Zhejiang Uniview Technologies Co., Ltd.	Edge Computing Server Deployment Guide		Internal use only
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Edge Computing Server Deployment Guide

(Internal Use Only)

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Revision History

Manual Version	Product Version	Revisions	Time	Author
V1.0	AIBOXV100R001B03D003SP10	Initial release	2024/11/20	Li Jinyue

Abstract

This document describes the networking environment, software installation and configuration, function services, some precautions during the deployment of the smart box, and FAQs in the current version.

Intended Audience

This document is intended for technical support engineer.

Acronym

Acronym	Full Name
ECS-B501	Edge Computing Server

Contents

1 System Introduction

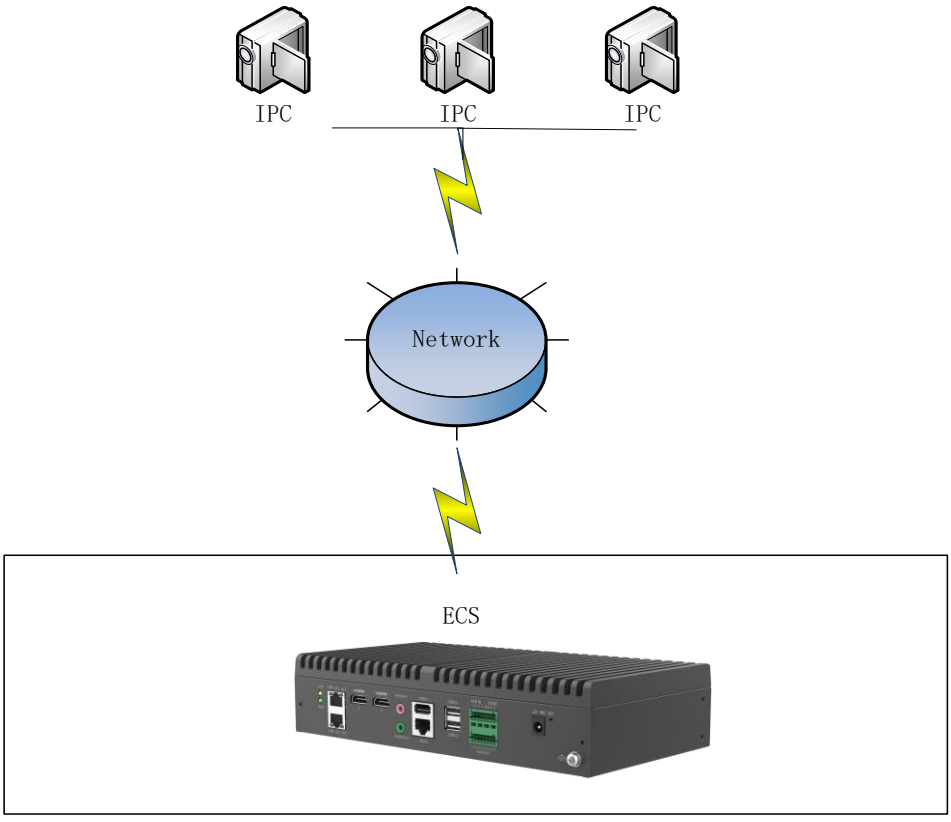
1.1 Overview

ECS-B501 is an industrial-grade one-HDD edge computing server that works with ordinary network cameras. The device is integrated with video decoding, data transmission, data storage, and intelligent algorithms. It receives videos from ordinary network cameras, analyzes objects in the videos, and outputs an alarm upon detection of an abnormal behavior. The device is easy to deploy and operate, and applicable to different environments.

The device utilizes deep learning algorithms to achieve fast and accurate face detection and behavior detection. It complies with industrial-grade standards, features a sophisticated and sturdy appearance, and is suitable for various indoor and outdoor application scenarios. The device offers a set of APIs to meet various application requirements and facilitate integration with third-party systems.

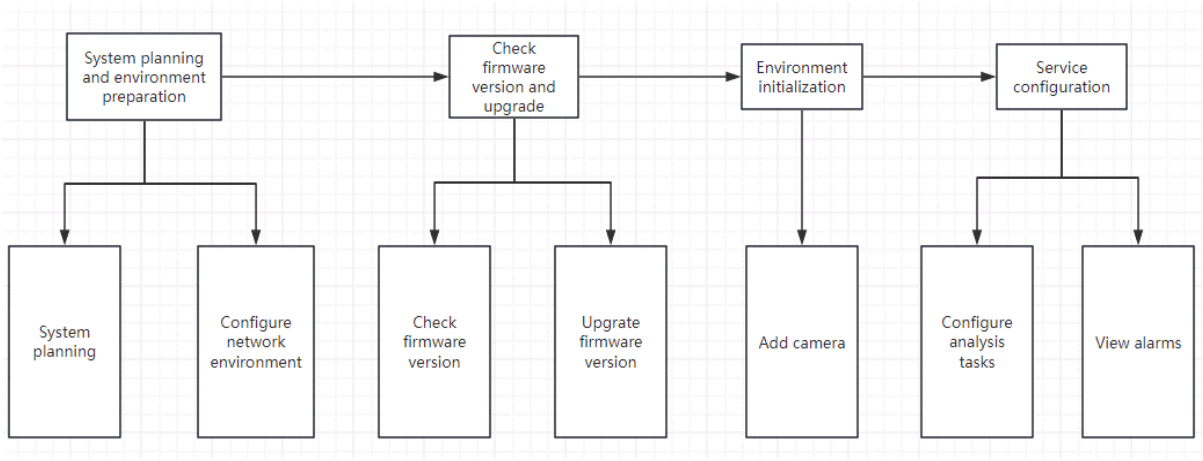
1.2 Networking

Figure 1-1 Networking



2 Deployment Procedure

The following shows a brief flow diagram including preparation, installation, configuration, and use.



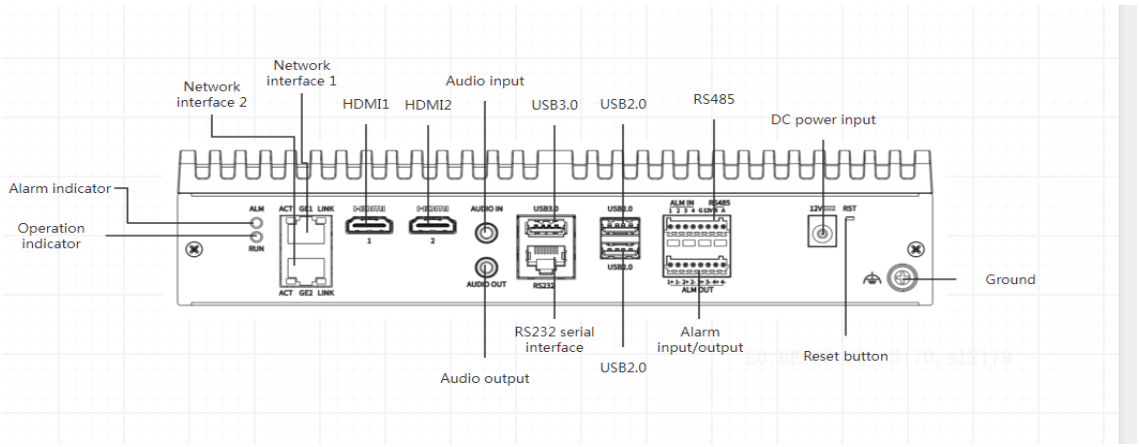
3 System Planning

3.1 Precautions

1. The device has two network interfaces. The default IP is 192.168.1.30 for the network interface 1 (eth0), and 192.168.2.30 for the network interface 2 (eth1). To access the device's backend, you need to change PC's IP address to 192.168.1.X, connect the PC directly to eth0 using a network cable, and enable SSH on the device's Web interface.
2. To log in to the system, please use a web browser, such as Google Chrome, Sogou Browser, 360 Speed Browser, Tencent Browser, etc., and enable the speed mode.

3.2 Preparation

The interfaces on the device are shown below:



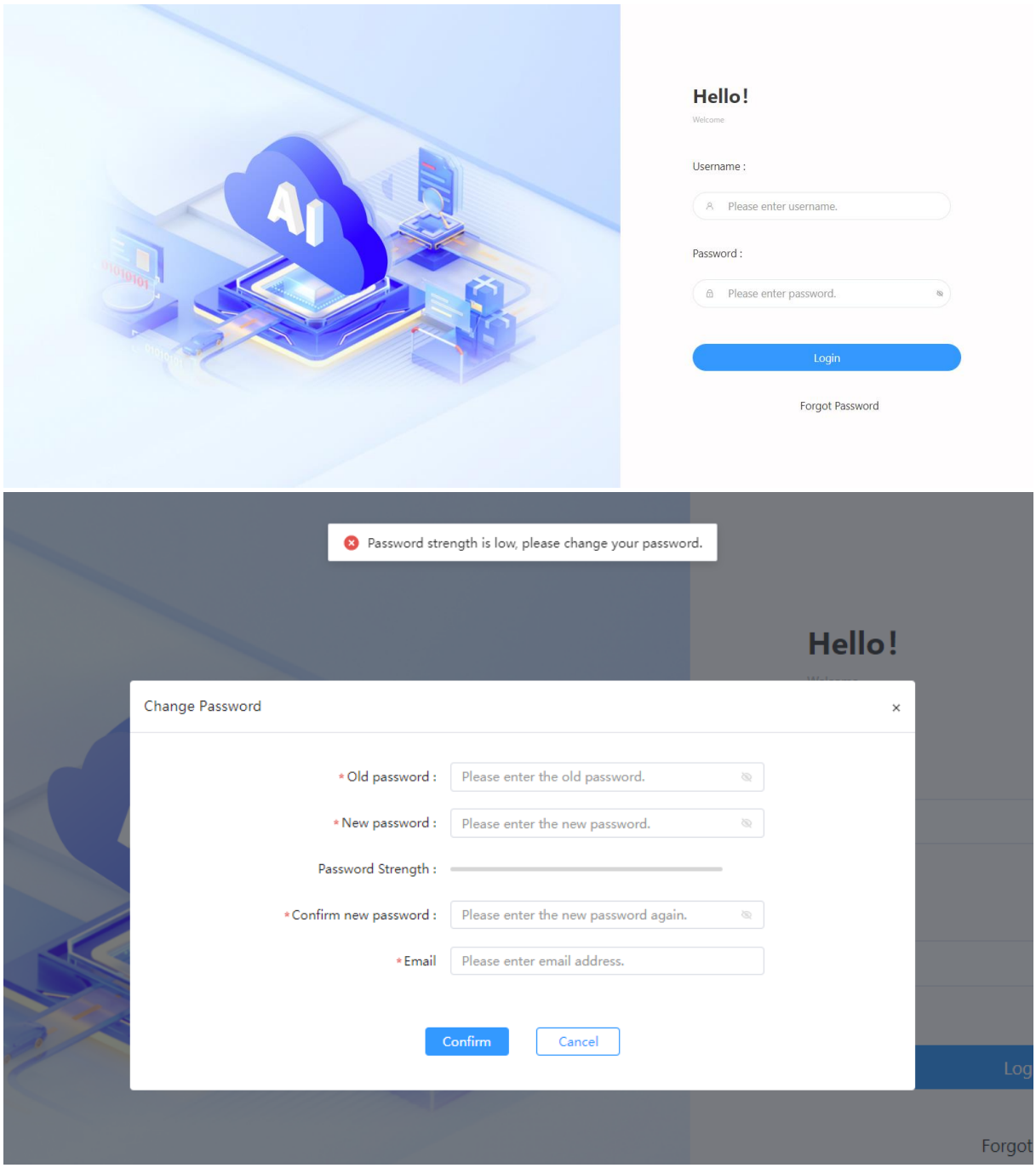
The upper network interface 1 is eth0, and the default IP is 192.168.1.30. The lower network interface 2 is eth1, and the default IP is 192.168.2.30.

4 Service Configuration

4.1 Login

4.1.1 Login

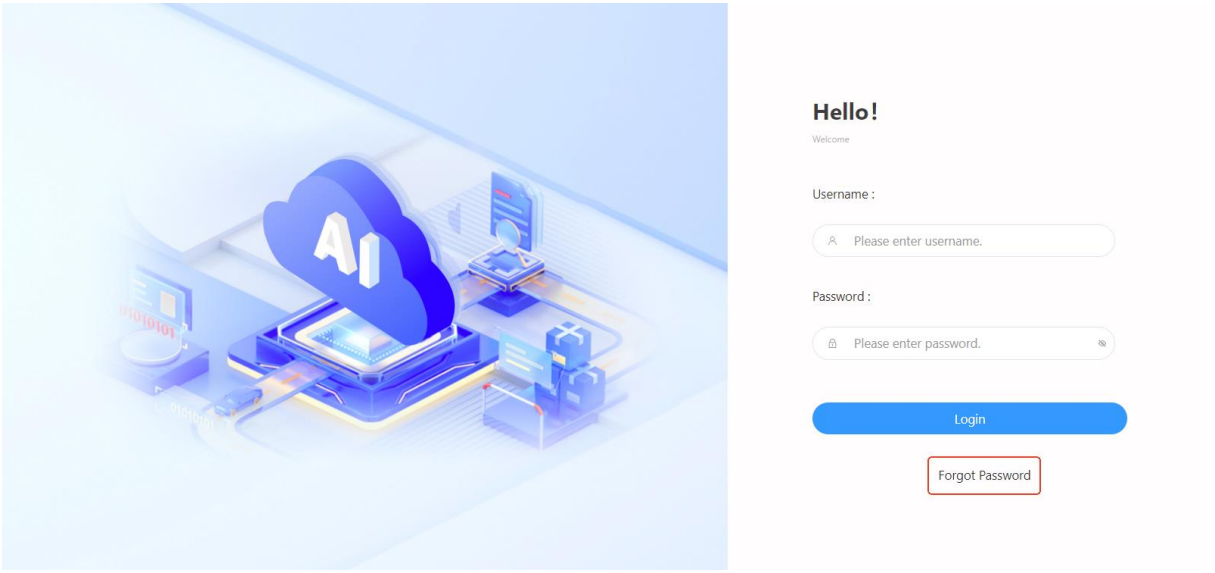
Open the web browser, enter the http://IP, and press **Enter** to open the **Login** page. Enter the username and password (default: **admin**/**123456**), and click **Login**. At the first login, you must change the password to a strong one with 9 to 20 characters including letters, digits, and specific characters (except / : ? ‘ * “ < >). Then, log in to the system with the changed password.

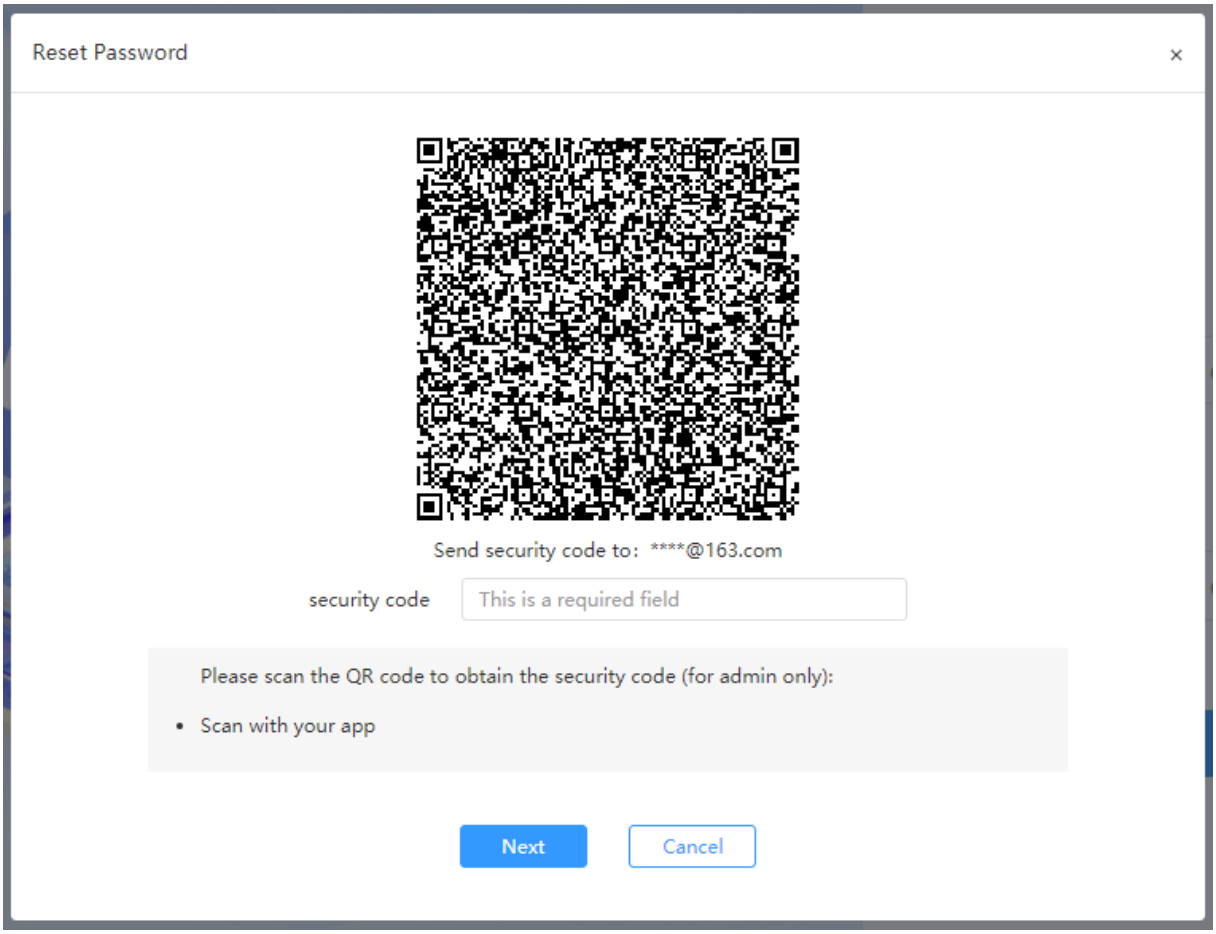


4.1.2 Forgot Password

NOTE!
Please set an email address at first login, which is used to receive the security code if you forgot the password.

1. Click **Forgot Password**.

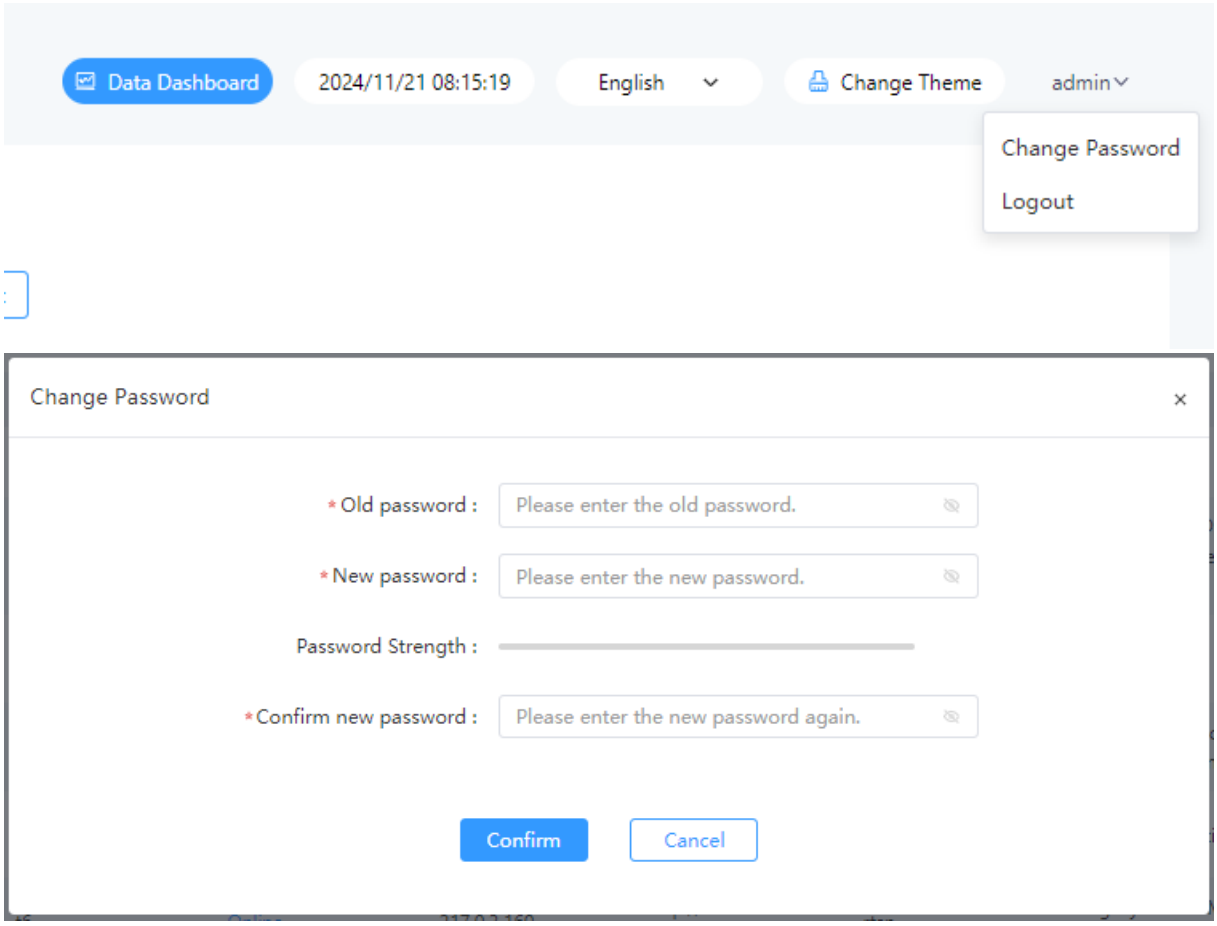




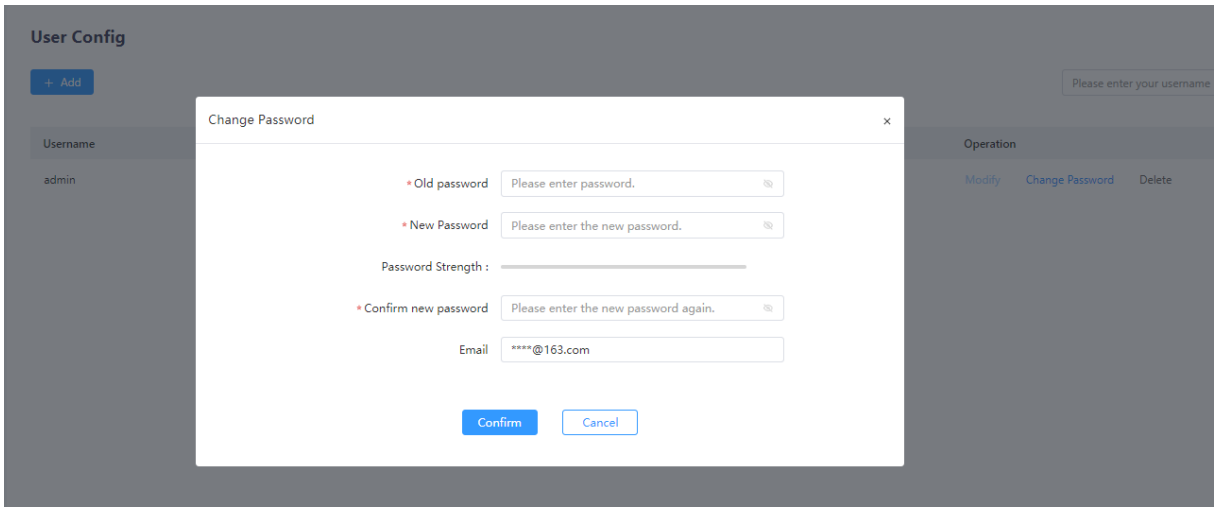
2. Open your UNV-Link app, go to **My** > **Tool** > **Forgot Device Password**, scan the QR code above, and the system will send the security code to the reserved email address. Enter the received security code, click **Next**, change the password based on the prompts, and then log in to the device's web interface with the new password.

4.1.3 Change Password

Method 1: Log in to the system, click the drop-down list of admin, and choose **Change Password**. On the **Change Password** window, enter the old password and new password, confirm the new password, and click **Confirm**. The password strength changes in real time as you enter the new password.

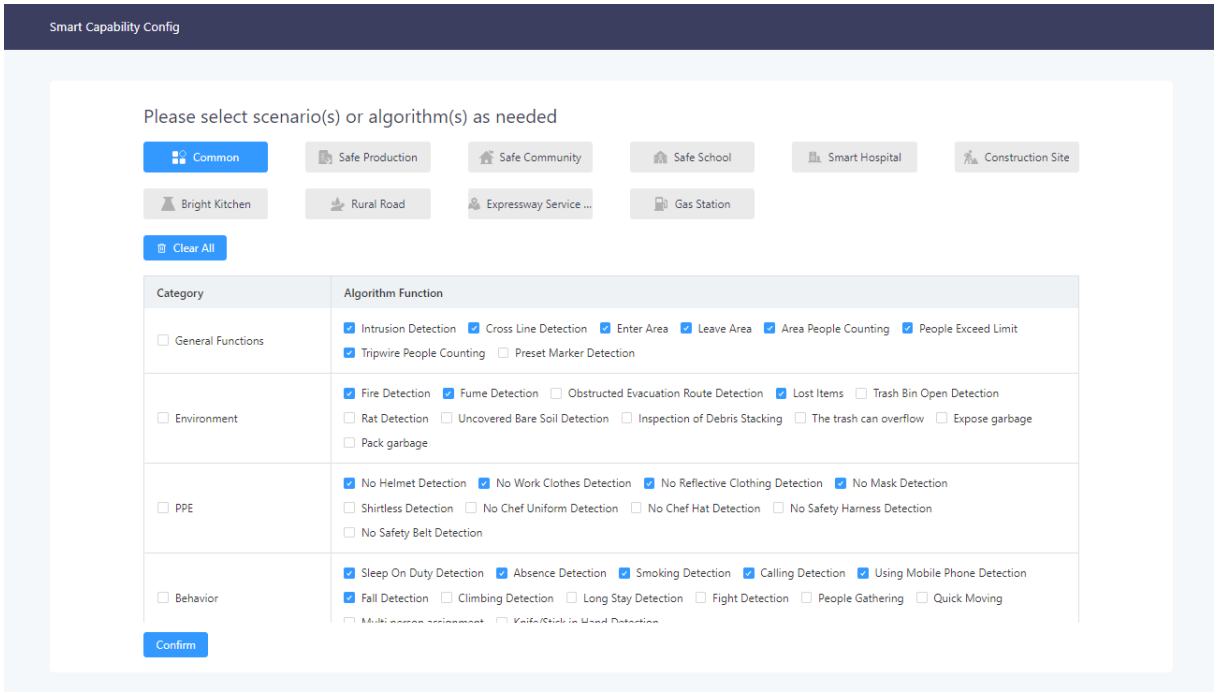


Method 2: Log in to the system, go to **System Config** > **User Config**, and click **Change Password**. On the **Change Password** window, enter the old password and new password, confirm the new password, and click **Confirm**. The password strength changes in real time as you enter the new password. You can change the email address used to receive the security code on this page.



4.1.4 Smart Capability Config

You need to select algorithms at the first login. Up to 20 algorithms are allowed.



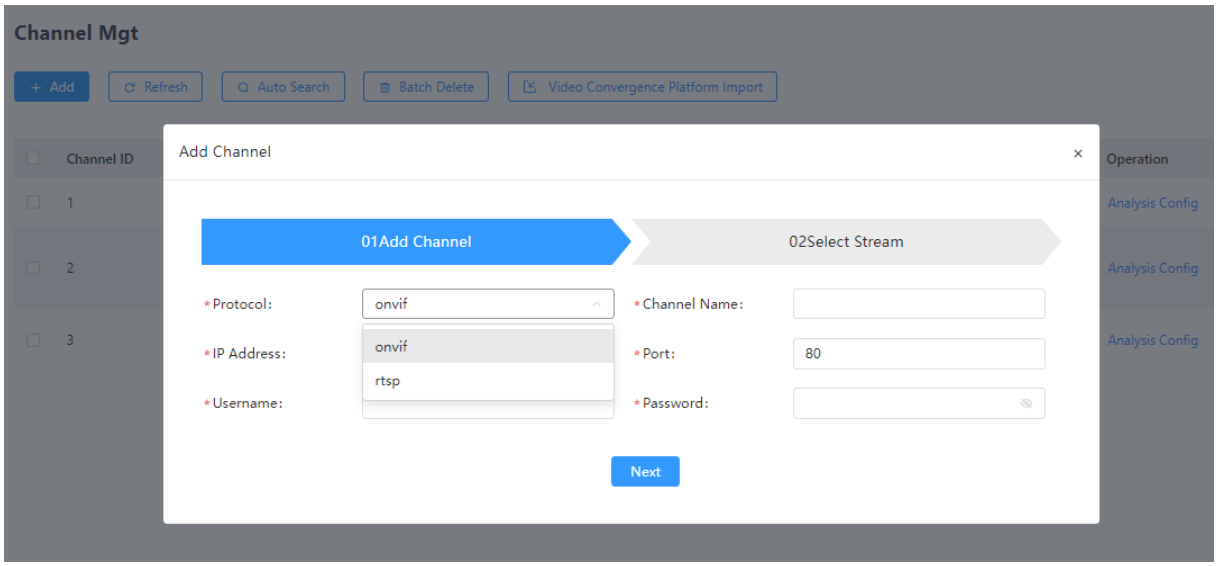
4.2 Channel Management (including Intelligent Service Configuration)

Channel management includes:

1. Channel operations: add, edit, delete, search channels.
2. Task configuration: choose tasks, draw detection areas.
3. Arming and linkage configuration: set arming schedule and trigger actions.

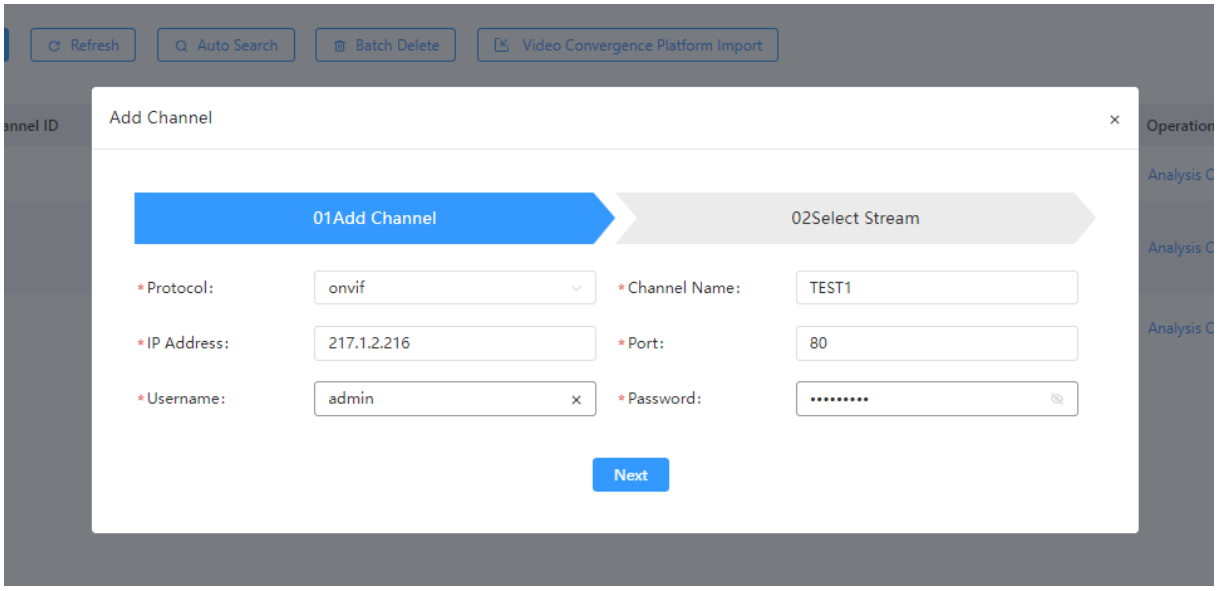
4.2.1 Add Channel

Click **Add**, and the **Add Channel** window appears. Choose a protocol, including Onvif or RTSP.



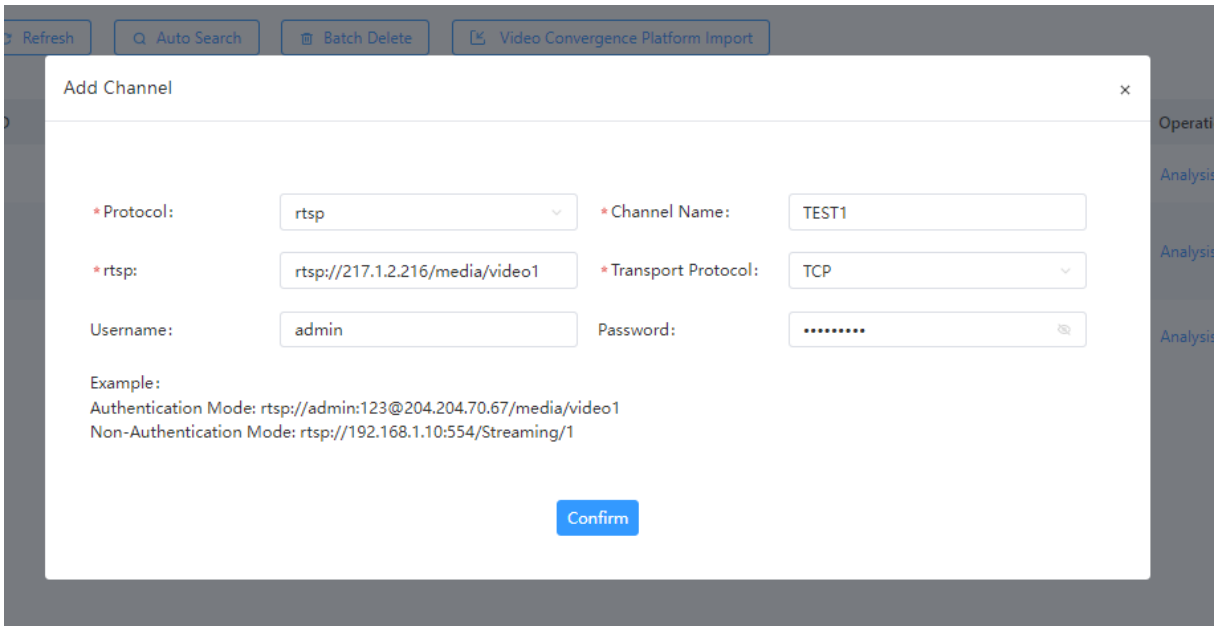
- Add via Onvif protocol

Enter the channel name, IP, port, username, and password, and click **Next**. Choose a stream type, and click **Confirm**.



- Add via RTSP protocol

Enter the channel name and RTSP URL by referring to the example below, and click **Confirm**.



The common RTSP address formats are as follows:

1. Hikvision:

rtsp://admin:123456@192.168.1.15.102:554/Streaming/Channels/101

2. Dahua:

rtsp://admin:123456@192.168.1.15:554/cam/realmonitor?channel=1&subtype=0

3. Jovision:

rtsp://admin:123456@192.168.1.15:554/live0.264

rtsp://admin:123456@192.168.1.15:8554/profile1

rtsp://admin:123456@192.168.1.15:8554/profile0

4. Uniview:

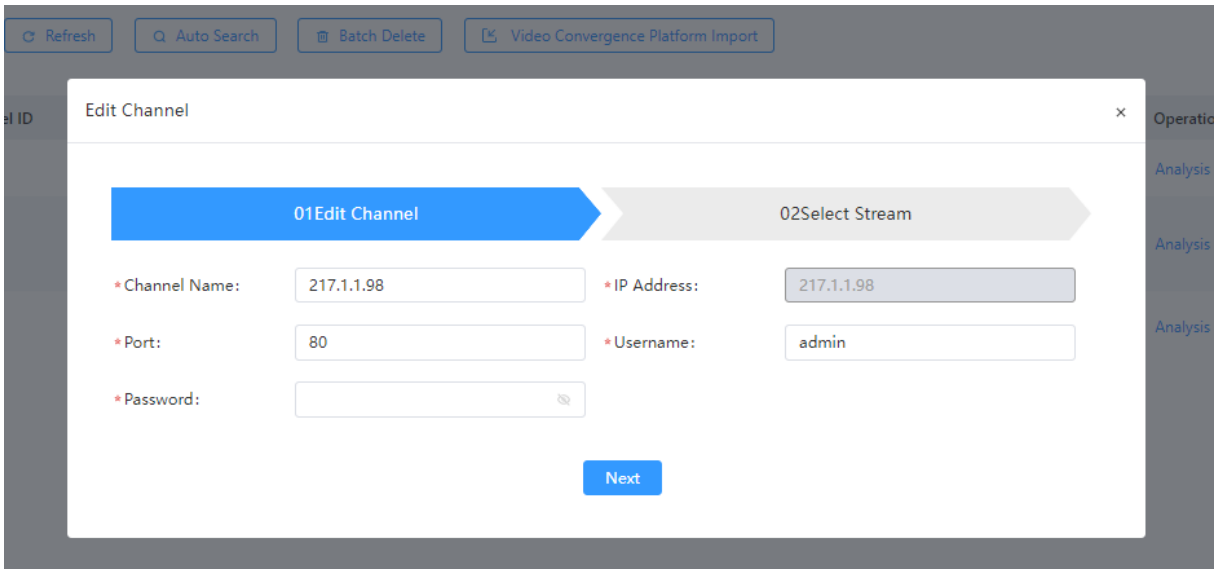
rtsp://admin:123456@192.168.1.15:554/unicast/c10/s0/live

rtsp://admin:123456@192.168.1.15:554/media/video1

CAUTION!
It is not recommended to choose the video stream with resolution lower than 1080P.
It is not recommended to choose the sub stream for task analysis.

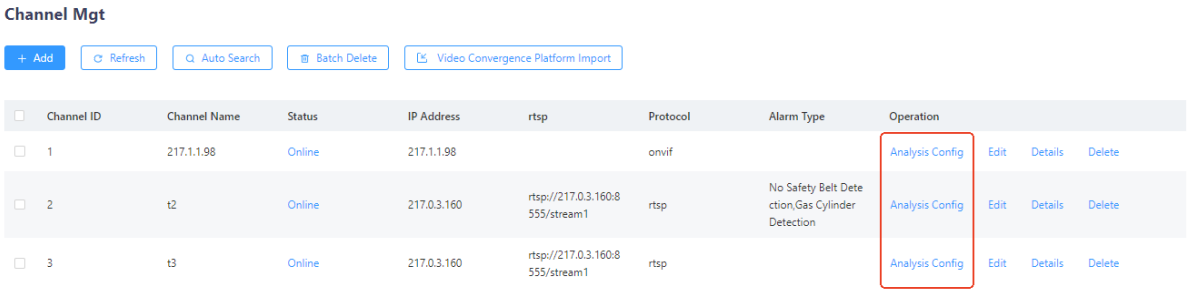
4.2.2 Edit Channel

Click **Edit** in the operation column to edit the channel parameters as needed.

