

Intelligent Fusion Server

User Manual

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The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the Hikvision website (https://www.hikvision.com/).

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FCC Information

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FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

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This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.



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2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: http://www.recyclethis.info.

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Preface

Applicable Model

This manual is applicable to Intelligent Fusion Server.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
<u> </u>	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Safety Instruction

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause overheating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

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Chapter 1 Introduction

Intelligent fusion server (hereafter referred as the sever), equipped with professional GPU card, integrates deep learning-based algorithms of facial analysis, picture structuralization and video structuralization. It combines analysis, storage and application as one. By recognizing, analyzing, modelling and comparing pictures of faces, human bodies or vehicles, the server can perform functions as list alarm, creating personnel archives, personnel trace analysis, searching by human body picture, vehicle arming, and so forth. The server is widely applied for city, community, school, company, industrial area and other face recognition scenarios.

1.1 Key Features

- Human face list management.
- · Human face list library arming.
- Human face detection in different monitoring scenarios.
- Rapid search for human face information in capture library.
- Supports list alarm, stranger alarm, high frequency alarm and license plate alarm.
- Settings of alarm popup and sound.
- Supports to establish archives for each personnel.
- Supports to generate personnel pattern.
- Rapid 1V1 face similarity comparison.
- Supports to search picture by attribute or picture, and display search results in order of similarity from high to low or in time order.
- Supports personnel identification and display search results in order of similarity from high to low.
- Supports to view the usage of device resource.
- User permission management of admin, operator and consumer.
- NTP time synchronization and manual time synchronization.
- Supports software updating.

1.2 PC Requirements

You can get access to the server with Web browser.

The requirements for your PC are shown as below.

- Operating system: Microsoft Windows 7, Microsoft Windows 10.
- CPU: Intel Pentium IV 3.0 GHz or more advanced version.
- · Memory: 1G or larger.
- Resolution: 1024 × 768 or higher.
- Web browser: Internet Explorer 8 to 11.

Chapter 2 Configuration Wizard

2.1 Login

You can get access to the server with Web browser.



You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.

Steps

1. Open Web browser, enter the IP address of the server and then press Enter.

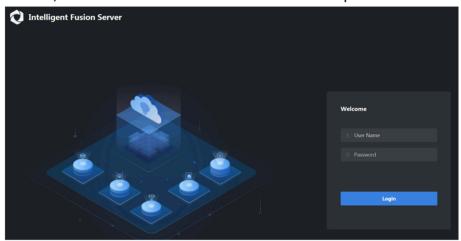


Figure 2-1 Login Interface

- 2. Enter User Name (admin) and Password(set for activation).
- 3. Click Login.



Figure 2-2 Home Page

 $\bigcap_{\mathbf{i}}$ Note

- If the server is inaccessible, go to Internet Options → Advancement, check Enable TLS1.1
 and Enable TLS1.2.
- The specific interface varies from product to product.

After admin user logs in, the server will jump to the homepage where you can view information such as **Alarm Statistics**, **Camera Statistics**, and **Capture Statistics**.

2.2 Import License

All-in-one devices are equipped with license by default, while Intelligent Fusion Software should be imported with a license for normal operation. Consult our technical supporters to apply for a license.

Steps

- 1. Go to System Management → System Configuration → Authorization .
- **2.** Move your mouse to **Operation guide**, and follow the steps to operate.

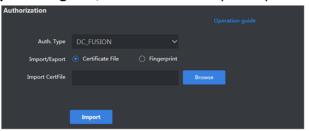


Figure 2-3 Import License

2.3 Create Cluster



The nodes that create micro video cloud cluster should be the same with that of creating analysis cluster. Otherwise, exception may occur.

2.3.1 Add Node

Before You Start

The node is online and on the same subnet with the server.



The specific parameter values filled in the relevant interfaces below are for reference only. You need to configure relevant parameter values according to actual needs.

Steps

- 1. Go to System Management → Cluster Management → Node Management
- 2. Click Add.

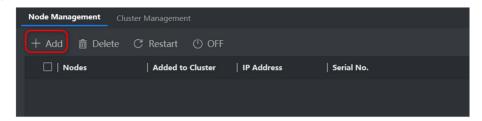


Figure 2-4 Add Notes

- 3. Enter Name, Nodes IP, User Name and Password.
- 4. Click OK.

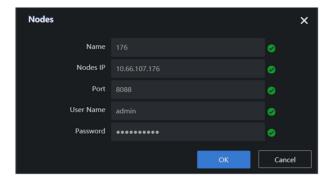


Figure 2-5 Configure Nodes Information

i Note

If there are multiple nodes to be added, please follow the steps above to finish.

2.3.2 Create Stand-alone Cluster

A single node can create a stand-alone cluster. And data can only be analyzed after the cluster is created.

Before You Start

The node is online.

Steps

1. Go to System Management → Cluster Management , and click Create Cluster.

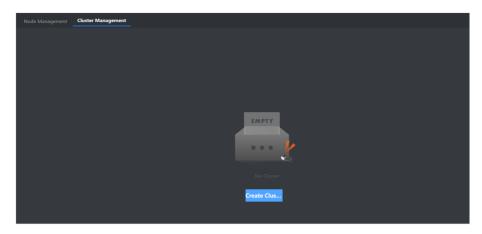


Figure 2-6 Click Create Cluster

2. Select the desired node, and click Next.

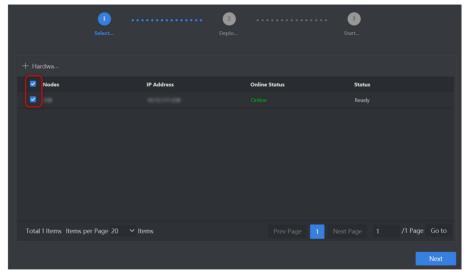


Figure 2-7 Select Nodes

3. Click zookeeper, kafka, MongoDB, appServer respectively and check the desired nodes.

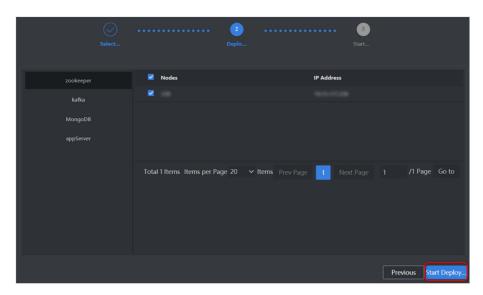


Figure 2-8 Deploying Service

- 4. Click Start Deploying.
- **5.** Click **OFF** after deploying is completed.
- **6.** Click **Resource Configuration** to allocate resources for face picture analysis and face video analysis.

Face Picture Analysis Path

Intelligent analysis and comparison of faces in pictures.

Face Video Analysis Path

Intelligent analysis and comparison of faces in videos.

Structured Picture Analysis Channel

Intelligent analysis of target (human body or vehicle) attributes in pictures.

Structured Video Analysis Channel

Intelligent analysis of target (human body or vehicle) attributes in videos.



If the value of available resource is zero, the server cannot process the corresponding analysis task.

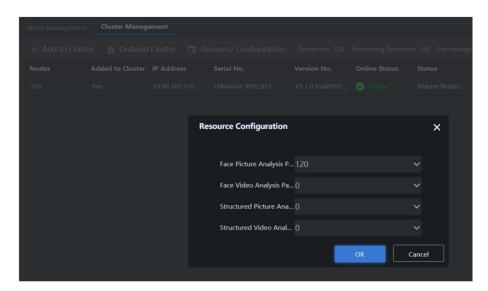


Figure 2-9 Allocate Resource



The interfaces vary according to different types of chips. If the figure above is different with the actual one, the later prevails.

