • x: horizontal coordinate of the upper-left corner of a bounding box • y: vertical coordinate of the upper-left corner of a bounding box • w: width of a bounding box • h: height of a bounding box
detection_id	UUID of the alarm object.

Field	Description
category	Category of the alarm object. The value can be: <ul style="list-style-type: none"> • 0: person • 1: vehicle • 2: other
start_position	Start position of the intrusion. <ul style="list-style-type: none"> • For an intrusion against a line, the value is the name of the side from where the object enters. • For an intrusion into a region, the value is in or out. <ul style="list-style-type: none"> - in: The intrusion starts inside the region. - out: The intrusion starts outside the region.
end_position	End position of the intrusion. <ul style="list-style-type: none"> • For an intrusion across a line, the value is the name of the side where the object arrives. • For an intrusion into a region, the value is in or out. <ul style="list-style-type: none"> - in: The intrusion ends inside the region. - out: The intrusion ends outside the region.

6.2 Batch Task

6.2.1 Adding a Batch Task

Context

Video Center allows you to group video sources. Task Center allows you to analyze multiple video source groups in batches. If you want to use the same algorithm service to analyze and process all video sources in a group, you can create a batch task.

Prerequisites

- An algorithm service is available.
- A video source group has been created in Video Center.

Procedure

1. Choose **Task Center** > **Batch Task** and click **Add Batch Task**.
2. Set parameters by referring to the scenario of creating a task in [Creating a Task](#).
3. After you finish the configuration, click **OK**. You will see the **Batch Task** page, where you can check the status and basic information of your task.

6.2.2 Managing a Batch Task

Starting or Stopping a Batch Task

On the **Batch Task** page, click **Start** or **Pause** next to the task you want to change.

Editing a Batch Task

On the **Batch Task** page, click **Edit** next to the batch task you want to edit to modify its name, video source group, common parameters, and execution mode.

Viewing Batch Task Details

You can see the basic information about your batch tasks on the **Batch Task** page. This includes algorithm services, group name, task quantity, and status. To view specified batch tasks, you need to perform fuzzy search by batch task name or algorithm service name, or filter batch tasks by algorithm service, group name, task status, and vendor. Then, you can sort the batch tasks by task quantity or creation time in ascending or descending order.

You can click the name of a batch task to view more details. In addition to the basic information, you can also see the video analysis tasks associated with the batch task on the details page. In the associated task list, you can filter and start tasks, and view task details.

Delete a Batch Task

On the **Batch Task** page, click **Delete** next to the batch task you want to remove.

7 Event Center

7.1 Event List

Event Center stores alarm results captured by video algorithms, reviews snapshots, and reports events to implement event management and analysis.

The event list displays reported alarm events. You can view the video source, event time, number of aggregated events, and alarm image. It allows you to view, search for, delete, and review events, and set event rules.

7.2 Event Details

On the **Event List** page of Event Center, you can view basic event information, such as the video source name, event time, number of aggregated events, alarm image, and approval status. To view specified events, you need to perform fuzzy search by event name or video source name, or filter events by approval status from the drop-down list. Then, you can sort the events by event time in ascending or descending order.

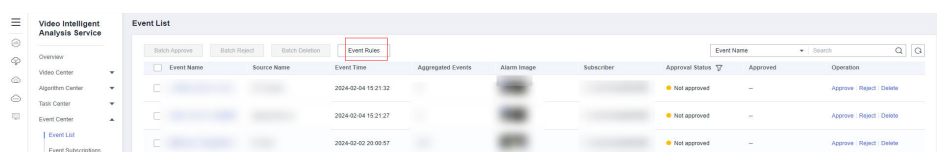
You can click an event name to go to the event details page and view the event details.

On the event details page, you can view the primary event information, such as the video source name, status, labels, group, location, creation time, and stream address. The sub-events are also displayed. You can view events by page, view the alarm image and approval status, and batch approve, reject, or delete events.

7.3 Event Rules

Event rules are rules for displaying events.

1. Choose **Event Center > Event List** and click **Event Rules** above the event list.



2. On the **Event Rules** page, choose whether to enable manual review and repetitive event aggregation.

Event Rules

×

New rules apply to new events only. Do not modify the rules frequently.

Manual Review

If Manual Review is enabled, all events must be manually reviewed before they can be reported.

Repetitive Event Aggregation

When this option is enabled, events generated for the same job within a user-defined interval will be aggregated into a single event.

Aggregation Interval Min

- **Manual Review:** If this option is enabled, all events must be manually reviewed before they can be reported.
- **Repetitive Event Aggregation:** If this option is enabled, set the event aggregation interval. The value ranges from 1 to 1440 minutes. Events generated for the same task within a user-defined interval will be aggregated into a single event. The first event is displayed as the primary event in the event list. Other events are displayed as sub-events on the event details page. All events generated after this option is disabled are displayed as primary events in the event list.