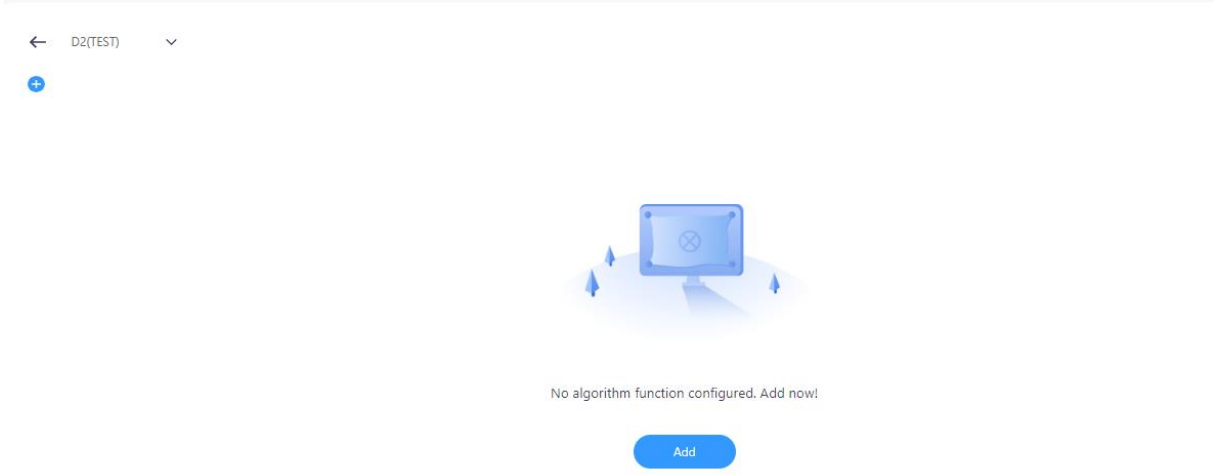


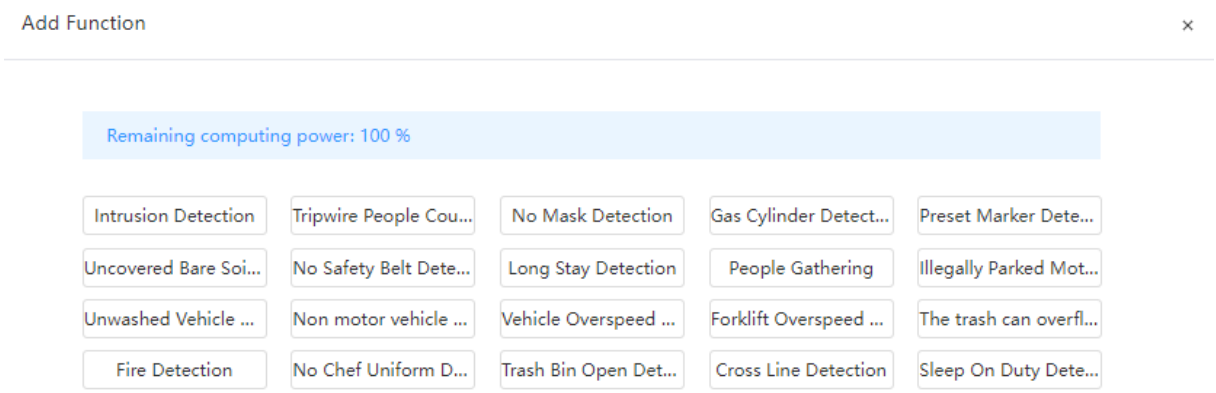
4.2.3 Intelligent Service Configuration

Configure intelligent services for channels.



1. Click **Analysis Config**, click ⊕ or **Add**, and choose the intelligent analysis services.

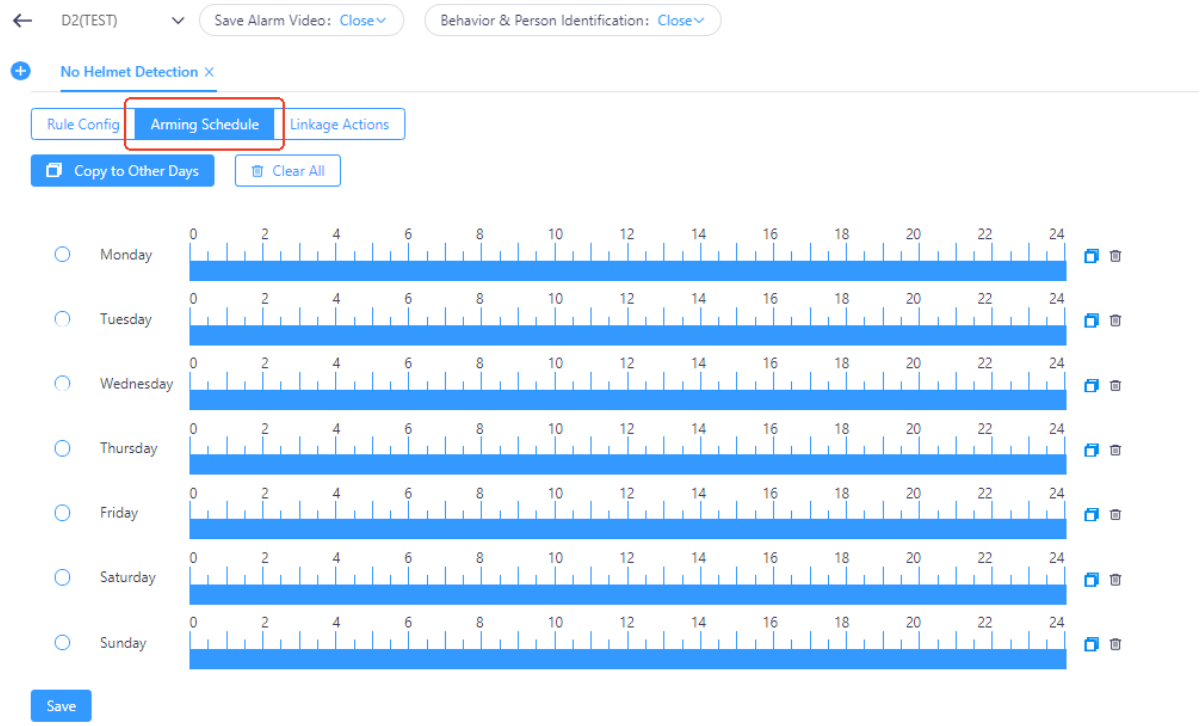




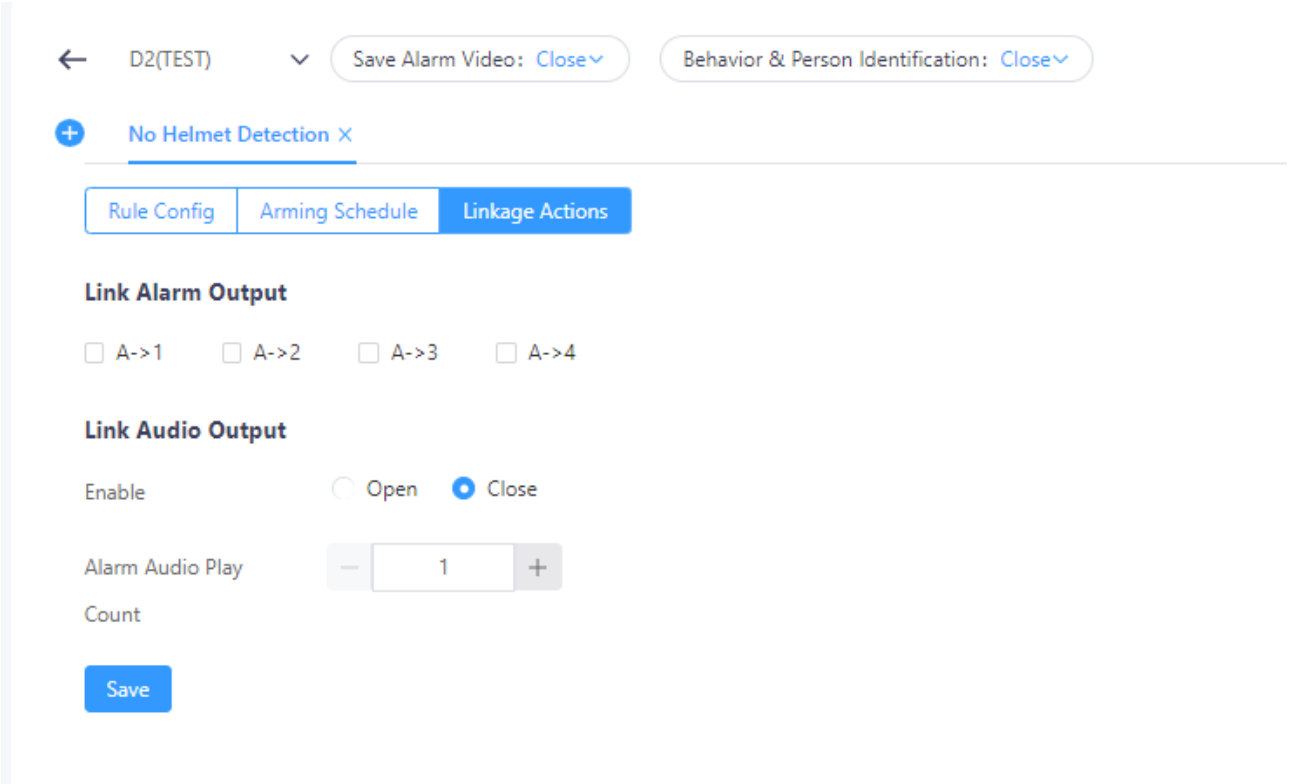
NOTE!

- If the configured analysis tasks exceed the total computing power of the smart box, the analysis accuracy will be affected. Please pay attention to the remaining computer power during configuration.
- Face detection cannot be enabled simultaneously with other functions. There are no such limitations for other functions.
- The algorithm functions can be changed at **System Config** > **Smart Capability Config**. Up to 20 functions can be enabled simultaneously.

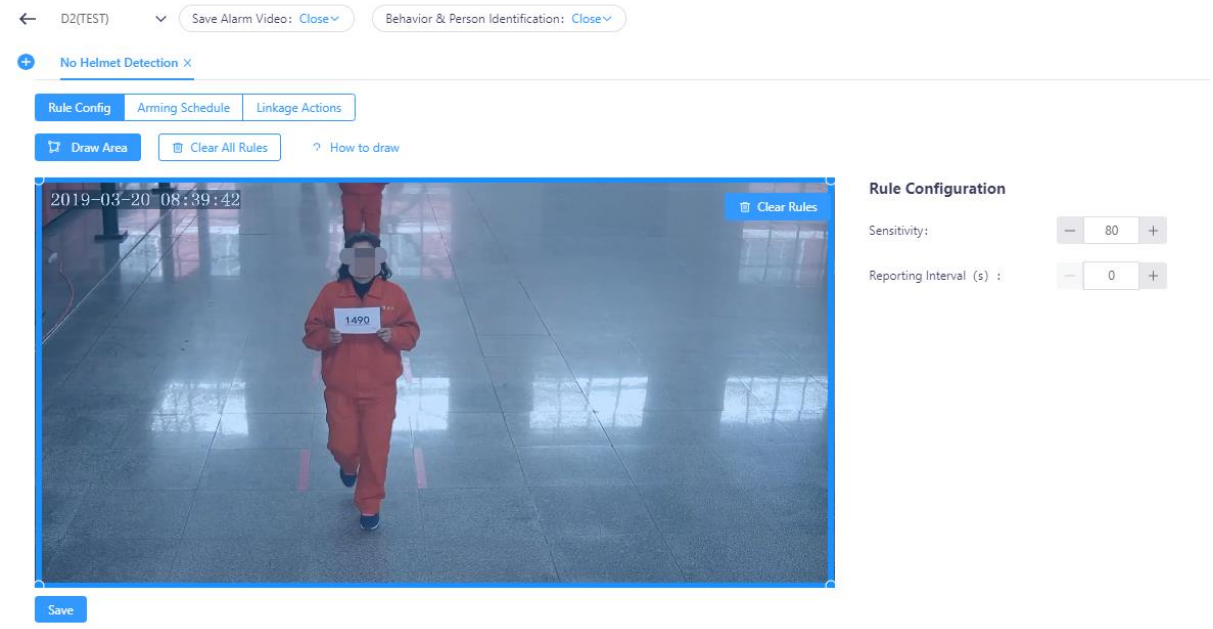
2. Enter the service configuration page. The following takes no hardhat detection as an example.
3. Draw the detection area.
   - Use the default area: By default, the detection area covers the entire image.
   - Customize area: Click **Clear Rules**, and then draw the detection area as needed.
     - Left-click to start drawing, right-click to finish.
     - Specify 3 to 6 points to set the detection area.
4. Configure the arming schedule. Supports 24/7 schedule.



5. Configure the linkage actions, including alarm output linkage (connects an alarm device via the device's ALM OUT interface) and audio output linkage (connects an audio device via the device's AUDIO OUT interface).



6. Set the sensitivity and reporting interval.



NOTE!

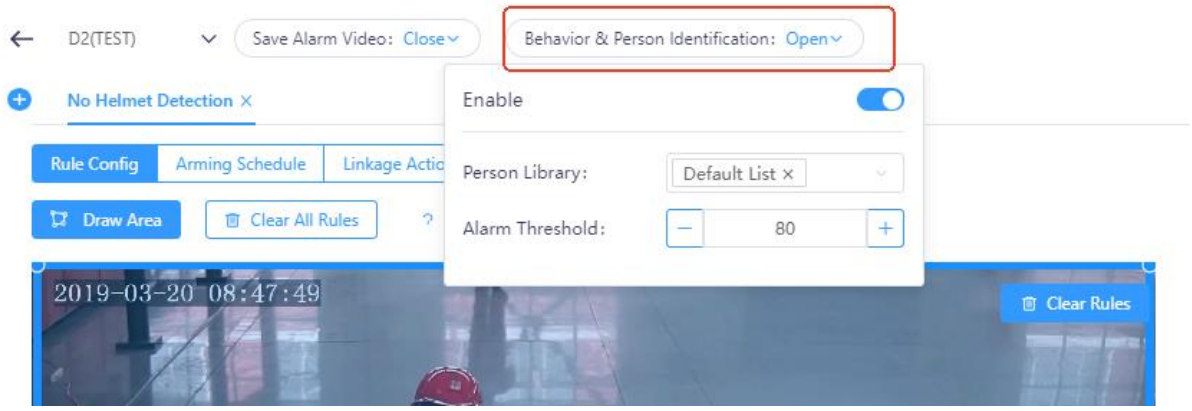
- The higher the sensitivity, the more likely alarms will be triggered, but the higher the false alarm rate, vice versa. Please adjust the sensitivity based on the actual scene.
- The default reporting interval is 0, which means only one alarm will be reported for the same target. If you set a different interval, alarms will be reported for the same target at the specified interval.

7. After the configuration is complete, click **Save**. A success message means the settings are saved.
8. To synchronize multiple intelligent services to a channel at once, you only need to click **Save** after configuring all services (If **Save Alarm Video** is enabled, the alarms generated by the synced services will save the corresponding alarm videos).

NOTE!

- To enable data comparison service for the channel, you need to enable the face detection and behavior & person identification services for face detection snapshot, and enable behavior service and behavior & person identification service for behavior comparison snapshot.
- The higher the alarm threshold is set in behavior & person identification, the fewer the person comparison results, but the lower the false alarm rate. Conversely, the lower the alarm threshold, the higher the false alarm rate, but the more the person comparison results.

9. Configure no hardhat detection and behavior & person identification services for the channel, and the smart box can capture the behavior comparison images based on the photo in person library.



4.2.4 Intelligent Service Introduction

The intelligent services supported by the edge computing server include: face detection, intrusion detection, cross line detection, enter area, leave area, area people counting, overcrowding detection, tripwire people counting, preset marker detection, fire detection, smoke detection, evacuation route obstruction, object left behind, trash bin open detection, rat detection, uncovered soil detection, improper stacking of materials, trash bin overflow, exposed trash, bagged trash, no hardhat detection, no work clothes detection, no reflective clothing detection, no cover detection, shirtless detection, no chief uniform detection, no chef hat detection, no safety harness detection, no safety belt detection, sleep on duty detection, absence detection, smoking detection, calling detection, using mobile phone detection, fall detection, climbing detection, long stay detection, fight detection, crowd detection, quick moving, inadequate worker, knife/stick in hand detection, illegally parked motor vehicle, unwashed vehicle detection, illegally parked non-motor vehicle, campus vehicle overspeed detection, forklift overspeed detection, and gas cylinder detection.

The following table introduces these intelligent services:

Service Name	Function Description	Remarks
Face Detection	This function takes snapshots when a person passes through the specified detection area. If there is a monitoring task, face detection will be performed.	Supports configuring face detection mode and face filtering size.
Intrusion Detection	This function triggers an alarm when intrusion is detected in the specified area.	Supports detecting motor vehicles, non-motor vehicles, and pedestrians.
Cross Line Detection	This function triggers an alarm when people crossing a user-specified virtual line is detected in a specified direction.	
Enter Area	This function triggers an alarm when people entering a user-specified area is detected.	
Leave Area	This function triggers an alarm when people leaving a user-specified area is detected.	

Area People Counting	This function counts the total number of people in the preset detection area in real time.	
Overcrowding Detection	This function triggers an alarm when the total number of people in the preset detection area exceeds the set number for a certain length of time.	
Tripwire People Counting	This function counts people crossing the preset tripwire in the detection area from both directions separately and returns the number of people entered and exited in real time.	
Preset Marker Detection	Attach a red sticker on the door and draw the detection area along the edges of the sticker. This function triggers an alarm when the door is open (the red sticker disappears) or closed (the red sticker appears).	
Fire Detection	This function triggers an alarm when obvious flames are detected in the preset detection area.	Supports detecting lighter, flame, etc.
Smoke Detection	This function triggers an alarm when obvious smoke is detected in the preset detection area.	
Evacuation Route Obstruction	This function triggers an alarm when a large object is detected on the evacuation route and it remains on the route for a certain length of time.	
Object Left Behind	This function triggers an alarm when objects are detected left behind in a specified area for a certain length of time.	Supports detecting some important items, such as fire extinguisher, flower pot, backpack, wallet, mobile phone, etc.
Trash Bin Open Detection	This function triggers an alarm when the trash bin opening is detected in the preset detection area.	
Rat Detection	This function triggers an alarm when moving rats are detected in the preset detection area.	Supports nighttime infrared image detection only.
Uncovered Soil Detection	This function triggers an alarm when the bare soil coverage rate in the preset detection area is less than the set threshold.	
Improper Stacking of Materials	This function triggers an alarm when the construction materials stack in the specified detection area for a preset duration.	
Trash Bin Overflow	This function triggers an alarm when bagged trash or scattered trash and waste is detected beside or on the trash bin in the specified detection area. The device will report the alarm in real time to the upper management platform so that sanitation workers can deal with the trash.	
Exposed Trash	This function triggers an alarm when exposed trash is detected in the specified detection area. The device will report the alarm in real time to the upper platform so that sanitation workers can deal with the trash.	

Bagged Trash	This function triggers an alarm when bagged trash is detected in the specified detection area. The device will report the alarm in real time to the upper management platform so that sanitation workers can deal with the trash.	
No Hardhat Detection	This function triggers an alarm when people not wearing a hardhat is detected in the preset detection area.	Supports detecting blue, red, yellow, orange, white, and black hardhats.
No Work Clothes Detection	This function triggers an alarm when people not correctly wearing the specified work clothes is detected in the preset detection area.	You need to import a work clothes library first.
No Reflective Clothing Detection	This function triggers an alarm when people not wearing the reflective clothing is detected in the preset detection area.	Supports detecting green reflective clothing only.
No Cover Detection	This function triggers an alarm when people not wearing a mask is detected in the detection area.	Supported mask types: 1) Ordinary disposable masks (blue, white, black, dark blue, purple, China red, green, pink, etc.) 2) 3D stereoscopic masks (black, white, China red) 3) N95 masks (black, white) 4) Willow-leaf masks (black, white, gradient)
Shirtless Detection	This function triggers an alarm when people with an uncovered upper body is detected in the preset detection area.	
No Chief Uniform Detection	This function triggers an alarm when people not wearing the chief uniform is detected in the preset detection area.	
No Chef Hat Detection	This function triggers an alarm when people not wearing a chef hat is detected in the preset detection area.	
No Safety Harness Detection	This function triggers an alarm when people not wearing the safety harness is detected in the preset detection area.	Supported safety harness style: Five-point and four-point safety harnesses in green, red, orange, blue, white, yellow, with a different color to the clothing color
No Safety Belt Detection	This function triggers an alarm when people not wearing a safety belt is detected in the preset detection area.	

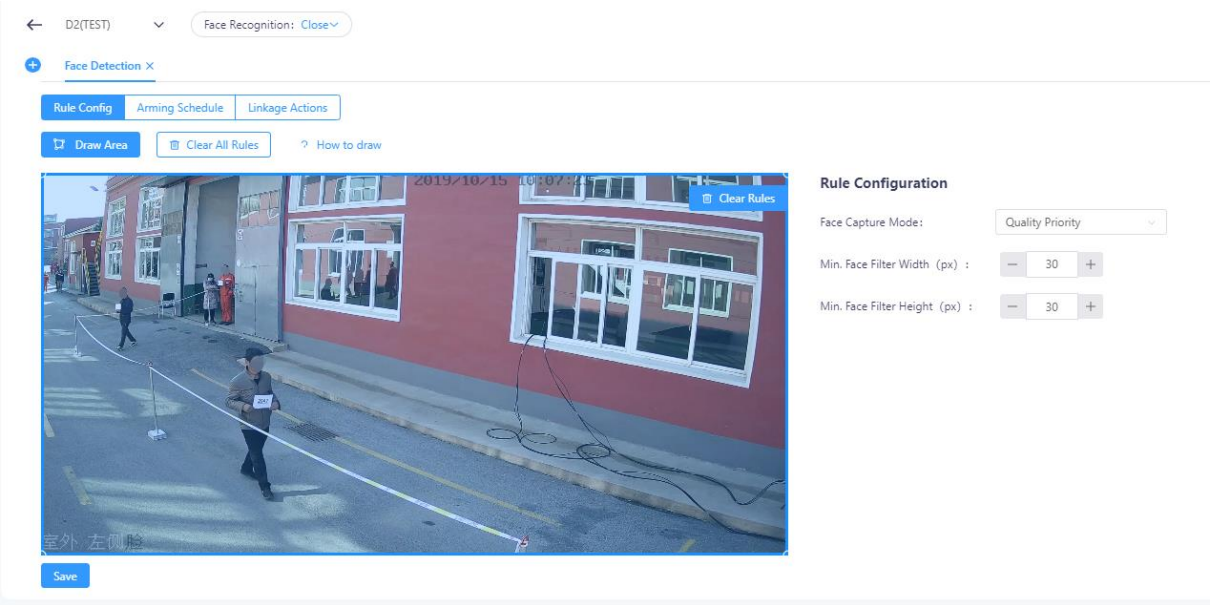
Sleep on Duty Detection	This function triggers an alarm when the target rests his/her head on the table in the detection area and remains still for a certain length of time.	
Absence Detection	This function triggers an alarm when the total number of people in the preset detection area is less than the set number for a certain length of time.	
Smoking Detection	This function triggers an alarm when people smoking cigarettes is detected in the specified detection area.	
Calling Detection	This function triggers an alarm when people calling using a mobile phone is detected in the specified detection area.	
Using Mobile Phone Detection	This function triggers an alarm when the target that sits in the preset detection area and uses a mobile phone for a certain length of time.	
Fall Detection	This function triggers an alarm when people falling is detected in the specified detection area.	
Climbing Detection	This function triggers an alarm when people touching the climbing line is detected in the specified detection area.	You need to draw the detection area and climbing line manually.
Long Stay Detection	This function triggers an alarm when the target stays in the specified detection area longer than the set time threshold.	
Fight Detection	This function triggers an alarm when two or more people fighting in the specified detection area are detected.	
Crowd Detection	This function triggers an alarm when the number of people in the specified detection area exceeds the set value and they remains there for a certain length of time.	
Quick Moving	This function triggers an alarm when people moving quickly is detected in the specified detection area.	
Inadequate Worker	This function triggers an alarm when the number of people in the specified detection is less than the set threshold after the trigger time has elapsed (no alarm is generated if the number of people is 0).	
Knife/Stick in Hand Detection	This function triggers an alarm when people with a knife/stick in his/her hand is detected in the specified detection area.	
Illegally Parked Motor Vehicle	This function triggers an alarm when a motor vehicle parks in the specified detection area and remains for a certain length of time.	Supports plate recognition
Unwashed Vehicle Detection	This function triggers an alarm when the washing vehicle leaves the specified cleaning area before the preset time has elapsed.	Supports plate recognition; Primary detection keypoint: whole vehicle
Illegally Parked Non-Motor Vehicle	This function triggers an alarm when a non-motor vehicle parks in the specified detection area and remains for a certain length of time.	

Campus Vehicle Overspeed Detection	This function triggers an alarm when the motor vehicle speed exceeds the set threshold in the specified detection area.	
Forklift Overspeed Detection	This function triggers an alarm when the forklift speed exceeds the set threshold in the specified detection area.	
Gas Cylinder Detection	This function triggers an alarm when a gas cylinder is detected in the specified detection area.	

4.2.4.1 Face Detection

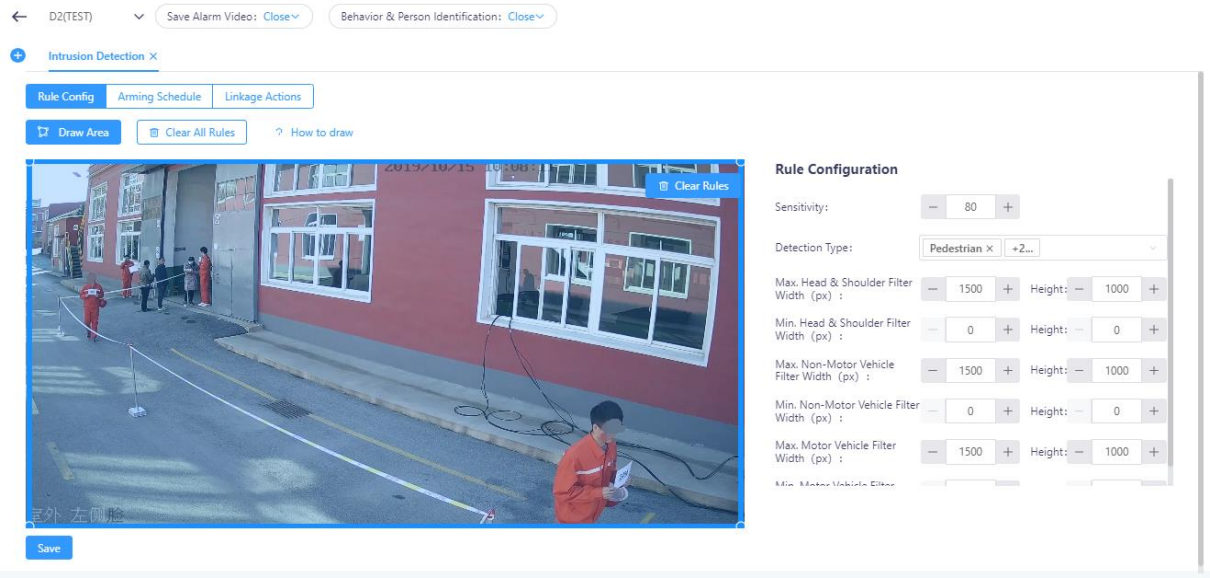
- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed.
- There are four face detection modes: quality priority (default), speed priority, periodic selection, quick report. You may change it according to the actual situation.
- The width and height of the minimum face filter size is 30 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Shift+Ctrl+Alt+X can be used to display or hide face detection, and the face library and face detection data are displayed or hidden simultaneously.

Attributes Configuration	Description
Face Detection Mode	● Quality Priority: The system selects one snapshot with the best quality from all the snapshots captured when a face is detected in the image to report. ● Speed Priority: Set the fast reporting time. The system selects one snapshot with the best quality from the moment that a face is detected till the report timeout is reached. ● Periodic Selection: Set the periodic reporting time. The system selects one snapshot to report at the set interval from the moment that a face is detected. ● Quick Report: Once a face is detected in the image, a snapshot will be taken and reported. If a higher quality snapshot is available later, it will replace the previous one and be reported again.
Minimum Face Filter Size	● Min. Face Filter Width: The minimum face width that the system can recognize during face detection or recognition. ● Min. Face Filter Height: The minimum face height that the system can recognize during face detection or recognition.



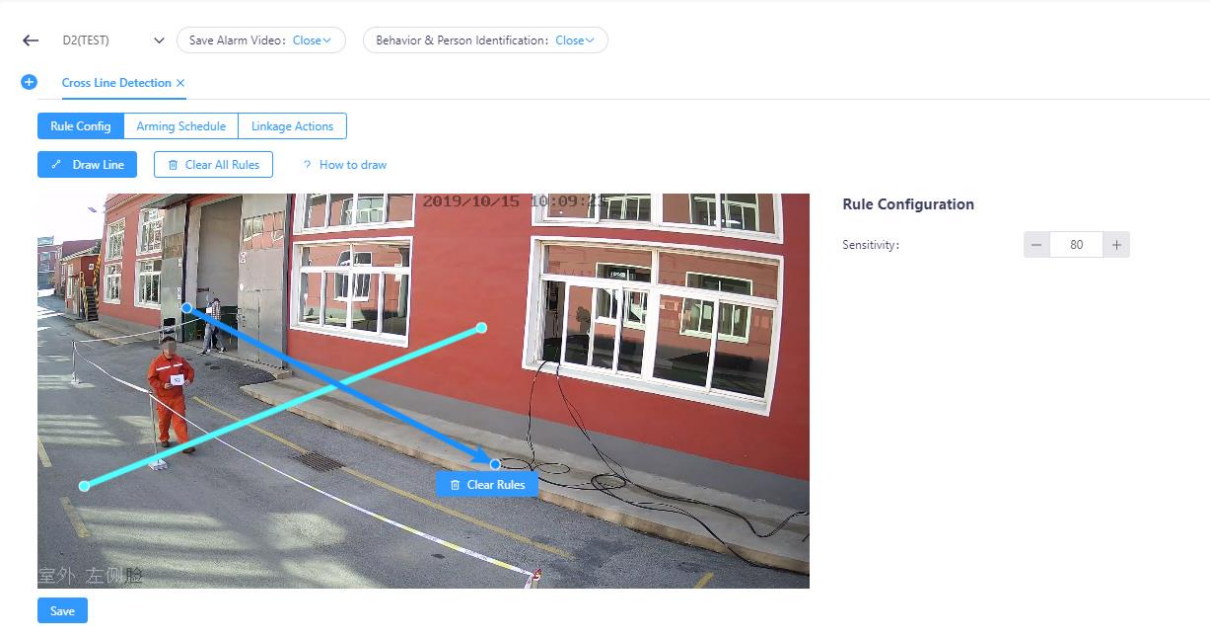
4.2.4.2 Intrusion Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 by default and can be adjusted as needed.
- The detection type includes motor vehicle, non-motor vehicle, and pedestrian, and you can choose the type as needed.
- The motor vehicle, non-motor vehicle, and pedestrian can be filtered by width and height size. Only the target larger than the minimum width/height and smaller than the maximum width/height can be detected.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



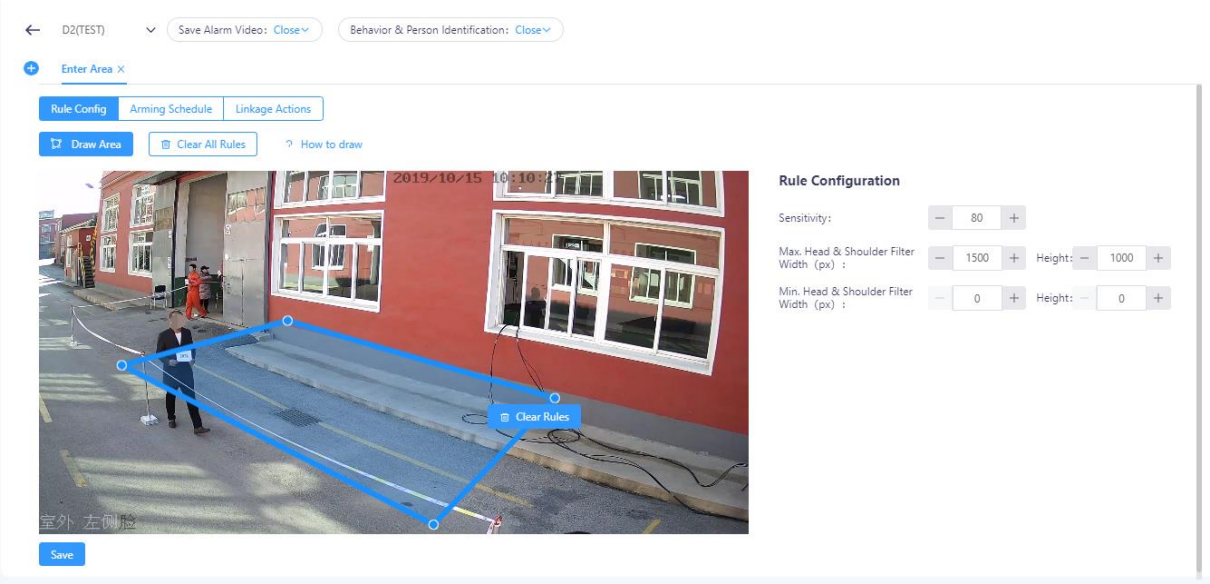
4.2.4.3 Cross Line Detection

- There is a default tripwire in the detection area. You can drag the points on the tripwire to adjust it; or click **Clear Rules** and **Draw Line** to draw the tripwire. For details, please refer to the Site Survey Guide.
- Set detection direction: After drawing the tripwire, drag on the image and a direction line will be generated, which should be perpendicular to the tripwire.
- The sensitivity is 80 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



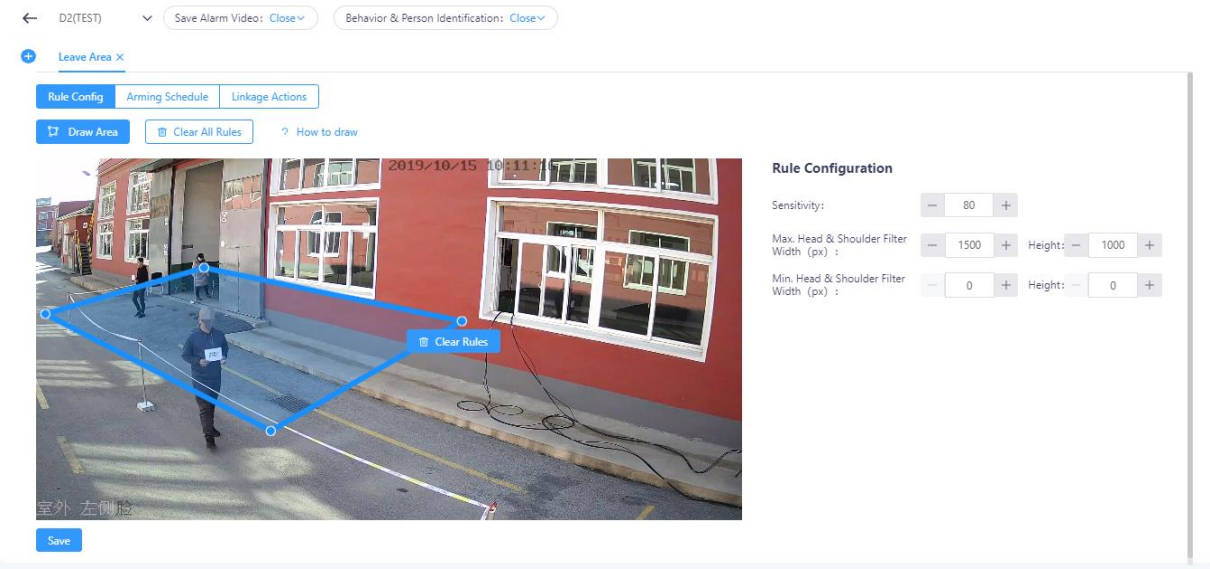
4.2.4.4 Enter Area

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 by default and can be adjusted as needed.
- The default maximum head & shoulder width and height are 1500 and 1000 respectively.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



4.2.4.5 Leave Area

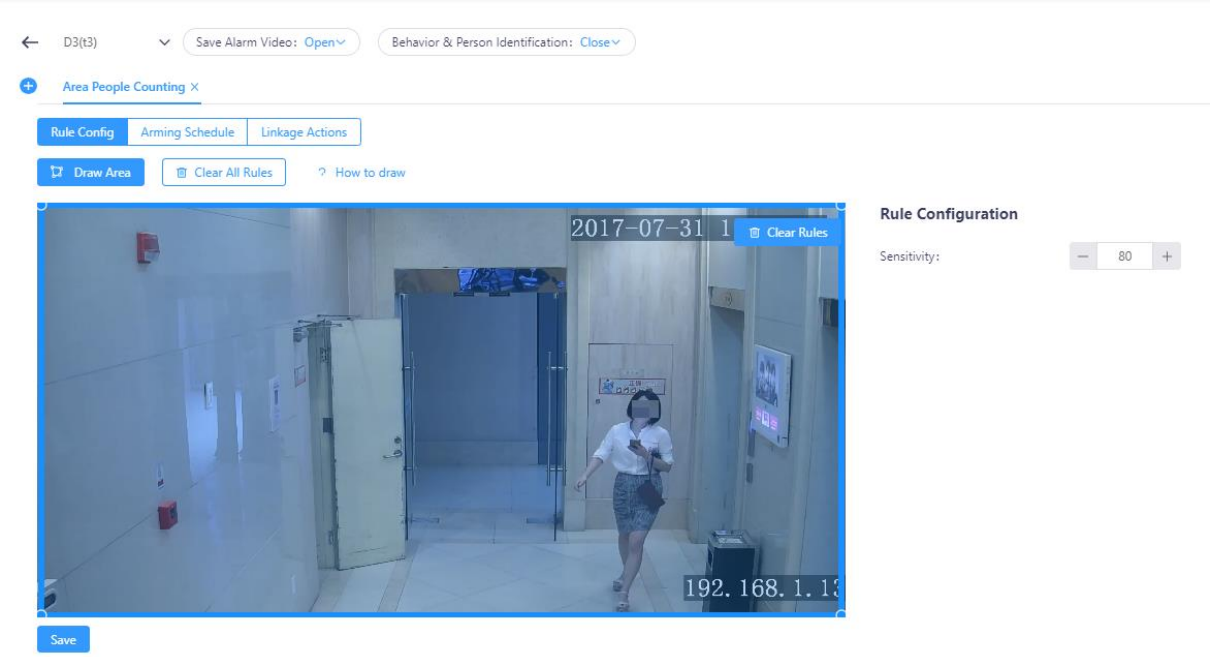
- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 by default and can be adjusted as needed.
- The default maximum head & shoulder width and height are 1500 and 1000 respectively.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



4.2.4.6 Area People Counting

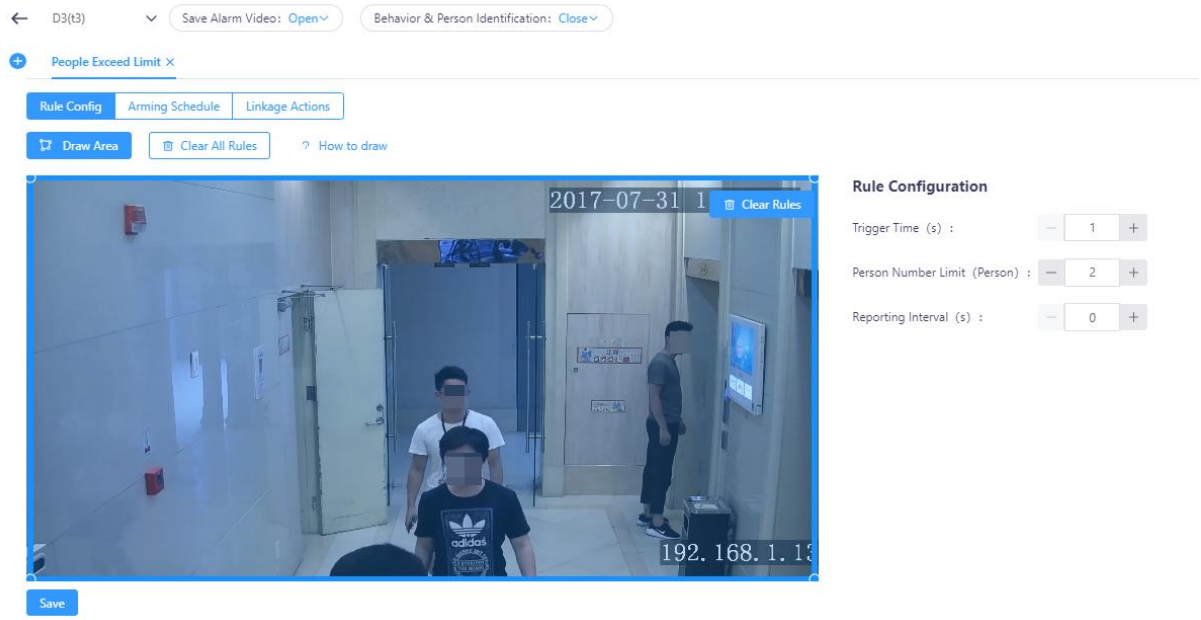
- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 by default and can be adjusted as needed.

- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



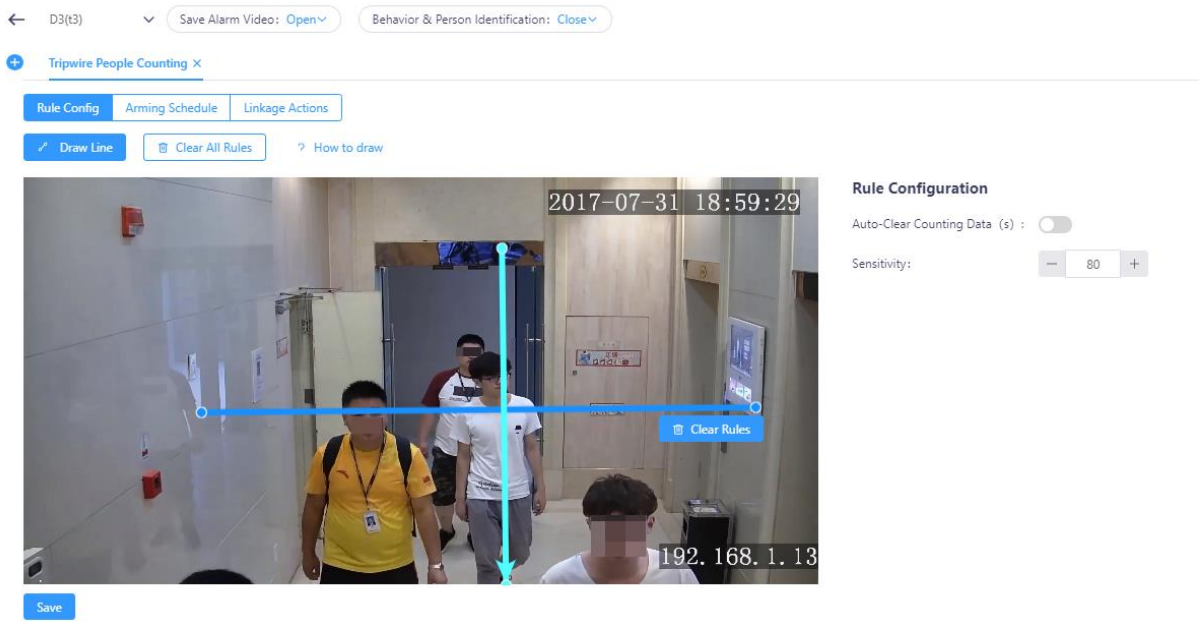
4.2.4.7 Overcrowding Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (1 second by default) and the limited number of people (2 by default) as needed. An alarm will be triggered when the number of people in the specified detection area exceeds the set value for a certain length of time.
- The reporting interval is 0 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



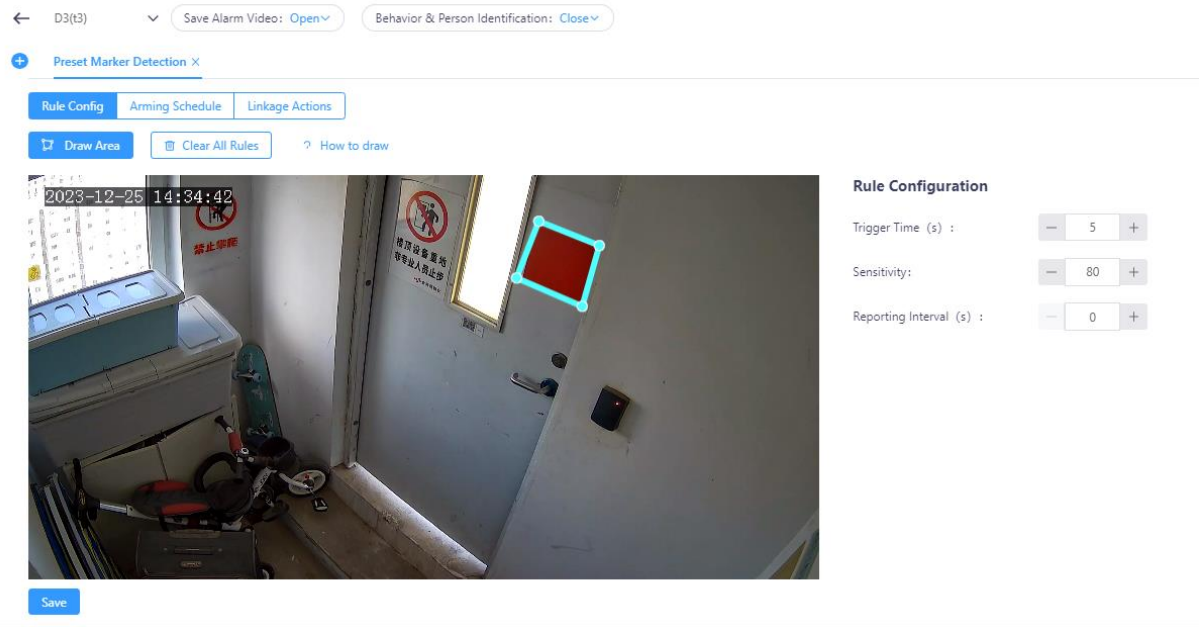
4.2.4.8 Tripwire People Counting

- There is a default tripwire in the detection area. You can drag the points on the tripwire to adjust it; or click **Clear Rules** and **Draw Line** to draw the tripwire. For details, please refer to the Site Survey Guide.
- Set detection direction: After drawing the tripwire, drag on the image and a direction line will be generated, which should be perpendicular to the tripwire.
- **Auto-Clear Counting Data** is disabled by default. You can enable it as needed. When enabled, you can set the counting data clearing time, and the people entered and exited displayed on the data dashboard page will be cleared at the set time.
- The sensitivity is 80 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



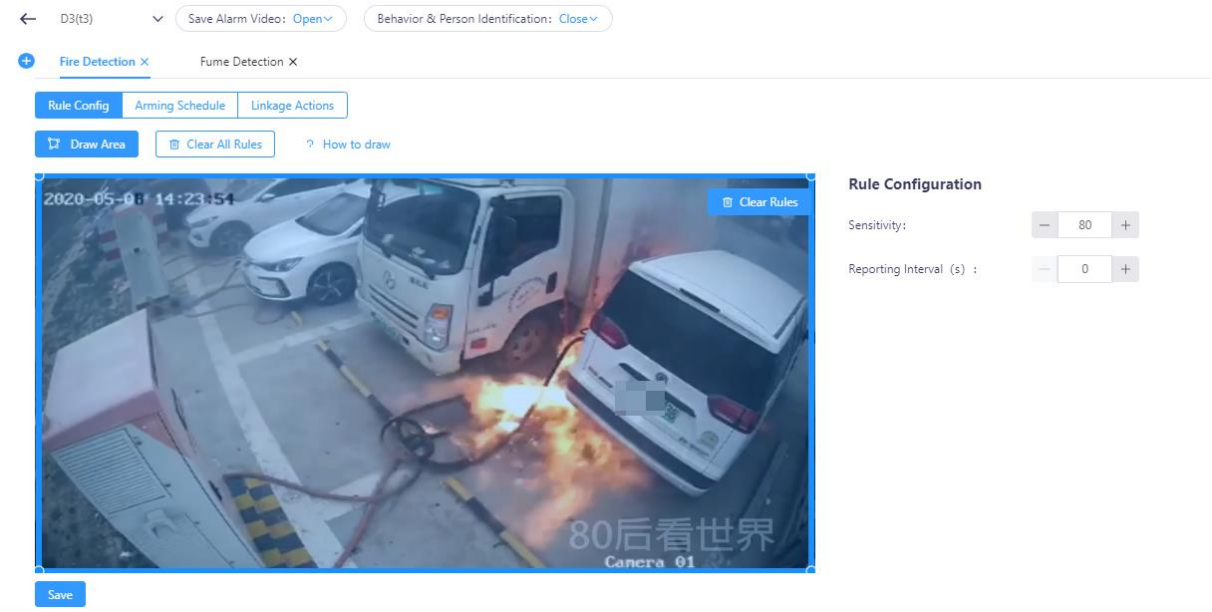
4.2.4.9 Preset Marker Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (5 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



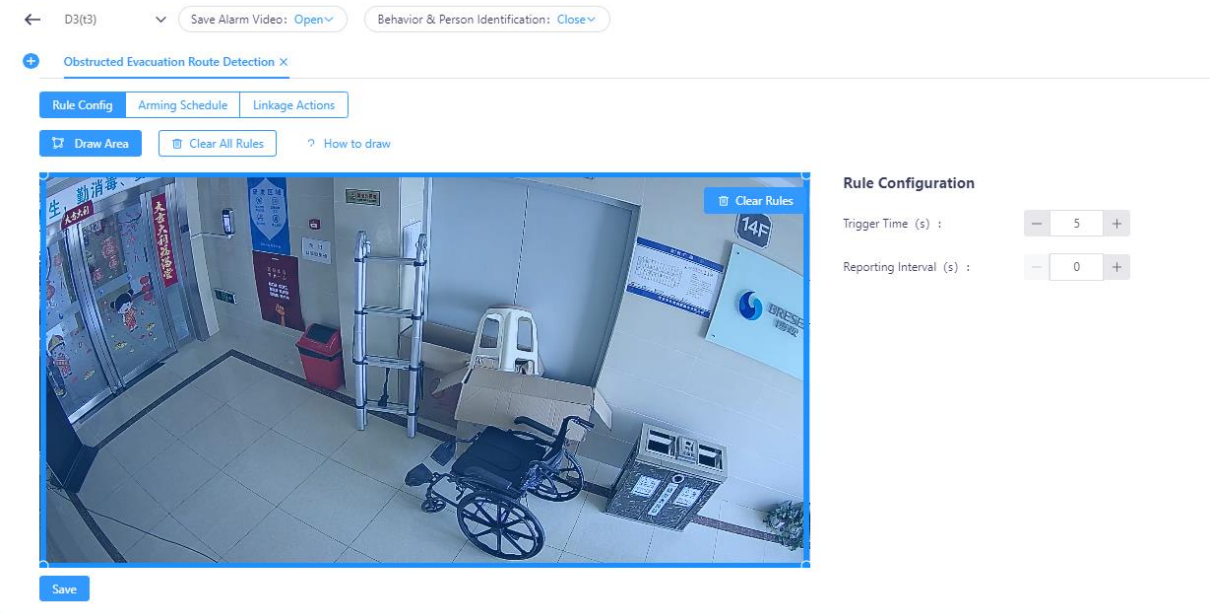
4.2.4.10 Fire Detection/Smoke Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



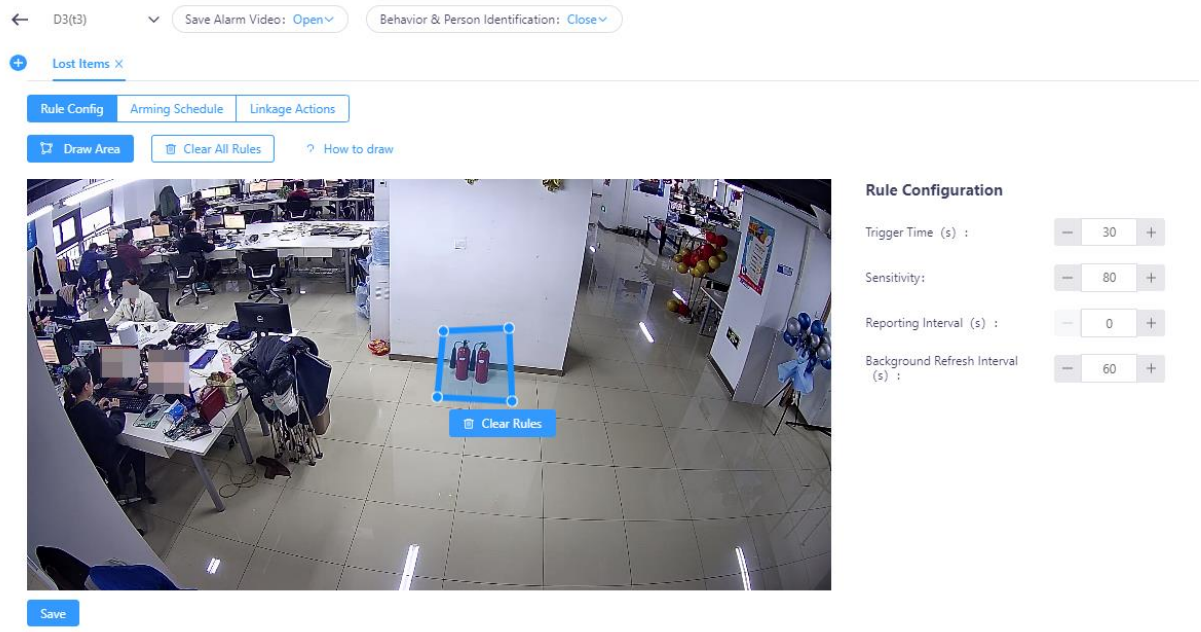
4.2.4.11 Evacuation Route Obstruction

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (5 seconds by default) as needed. The shorter the time, the more likely the alarm will be triggered.
- The reporting interval is 0 by default and can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



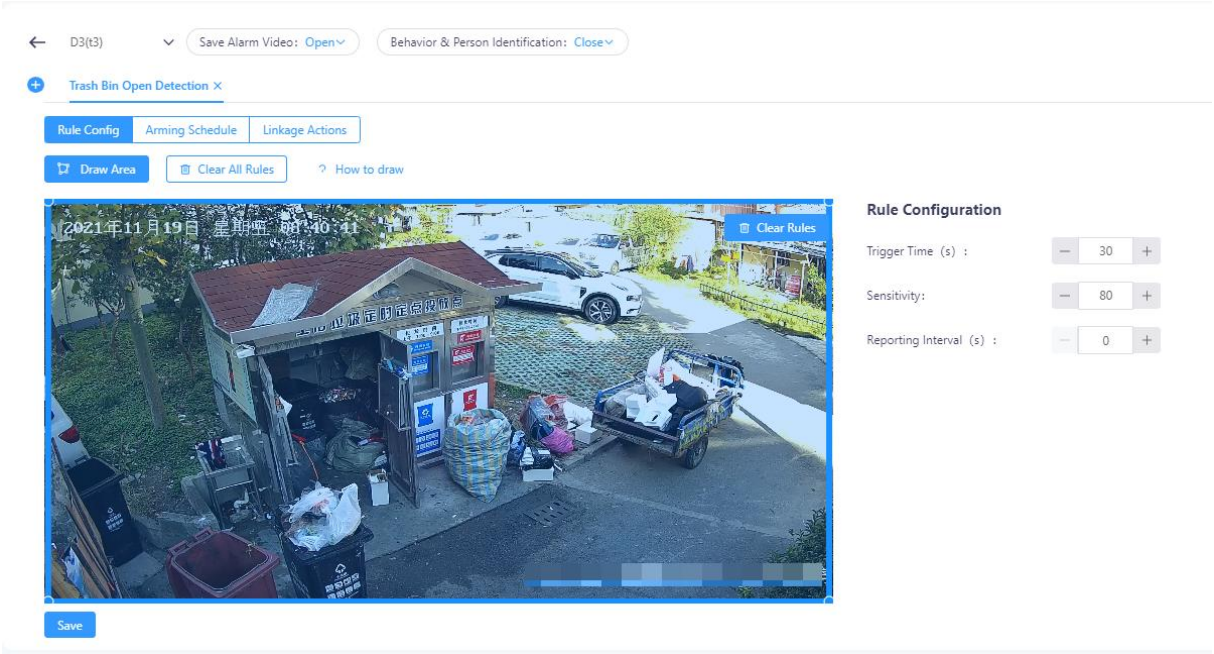
4.2.4.12 Object Left Behind

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) as needed. The shorter the time, the more likely the alarm will be triggered. The background refresh interval is 60 seconds by default and can be adjusted as needed.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



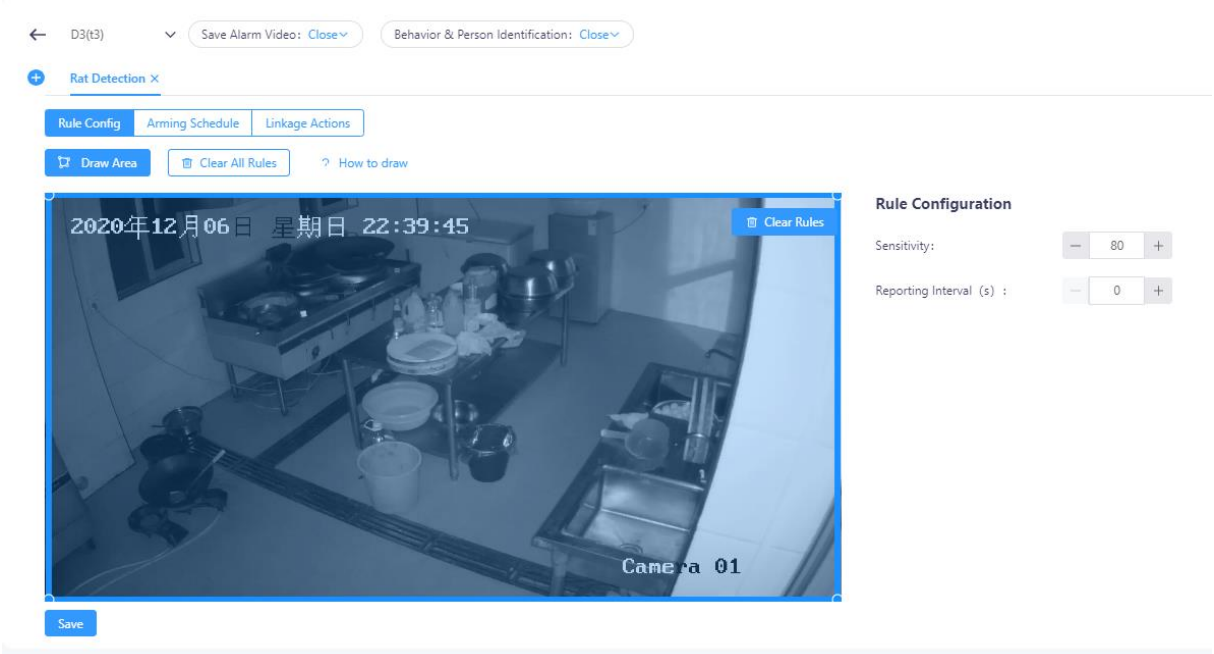
4.2.4.13 Trash Bin Open Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Supports detecting black, blue, green, and red outdoor trash bins. The trash bin should not be obscured by more than 1/3 in the image.



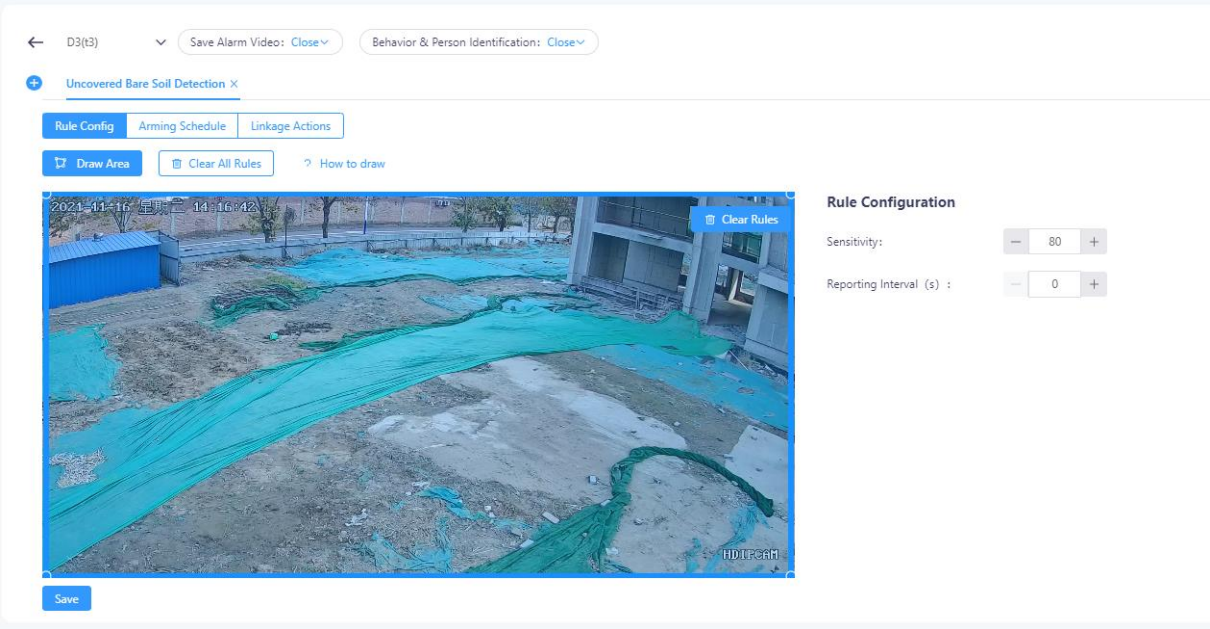
4.2.4.14 Rat Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- The default arming schedule is 22:00 to 02:00 from Monday to Sunday, which can be adjusted as required.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Supports nighttime infrared image detection only.



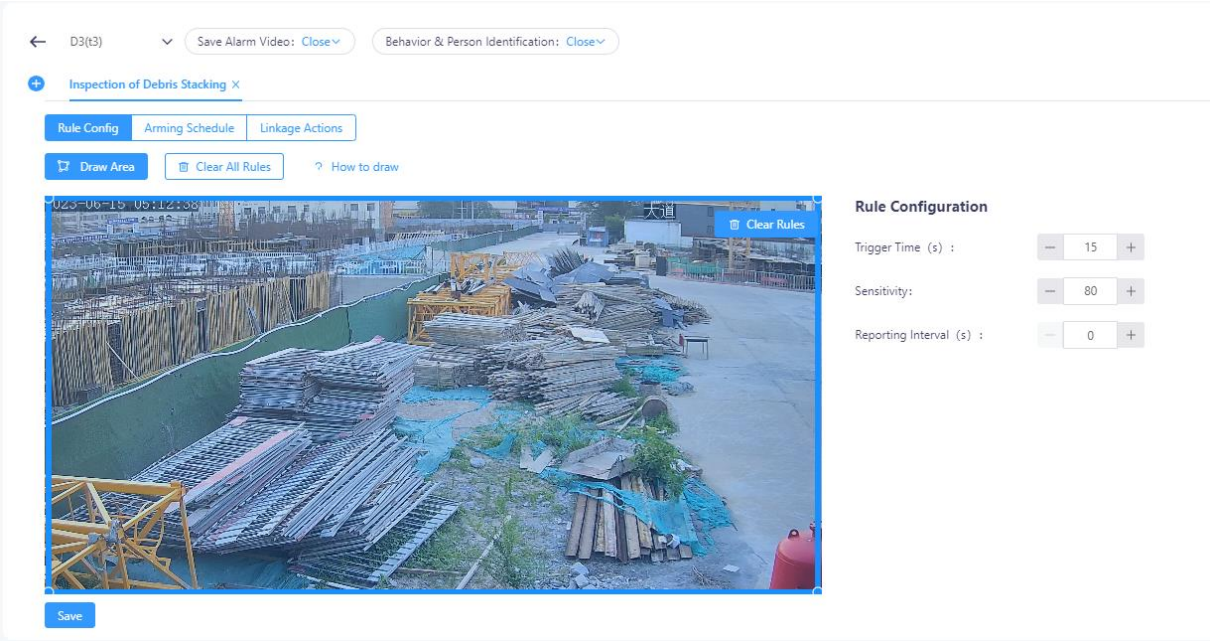
4.2.4.15 Uncovered Soil Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



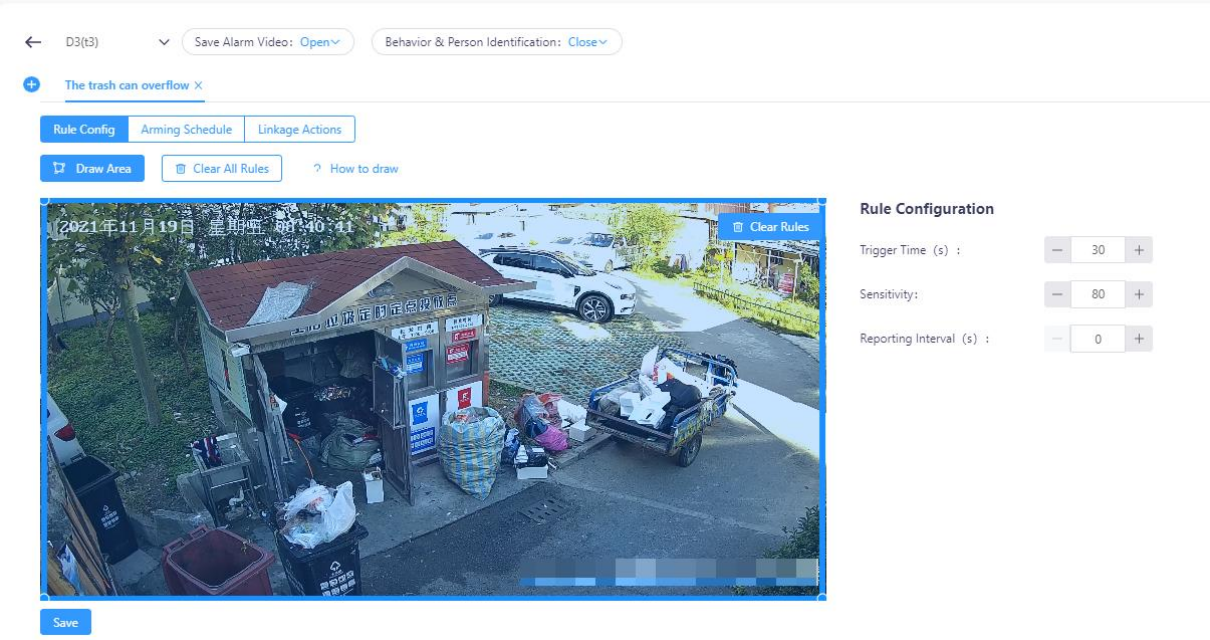
4.2.4.16 Improper Stacking of Materials

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (15 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



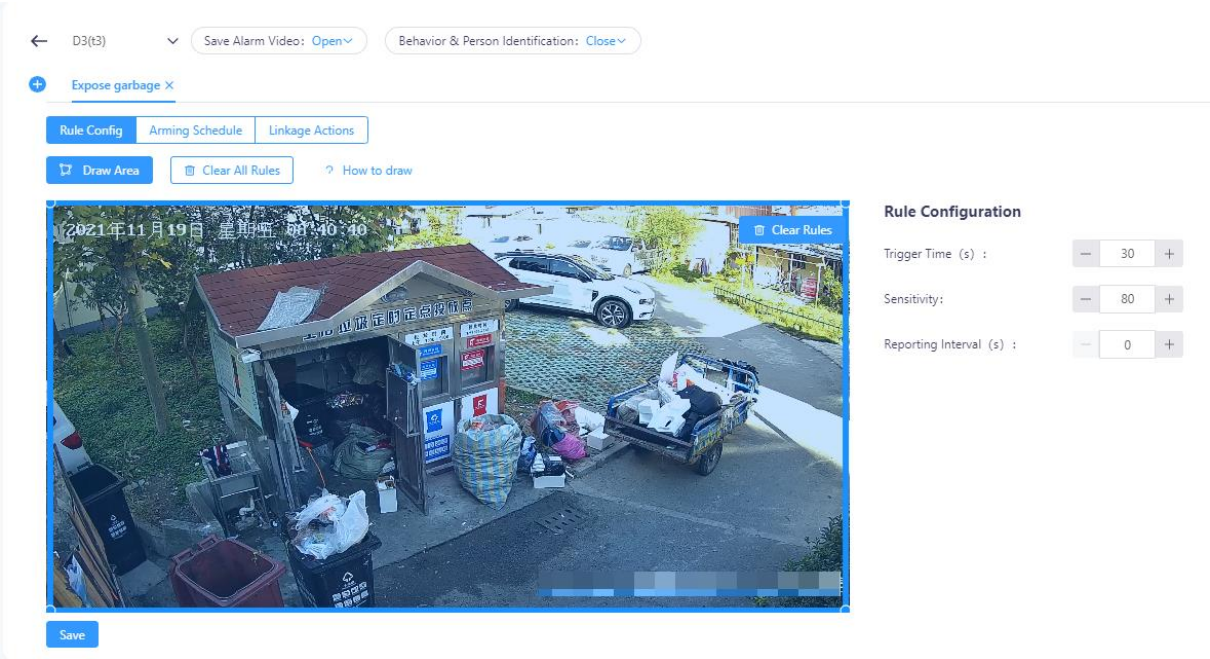
4.2.4.17 Trash Bin Overflow

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



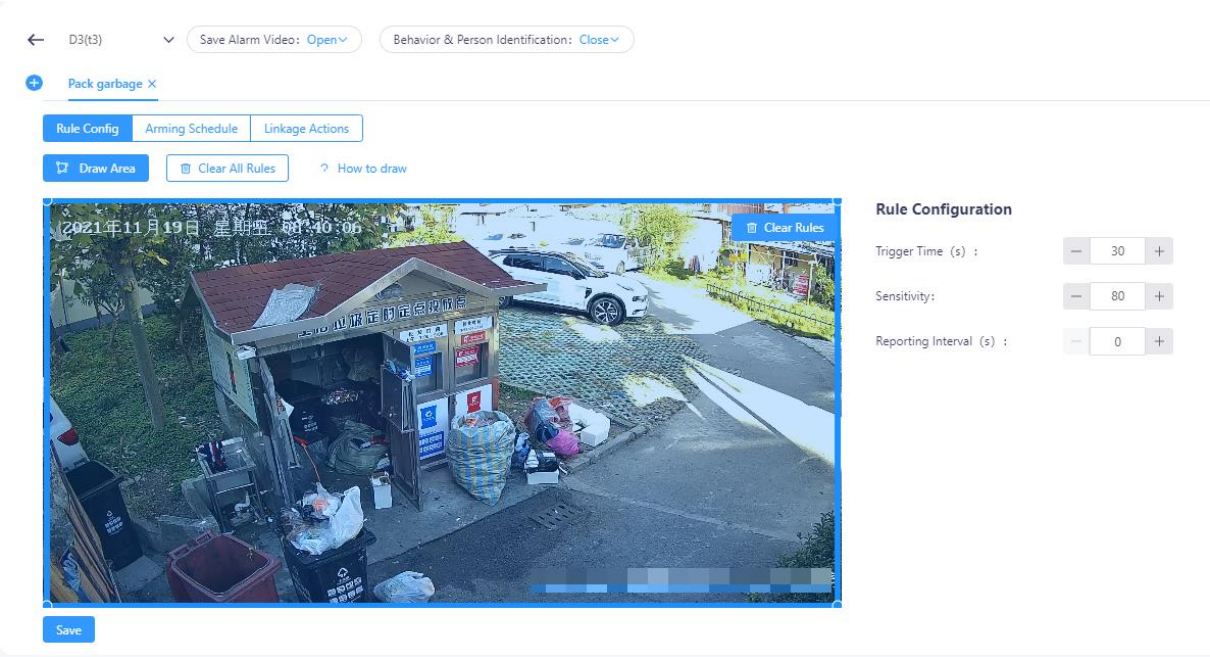
4.2.4.18 Exposed Trash

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



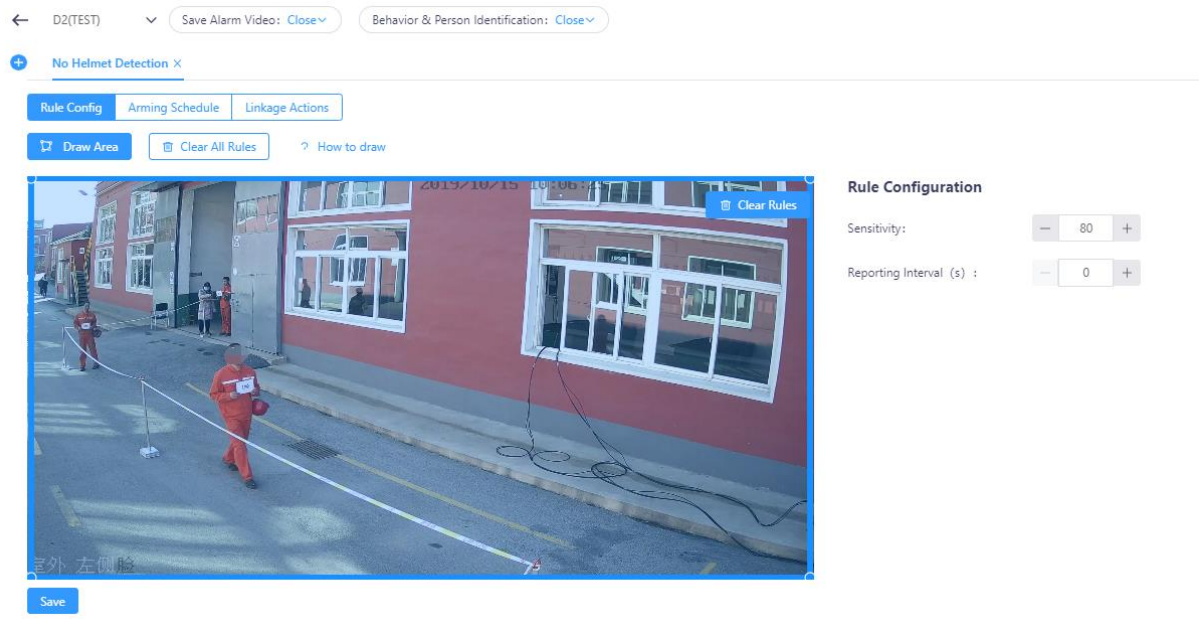
4.2.4.19 Bagged Trash

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



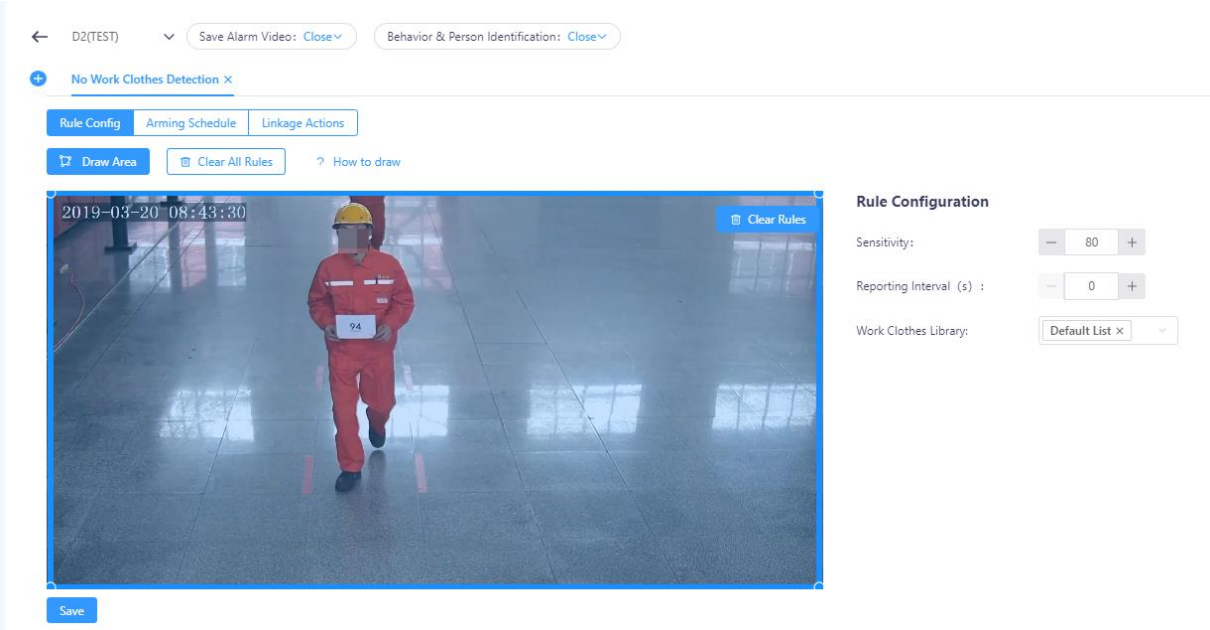
4.2.4.20 No Hardhat Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.
- Supports detecting blue, red, yellow, orange, white, and black hardhats.
- When the sensitivity is 90 and below, no alarm will be triggered only a person wears a hat, including hardhat, peaked cap, bicycle hardhat, etc. When the sensitivity is above 90, the device will strictly detect the hardhat wearing condition in accordance with the standard safety hardhat style.



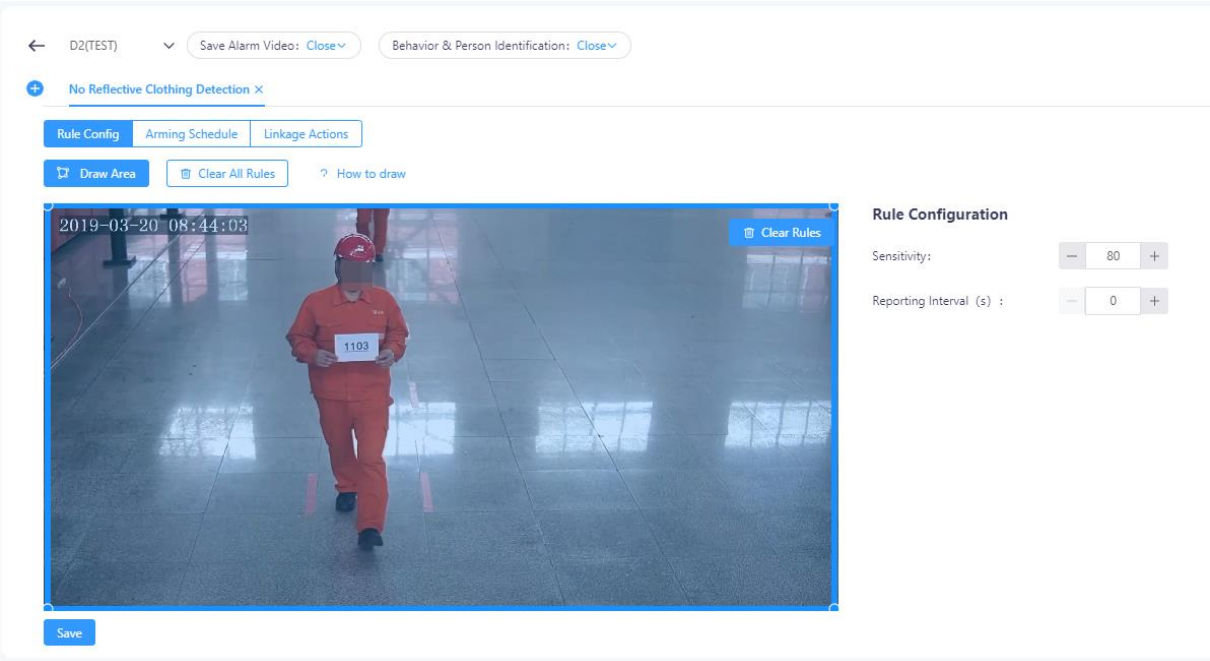
4.2.4.21 No Work Clothes Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- Select a work clothes library (see 5.1 for work clothes library adding).
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.
- Work clothes must have collars and sleeves, such as suits, white coats, security uniforms, and factory work clothes. Special work clothes such as reflective clothing, reflective vests, reflective strips, and aprons are not supported.
- Work clothes library image collection method: The model should wear work clothes correctly and stand in the center of the camera screen, with a height of 1/4 and 2/3 above the bottom of the image. Then take two photos, one from the front and one from the back, and import them to work clothes library.
- Work clothes library image size requirements: For the cropped photo, the optimal aspect ratio should be 1:3 and the resolution should be between 95x285 pixels and 200x600 pixels.



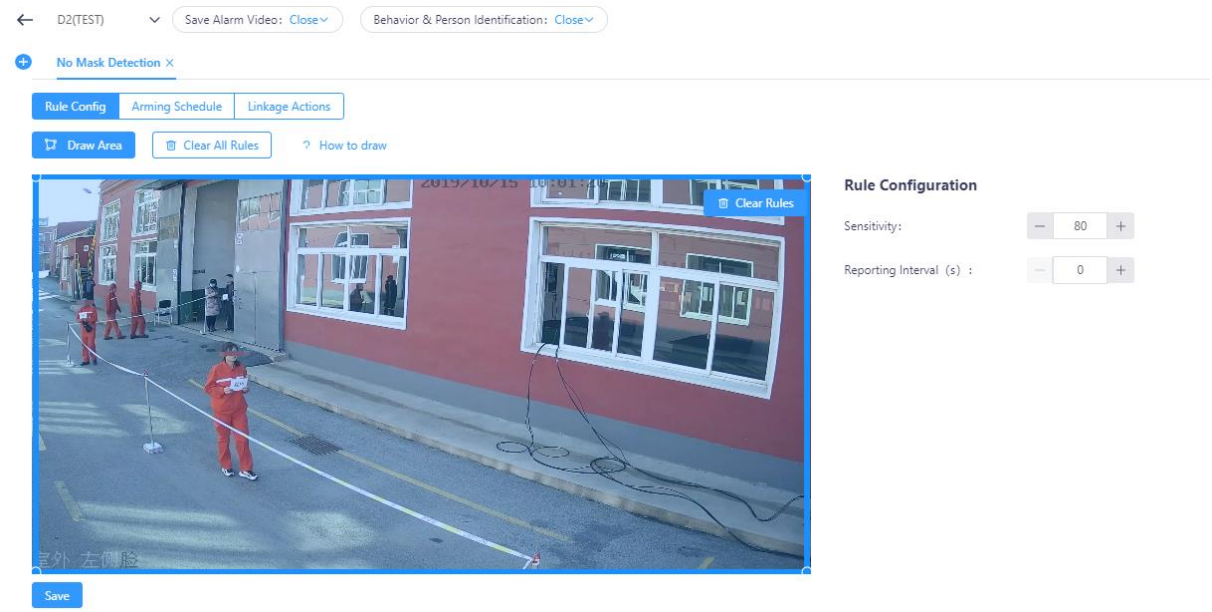
4.2.4.22 No Reflective Clothing Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.
- Green reflective clothing and reflective vests are supported. Reflective strips are not supported.