2.3.3 Create Master and Backup Cluster

Two or more nodes can create a master and backup cluster. And data can only be analyzed after the cluster is created.

Before You Start

- Ensure that at least 2 nodes are added.
- All the nodes should be on the same subnet.
- The master node and backup node must share the same type of GPU chip.

Steps

- 1. Go to System Management → Cluster Management , and click Create Cluster.
- 2. Select the desired nodes, and click Next.
- 3. Click zookeeper, kafka, MongoDB, appServer respectively and check the desired nodes.
- 4. Click appServer and enter an unused IP address in Virtual IP.
- 5. Click Start Deploying.
- **6.** Click **OFF** after deploying is completed.
- 7. Click Resource Configuration to allocate resources according to your actual needs.

Face Picture Analysis Path

Intelligent analysis of face attributes in pictures.

Face Video Analysis Path

Intelligent analysis of face attributes in videos.

Structured Picture Analysis Channel

Intelligent analysis of target (human body or vehicle) attributes in pictures.

Structured Video Analysis Channel

Intelligent analysis of target (human body or vehicle) attributes in videos.

i Note

If the value of available resource is zero, the corresponding analysis task can not be performed.

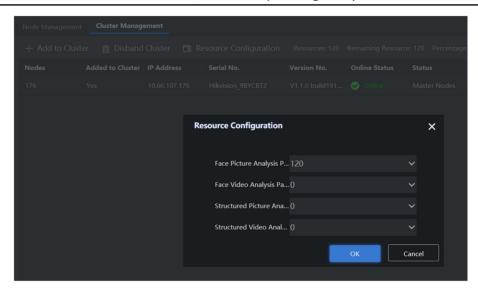


Figure 2-10 Allocate Resource

2.4 Add Face List Library

Add different list libraries, including normal library, blacklist library and VIP library.

Steps

1. Go to List Management, and click Add.

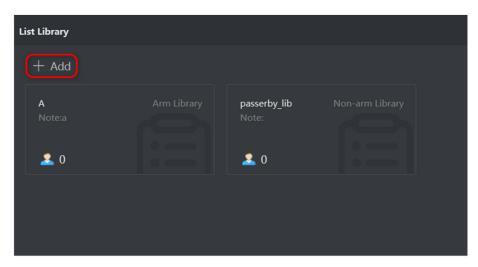


Figure 2-11 List Library Interface

2. Configure relevant parameters according to actual demands.

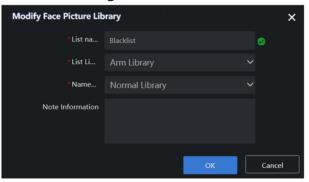


Figure 2-12 Add Face List Library

 \bigcap i Note

Only when **List Library Type** is set as **Arm Library** can the alarming and personnel archive function be performed.

- 3. Click OK.
- 4. Optional: Other operations.
 - Click matter to modify list library information.
 - Click in to delete the list library.

Note

- The passerby library is created by default and cannot be deleted. It is used to add captured stranger face pictures.
- Deleting a list library will delete all relevant personnel information.
- Only when no arming list is added, can the arm library be deleted.

2.5 Add Personnel Information

Before You Start

A face list library has been added.

Steps

1. Click the desired list library to add personnel.



Figure 2-13 Click List Library

2. Click Add, enter relevant parameters in the dialogue box, and upload face pictures.

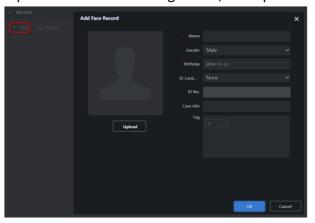


Figure 2-14 Add Personnel Information



- Name and Birthday are required, enter other contents according to actual demands.
- Face pictures in the format of JPEG, BMP, TIF, and PNG are supported.
- 3. Click OK.
- **4.** Move your mouse to the desired item, and click different icons for further operations.
 - Click are to edit personnel information.
 - Click into delete personnel information.
 - Click **T** to search personnel information.

2.6 Create Analysis Task

Analysis task includes real-time analysis task and local video record analysis task. Before creating analysis task, you should add respective resource like camera, video record and etc.

2.6.1 Add Camera

Add the desired camera for arming.

Before You Start

Obtain the IP address, user name and login password of the camera.

Steps



- Add one camera only for each time.
- I indicates control center and i indicates area. The camera should be added to control center first before added to area. Here we take adding camera to control center "test" as an example.
- 1. Go to Target Arming → Task Management → Camera Management.
- 2. Go to Administration-admin → Image.

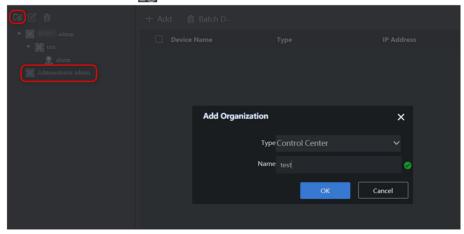


Figure 2-15 Add Control Center

- 3. Select Control Center as Type and enter the name of control center.
- 4. Click OK.
- 5. Click the newly-added control center and enter information in the popup window.

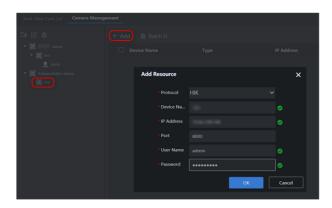


Figure 2-16 Add Camera

- 6. Click OK.
- **7.** Click 🛅 .
- **8.** Select **Area** as **Type** and enter the name of area.

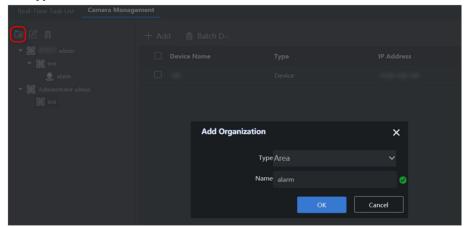


Figure 2-17 Add Area

9. Click OK.



The area name supports digits, lower-case letters, upper-case letters, and special characters like "-" and " _". Up to 32 characters are allowed.

10. Click the newly-added area and then click Add.

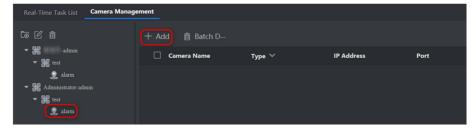


Figure 2-18 Add Camera to Area



The camera can be armed only after it is added to area.

- 11. Select the desired camera.
- 12. Click OK.



Both control center and area can be added to control center, but only camera can be added to area.

2.6.2 Create Real-time Analysis Task

Real-time analysis task is used to conduct real-time analysis of targets in monitoring scene.

Before You Start

The camera has been added.

Steps

- 1. Real-Time Task List
- 2. Go to Target Arming → Task Management , click New.

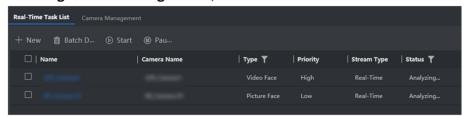


Figure 2-19 Task Management Interface

3. Check a desired camera or multiple cameras, click Create.

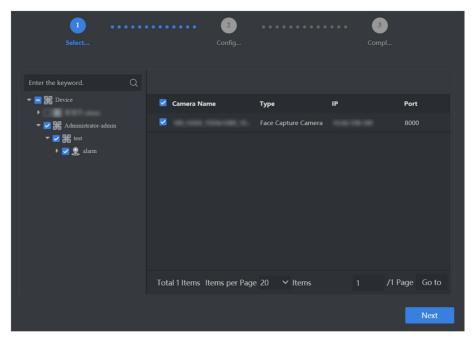


Figure 2-20 Check Cameras

- **4. Optional:** Click in Rule Settings list to set detailed rules.
 - Click 🔲 to draw the detection area. Full screen detection is set by default.
 - Click to draw min. pupil distance, and you can set max. pupil distance as well. After pupil distance is set, only faces whose pupil distance is between min. and max. pupil distance value will be detected.
 - Keep other parameters as default value.