3. Click **OK**.

7.4 Reviewing or Rejecting an Event

All events sent to Event Center are unapproved. You can manually review the events to improve the accuracy.

If manual review is enabled, all events must be manually reviewed before they can be reported.

Approving or Rejecting Events in Batches

On the **Event List** page, select the events you want to review and click **Batch Approve** or **Batch Reject**. After the review is completed, the approval status is refreshed on the page.

NOTE

After repetitive event aggregation is enabled, sub-events are displayed on the event details page. You need to go to the event details page and select sub-events for batch approval.

Approving or Rejecting an Event

On the **Event List** page, click **Approve** in the **Operation** column. In the dialog box that appears, click **Yes** to approve the event. The event will be pushed to subscribers through the subscription address.

On the **Event List** page, click **Reject** in the **Operation** column. In the dialog box that appears, click **Yes** to reject the event. The event will not be pushed to subscribers through the subscription address.

7.5 Deleting an Event

Batch Deletion

On the **Event List** page, select the events you want to delete and click **Batch Deletion**. In the dialog box that appears, choose whether to delete sub-events and click **OK**. The deletion cannot be undone.

Individual Deletion

On the **Event List** page, click **Delete** next to the event you want to remove. In the dialog box that appears, choose whether to delete sub-events and click **OK**. The deletion cannot be undone.

7.6 Subscribing to Events

By subscribing to events, you can create a socket server locally to receive event messages.

The subscription list displays all subscribers' information, including the subscriber name, number of subscribed video sources, number of subscribed events (sent and responded), creation time, and description. You can add, delete, modify, and search for subscriptions.

Adding a Subscription

1. Choose **Event Center > Event Subscriptions**.
2. Click **Add Subscription** and set parameters by referring to [Table 7-1](#).

Table 7-1 Parameters for subscribing to events

Parameter	Description
Subscriber	Enter a subscriber name.
Video Sources	Select All or Partial . All indicates that alarms of all video sources are subscribed to. Partial indicates that alarms of selected video sources are subscribed to.

Parameter	Description
Subscription Address	IP address of the subscriber's local PC, for example, http://127.0.0.1:8080 .
Header	Headers are sent to the subscriber together with subscribed messages. The format is key-value. Set at least one custom header.
Subscriber Description	Description, which is optional.

After a subscription is added, the platform sends the events generated for the selected video sources to all subscribers who have subscribed to the video sources.

8 Operation Center

8.1 Creating an Edge Resource Pool

An edge resource pool is a group of edge nodes. After an edge algorithm is deployed in an edge resource pool, you can use the deployed algorithm to analyze video data from edge cameras. Before creating a task using an edge algorithm, create an edge resource pool and deploy the edge algorithm in it.

Prerequisites

An edge node has been added and managed on IEF and is running. For details, see [Edge Node Overview](#).

Procedure

1. Log in to the VIAS console. Choose **Operation Center > Edge Resource Pools**.
2. On the **Edge Resource Pools** page, click **New** and set parameters.

Table 8-1 Parameters for creating an edge resource pool

Parameter	Mandatory	Type	Example	Description
Name	Yes	String	edge-pool-001	Enter 4 to 32 characters. Only lowercase letters, digits, and hyphens (-) are allowed.

Parameter	Mandatory	Type	Example	Description
Description	No	String	Edge resource pool which is used to deploy edge algorithms	Enter 0 to 255 characters.
Edge Nodes	Yes	String	edge-node-001	Select an edge node managed on IEF from the drop-down list.

- After you finish the configuration, click **Submit**.

The edge resource pool list page is displayed. You can see information about the newly created edge resource pool on the **Edge Resource Pools** page.

Viewing an Edge Resource Pool

The **Edge Resource Pools** page displays a list of created resource pools. You can view the name, status, creation time, update time, and description of each resource pool.

You can also search for a specified edge resource pool by name.

Click the name of an edge resource pool to go to the details page and view details about its edge nodes.

Modifying an Edge Resource Pool

On the **Edge Resource Pools** page, click **Edit** next to the edge resource pool that you want to edit to modify its parameters.

Deleting an Edge Resource Pool

On the **Edge Resource Pools** page, click **Delete** next to the edge resource pool that you want to remove.

CAUTION

Do not delete an edge resource pool if there are tasks running on it.