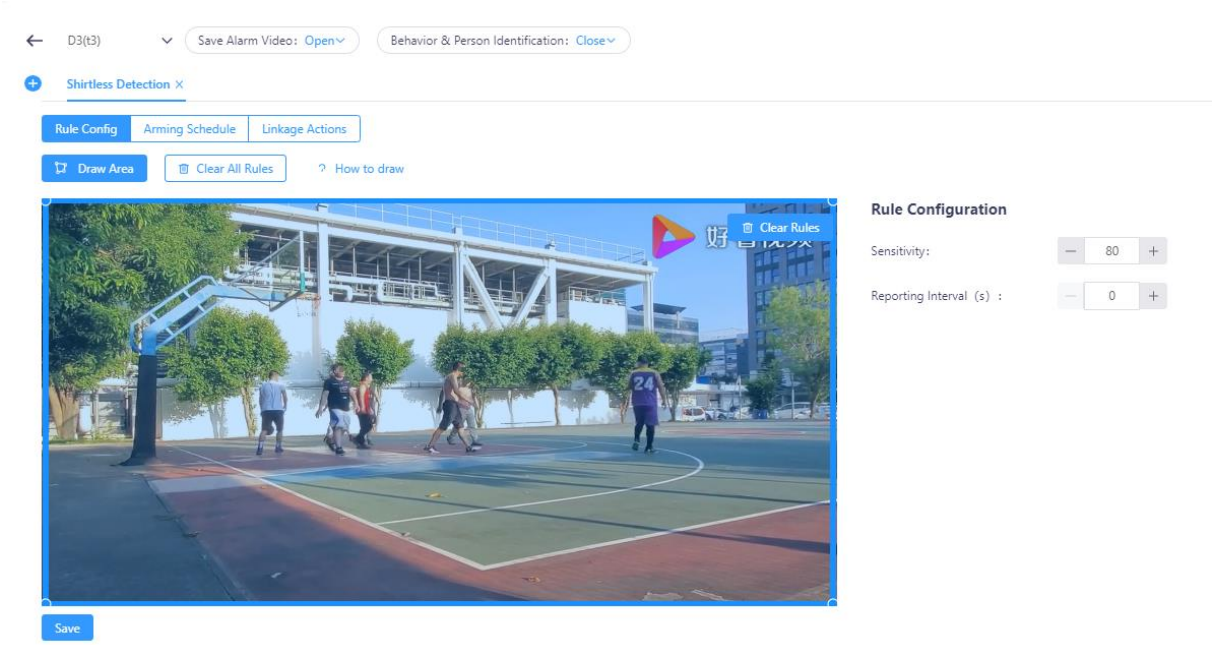
4.2.4.23 No Cover Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



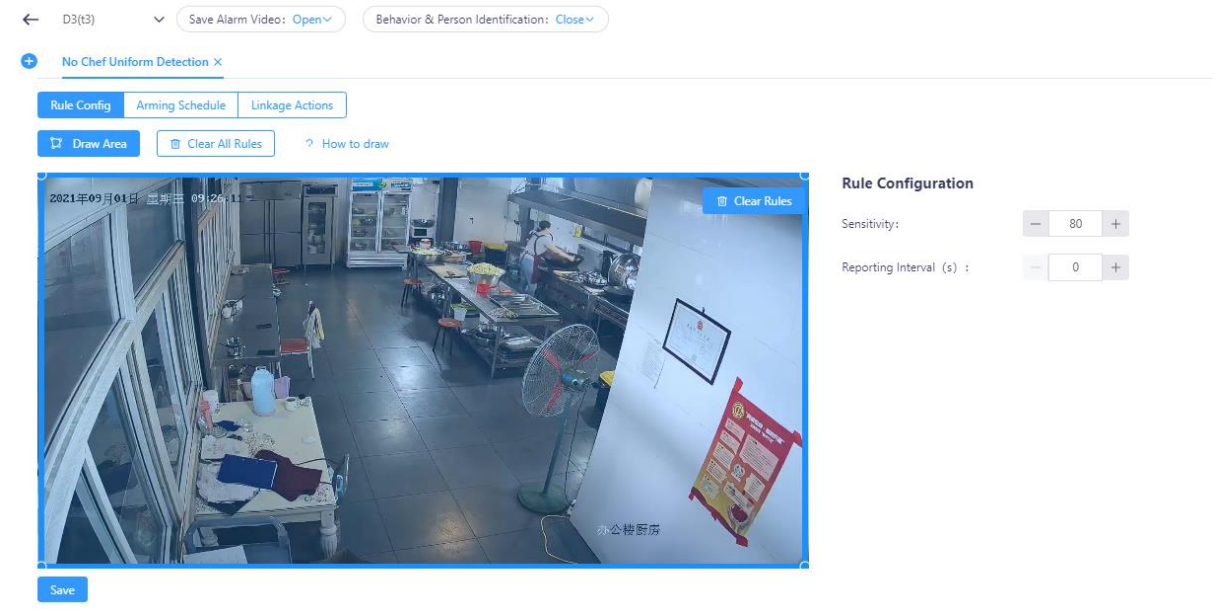
4.2.4.24 Shirtless Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



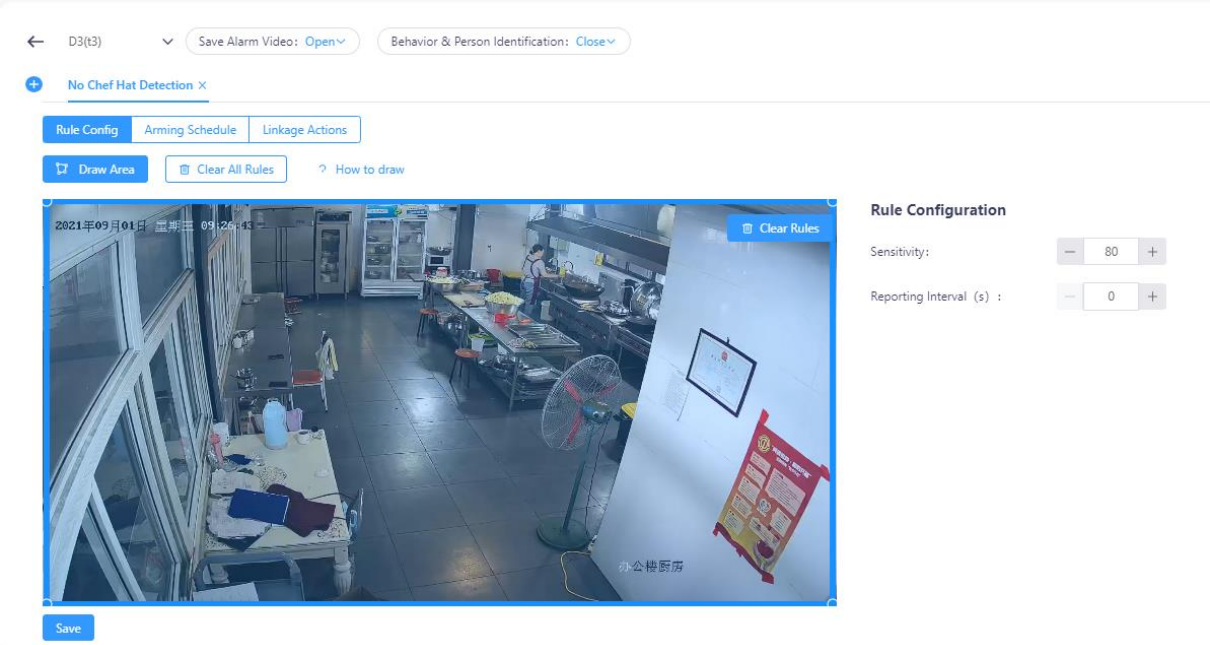
4.2.4.25 No Chief Uniform Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 By default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



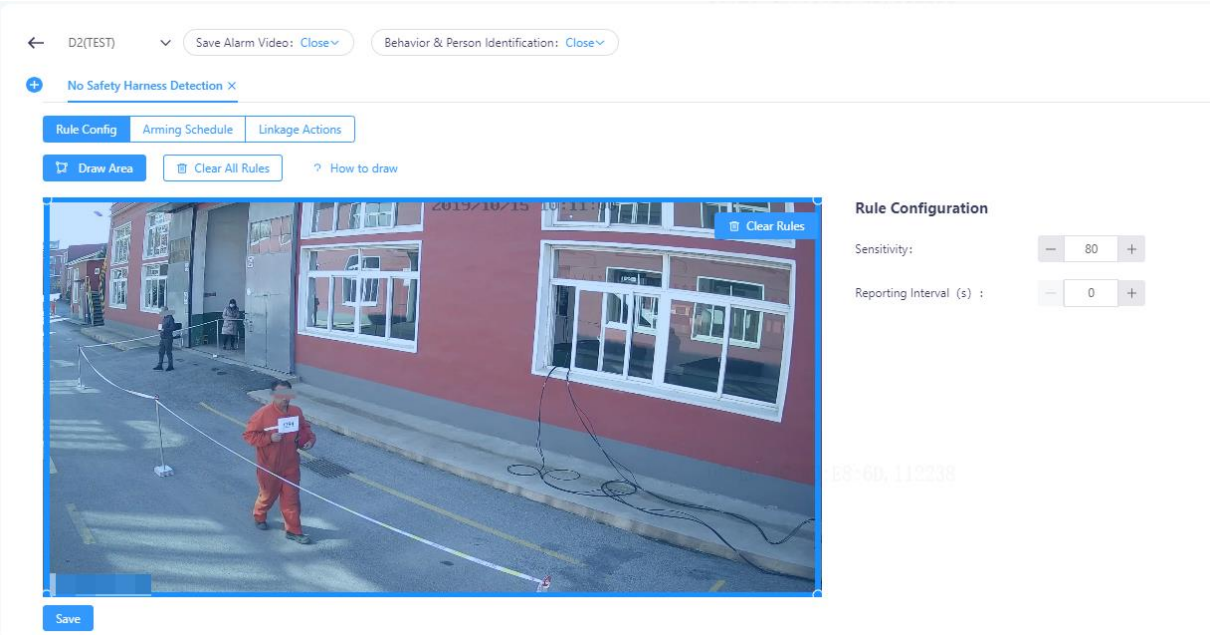
4.2.4.26 No Chef Hat Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



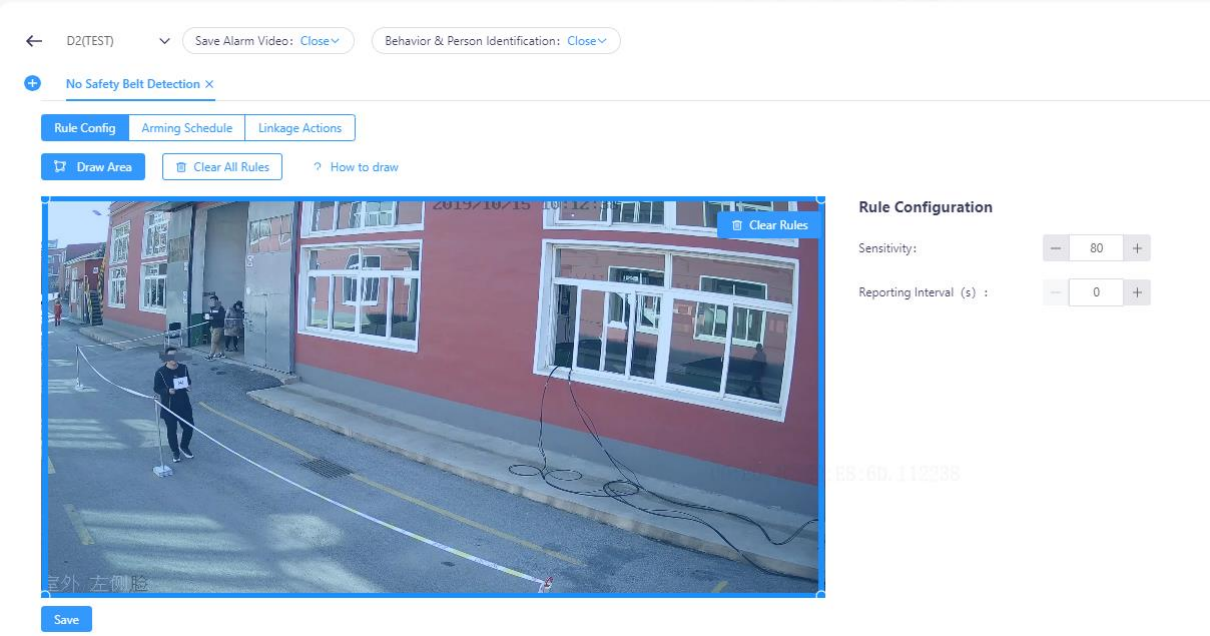
4.2.4.27 No Safety Harness Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



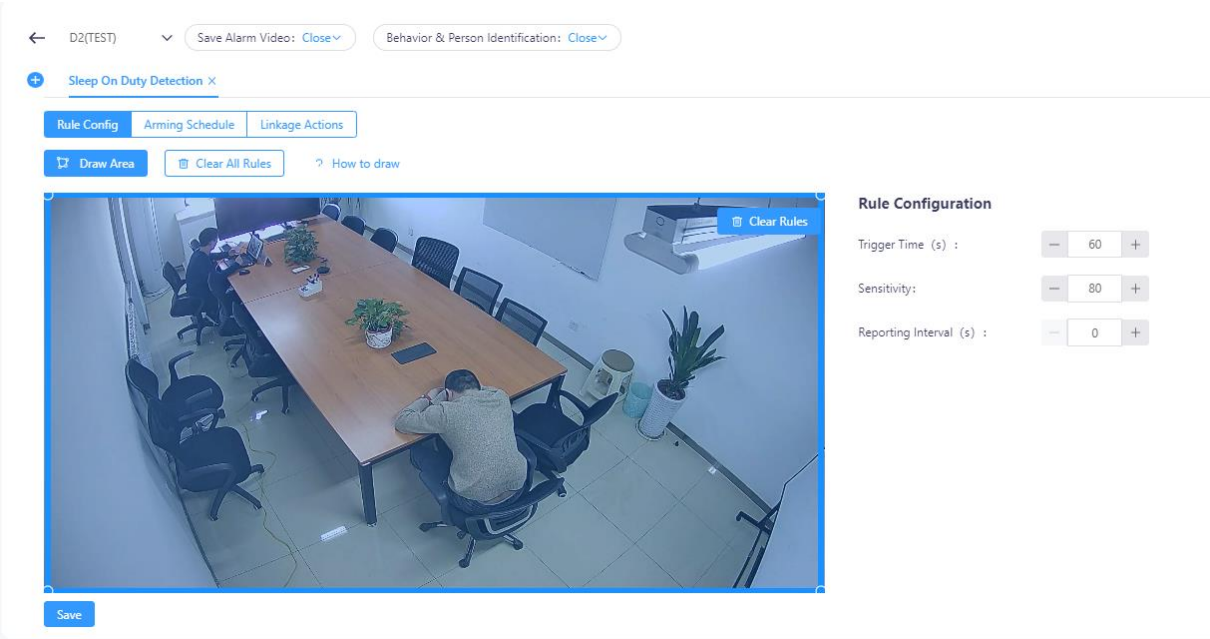
4.2.4.28 No Safety Belt Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



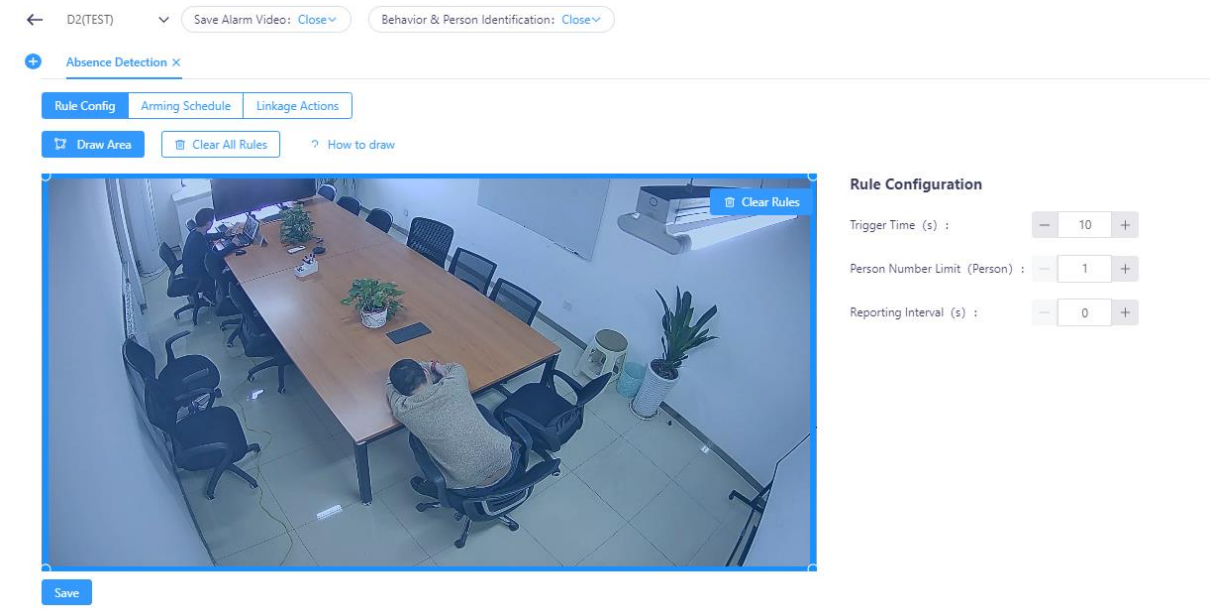
4.2.4.29 Sleep on Duty Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (60 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



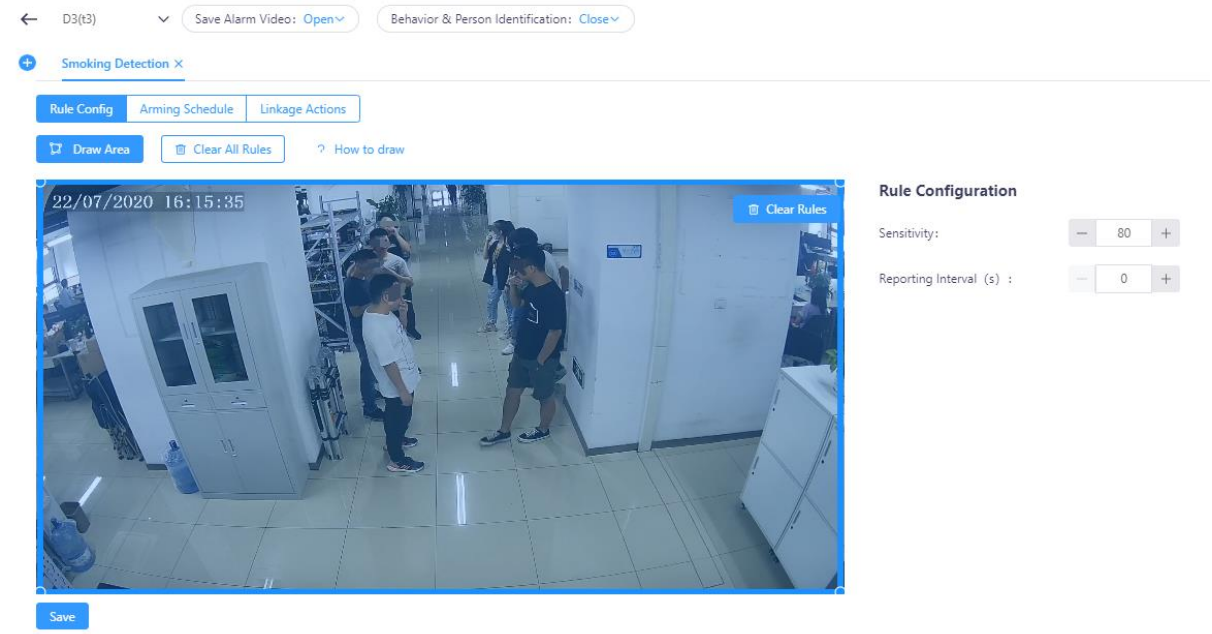
4.2.4.30 Absence Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (10 seconds by default) and the number of people limited (1 by default) as needed. An alarm will be triggered when the number of people in the specified detection area is less than the set value for a certain length of time.
- The default reporting interval is 0, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



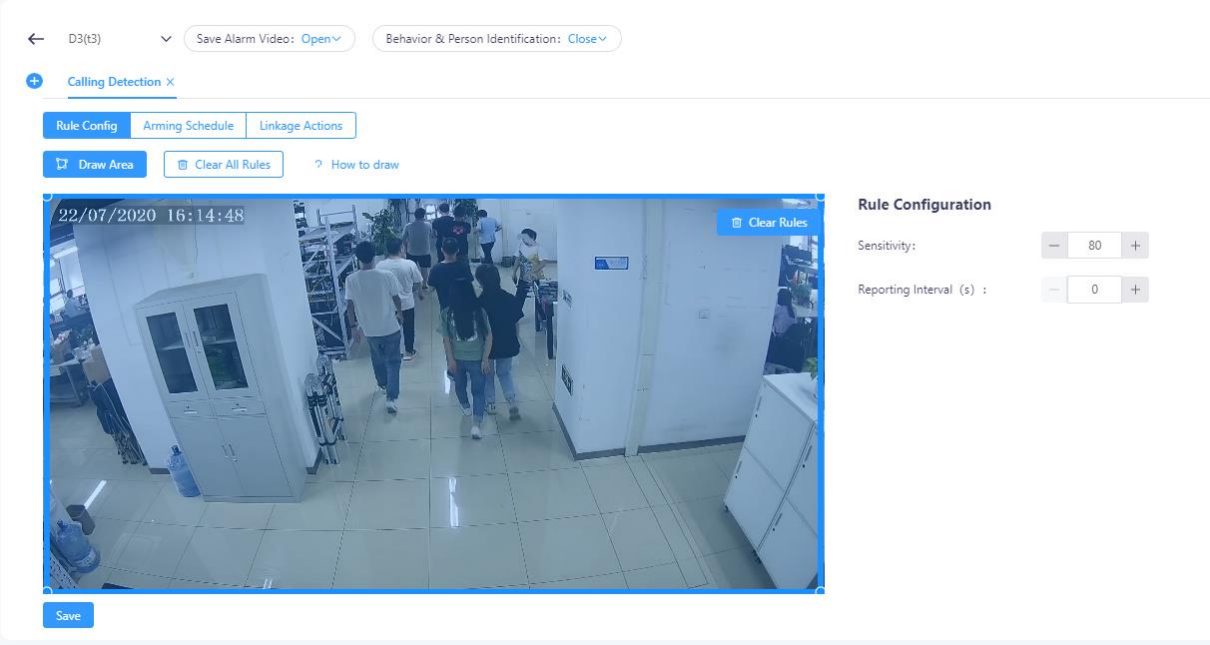
4.2.4.31 Smoking Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



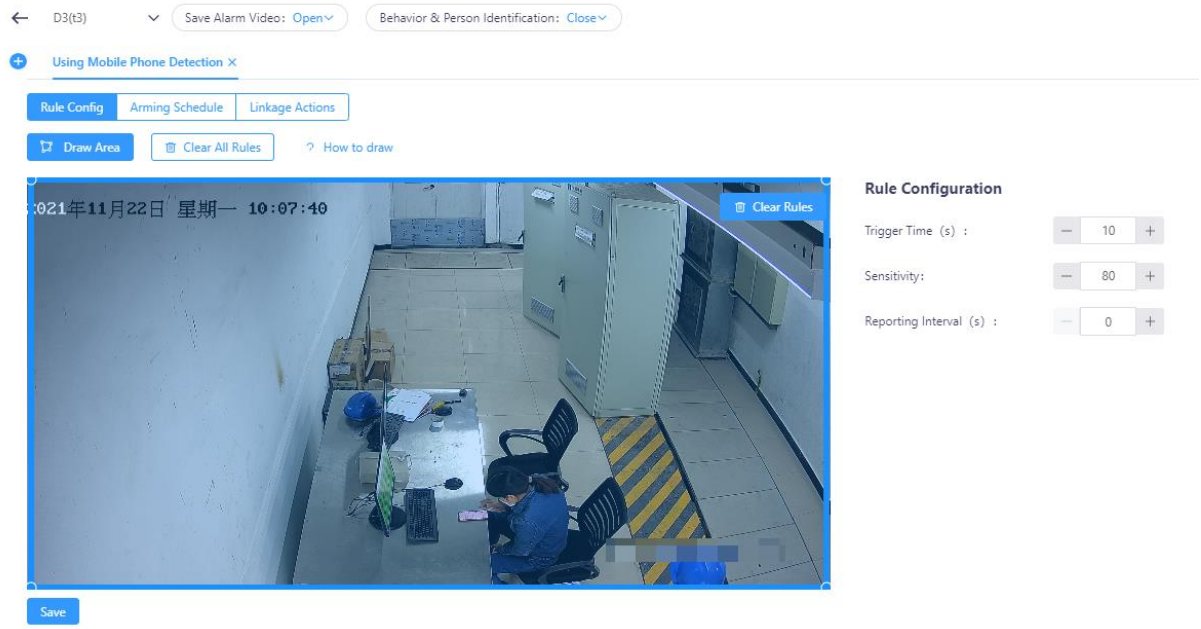
4.2.4.32 Calling Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



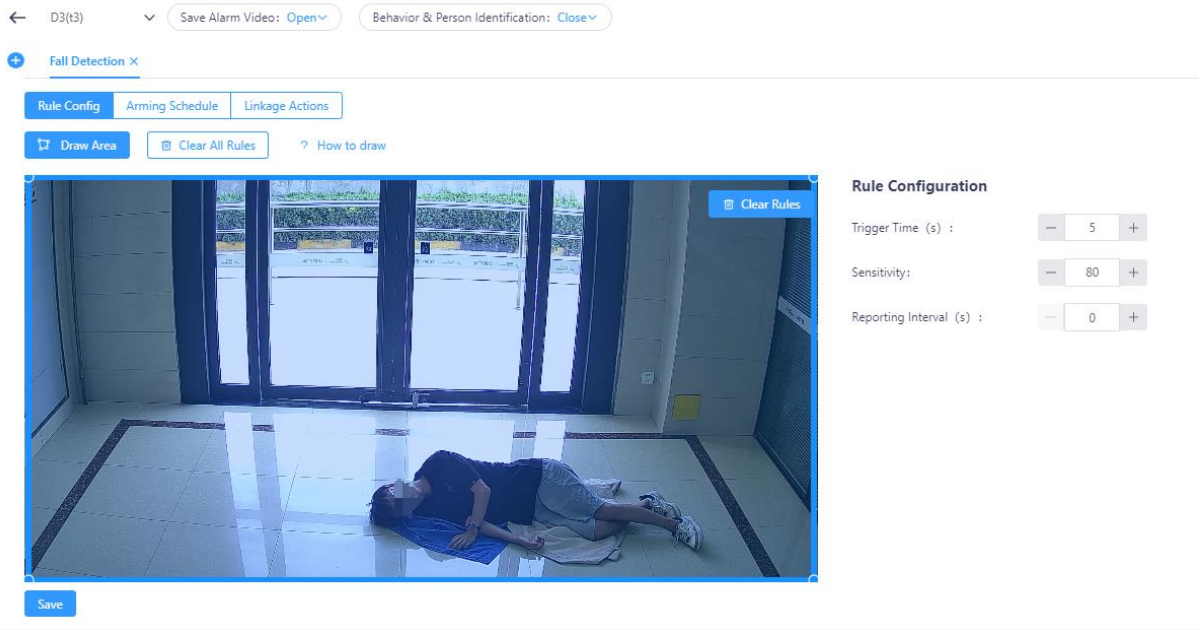
4.2.4.33 Using Mobile Phone Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (10 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



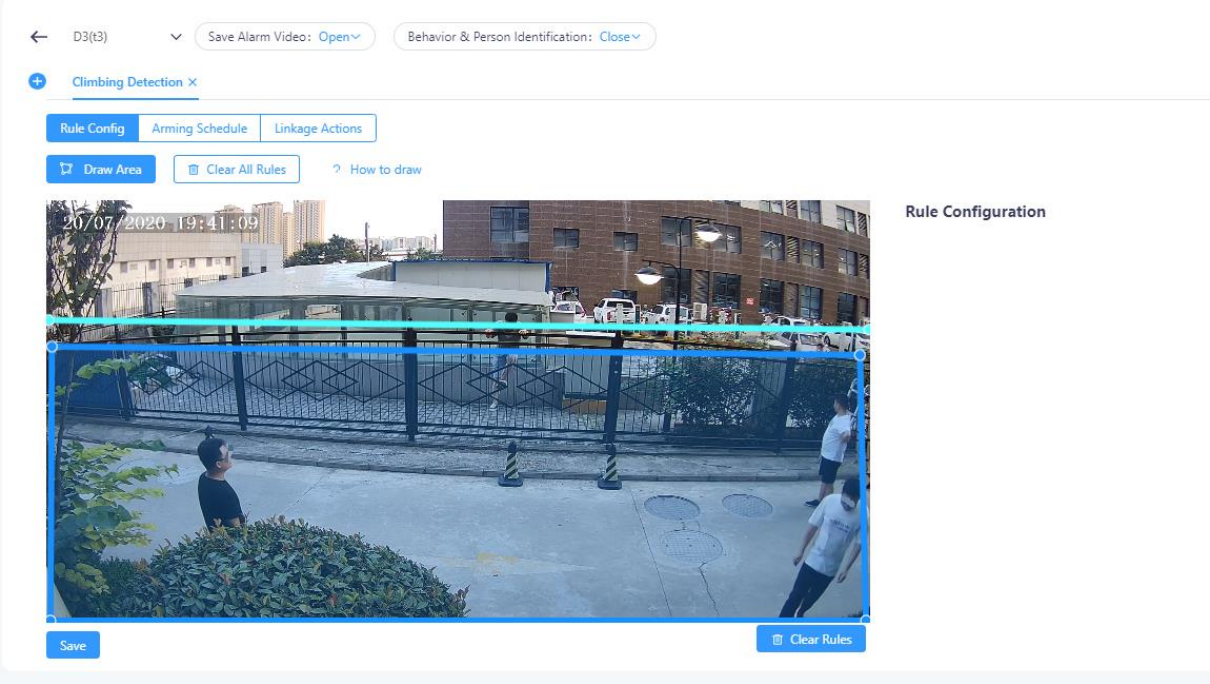
4.2.4.34 Fall Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (5 seconds by default) as needed. The shorter the time, the more likely the alarm will be triggered.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



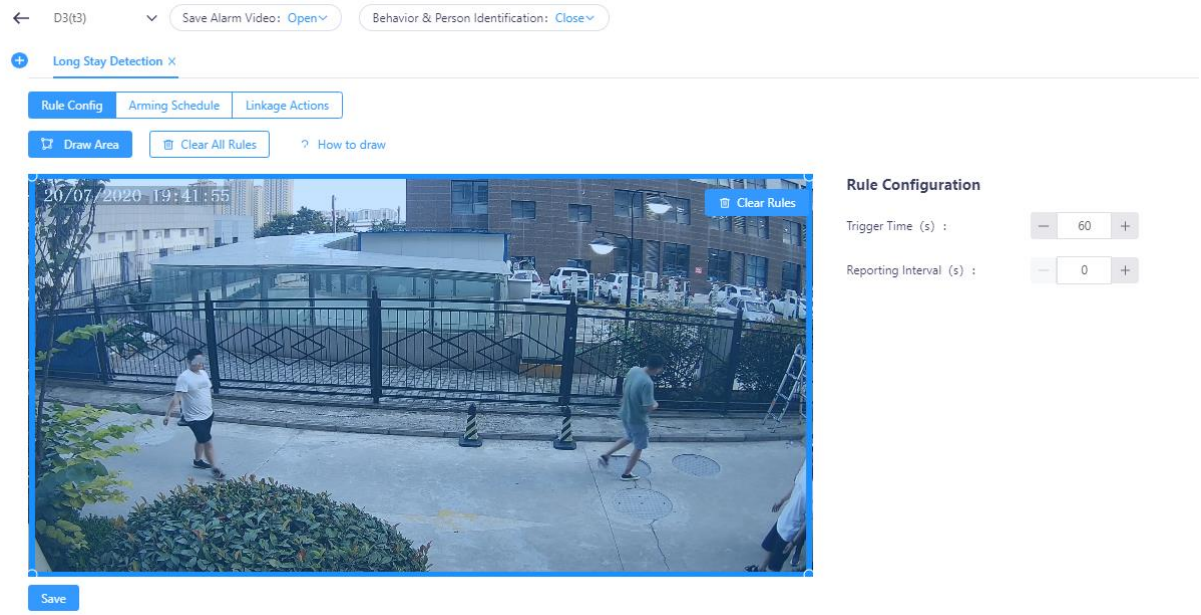
4.2.4.35 Climbing Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



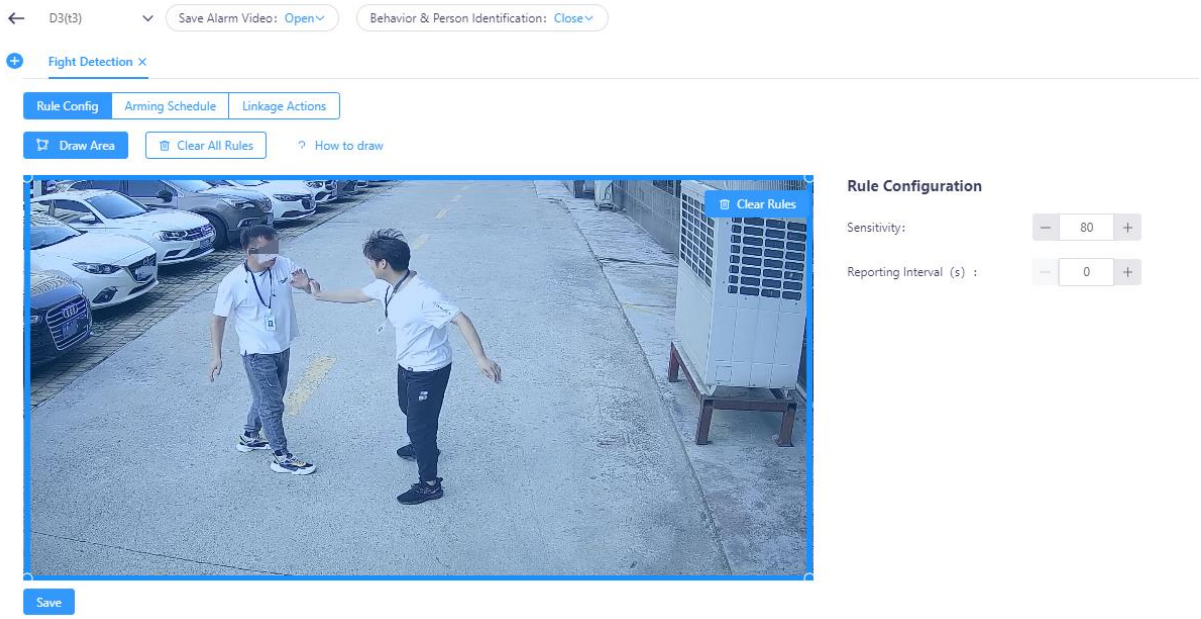
4.2.4.36 Long Stay Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (60 seconds by default) as needed. The shorter the time, the more likely the alarm will be triggered.
- The default reporting interval is 0, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



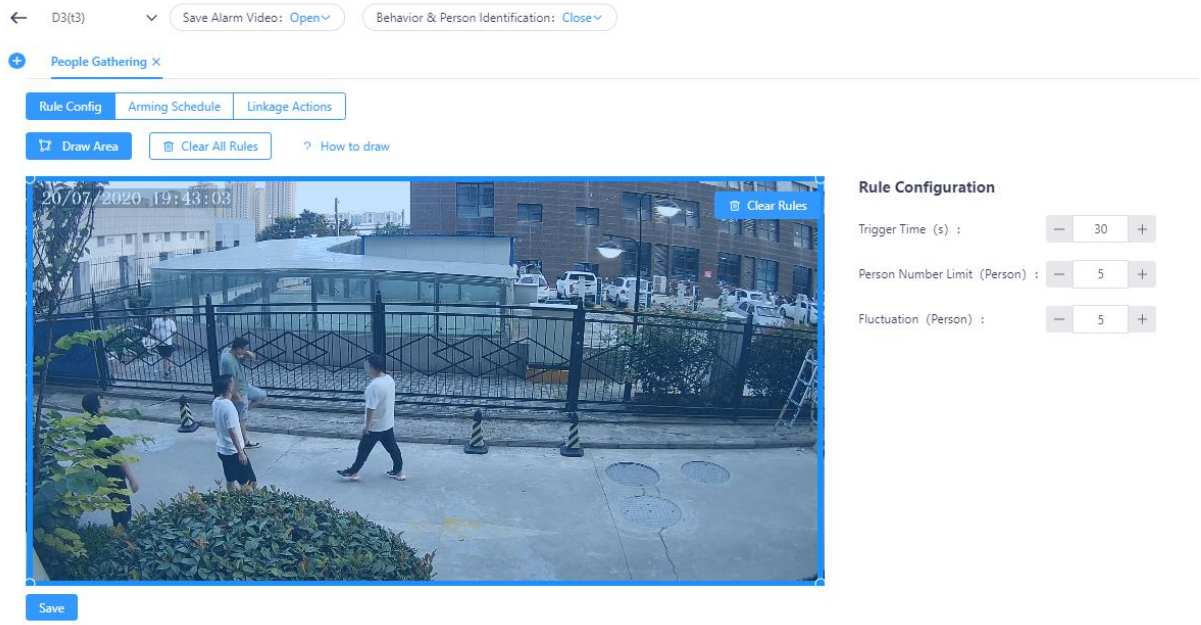
4.2.4.37 Fight Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



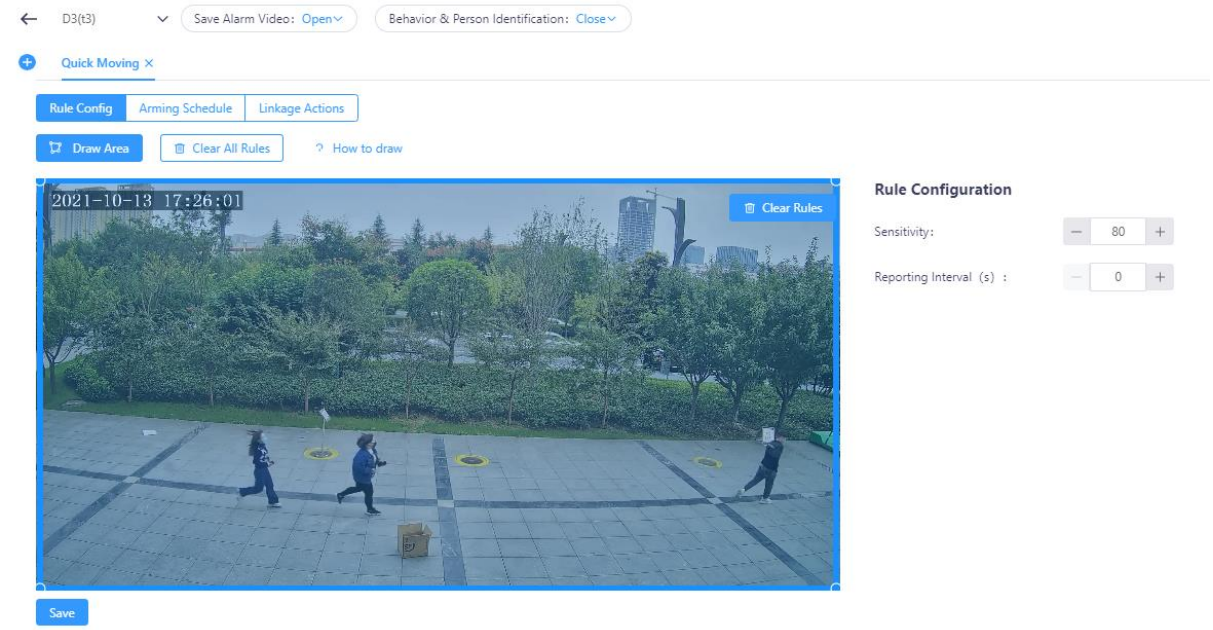
4.2.4.38 Crowd Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (60 seconds by default), the number of people limited (5 by default), and the number of fluctuating people (5 by default) as needed. The shorter the time and the fewer the number of limited and fluctuating people, the more likely the alarm will be triggered.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