Figure 2-21 Set Rule



This step is only applicable for face capture of video streams from normal network cameras.

- 5. Click OK.
- **6.** Click **a** to set detailed schedule. The server performs all-hours analysis by default.
- 7. Click Create.

Batch Configuration

Configuration of any camera will lead to the change of all cameras.

Video Structure

Analysis of target attributes in videos. This type of analysis task should be created before you set license plate arming.

Video Face

Analysis and comparison of faces in videos.

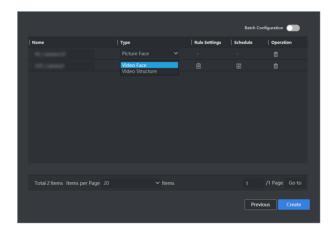


Figure 2-22 Create Real-time Analysis Task

2.6.3 Create Video Record Analysis Task

Video record analysis task is used to analyze targets in video record files.

Before You Start

- Import video record files.
- Allocate resources.

Steps

- 1. Go to Smart Application → Video Analysis , click New.
- 2. Click **Default List**, and then click **Import**.

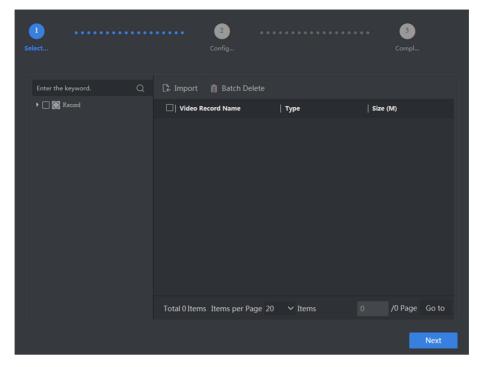


Figure 2-23 Import Video



Set the video starting time, otherwise the time of analysis results will be inconsistent with that of actual recording.

- 3. Click **Browse** to select desired video recording files.
- **4.** Set the actual time of recording as **video starting time** .

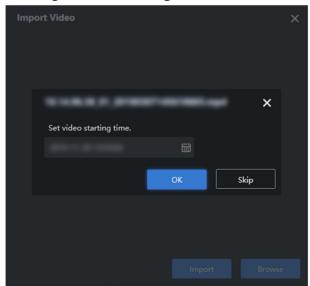


Figure 2-24 Set Video Starting Time

- 5. Click OK.
- 6. Click Import and select the desired videos in the list.
- 7. Click Next.

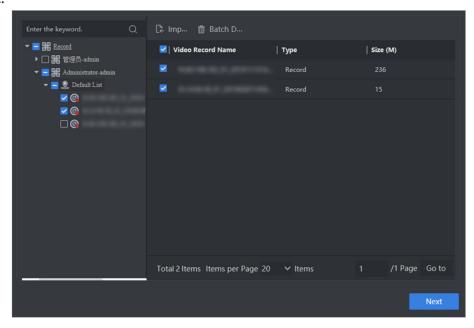


Figure 2-25 Select Recordings



If the live view function is disabled, you may have to install a plug-in in accordance with the prompt. Close Web browser before installing the plug-in.

- 8. Click in Rule Settings list to set detailed rules in the popup interface.
 - Click 🔲 to draw the detection area. Full screen detection is set by default.
 - Click to draw min. pupil distance, and you can set max. pupil distance as well. After pupil distance is set, only faces whose pupil distance is between min. and max. pupil distance value will be detected.
 - Keep other parameters as default value.



Figure 2-26 Set Rule

9. Click Create.

Batch Configuration

Configuration of any camera will lead to the change of all cameras.

Video Structure

Analysis of target attributes in videos. This type of analysis task should be created before you set license plate arming.

Video Face

Analysis and comparison of faces in videos.

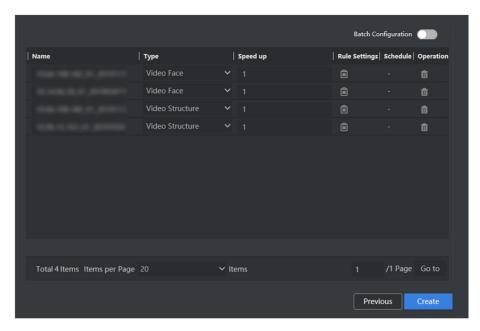


Figure 2-27 Create Video Record Analysis Task

2.7 Add Arming

2.7.1 Add List Arming

Listing arming is used to compare the faces captured by cameras with that of list library. If the similarity between this two pictures reaches the configured threshold value, a list alarm will be triggered.

Before You Start

- Cameras have been added and armed.
- A face list library has been created and personnel information added.
- Select **Arm Library** as **List Library Type** for the desired list library.

Steps

- 1. Go to Target Arming → List Arming , and click New.
- 2. Configure the parameters as below.

Table 2-1 Parameter Setting

Parameter Name	Description
Name and Note	Enter relevant information according to actual condition.
Arming Type	Select List Arm.
Arming Object	Select the desired list library.

Parameter Name	Description
Arming Camera	Select the desired camera.
Arming Time	Set arming time. You can click 💽 to customize arming period.
Threshold	A high threshold value requires a high similarity.

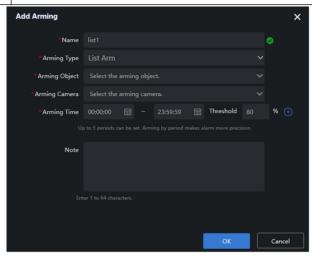


Figure 2-28 Set List Arming Parameters

3. Click OK.

Table 2-2 Parameter Setting

Operation	Description
Modify Arming Parameters	Click 🗹 to modify the arming parameters.
Delete Arming	Select the desired arming, and click 🛅 .

2.7.2 Add Stranger Arming

Stranger arming is used to compare the faces captured by cameras with that of list library. If the similarity between this two pictures does not reach the configured threshold value, a stranger alarm will be triggered.

Before You Start

- Cameras have been added and armed.
- A face list library has been created and personnel information added.
- Select **Arm Library** as **List Library Type** for the desired list library.

Steps

- 1. Go to Target Arming → List Arming , and click New.
- 2. Configure the parameters as below.

Table 2-3 Parameter Setting

Parameter Name	Description
Name and Note	Enter relevant information according to actual condition.
Arming Type	Select Stranger Arm.
Arming Object	Select the desired list library.
Arming Camera	Select the desired camera.
Arming Time	Set arming time. You can click 💽 to customize arming period.
Threshold	A high threshold value requires a high similarity.

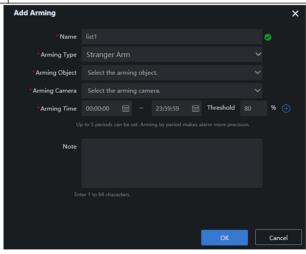


Figure 2-29 Set Stranger Arming Parameters

3. Click OK.

Table 2-4 Parameter Setting

Operation	Description
Modify Arming Parameters	Click lo modify the arming parameters.
Delete Arming	Select the desired arming, and click 🛅 .