9 Reference

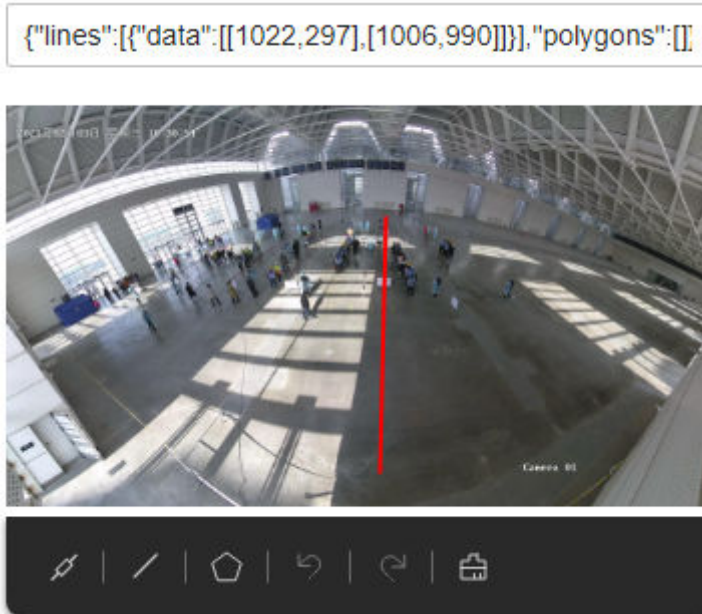
9.1 Configuring the ROI

Region of Interest (ROI) indicates the detection area of an algorithm. Some algorithms require JSON strings indicating the detection area, for example, `{"polygons":{"data":[[84,389], [1840,349], [1824,526], [78,526]]}}`, where `[84,389]` indicates the horizontal and vertical coordinates, `{"data":[...]}` indicates a graph formed by connection lines of these coordinate points, and `"polygons": [...]` indicates that multiple `{"data":[...]}` graphs are polygonal areas. The entire string example represents a polygonal area formed by the four coordinate points. Similarly, `{"lines":{"data":[[238,481], [1309,481]]}}` indicates a line segment formed by two coordinate points.

You can also draw an ROI. The platform automatically generates JSON strings indicating a detection area based on the drawing.

- When drawing a straight-line segment, click .

Figure 9-1 Drawing a straight-line segment




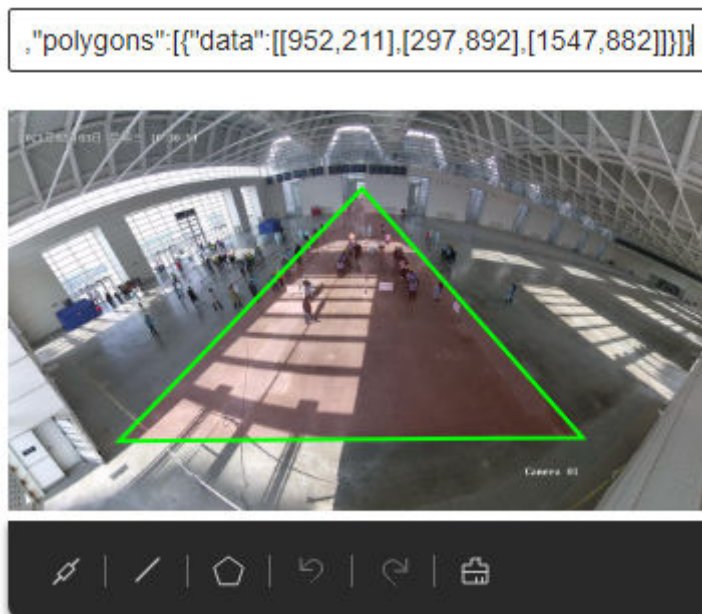
- When drawing a polygon, click . Draw the expected detection area in the photo. **You do not need to draw the last line segment. Double-click the left mouse button to end the drawing of the polygon. The area will be automatically closed.** When drawing a polygon, ensure that the line segments do not overlap. You can draw multiple polygon areas in a photo.

Figure 9-2 Drawing a polygon



9.2 Choosing an Output Channel

Prepare channels before outputting task results to DIS channels or webhook URLs.

Creating a DIS Stream

If **Output Mode** is set to **DIS** for a task, ensure that a DIS stream is available. For details about how to create a DIS stream, see [Creating a DIS Stream](#).

Starting a Webhook Service

If **Output Mode** is set to **Webhook** for a task, ensure that a webhook service has been started.

The following uses a simple Python script as an example to describe how to start a webhook service and save the received data.

1. Prepare a local Linux server, ensure that the network between the Linux server and the edge node server is normal, and install the Python environment.
2. Run the **ifconfig** command on the Linux server to obtain the IP address.
3. Enter the IP address of the Linux server in line 18 of the script.