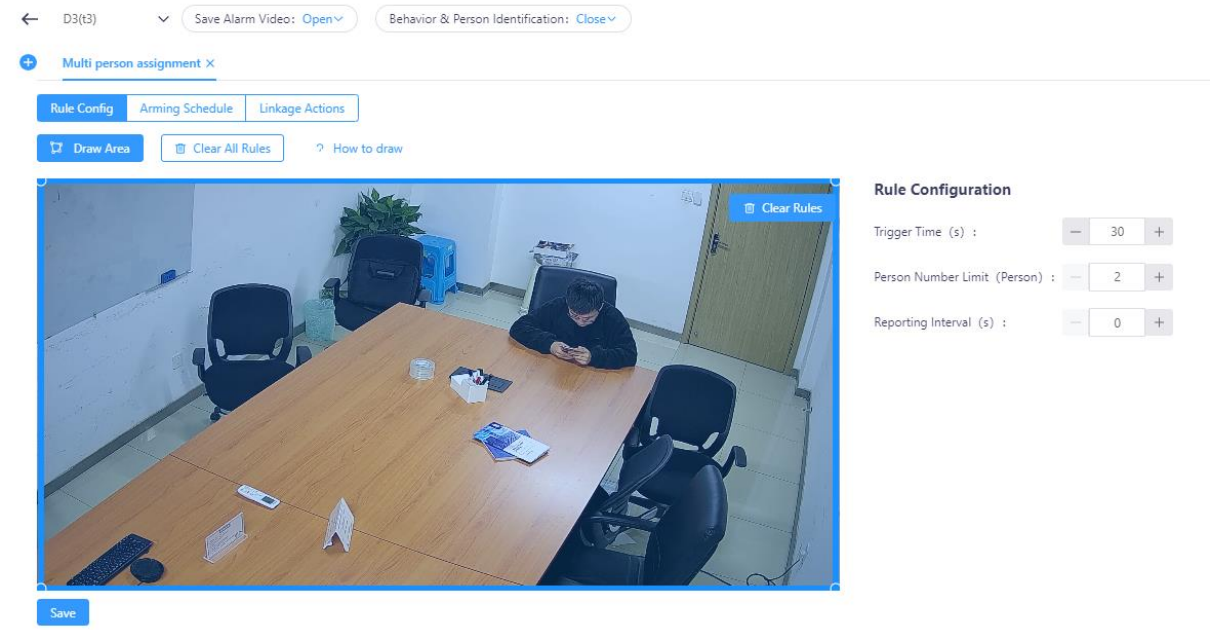
4.2.4.39 Quick Moving

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



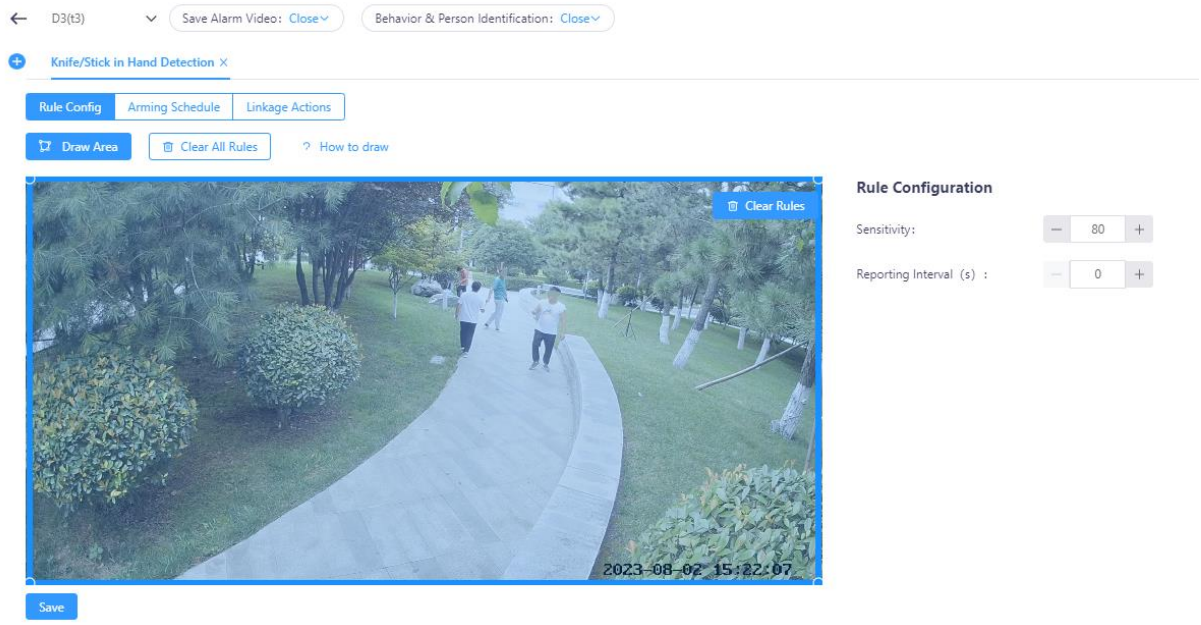
4.2.4.40 Inadequate Worker

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (30 seconds by default) and the number of people limited (2 by default) as needed. The shorter the time and the fewer the number of people limited, the more likely the alarm will be triggered.
- The default reporting interval is 0 which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



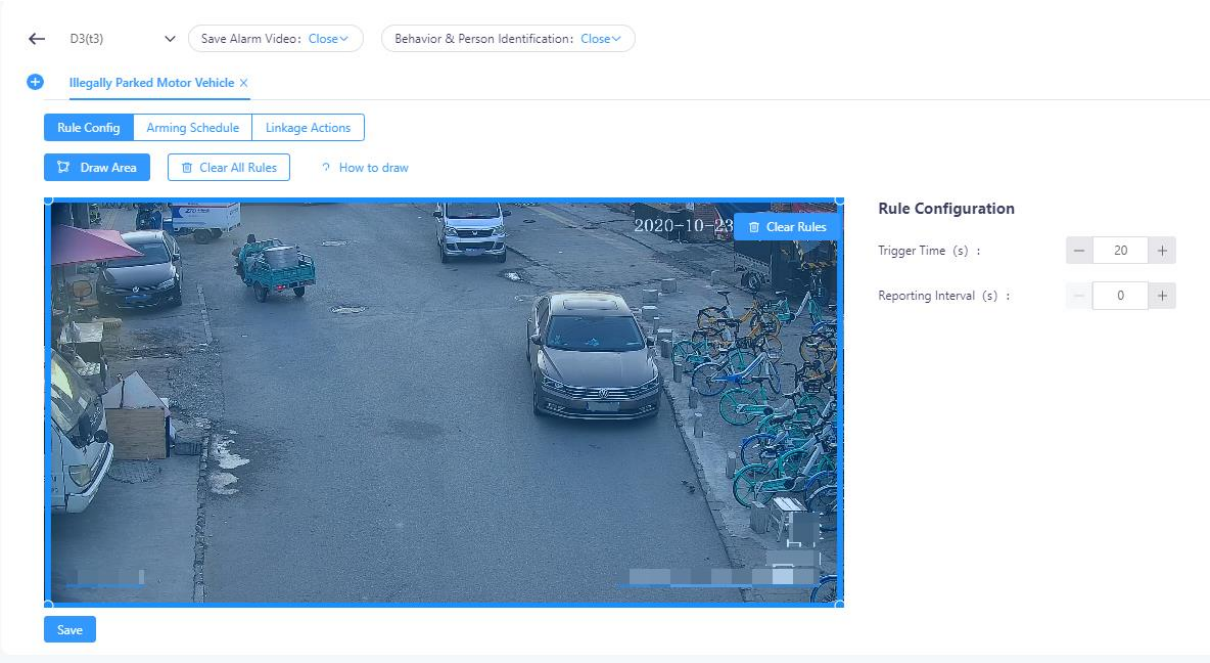
4.2.4.41 Knife/Stick in Hand Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



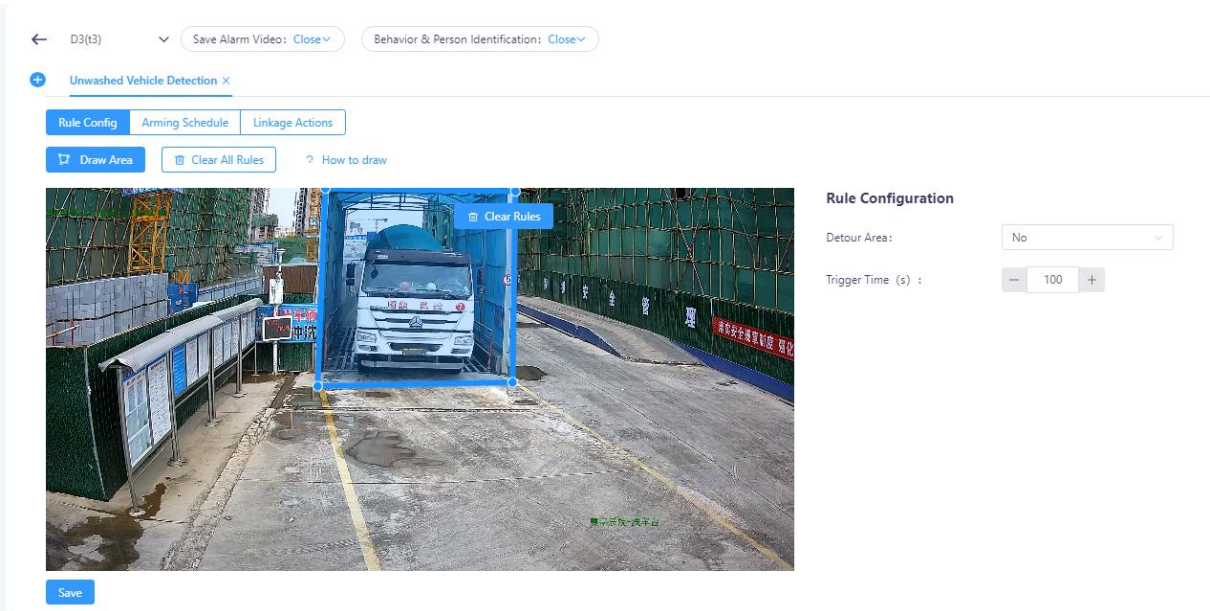
4.2.4.42 Illegally Parked Motor Vehicle

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the trigger time (20 seconds by default) as needed. The shorter the time, the more likely the alarm will be triggered.
- The default reporting interval is 0, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



4.2.4.43 Unwashed Vehicle Detection

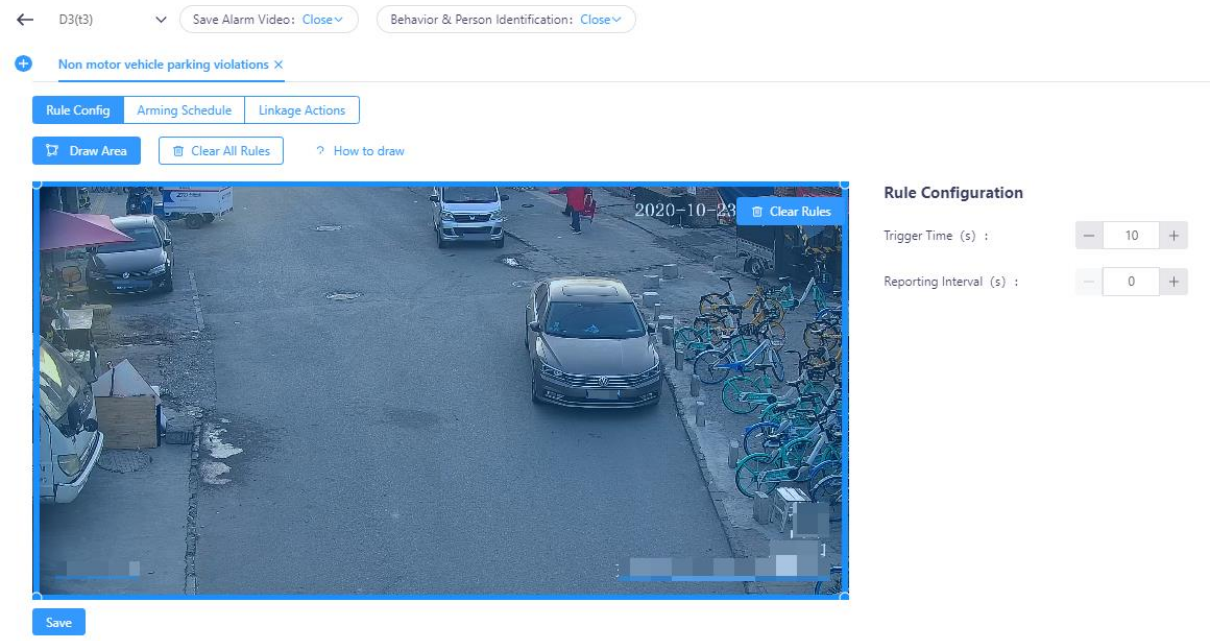
- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- Set the detour area and adjust the trigger time (100 seconds by default) as needed. The longer the time, the more likely the alarm will be triggered.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



4.2.4.44 Illegally Parked Non-Motor Vehicle

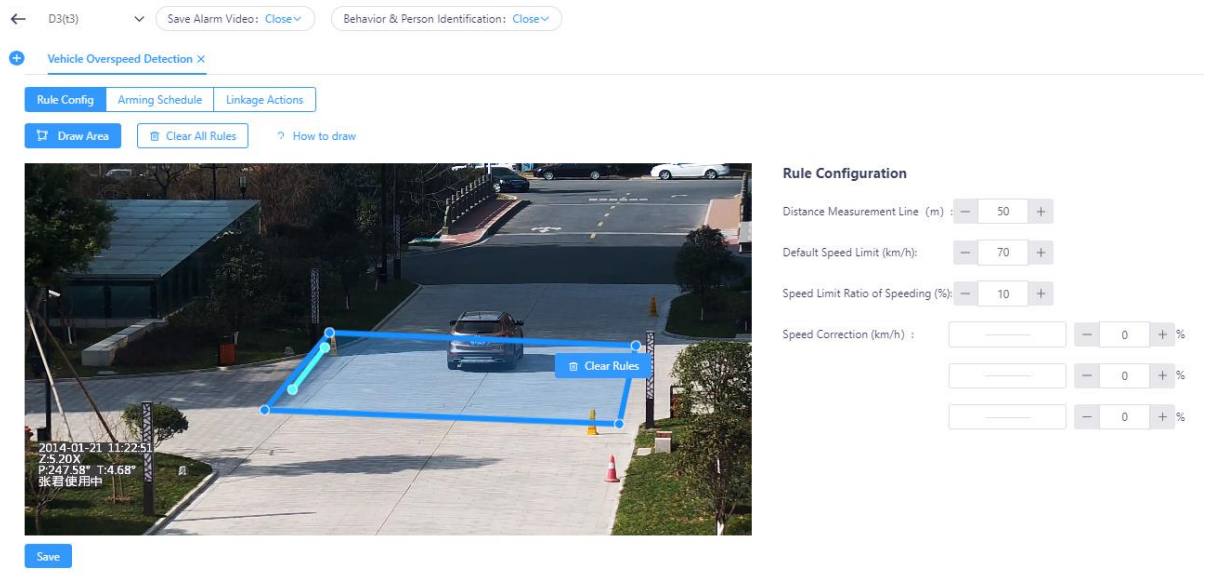
- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.

- You can change the trigger time (10 seconds by default) as needed. The shorter the time, the more likely the object will be detected.
- The default reporting interval is 0, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



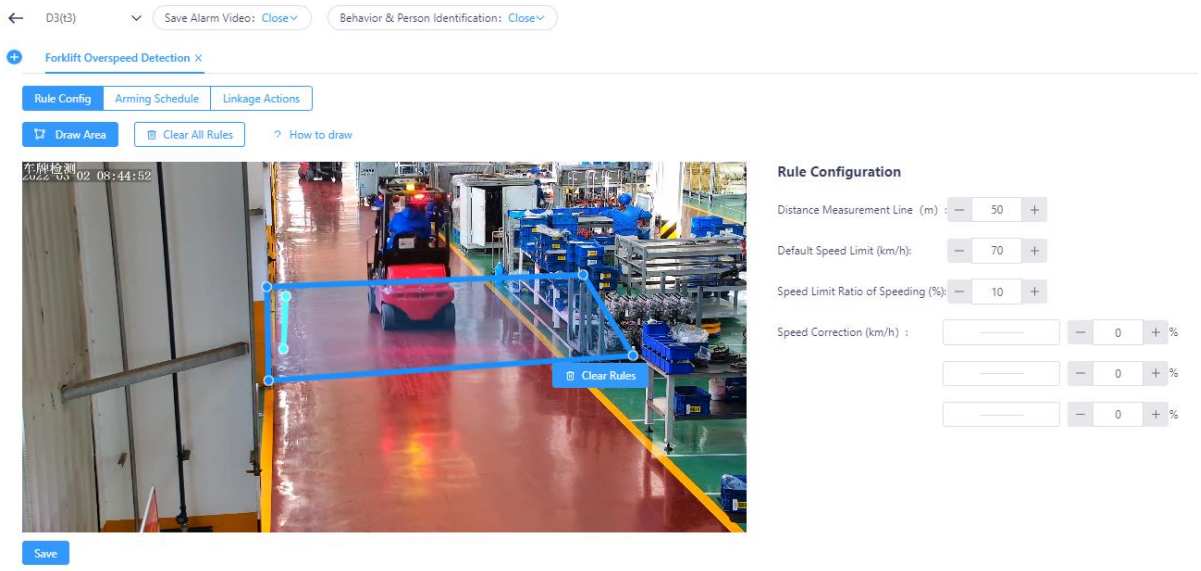
4.2.4.45 Campus Vehicle Overspeed Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the distance measurement line (50 meters by default), default speed limit (70km/h by default), and speed limit ratio of speeding (10% by default) as needed. An alarm will be triggered when the speed of the vehicle in the specified detection area exceeds the limit.
- The speed correction allows the vehicle speed detected by the algorithm to be modified by increasing or decreasing the speed according to the specified speed percentage range.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



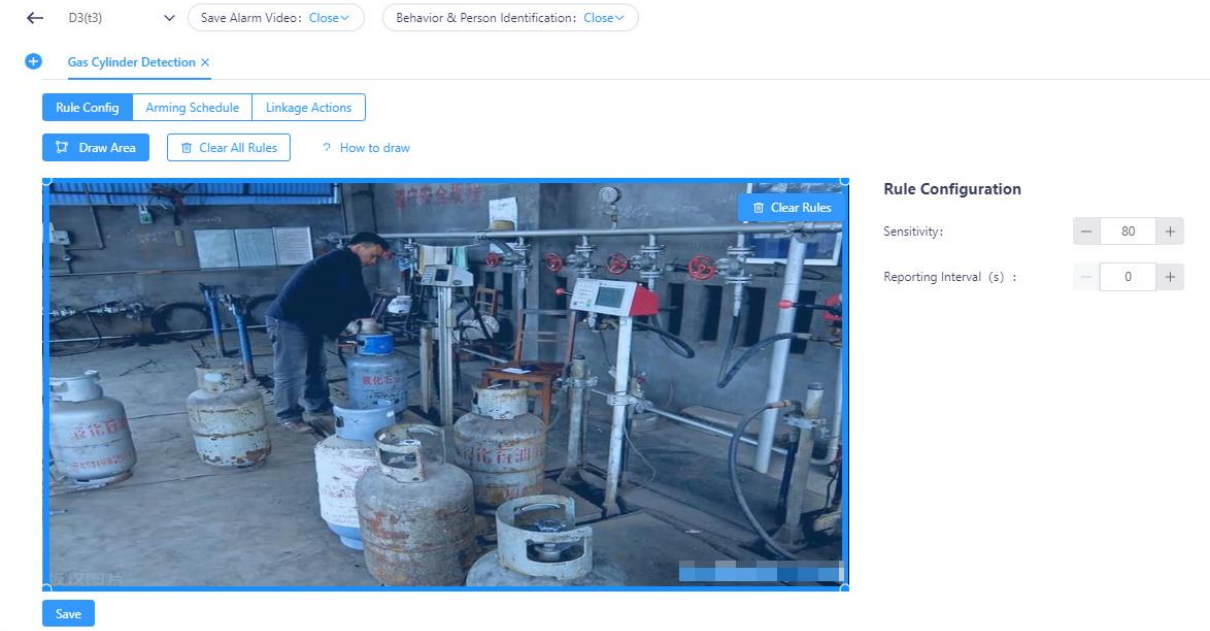
4.2.4.46 Forklift Overspeed Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- You can change the distance measurement line (50 meters by default), default speed limit (70km/h by default), and speed limit ratio of speeding (10% by default) as needed. An alarm will be triggered when the speed of the vehicle in the specified detection area exceeds the limit.
- The speed correction allows the forklift speed detected by the algorithm to be modified by increasing or decreasing the speed according to the specified speed percentage range.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.



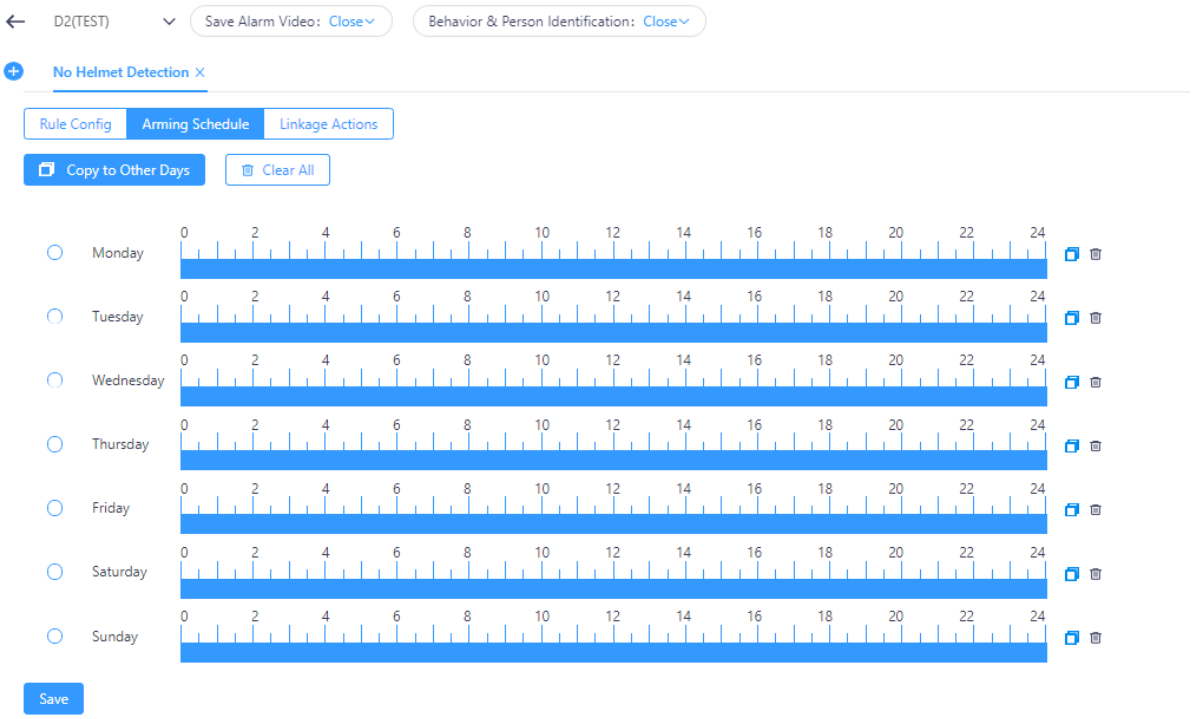
4.2.4.47 Gas Cylinder Detection

- The default detection area is the full screen. You can drag the four points to specify the detection area; or click **Clear Rules** and **Draw Area** to draw the detection area as needed. For detailed detection area drawing, please refer to the Site Survey Guide.
- The sensitivity is 80 and the reporting interval is 0 by default, which can be adjusted as needed.
- Click **Save**. A success message will appear indicating that the algorithm has been successfully configured.
- Lower the sensitivity if there are many false alarms, or increase it if objects are difficult to be detected.



4.2.5 Arming Schedule

Configure the arming schedule for the channel's intelligent service.



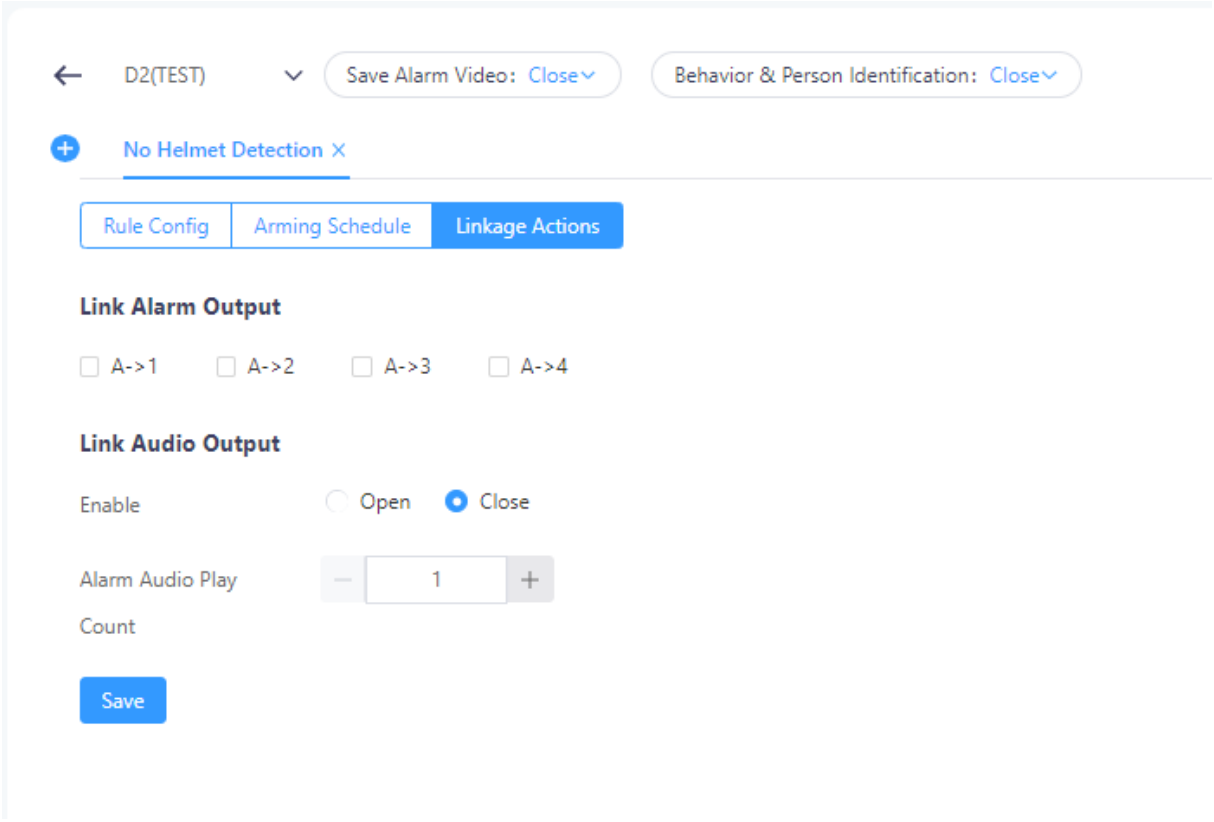
Key Operations

Click **Arming Schedule**, drag on the timeline to set the arming schedule, and click **Save**. The default arming schedule is 24h.

Other Operations

Operation	Description
Copy to Other Days	Used to apply the settings of a day (e.g., Monday) to other days of the week. 1. If you set the arming schedule for a day (e.g., Monday), select **Monday**. 2. Click **Copy to Other Days**, and then click **Save**.
Clear All	Click **Clear All** to clear all arming settings of a week, and click **Save**.
Copy to certain day(s)	Choose a day that has configured the arming schedule, click , and select the day(s) you want to copy to, and then click **Save**.
Clear a certain day	Choose a day you want to clear the arming schedule, and click the corresponding deletion button.

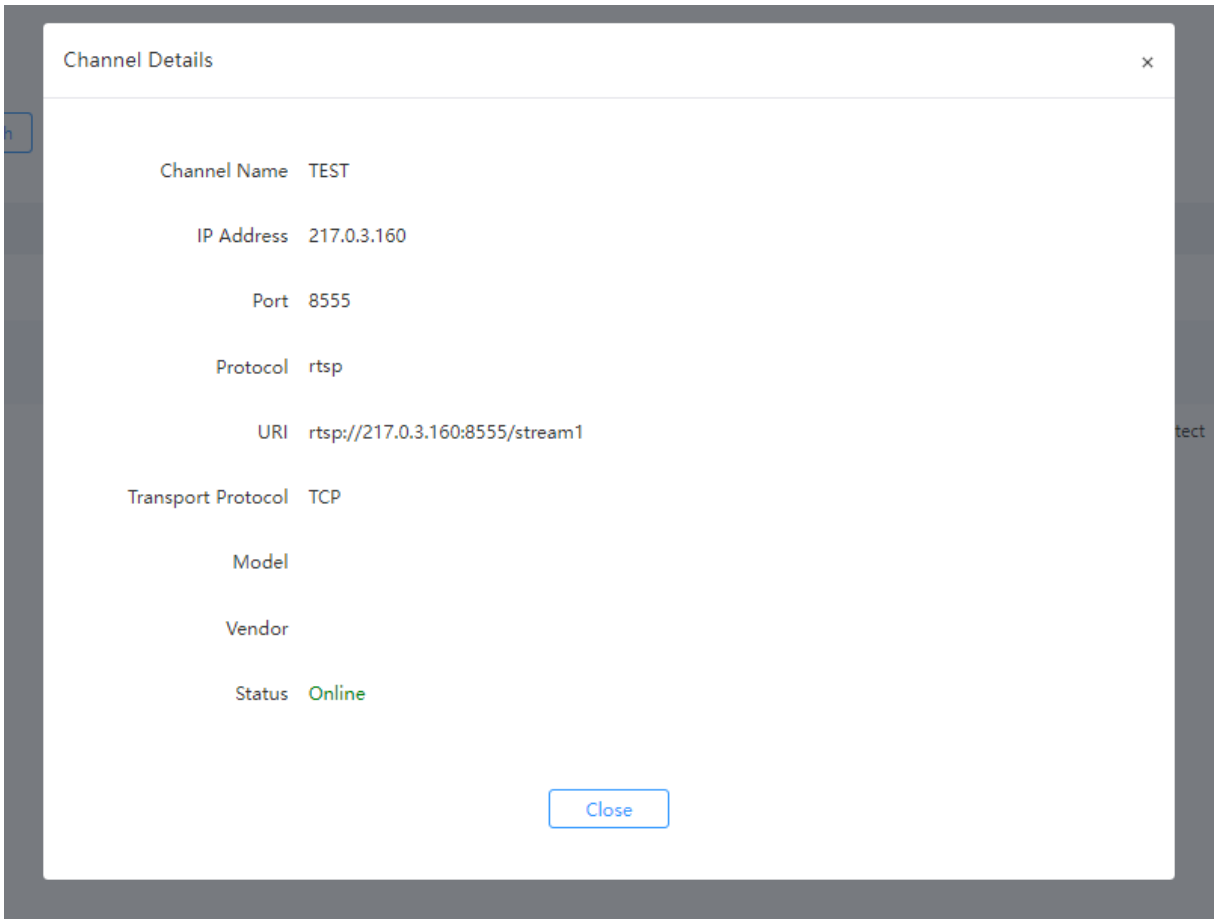
4.2.6 Alarm Linkage



- Link Alarm Output: If the server has connected to alarm output devices via the alarm output interface (see 3.2 Preparation for details), you can enable the triggered alarm output channel(s) as needed. The common alarm output devices include alarm lights, alarms, etc.
- Link Audio Output: If the server has connected to audio output devices via the audio output interface (see 3.2 Preparation for details), you can set the audio play count.

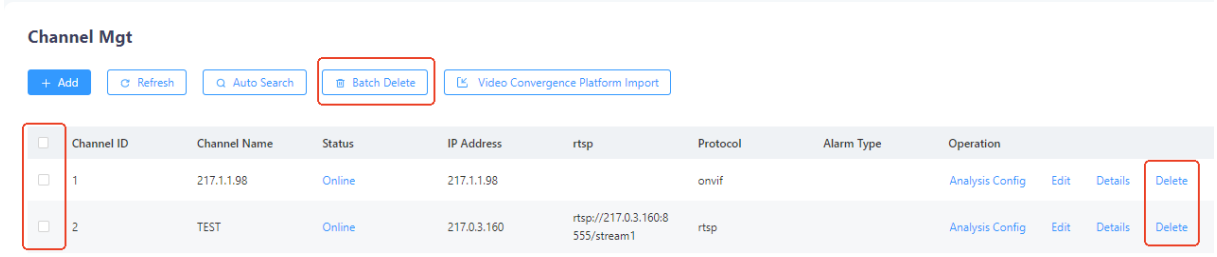
4.2.7 View Channel Details

Click **Details** for the channel in the **Operation** column. You may view the channel name, IP address, port, protocol, URL, transmission protocol, model, vendor, channel status, etc.



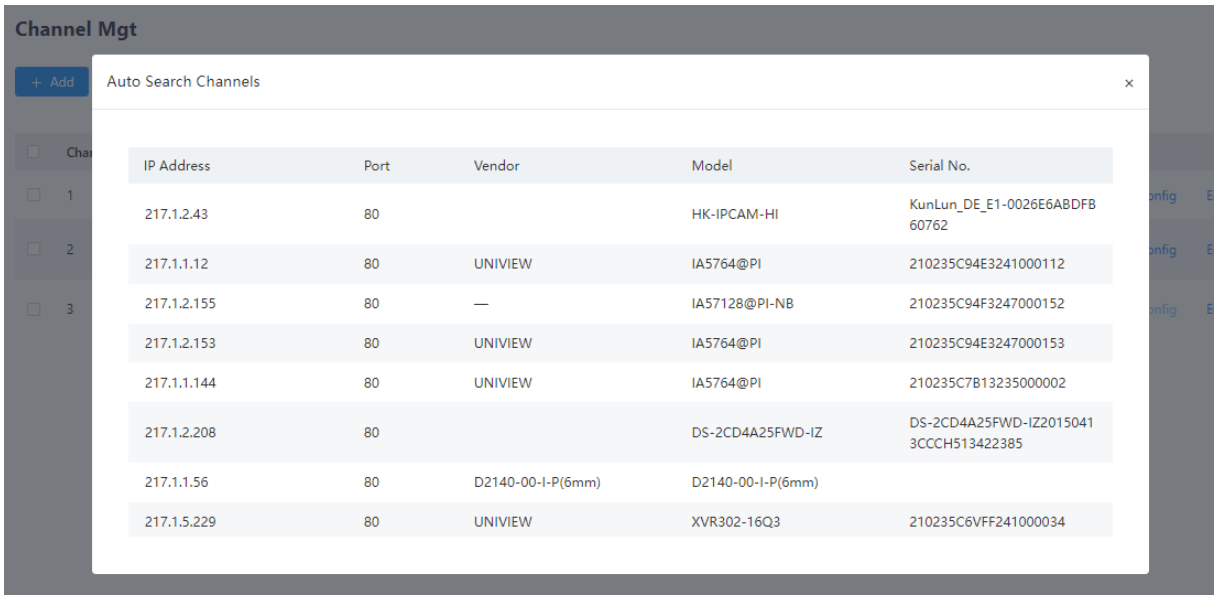
4.2.8 Delete Channel

Click **Delete** in the **Operation** column to delete a channel, or select channel(s) and click **Batch Delete** to delete multiple channels.



4.2.9 Auto Search

Click **Auto Search** and devices on the same LAN with the smart box will be displayed. Click on the channel that has not been configured to enter the **Add Channel** page, and add the channel via the Onvif protocol.



5 Library Configuration

5.1 Work Clothes Library

Manage work clothes photos in different work clothes libraries. The system can detect the person not wearing the work clothes by comparing the photo in the work clothes library.

5.1.1 Work Clothes Photo Requirements

Work clothes must have collars and sleeves, such as suits, white coats, security uniforms, and factory work clothes. Special work clothes such as reflective clothing, reflective vests, reflective strips, and aprons are not supported.

Figure 5 -1 Work Clothes Angle Requirements

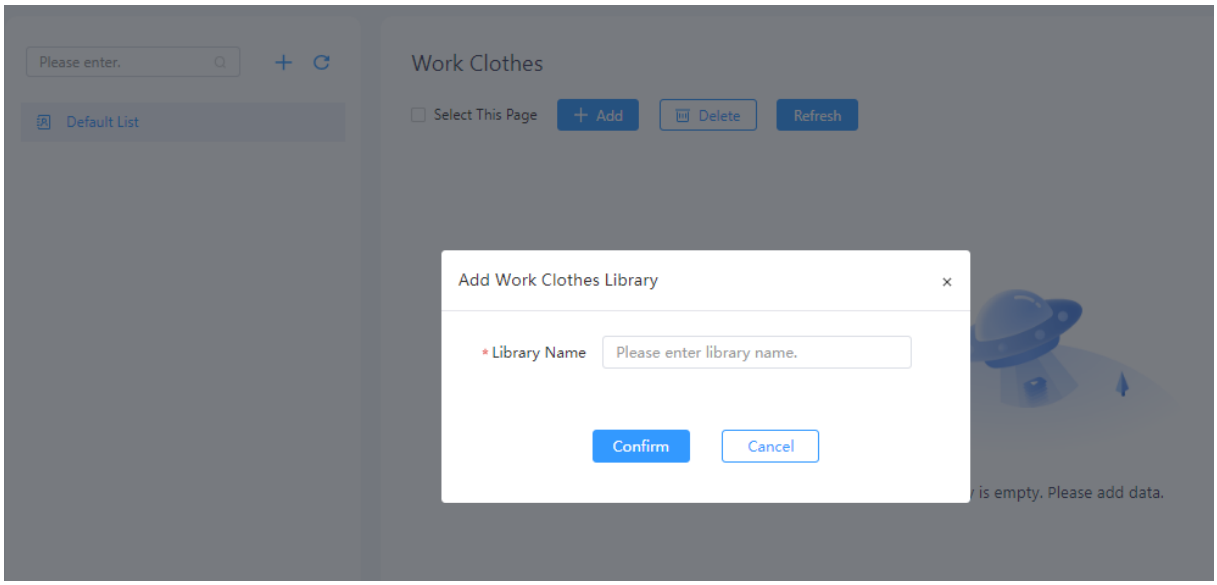
NOTE!

- Photos downloaded from the Internet or taken by a mobile phone are not supported.
- The photo resolution should be from 95*285px to 200*600px.

5.1.2 Import Work Clothes Photo

1. Add a work clothes library.

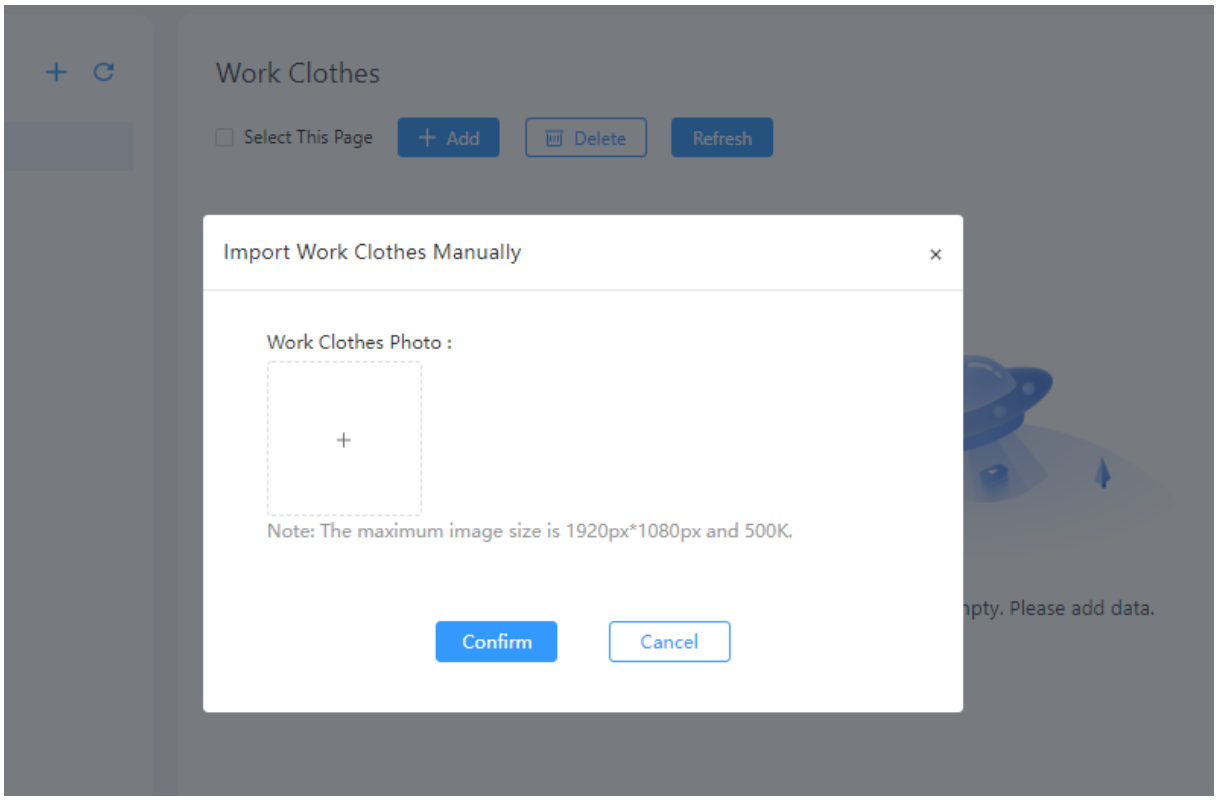
Click + to add work clothes libraries for different scenarios. Up to 8 work clothes libraries are allowed.