2.7.3 Add License Plate Arming

License plate arming is used to compare the license plates recognized by cameras with those armed license plates. If this two plates match with each other, a license plate alarm will be triggered.

Before You Start

A real-time or video record analysis task has been created, and its type is set as **Video Structure** or **Picture Structure**.

Steps

1. Go to Target Arming → License Plate Arming , and check Enable.



Figure 2-30 License Plate Arming Interface

Note

Import the template of license plate arming information to enable batch license plate arming. Go to **Export Arming List** → **Export Template** to get templates.

2. Click Add, and enter License Plate No., Start Time, End Time and Note.

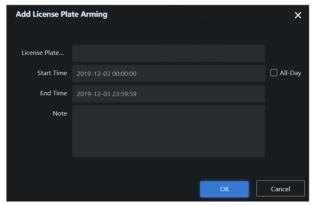


Figure 2-31 Add License Plate Arming

3. Click OK.

2.8 Reset Standard

Generally, the data of arming library will be synchronized to the server automatically. If any exception occurs during the process of data synchronization, you can reset standard to manually synchronize the data of arming library and server.

Before You Start

Full text retrieval is set.

Steps

1. Go to System Management → System Configuration → System Maintenance.

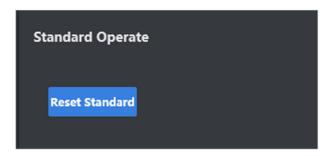


Figure 2-32 Reset Standard

2. Click Reset Standard.

2.9 Enable Frequency Alarm

Frequency alarm is used to count the frequency of personnel's appearance in monitoring scenes. An alarm will be triggered if the frequency reaches the configured threshold.

Before You Start

One or multiple cameras have been added and armed.

Steps

- 1. Go to System Management → System Configuration → Frequency.
- 2. Configure the parameters as below.

Table 2-5 Parameter Setting

Parameter Name	Description
Enable	Check Enable .
Arming Camera	Select the desired camera to count the personnel appearance frequency.
List to Filter	Filter the personnel in list library so that those personnel will not be counted.
Filtering Threshold	Compare the similarity between face captured by camera and that of face list library. If the similarity is greater than or equal to the set value, the personnel captured will not be counted.
Times	Frequency alarm will be generated only when the appeared times is greater than the configured times.
Capture Interval (min)	The internal of capturing face picture for the same personnel. (Unit: minute)
Similarity	Compare the similarity between newly captured face pictures and all captured face pictures. If the similarity is greater than or equal to the configured value, the appearance frequency for the same personnel will be counted.

Parameter Name	Description
Day Range	The statistics period of personnel appearance frequency. The data of the earliest day will be covered by the newly-added data if the actual number of days is greater than this value.
Time Segment	Set time period to count personnel appearance frequency.

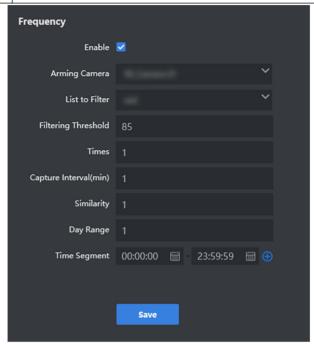


Figure 2-33 Enable Frequency Alarm

3. Click Save.

2.10 Enable Personnel Archive

Personnel archive is used to compare the similarity between face pictures captured by camera and that of face list libraries(except the passerby library). If the similarity value is greater than or equal to threshold value, the captured picture will be classified and saved into the real name archive. Otherwise, it will be saved into the passerby archive. The archive records the appearance frequency, appearance duration and captured pictures. Every personnel will be recorded with a separated archive.

Before You Start

- At least one camera has been added and armed.
- Select **Arm Library** as **List Library Type** for the desired passerby library.

Steps

- 1. Go to System Management → System Configuration → Personnel Archive .
- **2.** Configure the parameters as below.

Table 2-6 Parameter Setting

Parameter Name	Description
Enable	Check Enable .
Arming Object	Select Passerby Library and other desired lists.
Arming Camera	Select desired cameras.
Threshold	Compare the similarity between face pictures captured by camera and that of face list library (except passerby library). If the similarity value is greater than or equal to the threshold value, the captured picture will be classified and saved into the real name archive. Otherwise, it will be saved into the passerby archive.

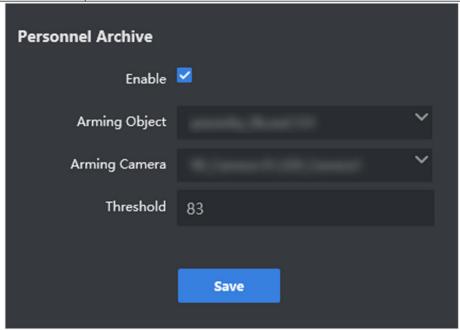


Figure 2-34 Enable Personnel Archive

3. Click Save.

Chapter 3 Smart Application

The smart application includes live view, alarm search, personnel archive and 1 V 1 comparison.

3.1 Live View

You can view captured face pictures, list alarm information, stranger alarm information and frequently appeared personnel alarm information.

Before You Start

Add list arming.

Steps

1. Click Live View.

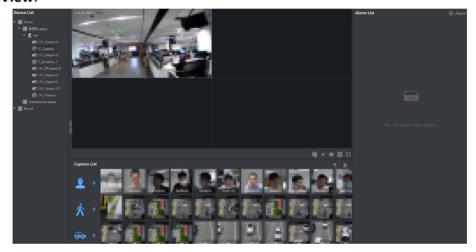


Figure 3-1 Live View

 \square_{Note}

In the live view interface, the bottom area displays real-time captured face pictures, human body pictures and vehicle pictures, and the right area displays real-time list alarm information.

Interface Area	Description
Live View Interface	Live view with multi-channels is supported.
	 Click to stop live view of current channel. Click to stop live view for all channels. Click to capture pictures manually. The captured picture will be saved automatically. Go to <i>Configuration Live View</i> to configure the saving path.

Interface Area	Description
	 Click to view in split window Click to view in full screen.
Capture List	Display the real-time captured face pictures, human body pictures and vehicle pictures.
	 Click to filter cameras or videos, only face pictures from selected cameras or videos will be displayed. Click to delete current displayed face pictures. Click to add the selected picture to list library. Click to take the selected picture as a target to search picture by picture. Click to take the selected picture as a target to confirm identification.

2. Optional: Click **Alarm** in the upper right corner of the interface to configure parameters according to actual needs.

Table 3-2 Parameter Setting

Parameter Name	Description
Real-time Alarm Display	Check the desired alarm types to display corresponding alarm information.
Type of Alarm Popups	Enable alarm pop-up window and check the desired alarm types.
Customized Alarm Sound	Enable alarm sound to inform alarm information. You can also customize alarm sound by uploading MP3 files.
Alarm Prompt	Enable alarm prompt to inform alarm information.

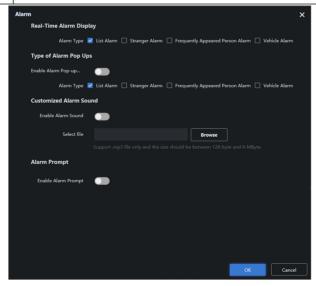


Figure 3-2 Alarming Setting Interface

3.2 Alarm Search

Search detailed information of list alarm, stranger alarm, frequently appeared personel alarm and license plate alarm.

3.2.1 List Alarm

Compare the similarity between captured face pictures and those in list library like blacklist library. A list alarm will be triggered if the similarity reaches the configured value.