Figure 9-3 Script example post.py

```
1 import json
2 from wsgiref.simple_server import make_server
3
4
5 def application(environ, start_response):
6     start_response('200 OK', [('Content-Type', 'application/json')])
7
8     request_body = environ["wsgi.input"].read(int(environ.get("CONTENT_LENGTH", 0)))
9
10    f=open('./post.txt','a')
11    f.write(request_body)
12    f.write("\n")
13    f.close()
14    return ("200 success\n")
15
16 if __name__ == "__main__":
17     port = 6006
18     httpd = make_server("192.168.1.223", port, application)
19     print "serving http on port {}".format(str(port))
20     httpd.serve_forever()
```

```
import json
from wsgiref.simple_server import make_server

def application(environ, start_response):
    start_response('200 OK', [('Content-Type', 'application/json')])
    request_body = environ["wsgi.input"].read(int(environ.get("CONTENT_LENGTH", 0)))

    f=open('./post.txt','a')
    f.write(request_body)
    f.write("\n")
    f.close()
    return ("200 success\n")

if __name__ == "__main__":
    port = 6006
    httpd = make_server("10.10.10.1", port, application)
    print "serving http on port {}".format(str(port))
    httpd.serve_forever()
```

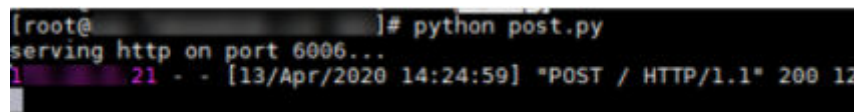
 NOTE

You can change the port number **6006** in the script.

When creating a task, set the webhook URL to **http://\${IP address}:\${Port}**, for example, **http://10.10.10.1:6006**.

4. Execute the script **python post.py** to start the webhook service.

Figure 9-4 Script executed



```
[root@ ~]# python post.py
serving http on port 6006...
13/Apr/2020 14:24:59 - - [13/Apr/2020 14:24:59] *POST / HTTP/1.1* 200 12
```

9.3 Obtaining a RESTful Video Source Address

Edge video ingestion supports **Camera**, **VCN**, and **Restful**. This section describes video ingestion using RESTful APIs.

Context

VIAS uses RESTful APIs as follows: The algorithm container accesses the server address provided by you through a REST request, obtains the response and parses the video stream address, and ingests and analyzes the video source. Restful URLs for videos supported by cloud algorithms must be accessed through Huawei Cloud servers, and Restful URLs for videos supported by edge algorithms must be accessed through your edge servers.

Assume that the RESTful request address of the provided GET method is **http://10.10.10.1:6006/task**.

The response is:

```
{
  "data": {
    "rtspurl": "rtsp://10.10.10.1/test.sdp"
  }
}
```

URL: REST request address. Set this parameter to **http://10.10.10.1:6006/task**.

Relative RTSP URL: Path of the edgerestful stream address in the response body. Set this parameter to **data/rtspurl**.

Figure 9-5 Adding a video source obtained using a RESTful API

* Type: Single Batch

* Source Name: ✓

* Location: Cloud Edge

* Select Path: Camera Restful VCN

* HTTPS Certificate Validation:

* URL:

* Relative RTSP URL:

Longitude & Latitude:

REST API Script Example

The following is a server script written in Python. **host** indicates the REST request address, **data** indicates the data structure returned by the backend service, **request_channel_id** indicates the unique ID of the video source, and **url** indicates the actual video stream address.

```
restful > restful.py > ...
1 import json
2 from http.server import HTTPServer, BaseHTTPRequestHandler
3
4 data = {'data': {'url': 'rtsp://10.78.12.135/test.sdp', 'request_channel_id': 'stream_id'}}
5 host = ('10.78.12.135', 6010)
6
7 class Resquest(BaseHTTPRequestHandler):
8     def do_GET(self):
9         self.send_response(200)
10        self.send_header('Content-type', 'application/json')
11        self.end_headers()
12        self.wfile.write(json.dumps(data).encode())
13
14 if __name__ == "__main__":
15     server = HTTPServer(host, Resquest)
16     print('running server...')
17     server.serve_forever()
18
```

After configuring **host** and **data**, run the script. Then, you will access the URL configured in **host** and obtain a returned structure.

```
PS C:\Users\... \Desktop\restful-python3> python .\restful.py
running server...
```

When creating a video source, set **URL** to the REST request address, and set **Relative RTSP URL** based on the response. In the preceding example, the video source address in the response is **data/url**.

A Change History

Released On	Description
2023-07-20	Replaced images.
2023-07-13	Modified the link to the management console.
2023-02-01	This issue is the first official release.