2. Import work clothes photos (taken from real scenarios).

- Import

Click **Add** to import a work clothes photo. See 5.1.1 Work Clothes Photo Requirements for details.



5.2 Person Library

Person library supports editing the personnel information and provides relevant personnel information for face algorithms.

NOTE!
This function is unavailable if **Face Detection** is disabled on the **Smart Capability Config** page.

5.2.1 Face Photo Requirements

1. Overall requirements: Bareheaded (no hats) and unobstructed (no masks) frontal photos.

2. Range requirement: The photo should show both ears and the complete part from the top of the head (including hair) to the bottom of the neck of the person.

3. Color requirement: True color photo.

4. Makeup requirement: Heavy makeup is not allowed, including hair dye and eyelashes.

5. Background requirement: A solid color such as white or blue is acceptable.

6. Light requirement: The photo should be taken with adequate light. There should be no overly dim, overly bright, or uneven lightness (i.e., half shadow and half bright) on the face.

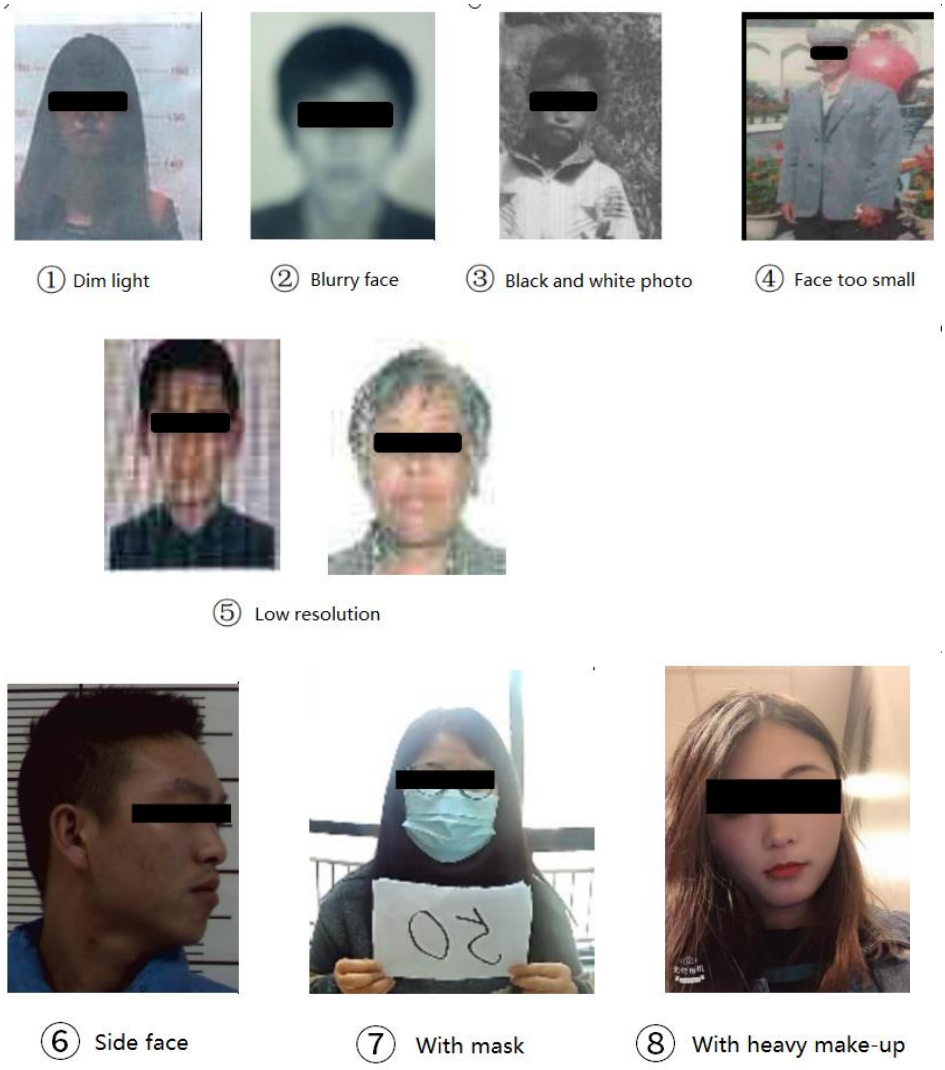
7. Photo timeliness requirements: The age depicted in the photo should not be significantly different from the current actual age. The photo should not exceed one year. For individuals with significant changes in coiffure or bangs, it is recommended to take the photo on the spot.

8. Photography equipment requirements: The photo should be taken with a high-quality smartphone or a single-lens reflex camera.

9. Photo requirement: JPG format, file size of 50KB-2MB; the resolution of the face should be in the range of 200*200px to 640*640px; no image alterations such as beautification.

Figure 5-2 Correct Example

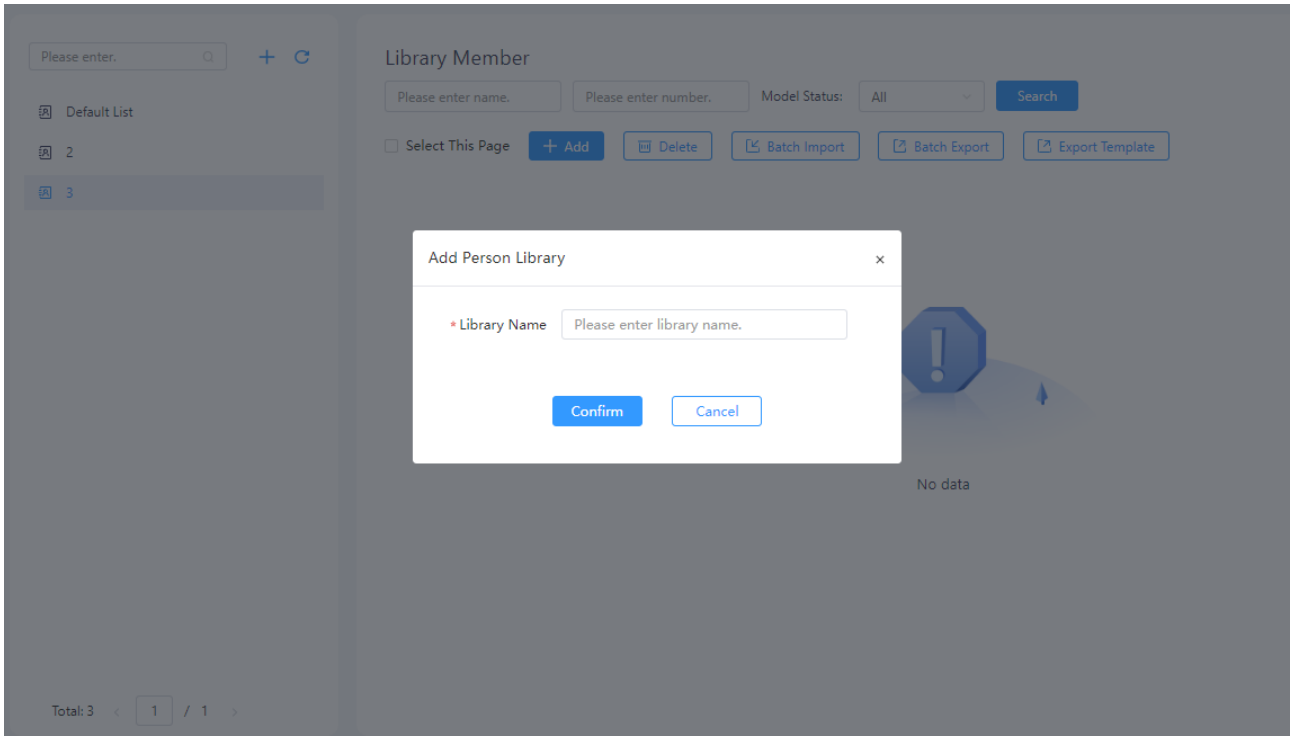
Figure 5-3 Wrong Example



5.2.2 Import Person Information

1. Add a person library.

Click + to add a person library.

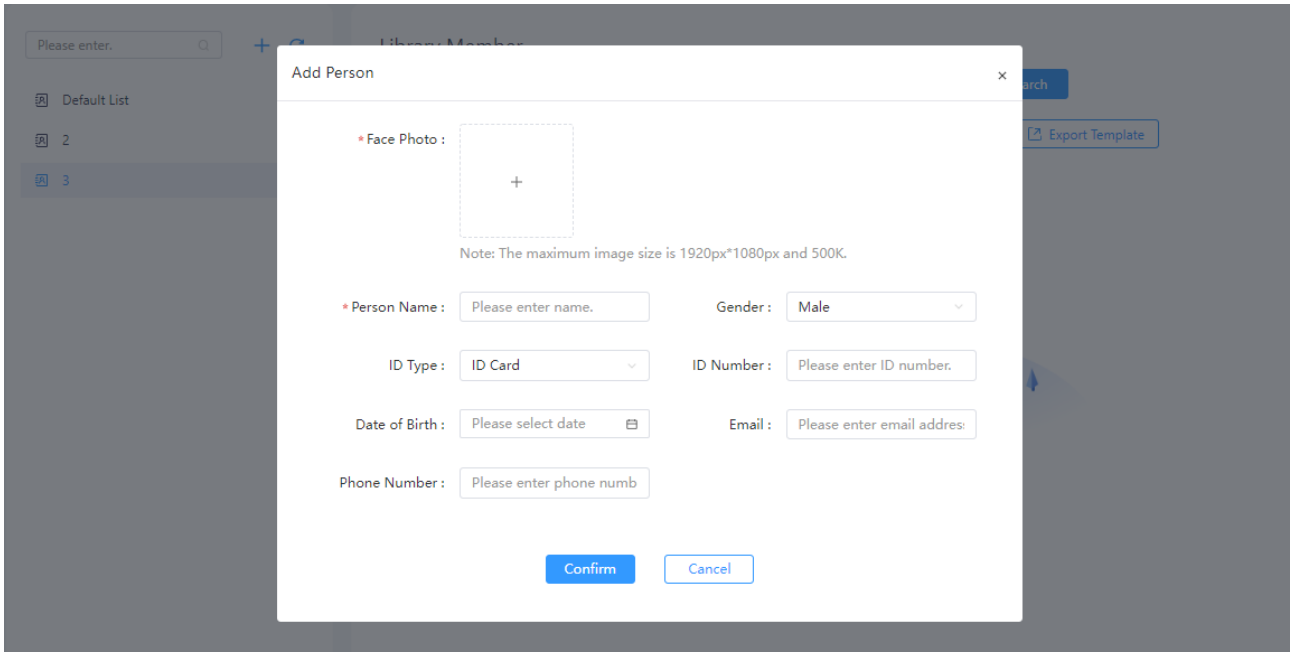


2. Import person information.

Choose a way to add the person information.

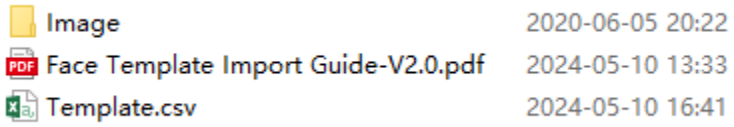
- Add Manually

Click **Add** to enter the **Add Person** page. Upload the face photo, and enter the person information.



- Add in Batches

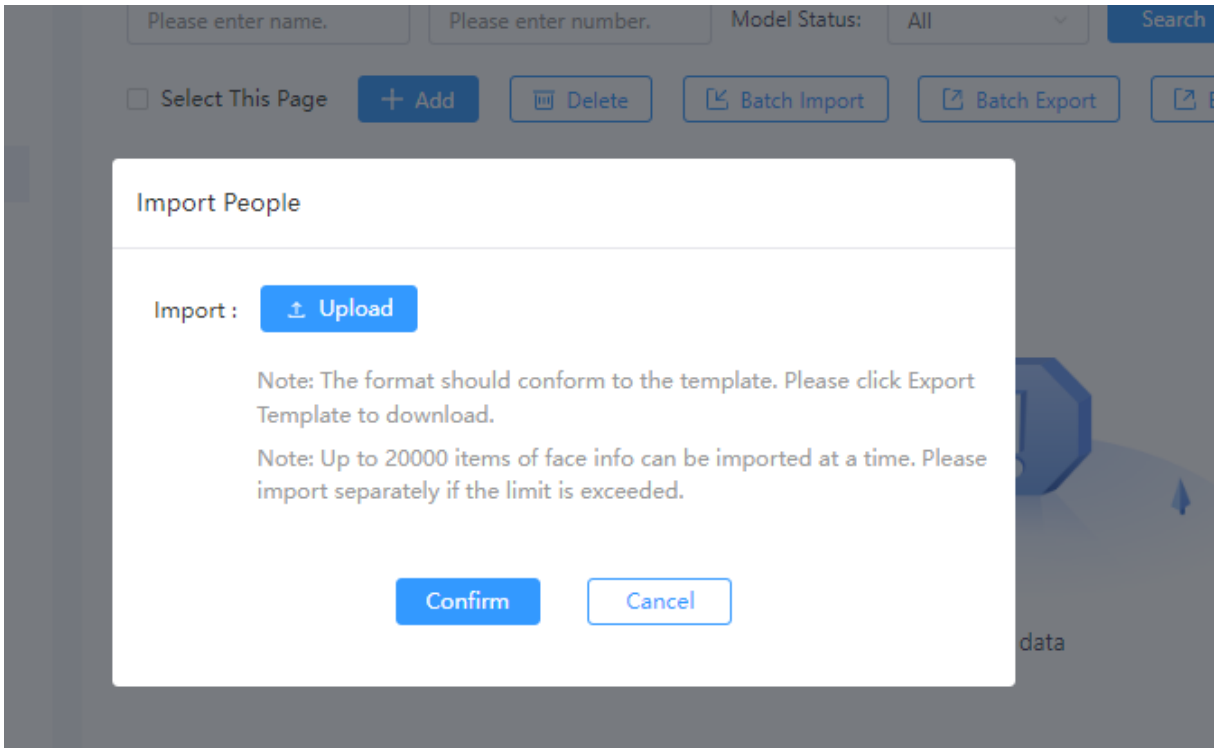
(1) Click **Export Template**, and unzip it to get the template.



(2) Edit the template information. Import face images to the **Image** folder and fill the person information in faceTemplate.csv. The person information in the table should correspond to the image path.

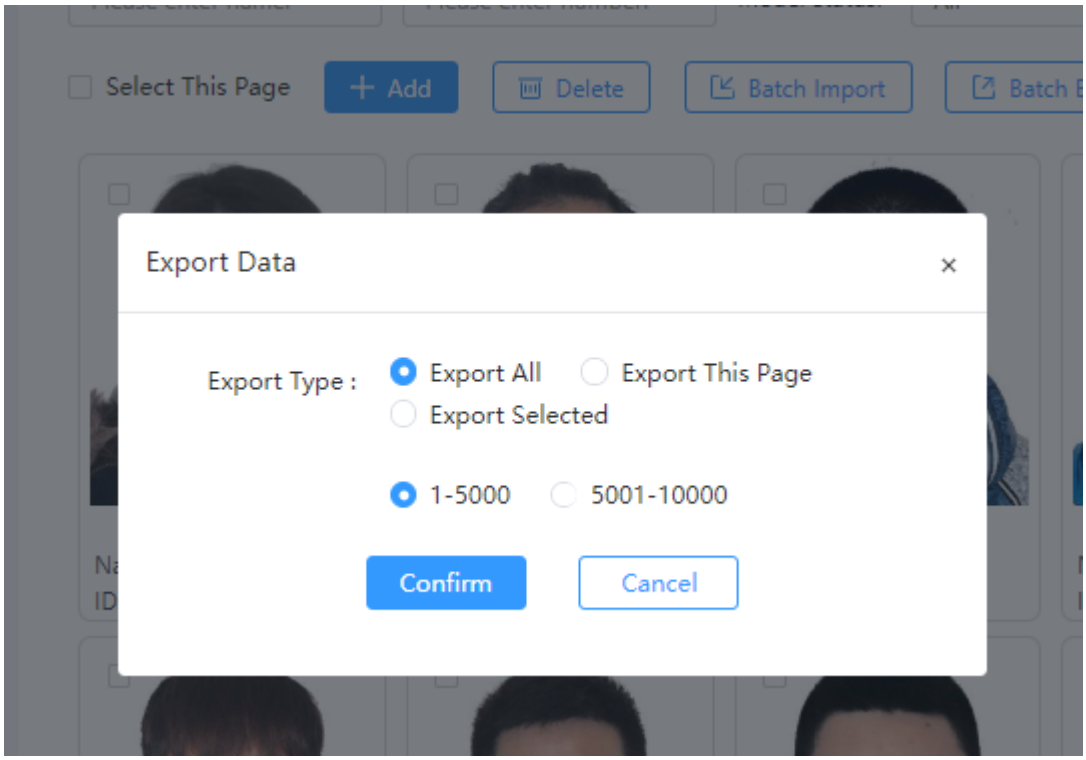
(3) Import the face information. Pack the edited face template file and the corresponding image into a compressed file (faceTemplate.tar). Click **Batch Import**, and click **Upload** to upload the compressed file.

Note: When adding a compressed file, select it directly in the layer with **Image** and **Template, .csv** folders, otherwise the finished compressed file will have an additional layer of path, resulting in parsing failure during import.



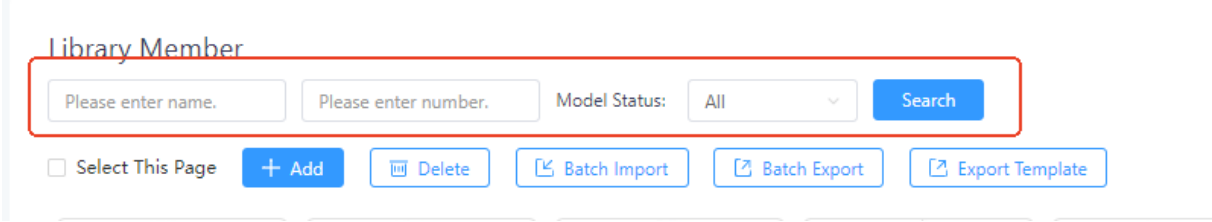
5.2.3 Export Person Information

Click **Batch Export** to enter the **Export Data** window. Choose an export type, and click **Confirm** to export face image and corresponding person information.



5.2.4 Search Person Information

Select a person library. You may search face images by name and model status.



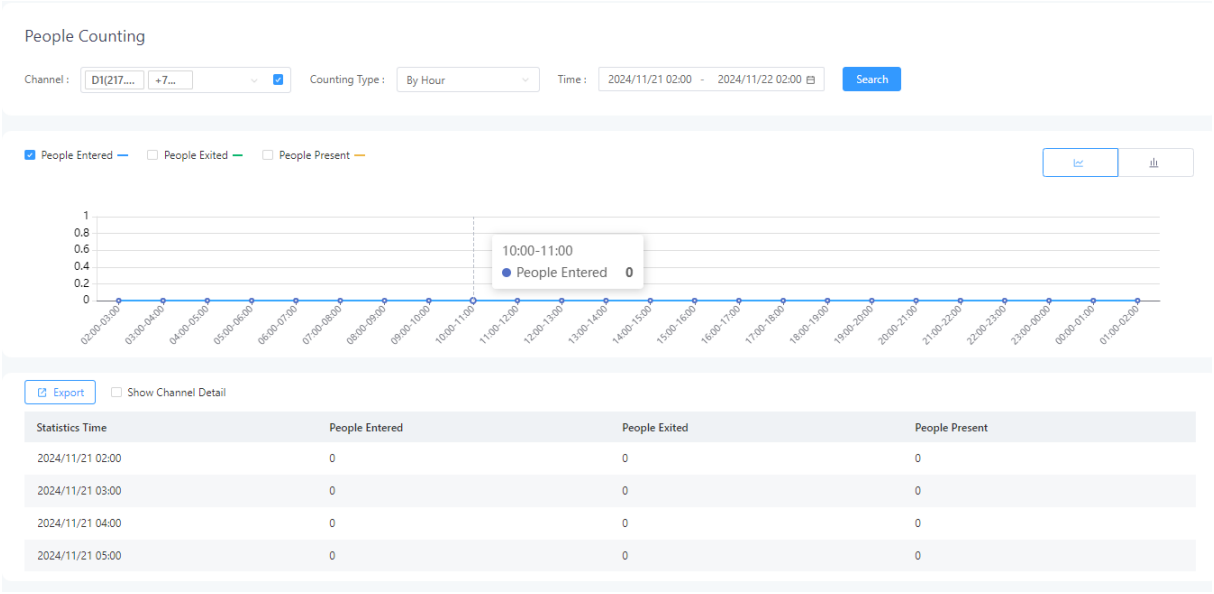
6 Analysis & Statistics

6.1 People Counting

You can view the tripwire people counting results on this page.

The people counting data can be searched by channel, counting type, and time. You may view the results in line graph or histogram mode.

The bottom of the page shows the people entered, people exited, and people present during the specified time period. Supports showing channel details and exporting data.

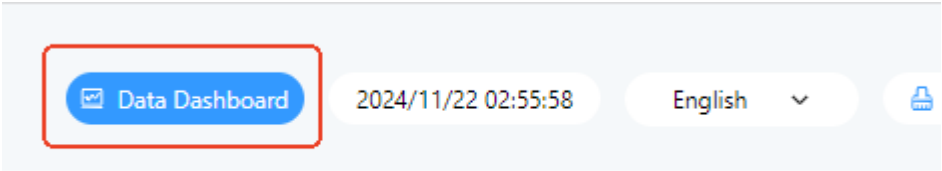


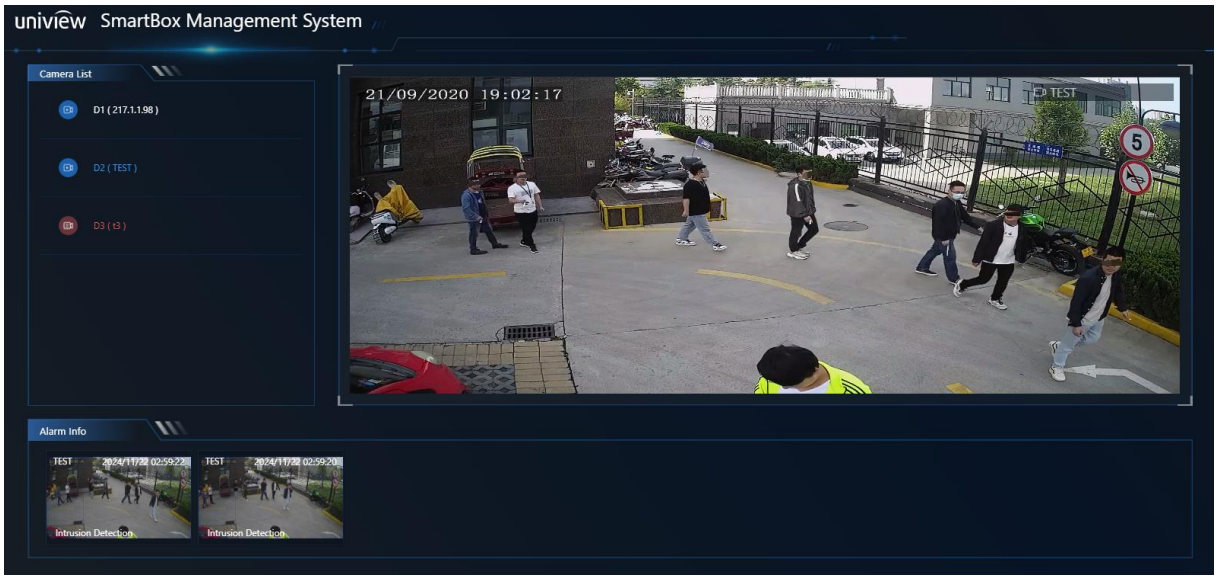
NOTE!
This function is unavailable if **Tripwire People Counting** is disabled on the **Smart Capability Config** page.

7 Data Search

7.1 Data Dashboard

Click **Data Dashboard** in the upper-right corner, and you can view the channel live videos and alarms of the intelligent services.

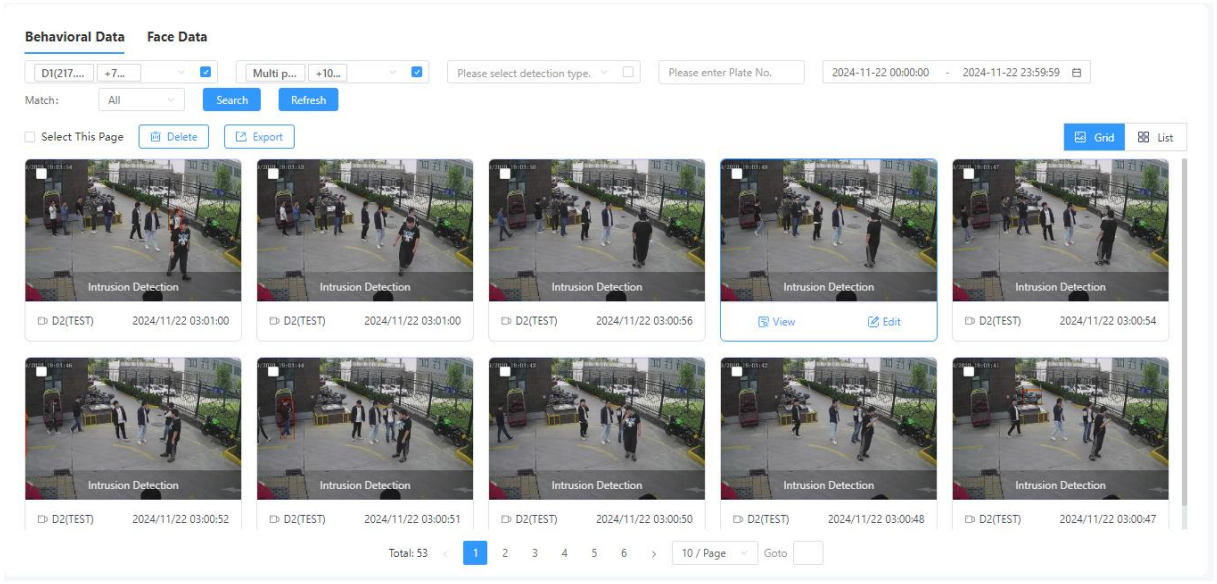




7.2 Capture Data

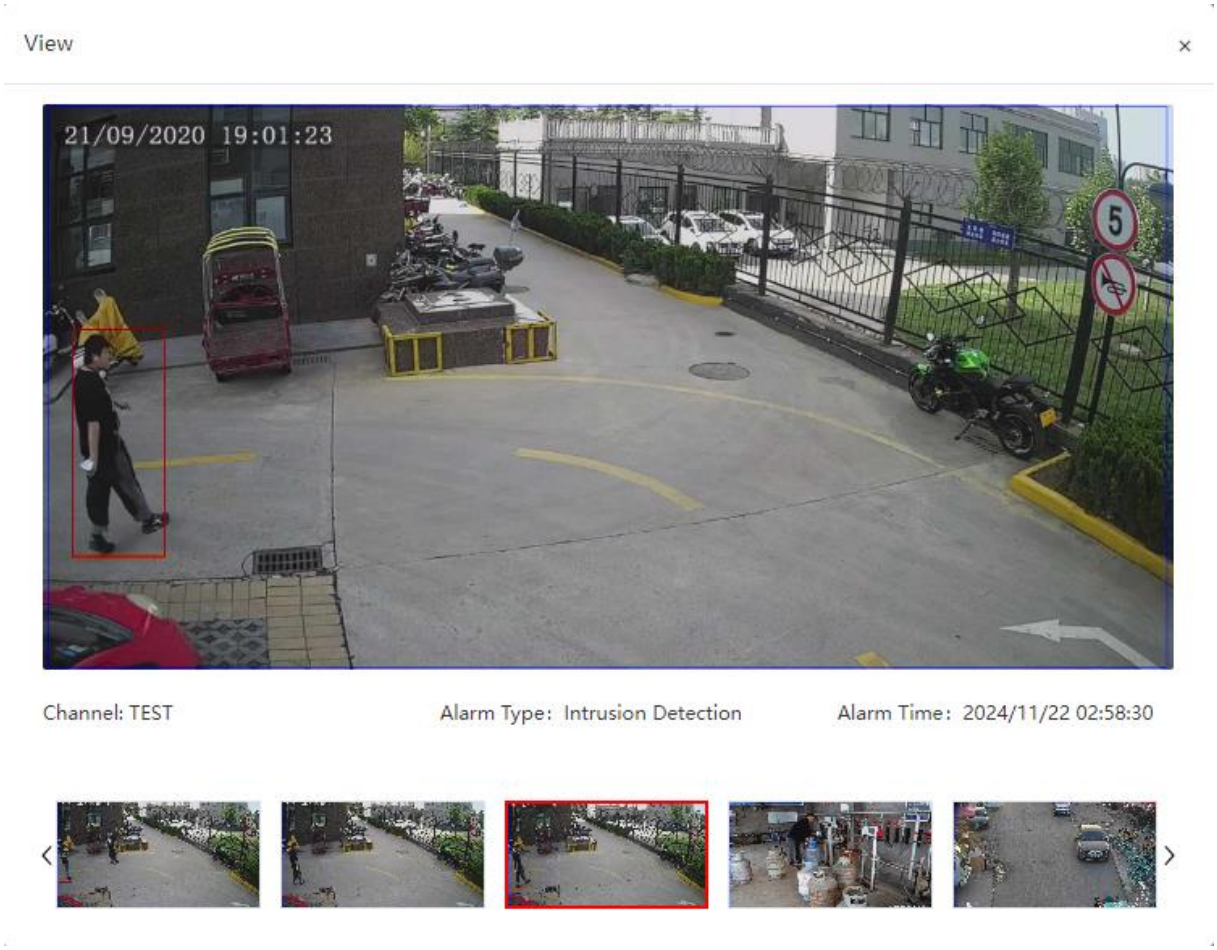
7.2.1 Behavioral Data Search

The behavioral data can be searched by channel, intelligent service, detection type, plate number, match condition, and time. You may view the search results in grid or list layout.



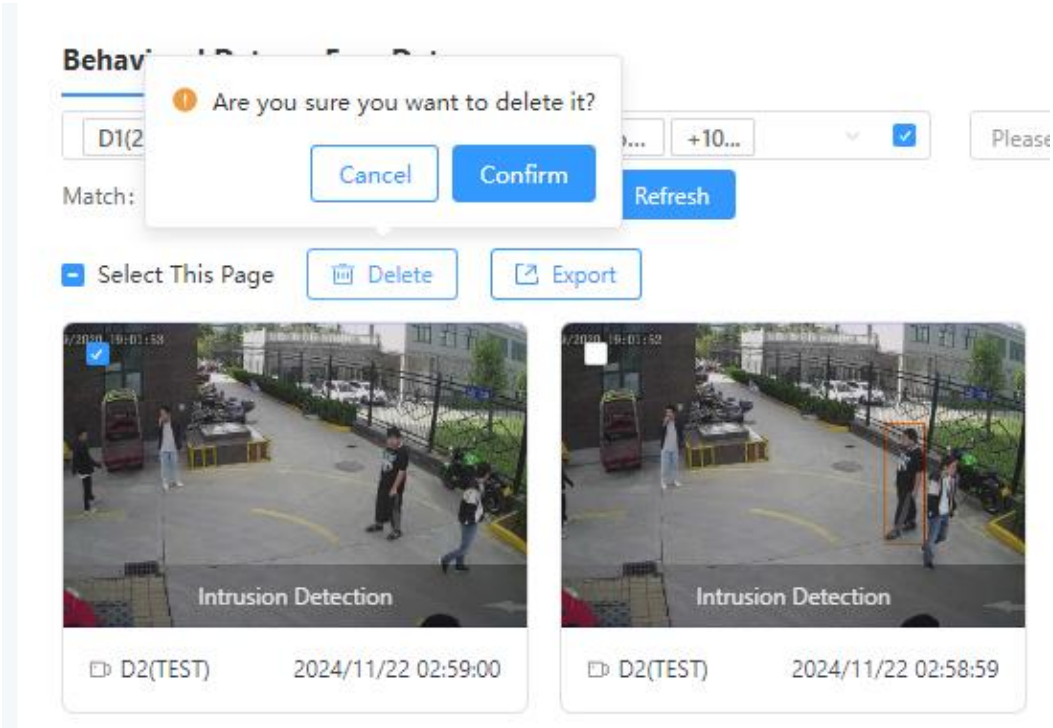
7.2.2 Behavioral Data Details

Hover over the image in **Grid** layout, and click **View** to view the behavioral analysis details. The alarm snapshot, channel, alarm type, and alarm time will be displayed. You can also switch between events by clicking on the snapshots below. Click **Video** to view the alarm video.

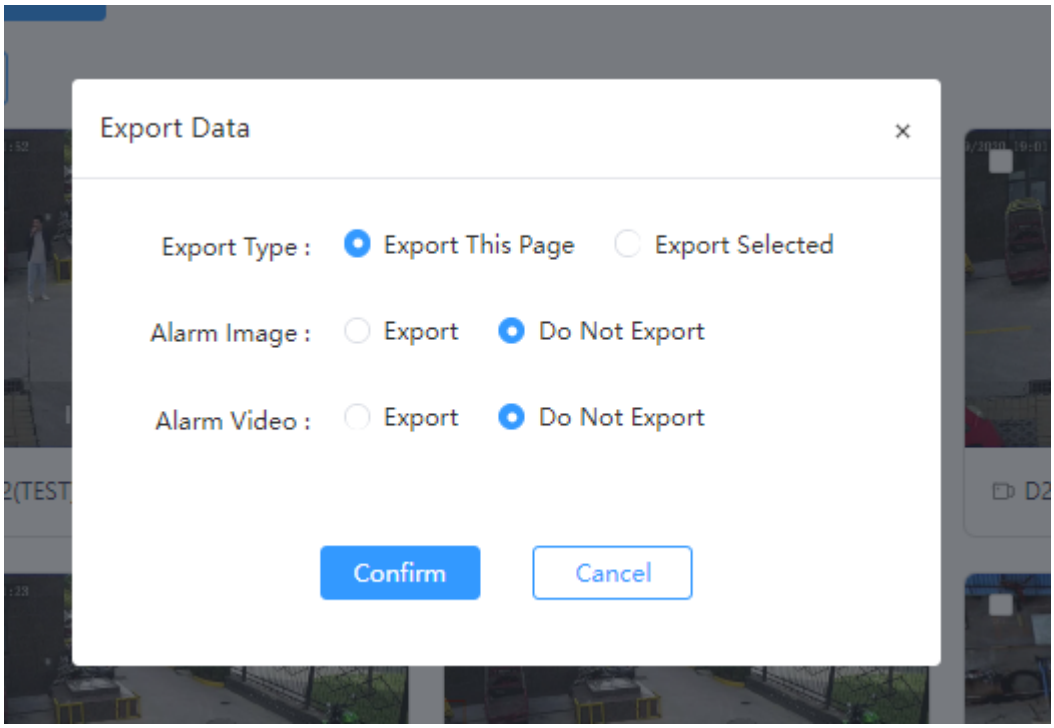


7.2.3 Behavioral Data Deletion/Export

Select the alarm data you want to delete, click **Delete**, and click **Confirm**.

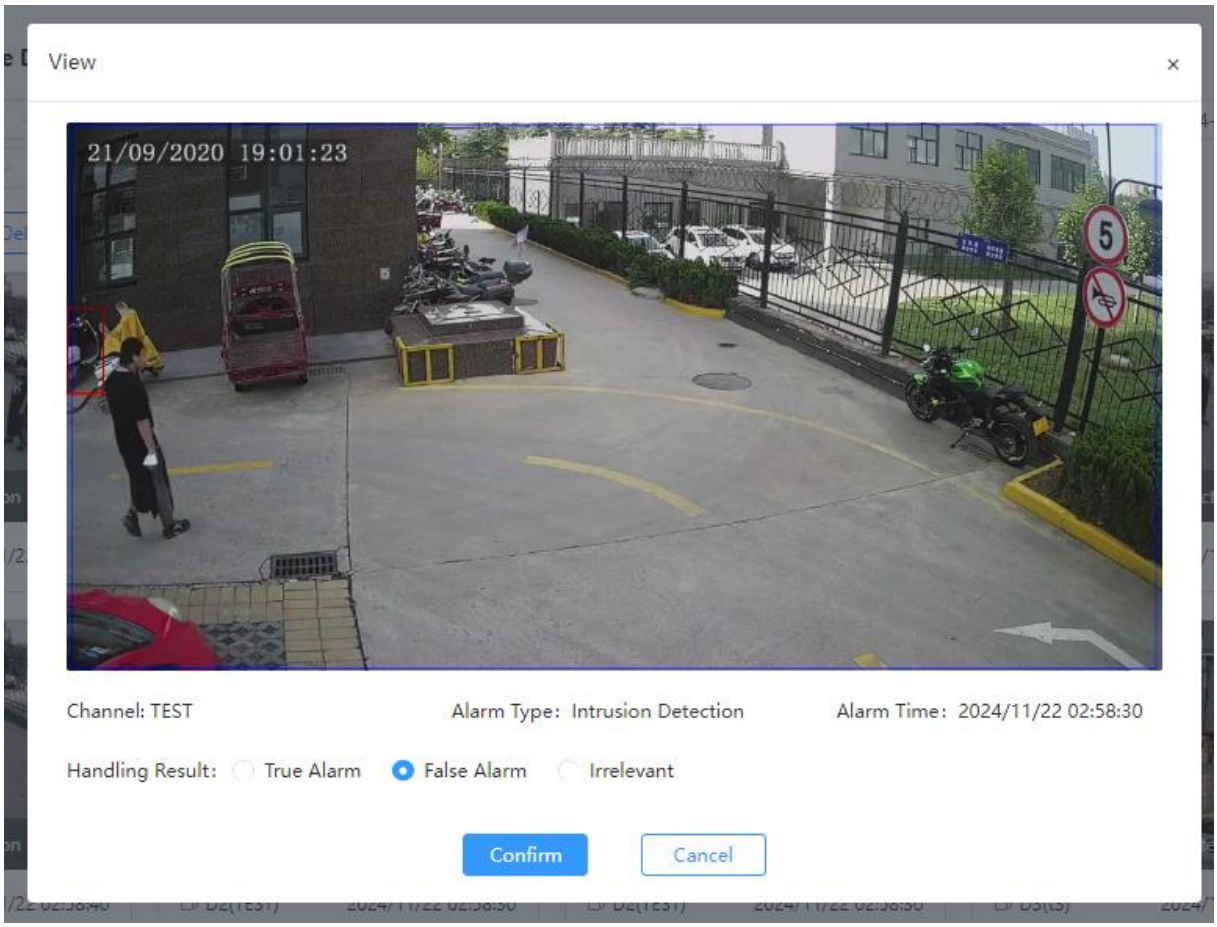


Click **Export** to enter the **Export Data** page, set the export type to **Select This Page** or **Export Selected**, select the alarm image and alarm video type as needed, and click **Confirm**.