Before You Start

Add list arming.

Steps

1. Go to Alarm Search → List Alarm . By default, the server displays all current alarm information.

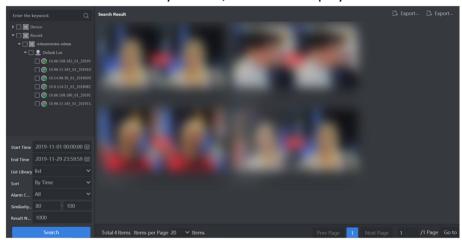


Figure 3-3 List Alarm Interface

- **2. Optional:** Select the desired cameras or videos. If no camera or record is selected, all the alarm information will be searched.
- **3.** Set search conditions according to actual needs.
- 4. Click Search.
- 5. Click alarm picture to view detailed information.

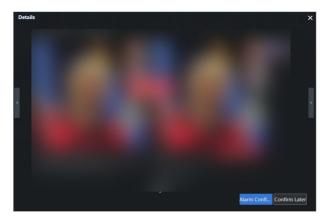


Figure 3-4 View Detailed Information

- 6. Optional: Click Alarm Confirmation to confirm.
- 7. Optional: Click Export Current Page or Export All to export alarm information.

3.2.2 Stranger Alarm

Compare the similarity between captured face pictures and those in list library. A stranger alarm will be triggered if the similarity value does not reach the configured value.

Before You Start

Add stranger arming.

Steps

1. Go to **Alarm Search** → **Stranger Alarm** . By default, the server displays all current alarm information.

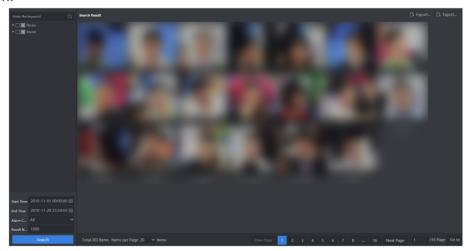


Figure 3-5 Stranger Alarm Interface

- **2. Optional:** Select the desired cameras or records. If no camera or record is selected, all the alarm information will be searched.
- **3.** Set search conditions according to actual needs.

- 4. Click Search.
- **5.** Click stranger alarm picture to view detailed information.

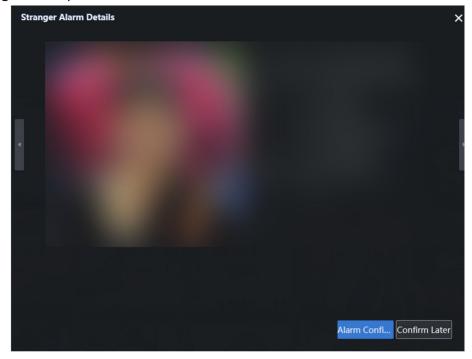


Figure 3-6 View Detailed Information of Stranger Alarm

- **6. Optional:** Click **Alarm Confirmation** to confirm the alarm.
- 7. Optional: Click Export Current Page or Export All to export alarm information.

3.2.3 Frequently Appeared Person Alarm

Count personnel appearance frequency in monitoring scenes. An alarm will be triggered if the frequency reaches the configured value.

Before You Start

Enable frequency alarm.

Steps

1. Go to **Alarm Search** → **Frequently Appeared Person Alarm** . By default, the server displays all current alarm information.

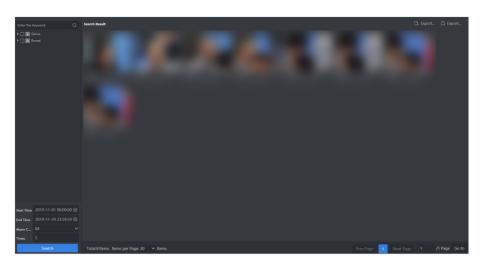


Figure 3-7 Frequently Appeared Person Alarm Interface

- **2. Optional:** Select the desired cameras or records. If no camera or record is selected, all the alarm information will be searched.
- 3. Set search conditions according to actual needs.
- 4. Click Search.
- **5.** Click alarm picture to view detailed information.

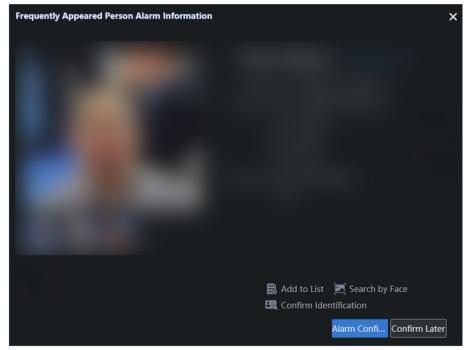


Figure 3-8 View Detailed Information-Frequently Appeared Person Alarm

Note

You can view all captured information of the target person by clicking Capture History

6. Optional: Click **Alarm Confirmation** to confirm the alarm.

7. Optional: Click Export Current Page or Export All to export alarm information.

3.2.4 License Plate Alarm

Compare the license plate recognized by cameras with armed license plates. If the license plate captured by camera matches with one of the armed, a license plate alarm will be triggered.

Before You Start

Add license plate arming.

Steps

1. Go to Alarm Search → Plate Alarm . By default, the server displays all current alarm information.

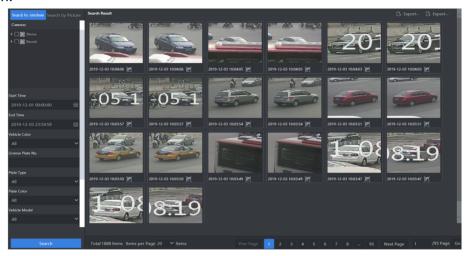


Figure 3-9 License Plate Alarm Interface

- **2. Optional:** Select the desired cameras or records. If no camera or record is selected, all the alarm information will be searched.
- 3. Set search conditions according to actual needs.
- 4. Click Search.
- 5. Click alarm picture to view detailed information.



Figure 3-10 View Detailed Information-Plate Alarm

6. Optional: Click **Alarm Confirmation** to confirm the alarm.

7. Optional: Click Export Current Page or Export All to export alarm information.

3.3 Personnel Archive

Personnel archive records personnel appearance frequency, appearance time period and respective captured pictures in monitoring scenes.

Before You Start

Enable personnel archive.

Steps

1. Go to Smart Application → Personnel Archive .

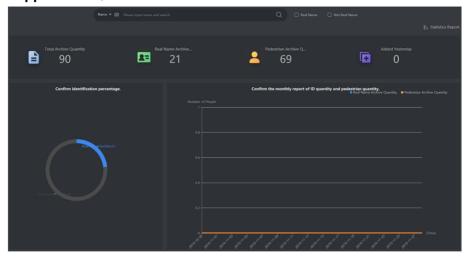


Figure 3-11 Personnel Archive Interface

Real Name

It refers to the personnel whose face picture is in list libraries, except the passerby library.

Not Real Name

It refers to the personnel whose face picture is in passerby library.

Statistic Report

In accordance with gender, age or total personnel frequency in a period, the statistic report shows different figures of strangers and real name personnel recognized by cameras or in the videos. You can also export the statistic report to generate an Excel or HTML file.

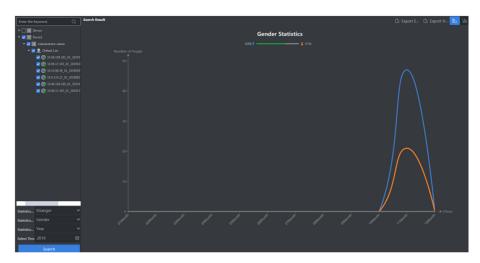


Figure 3-12 Statistic Report

2. Set search conditions according to actual needs and search personnel archive by clicking .

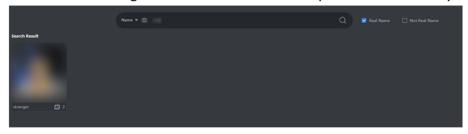


Figure 3-13 Personnel Archive Search Result

3. Click loview details.

3.4 1 V 1 Comparison

Upload two face pictures to compare their similarity degree.

Steps

1. Go to Smart Application \rightarrow 1 V 1 Comparison .

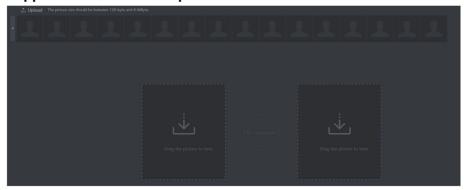


Figure 3-14 1 V 1 Comparison Interface

2. Click **Upload** to upload desired face pictures. If the selected picture contains multiple faces, these faces will all be uploaded.

Note

- Face pictures in the format of JPEG, BMP, TIF and PNG are supported. The resolution should be greater than 48 * 48 and smaller than 1600W pixels, and the picture size should be smaller than 8 MB.
- It is recommended to upload pictures with clear faces to improve the comparison accuracy.
- **3.** Drag desired face pictures to comparison area for similarity comparison.

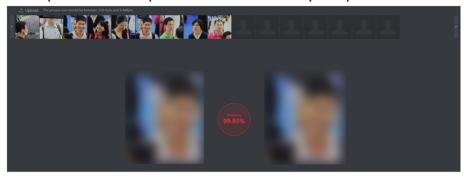


Figure 3-15 1 V 1 Comparison Result

Chapter 4 Smart Search

4.1 Face Picture Search

4.1.1 Search by Facial Attribute

Search captured face pictures by face attributes.

Before You Start

Alarm the camera.

Steps

- 1. Go to Smart Search → Face Picture Search → Search by Attribute . By default, the server displays all captured face pictures.
- 2. Set detailed search conditions as needed.



- If no camera or recording is selected, all captured face pictures will be searched.
- You can set different search condition parameters by referring to *Configure Display Parameters* .
- 3. Click Search.

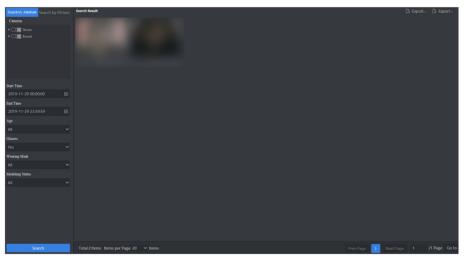
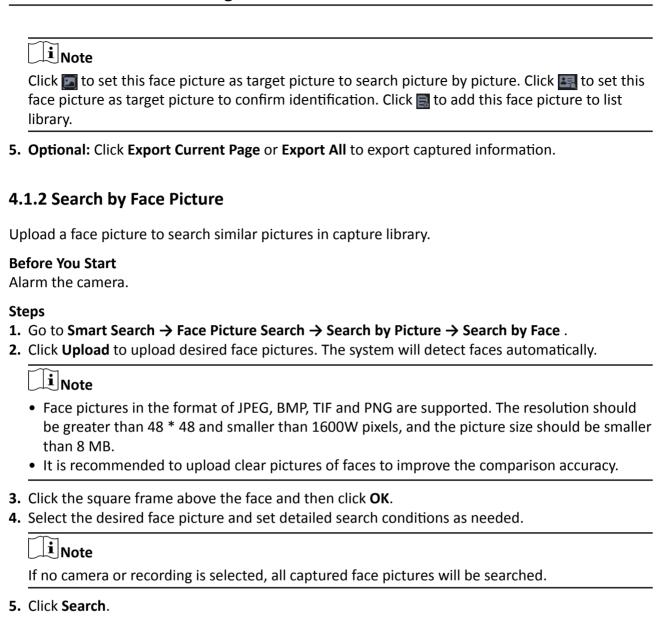


Figure 4-1 Search by Facial Feature Interface

4. Click the face picture displayed to view detailed information.

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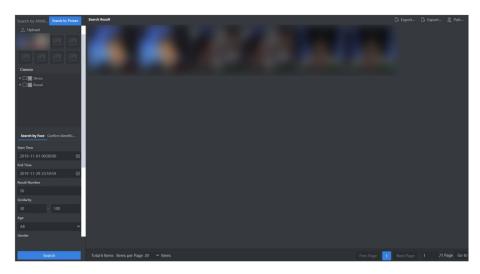


Figure 4-2 Search by Face Picture Results

6. Click the face picture displayed to view detailed information.

 $\bigcap_{\mathbf{i}}$ Note

Click to set this face picture as target picture to search picture by picture. Click to set this face picture as target picture to confirm identification. Click to add this face picture to list library.

7. Optional: Click Export Current Page or Export All to export searching results.

4.1.3 Confirm Identification

Upload a face picture to search similar pictures in list library.

Before You Start

Add the list library.

Steps

- 1. Go to Smart Search → Face Picture Search → Search by Picture → Confirm Identification .
- 2. Click Upload to upload desired face pictures. The system will detect faces automatically.

iNote

- Face pictures in the format of JPEG, BMP, TIF and PNG are supported. The resolution should be greater than 48 * 48 and smaller than 1600W pixels, and the picture size should be smaller than 8 MB.
- It is recommended to upload clear pictures of faces to improve the comparison accuracy.
- 3. Click the square frame above the face and then click OK.
- **4.** Select the desired face picture and set detailed search conditions as needed.

Note

If no camera or recording is selected, all captured face pictures will be searched.

5. Click Search.



Figure 4-3 Confirm Identification Results

6. Click the face picture displayed to view detailed information.



Click at to set this face picture as target picture to search picture by picture. Click to set this face picture as target picture to confirm identification.

4.2 Human Body Search

4.2.1 Search by Physical Attribute

Search captured human body pictures by human body attributes.

Before You Start

Alarm the camera.

Steps

- 1. Go to Smart Search → Human Body Search → Search by Attribute . By default, the server displays all captured human body pictures.
- 2. Set detailed search conditions as needed.

Note

- If no camera or recording is selected, all captured human body pictures will be searched.
- You can set different search condition parameters by referring to *Configure Display Parameters* .
- 3. Click Search.

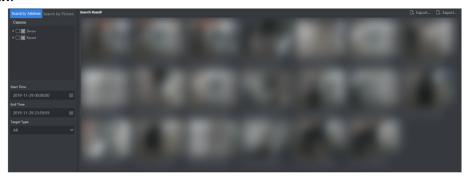


Figure 4-4 Search by Physical Attribute Interface

4. Click the human body picture displayed to view detailed information.

Note

Click **t** to set this human body picture as target picture to search human body by human body.

5. Optional: Click Export Current Page or Export All to export captured information.

4.2.2 Search by Human Body Picture

Upload a human body picture to search similar human body pictures in capture library.

Before You Start

Alarm the camera.

Steps

- **1.** Go to **Smart Search** → **Human Body Search** → **Search by Picture**. By default, the server displays all captured human body pictures.
- **2.** Click **Upload** to upload desired human body pictures. The system will detect human bodies automatically.

i Note

- Human body pictures in the format of JPEG, BMP, TIF and PNG are supported. The resolution should be greater than 48 * 48 and smaller than 1600W pixels, and the picture size should be smaller than 8 MB.
- It is recommended to upload clear pictures of human bodies to improve the comparison accuracy.
- **3.** Click the square frame above the human body and then click **OK**.