7.2.4 Behavioral Data Edit

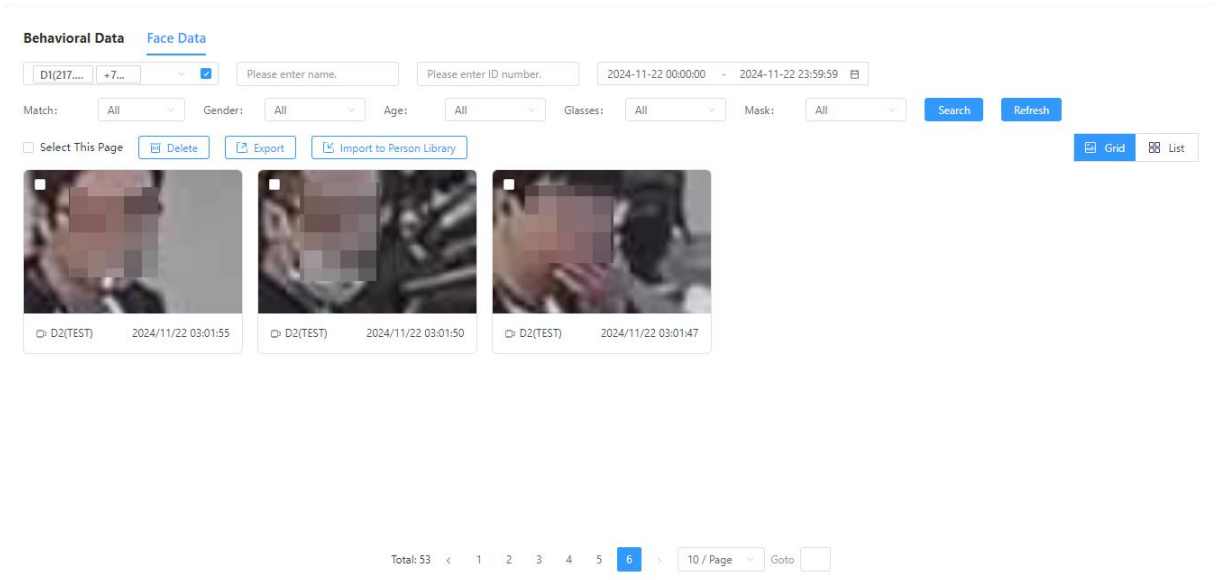
Select the alarm data, and click **Edit** to edit the handling result (true alarm, false alarm, and irrelevant). If you set handling result to **False Alarm**, the alarm data will be added to the sample library of the auto-learning module (currently only the intrusion detection alarm is supported).



7.3 Face Detection Search

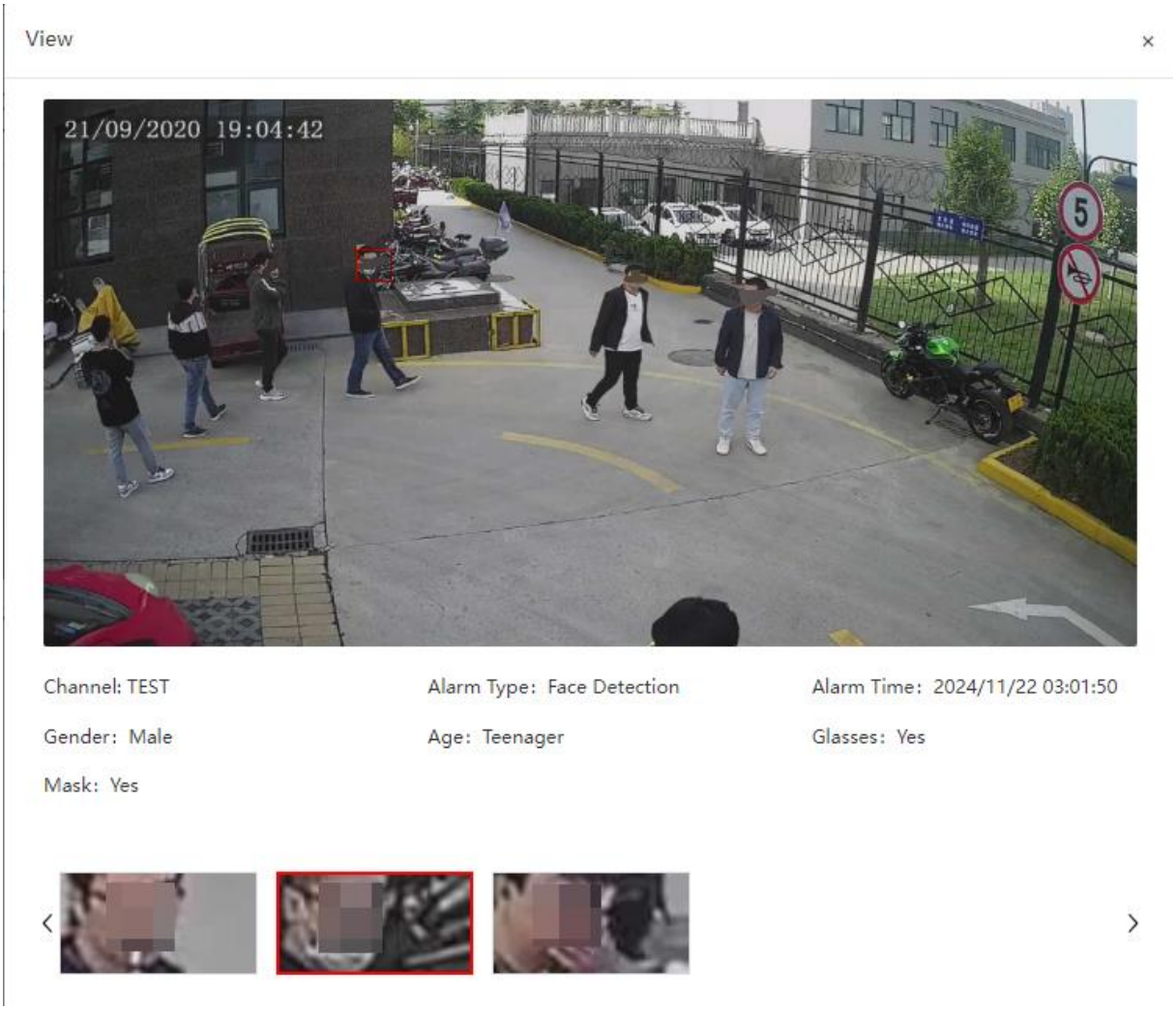
7.3.1 Face Data Search

The face data can be searched by the channel, name, ID, time, match condition, gender, age, glasses, and mask. You may view the search results in grid or list layout.



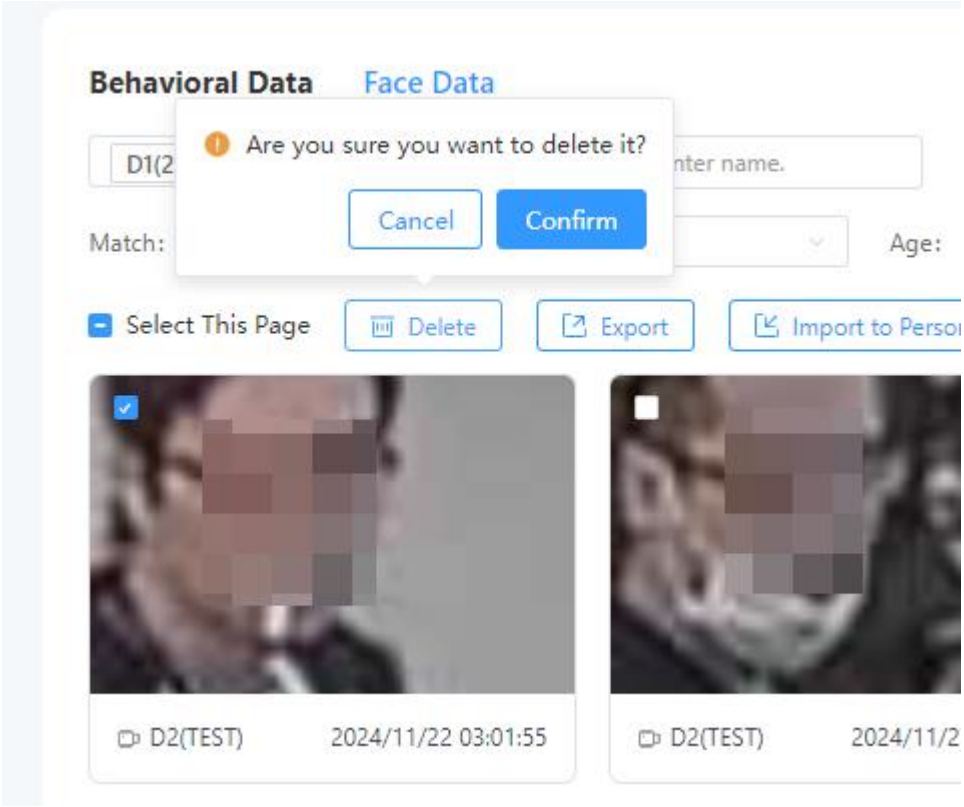
7.3.2 Face Data Details

Hover over the image in **Grid** layout, and click **View** to view the face detection details. The alarm snapshot, channel, alarm type, alarm time, gender, age, glasses, and mask will be displayed. You can also switch between events by clicking on the snapshots below.

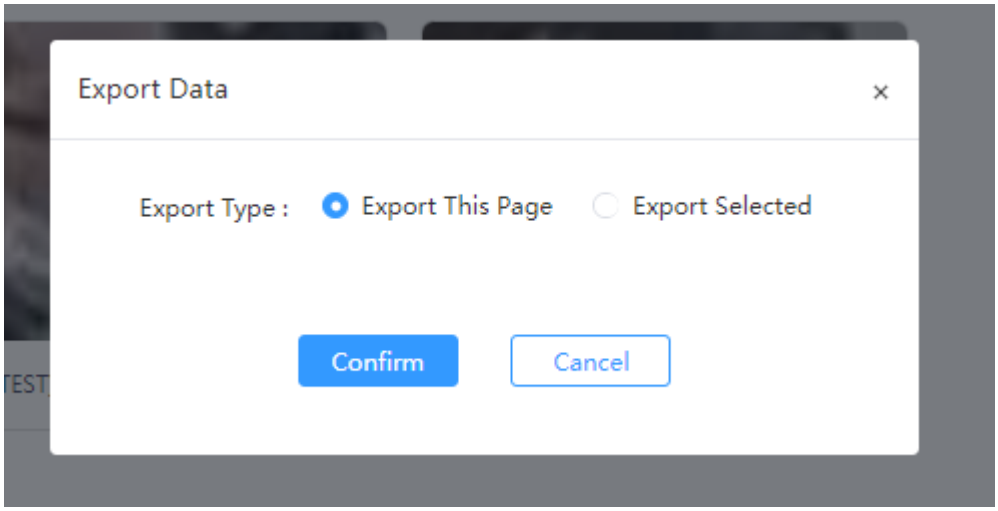


7.3.3 Face Data Deletion/Export

Select the alarm data you want to delete, click **Delete**, and click **Confirm**.

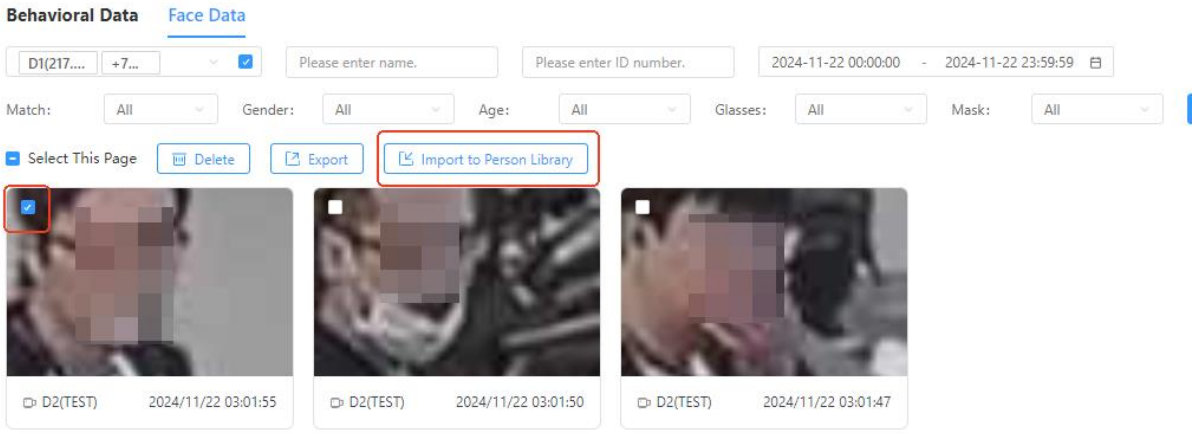


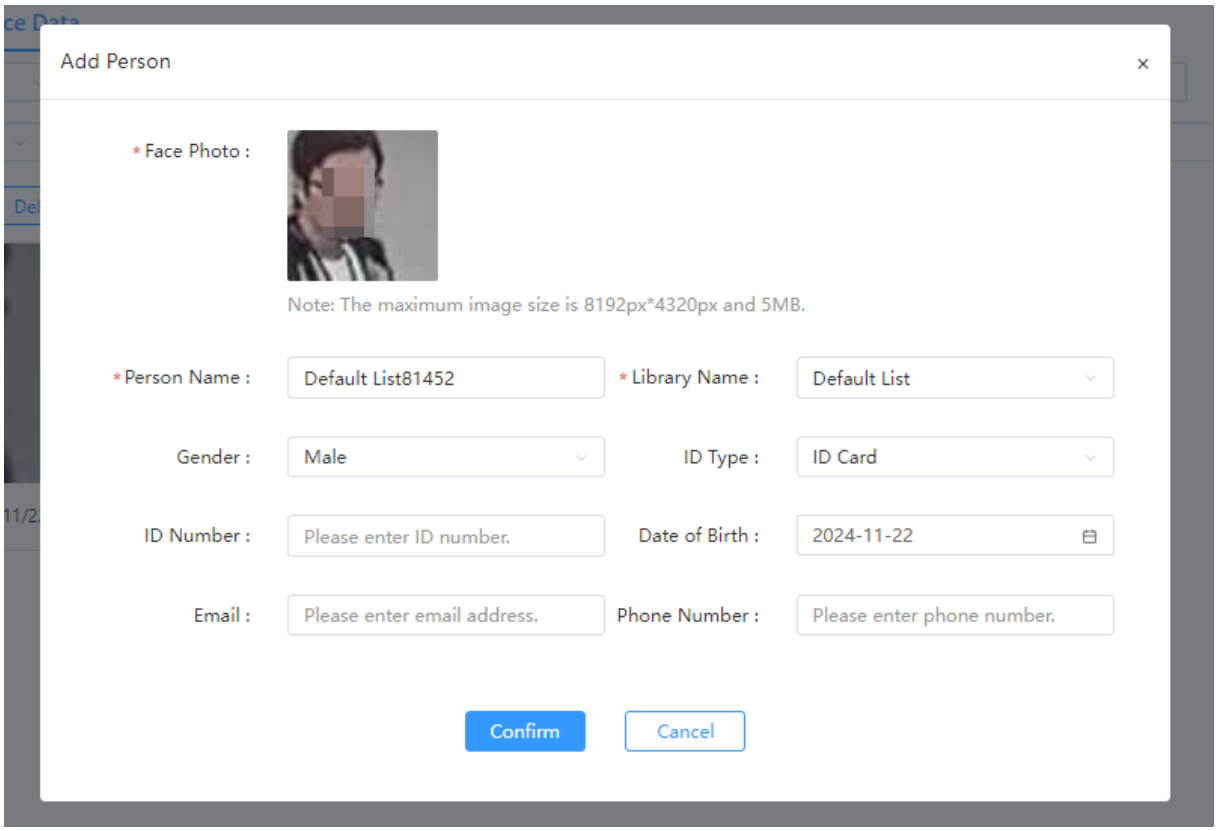
Click **Export** to enter the **Export Data** page, set the export type to **Select This Page** or **Export Selected**, and click **Confirm**.



7.3.4 Face Data Import

Select a face data, click **Import to Person Library**, and the **Add Person** page appears. Enter the person name, select a library, enter other information, click **Confirm**, and the face data will be imported to the selected person library.





8 Platform Configuration

8.1 Alarm Center

The alarm center includes platform configuration and upload time interval configuration

Platform configuration refers to configuring the corresponding mode based on the protocol required by the third-party platform when the device needs to connect to the third-party platform and upload data.

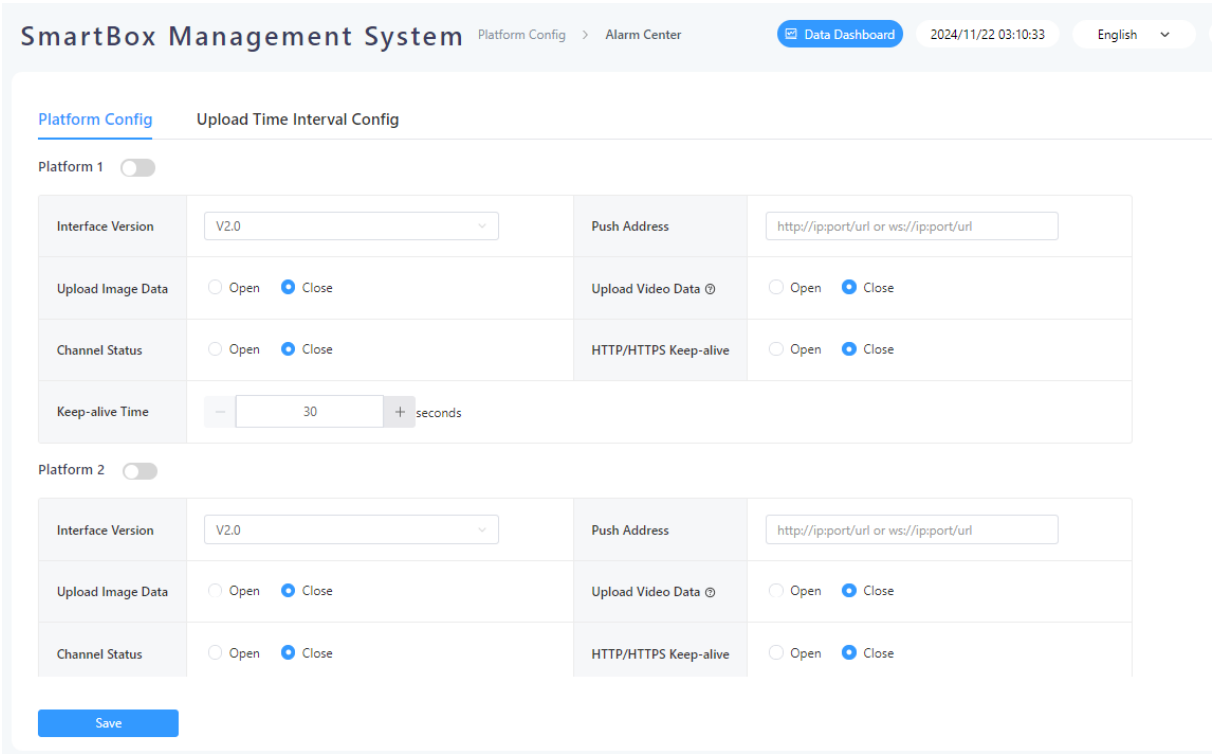
Upload time interval means the interval to upload data.

8.1.1 Platform Configuration

Up to two upper platforms can be configured.

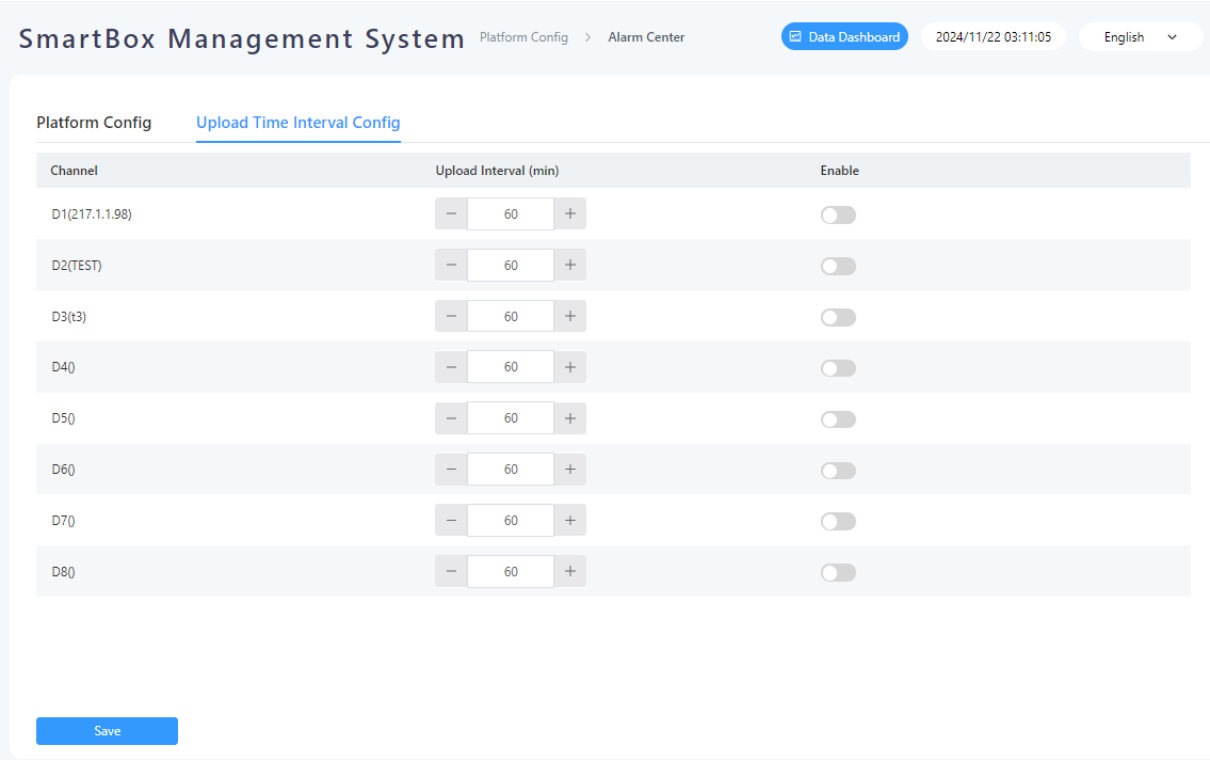
When the platform is enabled, the device can connect to the third-party platform via the WebSocket or HTTP protocol. You can configure the interface version, and choose to enable or disable the upload of images, videos, and channel status.

You can send keep-alive messages to the third-party platform via the HTTP or HTTPS protocol. The keep-alive time is 30s by default. You can set the keep-alive time and push address as needed.



8.1.2 Upload Time Interval Configuration

- Upload Time Interval: The device sends the alarm analysis results of the enabled channels to the upper platform at a set time interval.
- Enable: Enable/disable channel data upload.

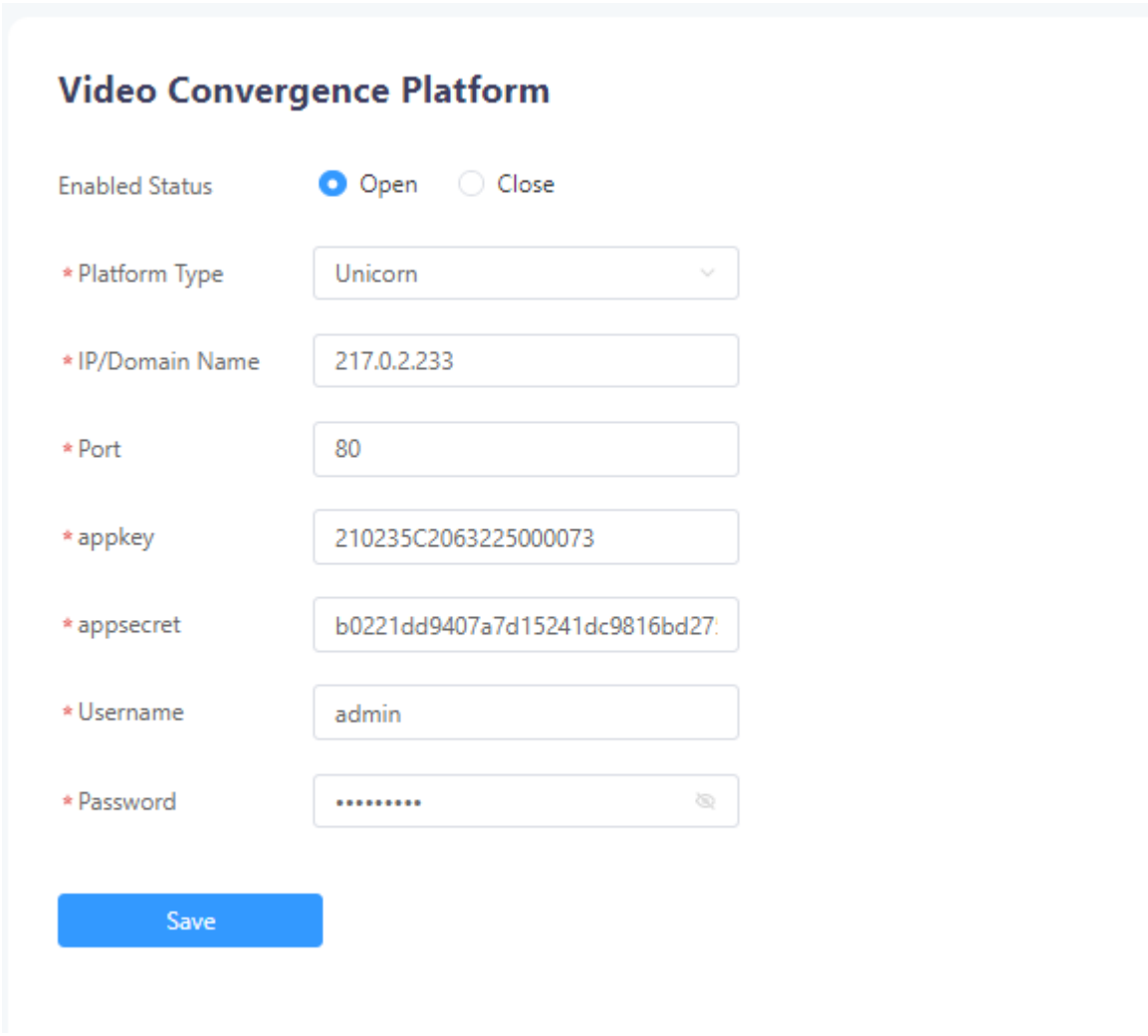


8.2 Video Convergence Platform

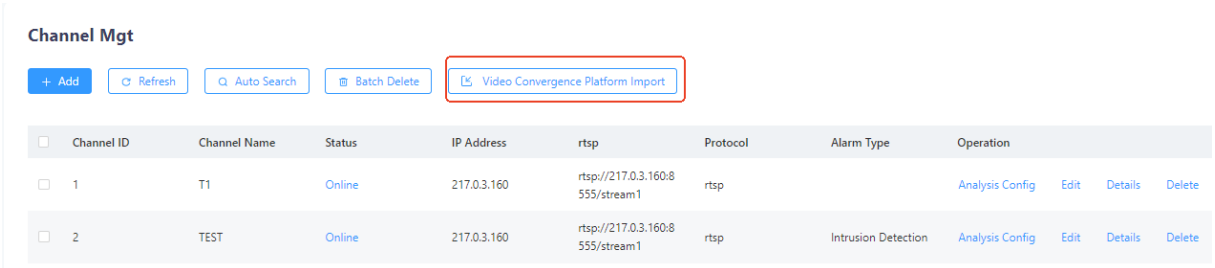
The video aggregation platform is used to connect the server to the platform so that the cameras on the platform can be added to the server for management.

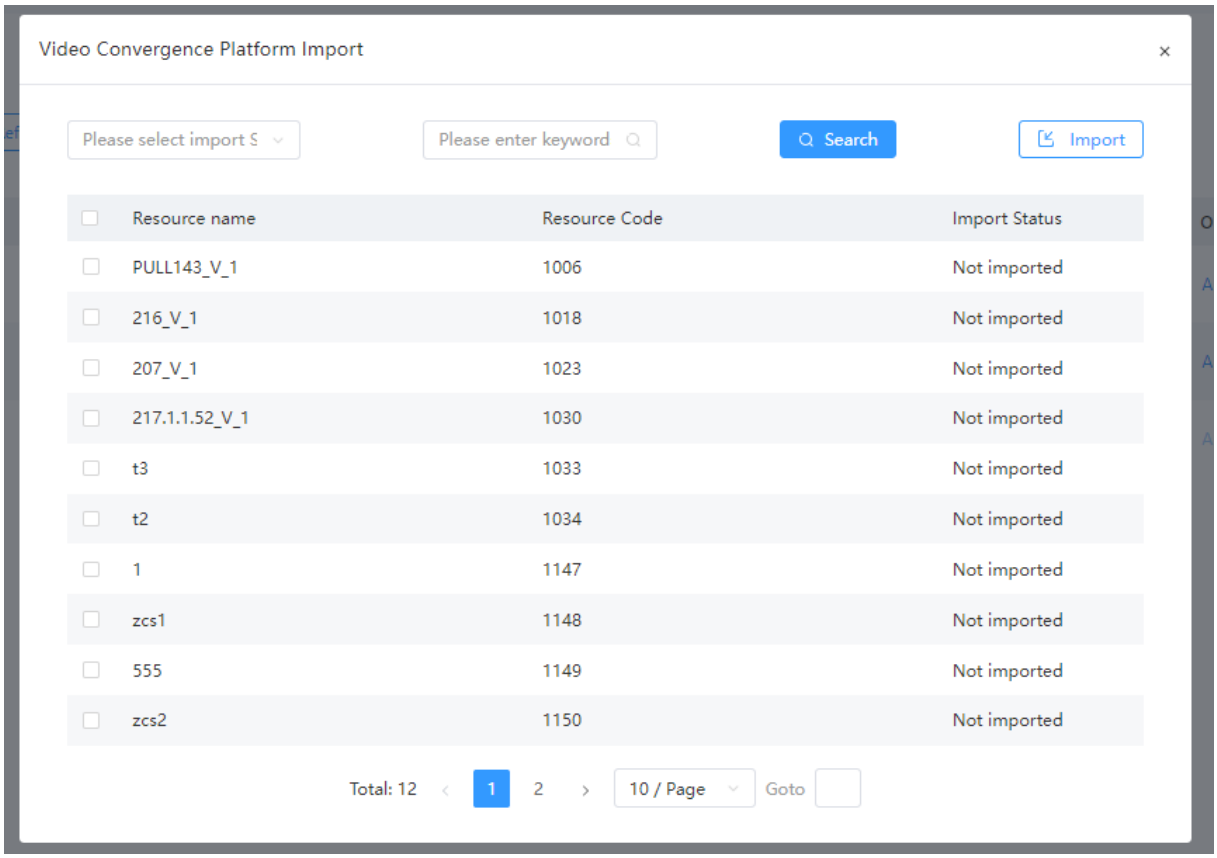
Enter the **Video Convergence Platform** page, click **Open** to enable the platform. Two platform types are available, including Unicorn and Unipheus/B1000.

Platform configuration example:



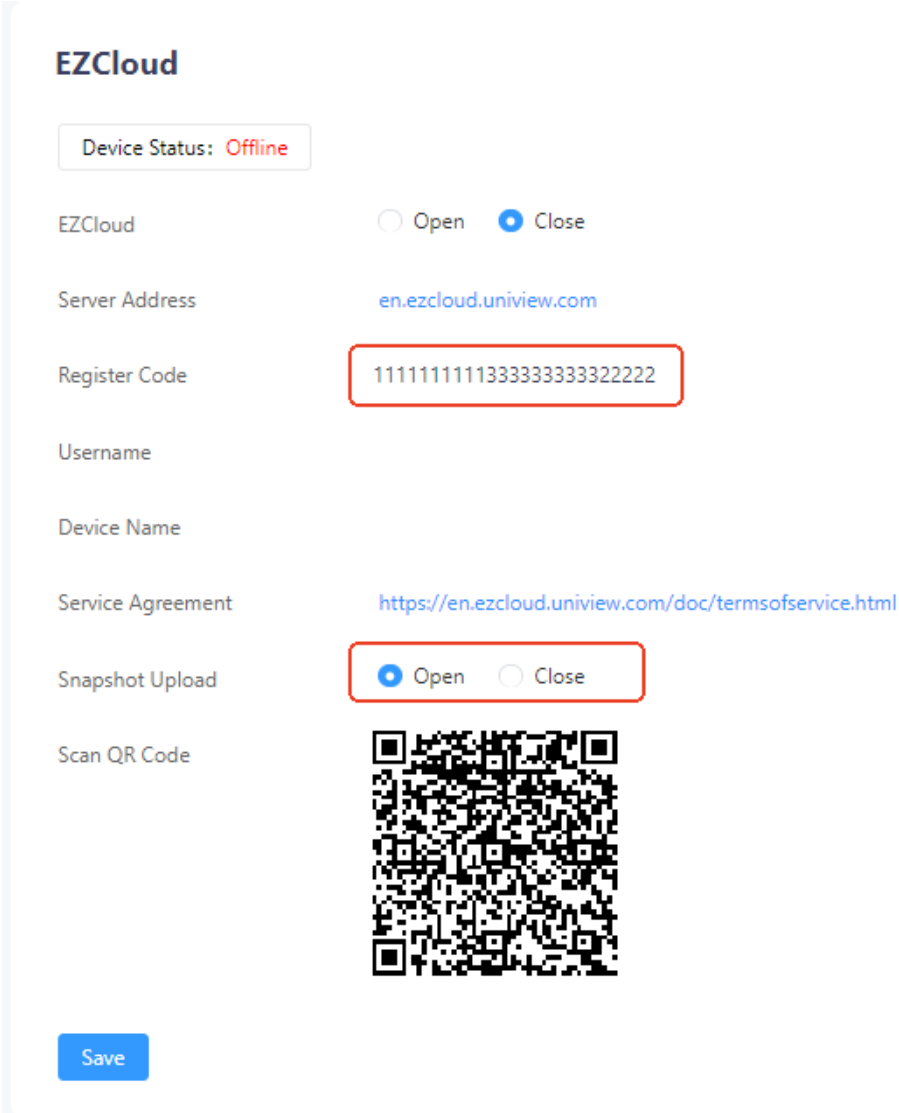
After the configuration is finished, the **Channel Mgt** page appears. Click **Video Convergence Platform Import**, and the cameras that can be imported to the platform will be displayed. You can search cameras by import status and device name.





8.3 EZCloud

EZCloud is disabled by default. When enabled, the smart box will connect to the EZCloud platform. You can add the device using a register code, or scan the QR code using the app. The IP address of the smart box must be in the same network segment as that of the EZCloud. When **Snapshot Upload** is enabled, you can view the alarm snapshots on the alarm record screen of the app.

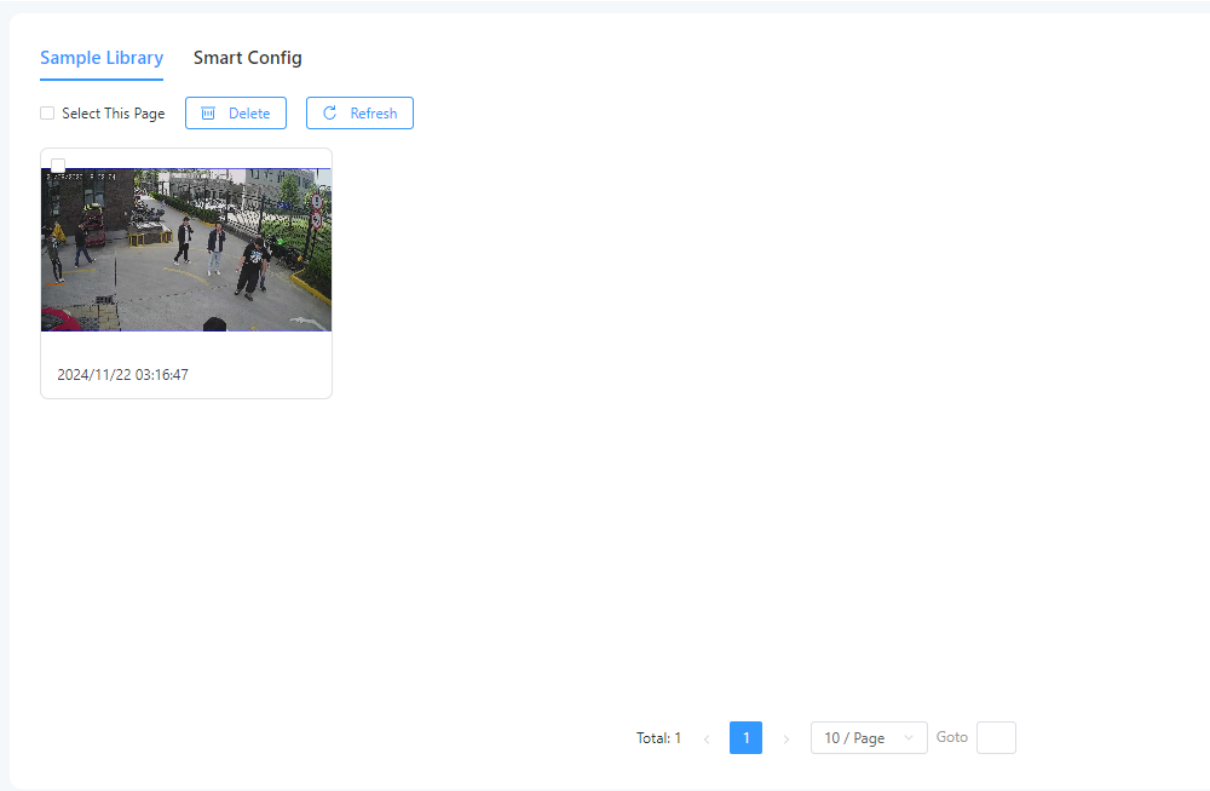


9 Auto-Learning

The auto-learning includes sample library and smart configuration.

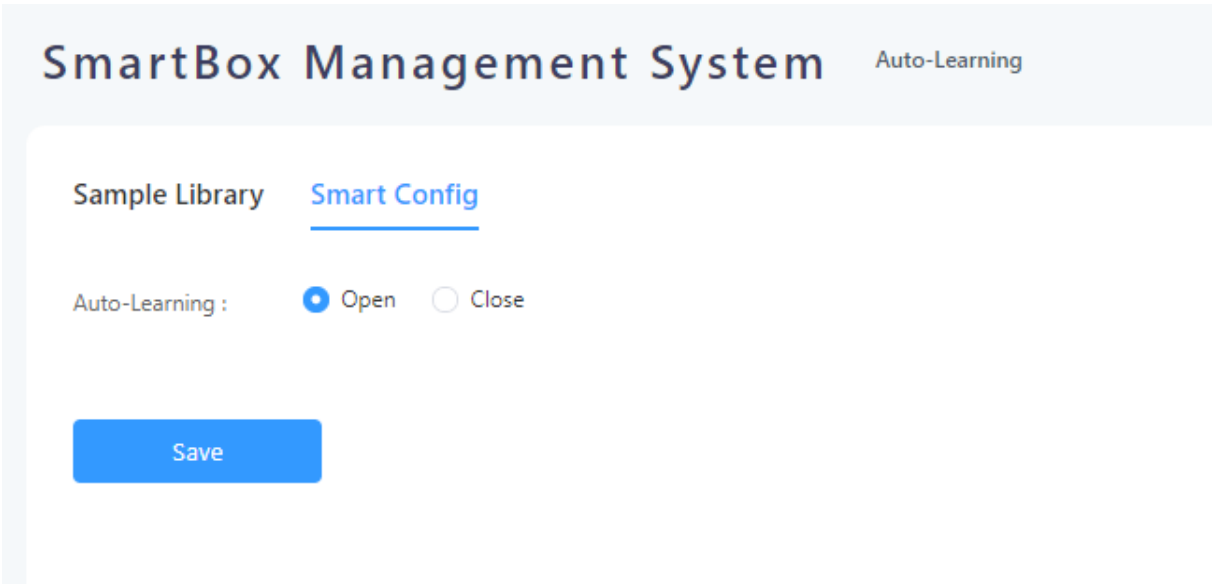
9.1 Sample Library

The false intrusion detection alarm edited on the behavioral data edit page will be displayed on the sample library page. You can select all data of this page, delete or refresh the data.



9.2 Smart Config

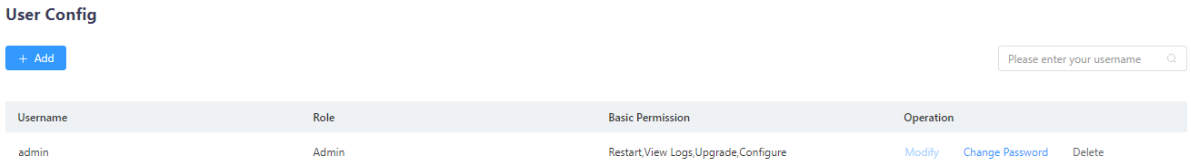
You can enable or disable **Auto-Learning** as needed. When enabled, the detection rate of intrusion detection will be reduced. The more data in the sample library, the lower the detection rate.