4. Select the desired human body picture and set detailed search conditions as needed.

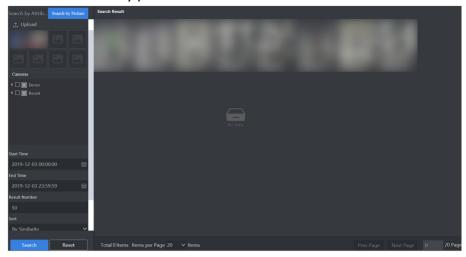


Figure 4-5 Set Human Body Feature Search Conditions

 $\bigcap_{\mathbf{i}}$ Note

If no camera or recording is selected, all captured human body pictures will be searched.

- 5. Click Search.
- 6. Click the human body picture displayed to view detailed information.

 $\widetilde{\mathbf{i}}$ Note

Click **to** set this human body picture as target picture to search human body by human body.

7. Optional: Click Export Current Page or Export All to export searching results.

4.3 Vehicle Search

4.3.1 Search by Vehicle Attribute

Search captured vehicle pictures by vehicle attributes.

Before You Start

Alarm the camera.

Steps

- **1.** Go to **Smart Search** → **Vehicle Search** → **Search by Attribute**. By default, the server displays all vehicle pictures captured by cameras.
- 2. Set detailed search conditions as needed.

- iNote
- If no camera or recording is selected, all captured face pictures will be searched.
- You can set different search condition parameters by referring to Configure Display Parameters
- 3. Click Search.

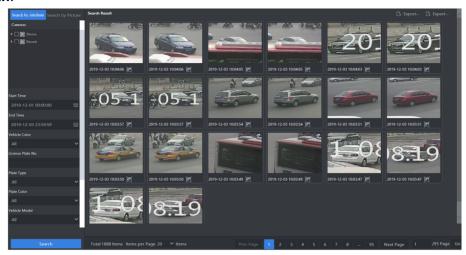


Figure 4-7 Vehicle Attribute Search Results

4. Click the face picture displayed to view detailed information.



Figure 4-8 Vehicle Capture Results

Note

Click **to** set this vehicle picture as target picture to search vehicle by vehicle.

5. Optional: Click Export Current Page or Export All to export captured information.

4.3.2 Search by Vehicle Picture

Upload a Vehicle picture to search related vehicle pictures in capture library.

Before You Start

Alarm the camera.

Steps

1. Go to **Smart Search** → **Vehicle Search** → **Search by Picture**. By default, the server displays all vehicle pictures captured by cameras.

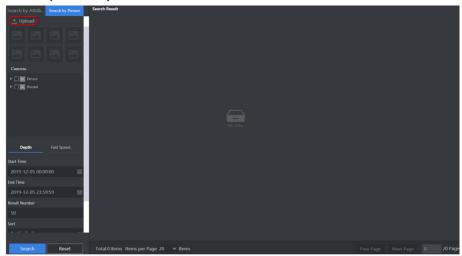


Figure 4-9 Search by Vehicle Picture Interface

2. Click **Upload** to upload desired face pictures. The system will detect faces automatically.



- Vehicle pictures in the format of JPEG, BMP, TIF and PNG are supported. The resolution should be greater than 48 * 48 and smaller than 1600W pixels, and the picture size should be smaller than 8 MB.
- It is recommended to upload clear pictures of vehicles to improve the comparison accuracy.
- 3. Click the square frame above the vehicle and then click OK.
- **4.** Select the desired vehicle picture and set detailed search conditions as needed.

Depth

Search by vehicle body similarities.

Fast Speed

Search by plate number, shape, brand and color.



If no camera or recording is selected, all captured vehicle pictures will be searched.

- 5. Click Search.
- **6.** Click the vehicle picture displayed to view detailed information.

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	Note
	Click a to set this vehicle picture as target picture to search vehicle by vehicle.
_	Outland Cityl Forest Course Barran Forest All Landers Indian Cityl Forest Land

7. Optional: Click Export Current Page or Export All to export searching results.

Chapter 5 System Management

5.1 Cluster Management

5.1.1 Delete Node

Before You Start

The node is online and not included in any cluster.

Steps

- 1. Go to System Management → Cluster Management → Node Management .
- 2. Check the desired node.
- 3. Click **Delete**, and click **OK** in the popup dialogue box.

5.1.2 Restart Node

Before You Start

The node is online.

Steps

- 1. Go to System Management → Cluster Management → Node Management .
- 2. Check the desired node.
- 3. Click Restart, and click OK in the popup dialogue box.

5.1.3 Power Off Node

Before You Start

The node is online.

Steps



After the node is powered off, the device can only be started by pressing power button, and remote start-up is not supported.

- 1. Go to System Management → Cluster Management → Node Management .
- 2. Check the desired node.
- 3. Click OFF, and click OK in the popup dialogue box.

5.1.4 Add More Nodes to Cluster

Add more nodes to cluster to enhance its capacity.

Before You Start

- The new nodes have been added.
- The new nodes are in the same subnet of the cluster.

Steps

- 1. Go to System Management → Cluster Management → Cluster Management .
- 2. Click Add to Cluster.



Figure 5-1 Add Nodes to Cluster

3. Check desired nodes, and click Next.

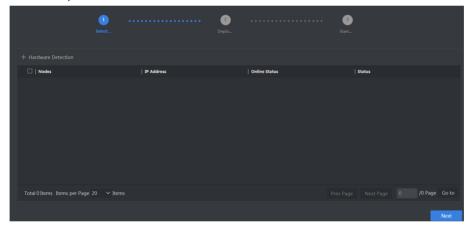


Figure 5-2 Check Desired Nodes

- 4. Click Start Deploying.
- **5.** Click **OFF** after the cluster is deployed.

5.1.5 Disband Cluster

Steps

- 1. Go to System Management → Cluster Management → Cluster Management .
- 2. Click Disband Cluster.



Figure 5-3 Disband Cluster

3. Click OK.

5.2 System Configuration

5.2.1 Configure General Information

You can keep the parameters in **General** as default value.



- **Device Filter** is enabled by default, in which case the server is only accessible by its IP address. If you have configured port mapping, please disable the device filter function in order to access to the server normally.
- You can select a desired region in **Regional Configuration**. Delete structured task(s) before and reallocate resource for task(s) after switching regions.

5.2.2 Configure Service

It supports sending task analysis results to the configured IP address.

Before You Start

Obtain IP address, port or URL.

Steps

1. Go to System Management → System Configuration → Service .



Figure 5-4 Service Configuration Interface

2. Set SDK service or HTTP transmission protocol according to actual needs.

SDK Service

Send task analysis results to the configured IP address via SDK protocol.

HTTP/HTTPS Transmission Protocol

Send task analysis results to the configured IP address via HTTP protocol.

3. Click Save.

5.2.3 Configure Pre-Classification

It can classify personnel in list library in advance, so as to speed up the process of searching by picture and confirming identification.

Steps

1. Go to System Management → System Configuration → Pre-classification .

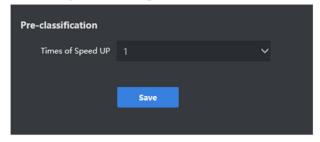


Figure 5-5 Pre-Classification Configuration

- 2. Set Time of Speed Up according to actual demands.
- 3. Click Save.

5.2.4 Configure Time

Synchronize the server time promptly. NTP and manual time synchronization are allowed.

Before You Start

Obtain the IP address and port of NTP server before synchronizing with NTP server time.

Steps

1. Go to System Management → System Configuration → Time .

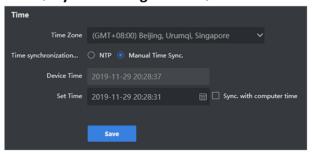


Figure 5-6 Time Configuration Interface

2. Check NTP or Manual Time Sync according to actual demands.



If **Sync.** with computer time is checked, the time of the server will be consistent with that of the computer.

3. Click Save.

5.2.5 User Management

There are three types of users, including admin, operator and consumer. Only admin has the permission to add and delete user, and edit user password. Operator and consumer have the permission to edit their own password only. Up to 32 users can be added.

Add User

Steps

1. Go to System Management → System Configuration → User



Figure 5-7 User Management Interface

2. Click Add, and input relevant information in the popup dialogue box.

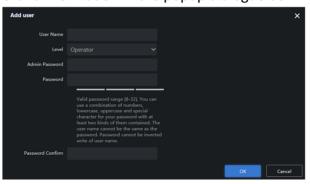


Figure 5-8 Add User



- We highly recommend you create a strong password of your own choosing (Using a minimum
 of 8 characters, including at least three of the following categories: upper case letters, lower
 case letters, numbers, and special characters.) in order to increase the security of your
 product.
- We recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- 3. Click OK.

Modify Admin Password

Steps

1. Go to System Management → System Configuration → User

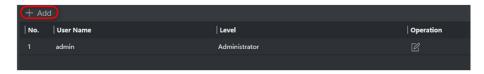


Figure 5-9 User Management Interface

2. Click , and modify admin password in the popup dialogue box.

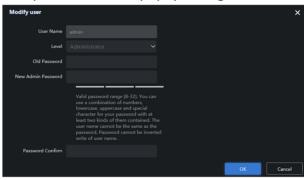


Figure 5-10 Modify User

3. Click OK.

5.2.6 Configure Display Parameters

Configure the search conditions for smart search function. For example, if you do not enable **Display Gender**, there will be no gender option in search conditions.

Steps

1. Go to System Management → SystemConfiguration → Display.

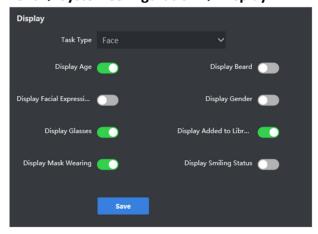


Figure 5-11 Display Configuration Interface

- 2. Set different search conditions according to actual needs.
- 3. Click Save.

5.2.7 Configuration Live View

Configure the play performance of live view, image format and saving path of manually captured pictures.

Steps

1. Go to System Management → System Configuration → Live View .

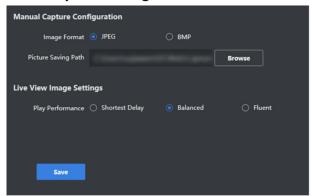


Figure 5-12 Live View Configuration Interface

2. Set live view parameters.

Manual Capture Configuration

Select JPEG or BMP as image format, and configure Picture Saving Path.

Live View Image Settings

Set Play Performance. It is recommended to use default value.

3. Click Save.

5.2.8 Configure Person Pattern

Generate information of personnel movement path.

Steps

1. Go to System Management → System Configuration → Person Pattern Configuration .

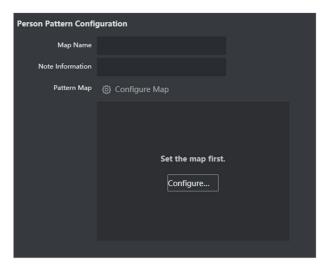


Figure 5-13 Person Pattern Configuration Interface

- 2. Enter Map Name and Note Information.
- 3. Click Configure Map to upload a map.
- 4. Click OK.

5.2.9 Restore Default

Before You Start

The cluster has been disbanded.



There are two types of restoration, including restore and default.

Restore

Restore all parameters, except the IP parameters and user information, to the default settings. As a result, the device will restart automatically and need to be activated again.

Default

Restore all parameters to the default settings. As a result, the device will restart automatically and need to be activated again.

Steps

1. Go to System Management → System Configuration → Restore Defaults .



Figure 5-14 Restore Defaults Configuration Interface

2. Select restoration type according to actual demands.

5.3 Operation and Maintenance

5.3.1 Check Hardware Status

Check detailed information of CPU, memory, disk, GPU and etc.

Steps

- 1. Go to System Management → Operation and Maintenance → Hardware Status .
- 2. Click in Details list.



Figure 5-15 Hardware Status Interface

3. Click tabs to different hardware status.

5.3.2 Check Service Status

Check MongoDB, zookeeper, kafka and other service status.

Steps

1. Go to System Management → Operation and Maintenance → Service Status.



Figure 5-16 Service Status Interface

2. Click **Node Information**, **Memory Status** or **Resource Statistics** to check detailed information respectively.

Node Information

The node of current service.

Memory Status

The overall scale of memory, loaded data quantity, total number of dynamic library and capture duration.

Resource Statistics

The total and remaining resource quantity.

5.3.3 Modify IP Address

You can modify the IP address of cluster and micro video cloud through the Web page of Intelligent Fusion Server.

Steps



If the current software is upgraded from the earlier version of V1.1.0, the micro video cloud is not supported to be upgraded, and the function of configuring IP address is inaccessible.

- 1. Go to System Management → Maintenance → Modify IP Address.
- 2. Click Modify IP Address.



Figure 5-17 Modify IP Address

- 3. Modify the IP address as needed.
- 4. Click Save.



Figure 5-18 Save IP Address

5.3.4 Search Log

Log includes running log, alarm log and operation log. Searching and exporting logs are supported.

Running Log

Records running information.

Alarm Log

Records alarm information.

Operation Log

Records operation information in Wed interface.

Steps

- 1. Go to System Management → Log.
- 2. Select log type, set search start time and end time, and click **Search**.
- 3. Click Export to export searched log.
 - Enter search information in search bar, click to find log information.
 - Click Maintenance to export maintenance log for the maintenance staff's reference.

5.3.5 Check Online User

Check total quantity of users and real-time online users by click in the top-right corner of the interface.

5.3.6 Check Version Information

Go to \bigcirc \rightarrow **Version** to check version information.

5.3.7 Check Help Document

Go to \bigcirc \rightarrow Help Document to refer to help information.

5.3.8 Upgrade Software

It is allowed to upgrade software through Web interface.

Before You Start

- The device is online and running normally.
- Obtain updating files.

Steps

1. Go to System Management → Software Updating .

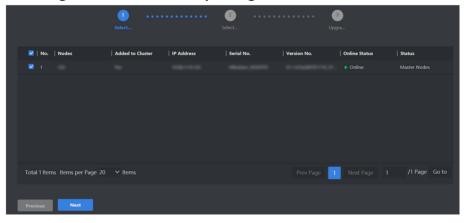


Figure 5-19 Software Updating Interface

2. Check the desired server, and click **Next**.

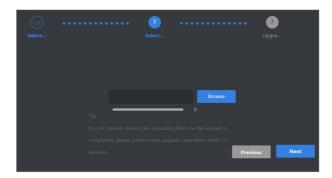


Figure 5-20 Select Uploading Files

- 3. Click Browse to upload updating files, and then click Next.
- 4. Click OK.

iNote

The device will reboot after updating completed.

5.4 Log out

Go to **admin** → **Logout** to log out.