10 System Configuration

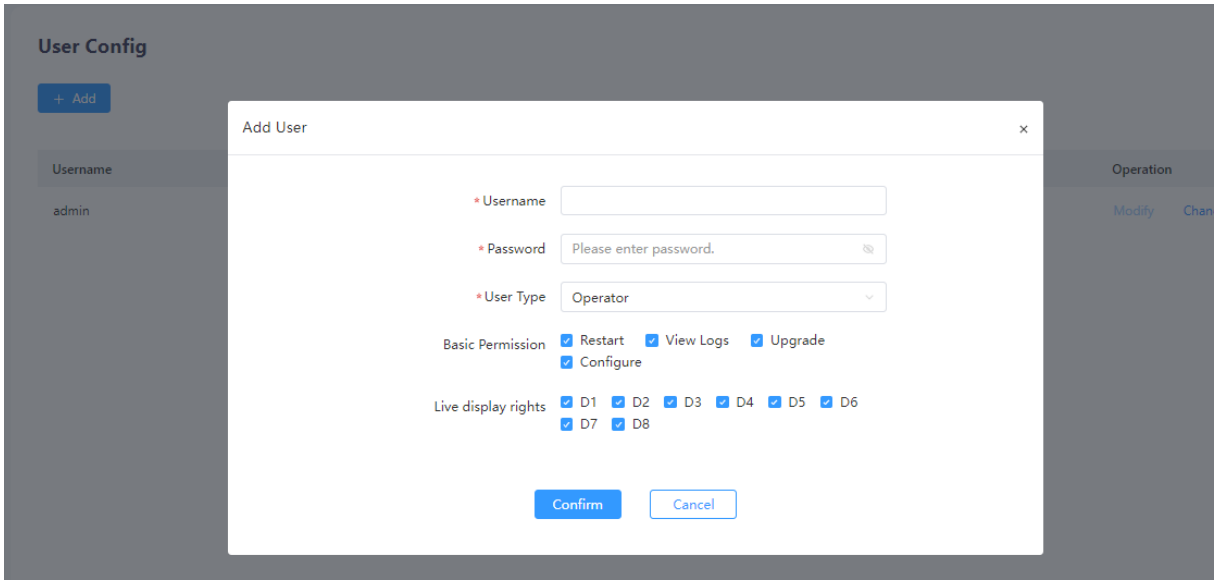
10.1 User Configuration

You may add and delete users, assign user permissions, change the password, and manage the role.

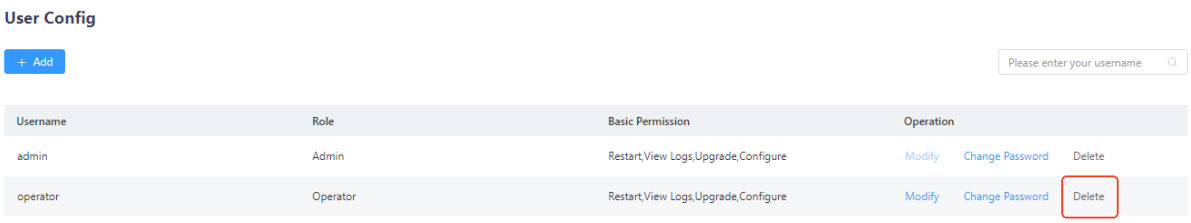


10.1.1 User Management

- Add user: Click **+Add**, and then configure the parameters.



- Delete user: Select the user you want to delete, and click **Delete**.

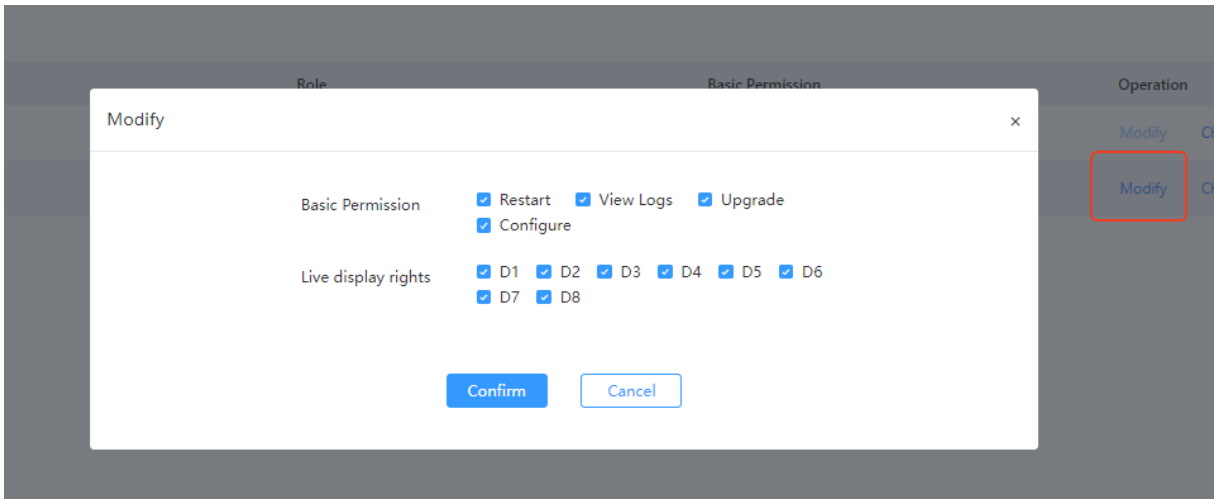


NOTE!

- Only the administrator can delete users.
- The admin user cannot be deleted.

10.1.2 Password and Permissions Change

Only admin can change the password and permissions of other users.



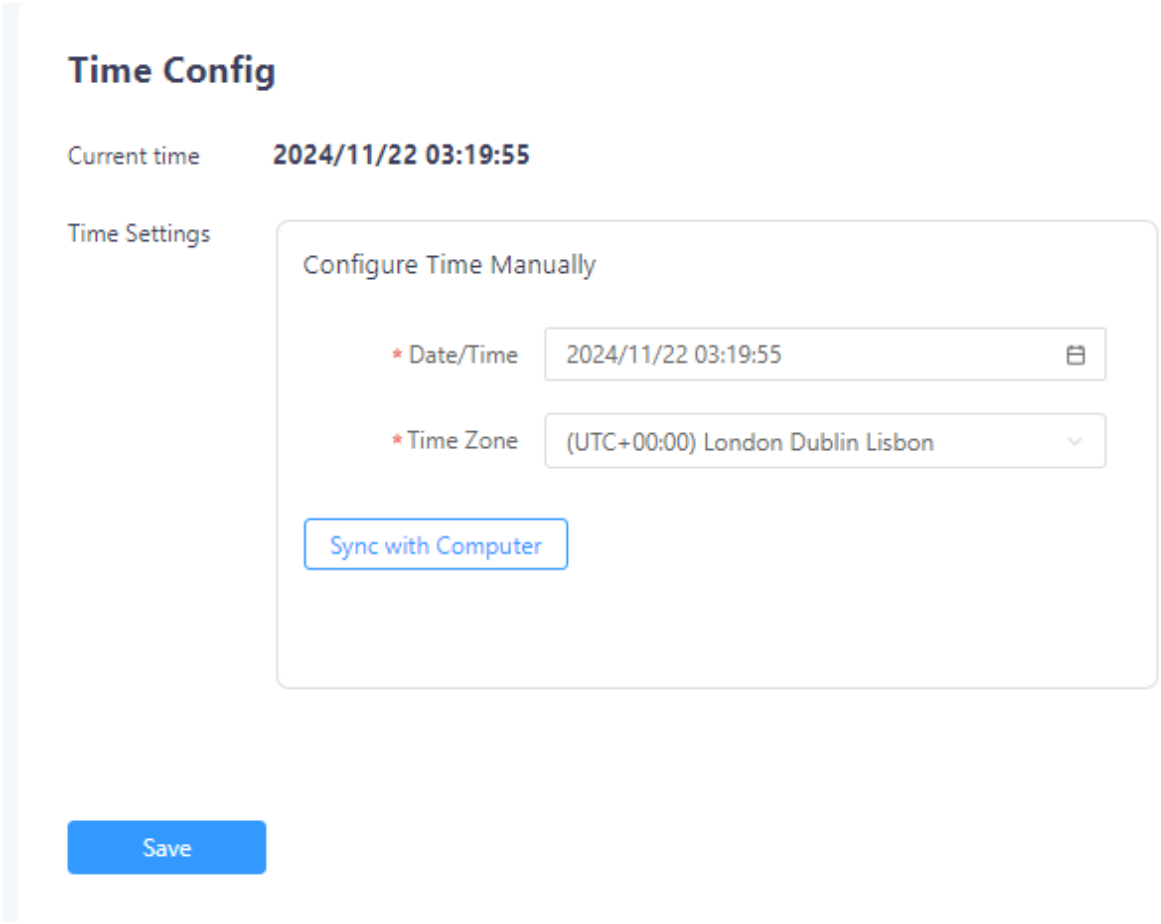
NOTE!

- Admin can reset the password of all users (including admin user).
- Admin can modify the permissions of all users or delete users.
- Only admin can assign the user permission.

10.2 Time Configuration

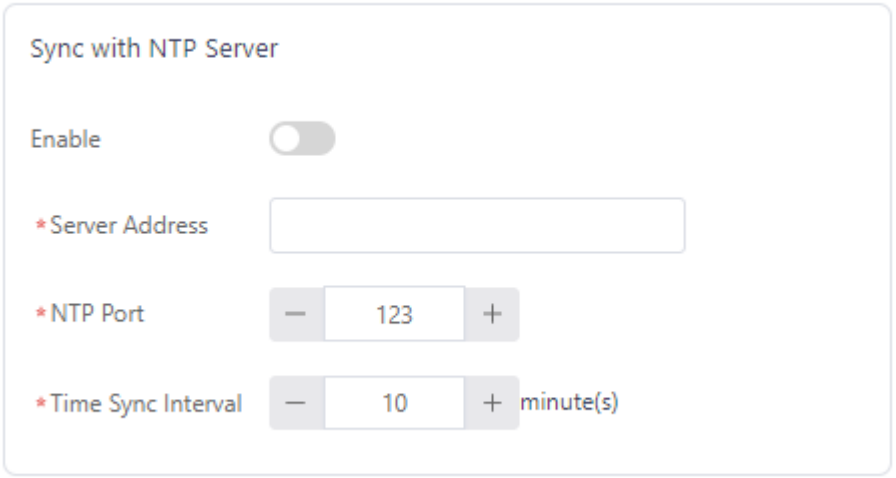
You can set the time manually or sync time with NTP server.

- Set Time Manually
  - ➢ You can set the system time and time zone manually.
  - ➢ The system time can be synced with the computer time.



- Sync with NTP Server

If there is a server for time calibration in the network environment, it is recommended to sync with the NTP server. Enable **Sync with NTP Server**, and enter the server address, NTP port, and time sync interval.



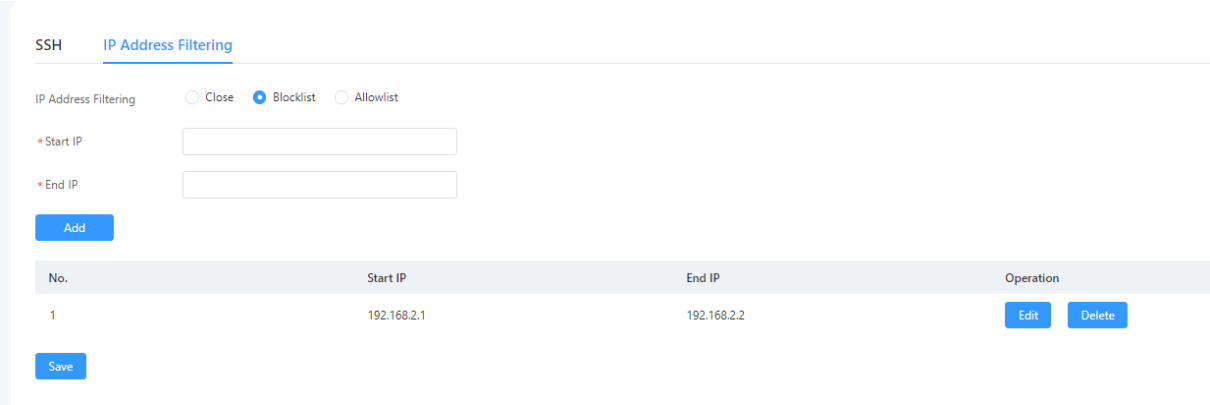
10.3 Security

10.3.1 SSH

When enabled, you can access the smart box's background using two-factor authentication based on a dynamic factor.

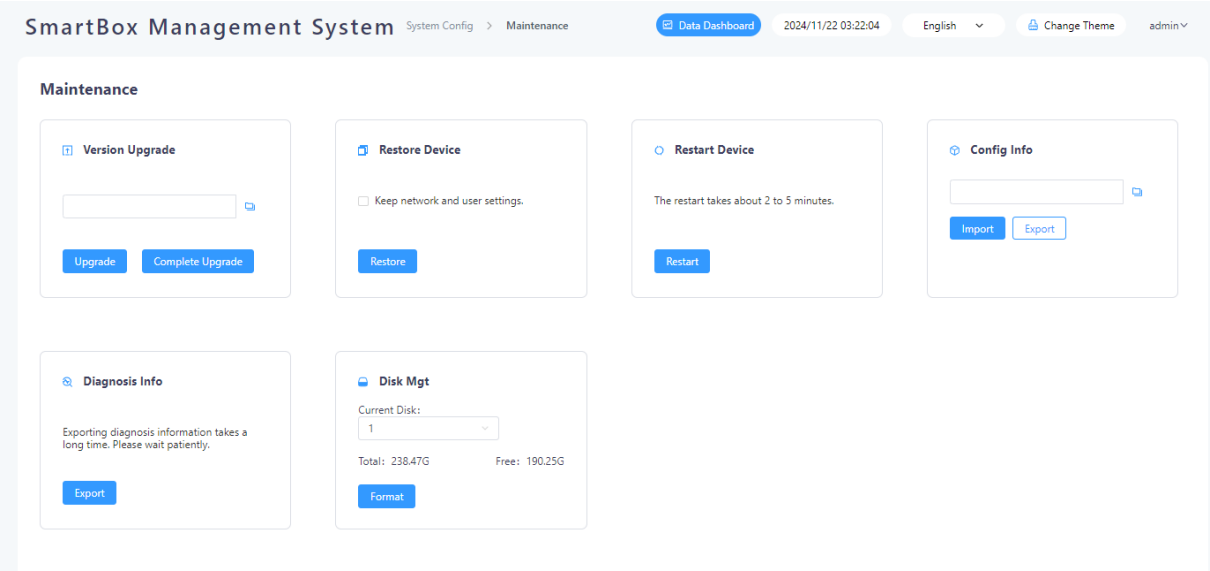
10.3.2 IP Address Filtering

- Use IP address to allow or forbid access to the smart box.
- Blocklist: Access from IP addresses on the blocklist is forbidden.
- Allowlist: Only access from IP addresses on the allowlist is allowed.
- The added IP addresses will be displayed in the list below. You can edit or delete the address as needed.



10.4 System Maintenance

The system maintenance includes version upgrade, device restoration, device restart, information configuration, diagnosis information, and hard disk management.



1. Version Upgrade

When a new version is available, you can select an upgrade packet locally and click **Upgrade** (compatibility upgrade) or **Complete Upgrade**.

CAUTION!

Before upgrading, please refer to the version description document to check if the current version can be upgraded to the latest version. Do not upgrade the version without checking to avoid problems.

2. Device Restoration

Restore the device to the initial status. You may choose whether to keep the current network settings and user settings.

3. Device Restart

Click to restart the device.

4. Information Configuration

- Exporting the configuration information will download the system's configuration information to the local. You may provide this file to other devices. Configuration information includes channel configuration, data integration configuration, and network configuration.
- Importing the configuration information will copy other device's configuration information to this device.

CAUTION!

- Importing configuration will overwrite the current channel data. Please operation with caution.
- Configuration information can only be imported in the same version, and cannot be imported across version.

5. Diagnosis Information

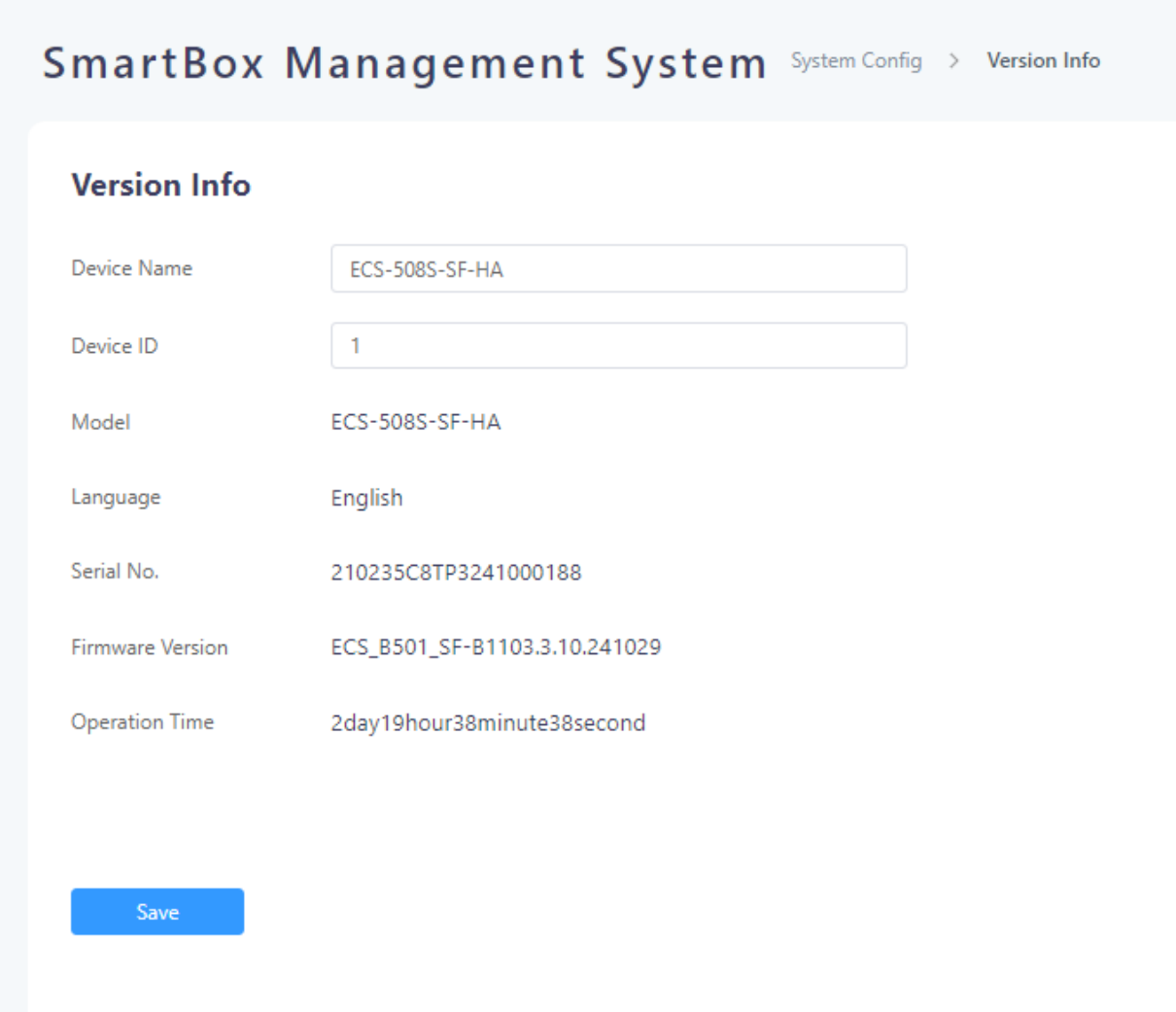
If there is a problem with the device, you may export the diagnosis information and submit it to the related technician.

6. Hard Disk Management

Display the hard disk information, including the current used hark disk, total capacity and remaining capacity of the hard disk. You can format the hard disk if necessary.

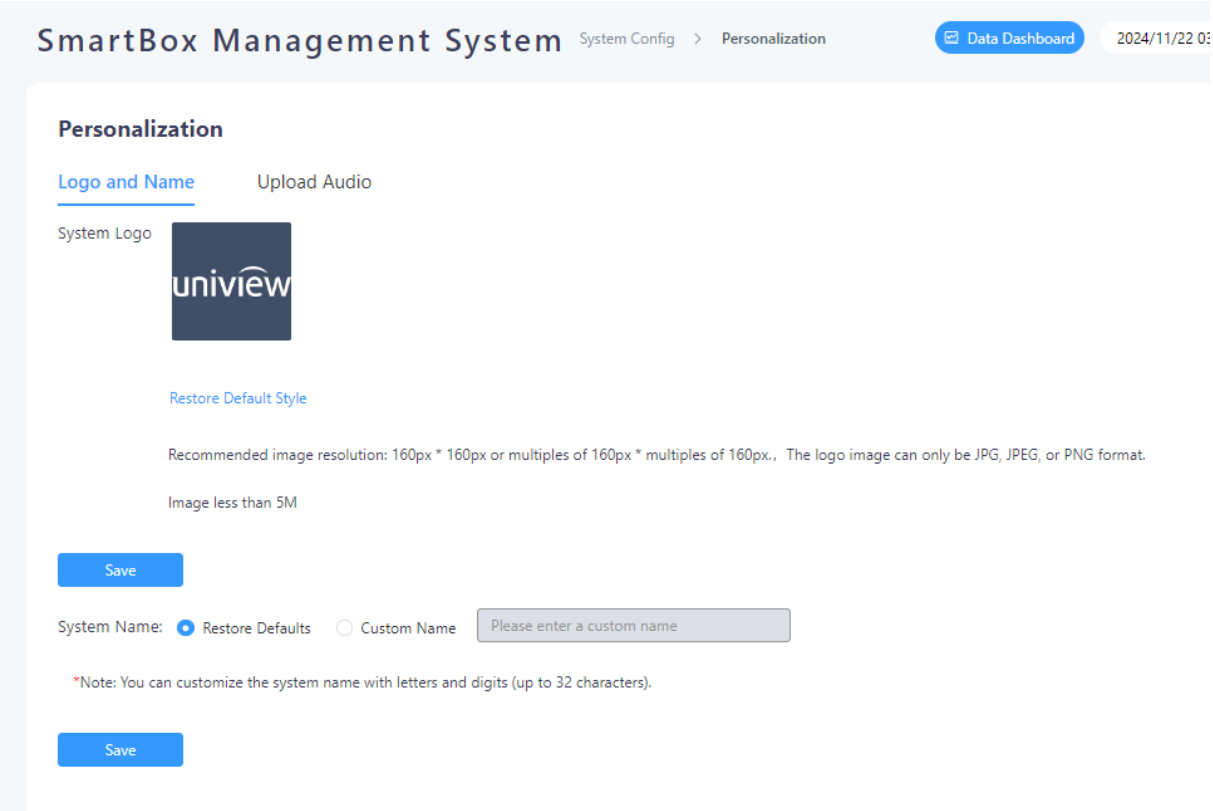
10.5 Version Information

You can view the device name, device ID, model, etc., and change the device name and device ID.



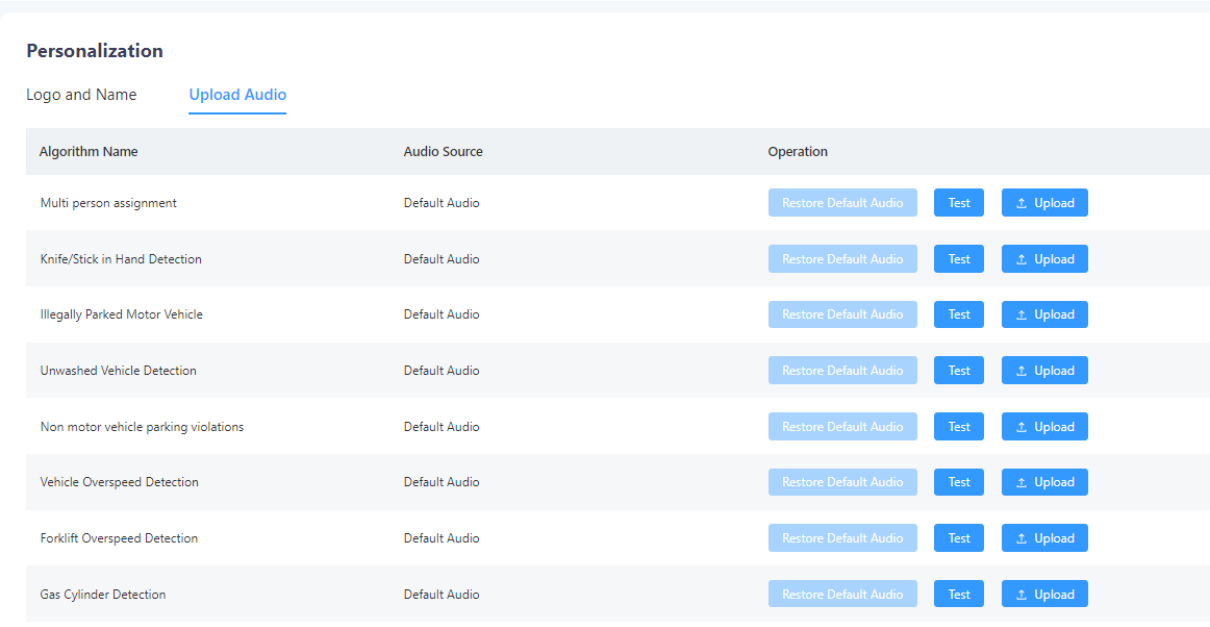
10.6 Personalization Configuration

10.6.1 Logo and Name



- Logo and Name: You may customize the system logo and name as needed.
- Restore Default: To restore the default system logo, click **Restore Default Style** and click **Save**; to restore the default system name, select **Restore Defaults** and click **Save**.

10.6.2 Audio Upload

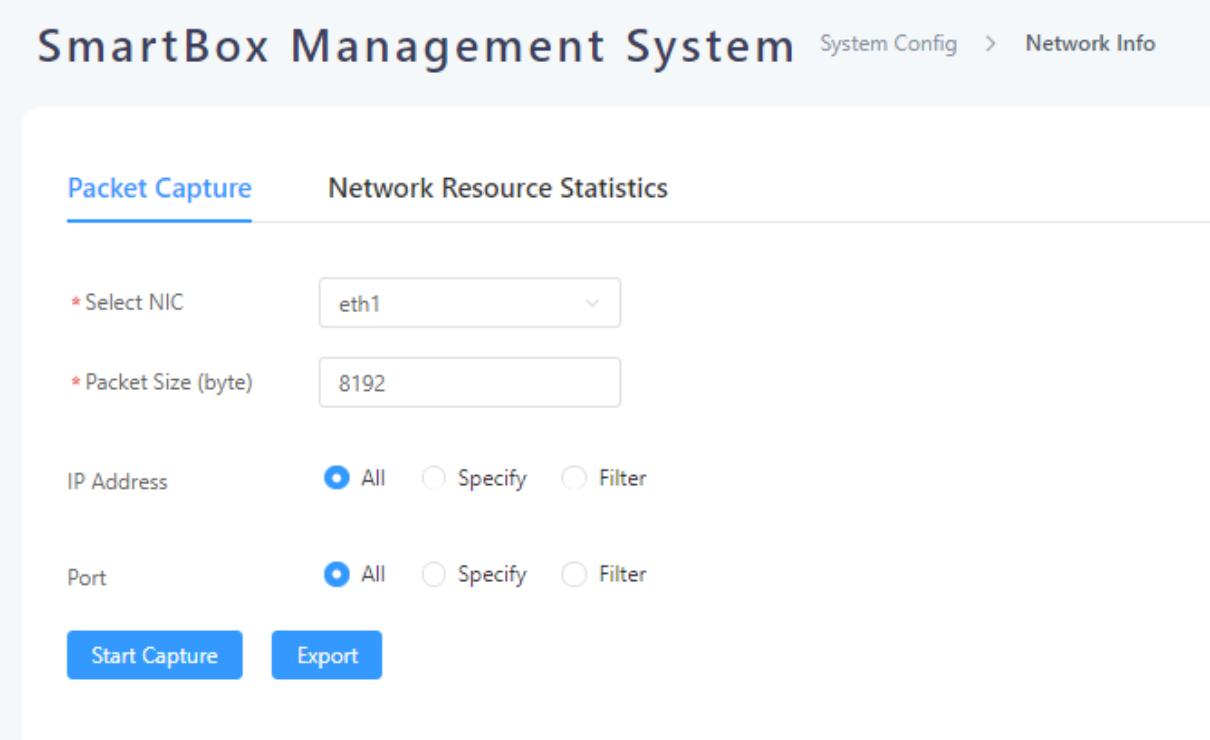


- Test: Click **Test** to try the alarm audio.
- Upload: Click **Upload**, select and upload the custom alarm audio, and then the alarm audio will be the uploaded one.
- Restore Default Audio: After you uploading the custom alarm audio, click **Restore Default Audio** to restore the default system audio.

10.7 Network Information

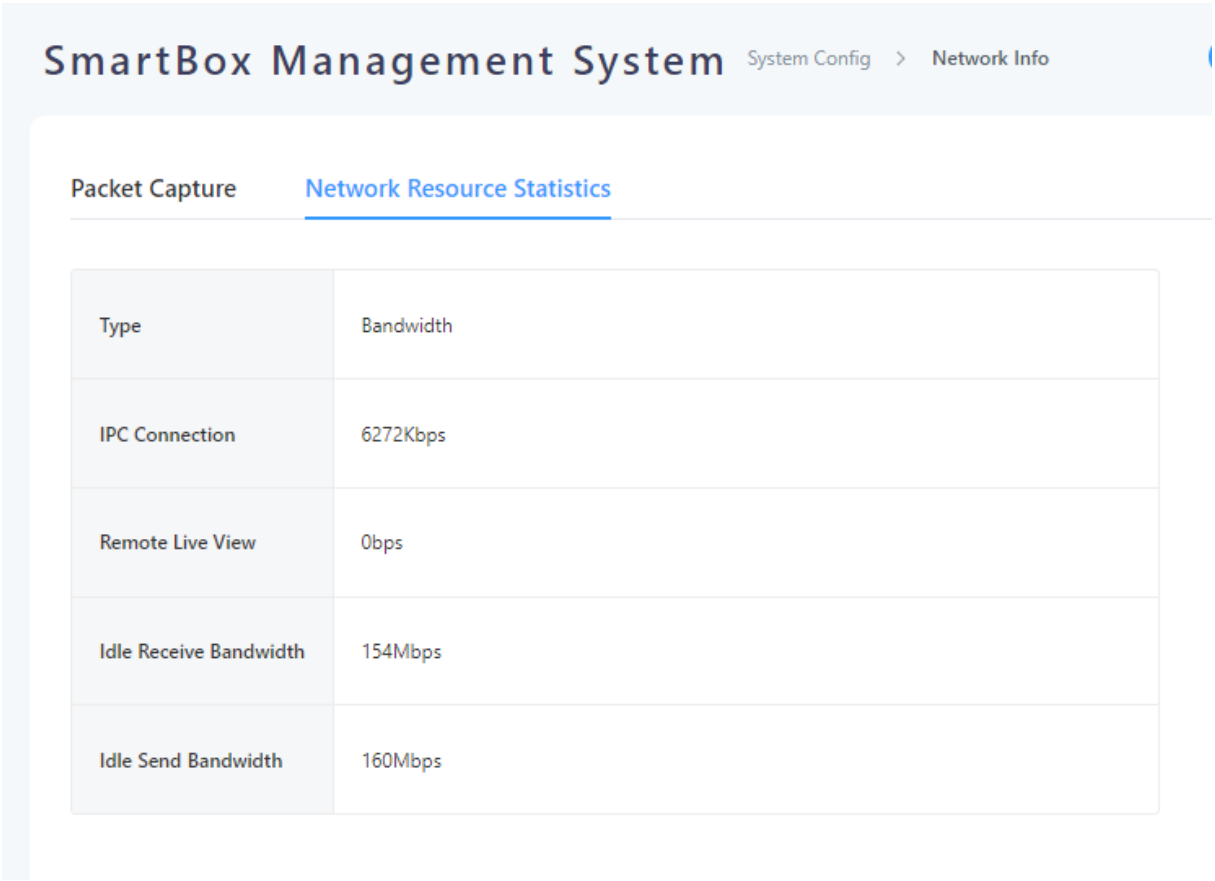
10.7.1 Packet Capture

Select an NIC for packet capture, and set the packet size. Select **All/Appoint/Filter** for the IP address and port as needed, and then click **Start Capture** to start capturing packets. After packet capture is finished, you may click **Export** to export the results and use the Wireshark software to view the message data.



10.7.2 Network Resource Statistics

You can view the network information including network type, IPC connection, remote live view, etc.

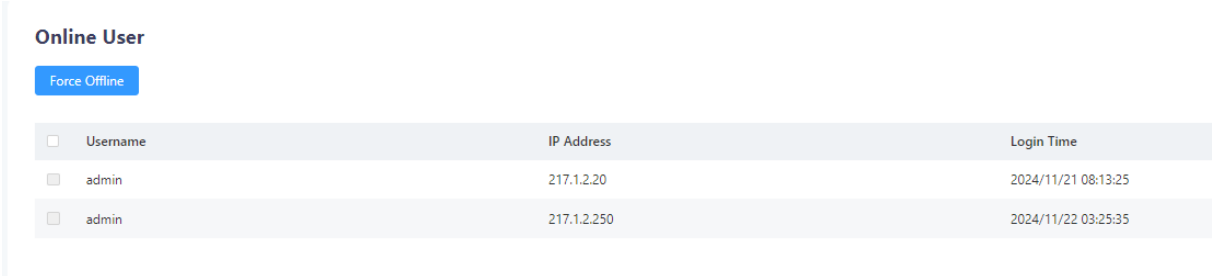


NOTE!

- Up to 65535 bytes or 100M data can be captured
- Specify: Capture packets of the specified ports and IPs.
- Filter: Capture packets except those of the specified ports and IPs.

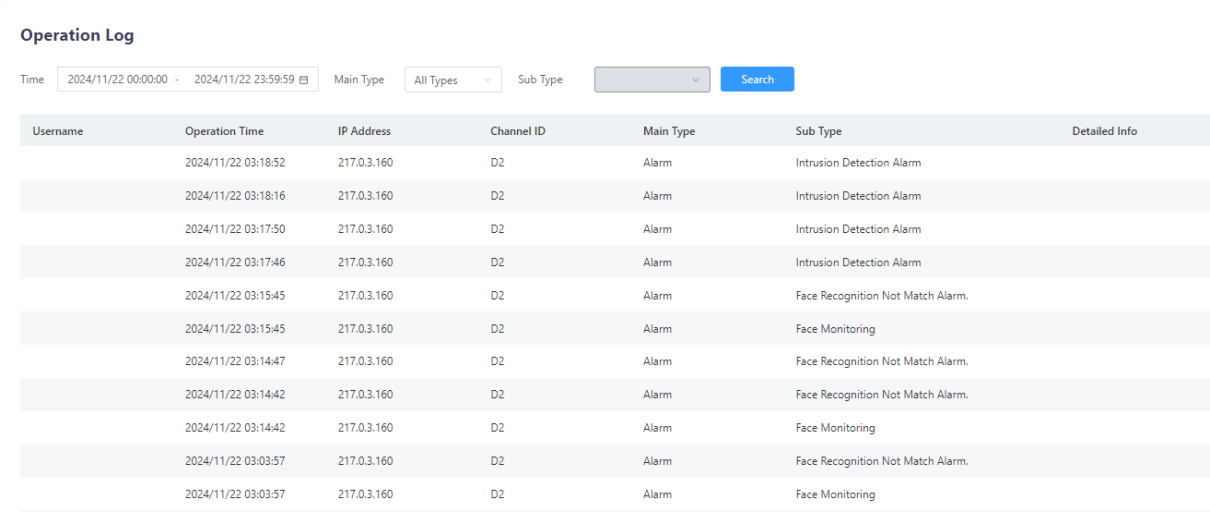
10.8 Online User

You can view all online user information including login time on this page. If you log in with the admin user, you can force online users to go offline.



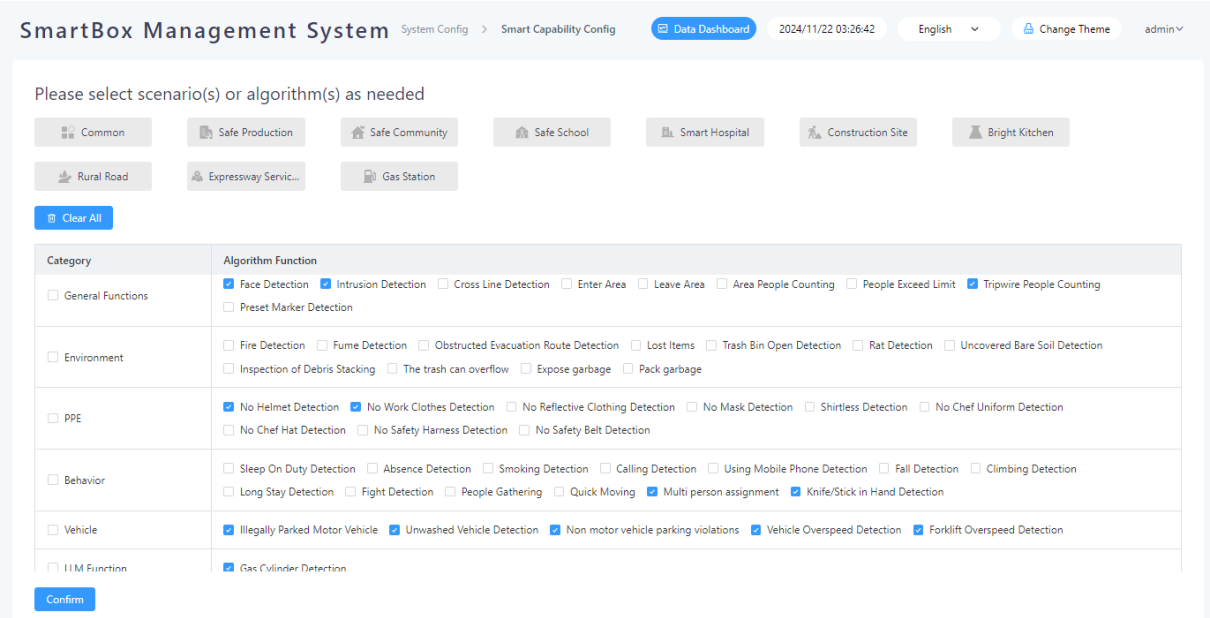
10.9 Operation Logs

This page records the operation and alarm information. All types include alarm, exception, operation, and notification, and each type includes multiple sub types. You can search logs by type and time.

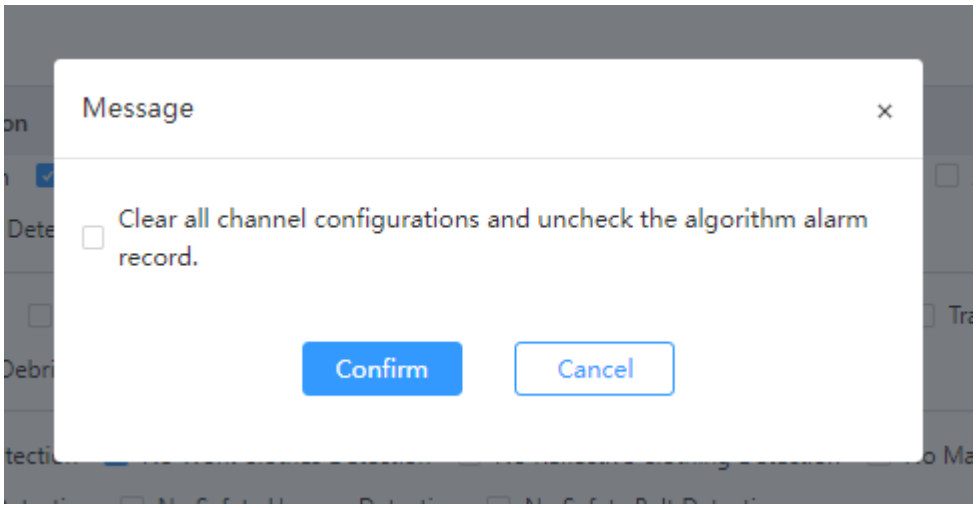


10.10 Smart Capability Config

Select the desired algorithms on this page. Up to 20 algorithms are allowed.



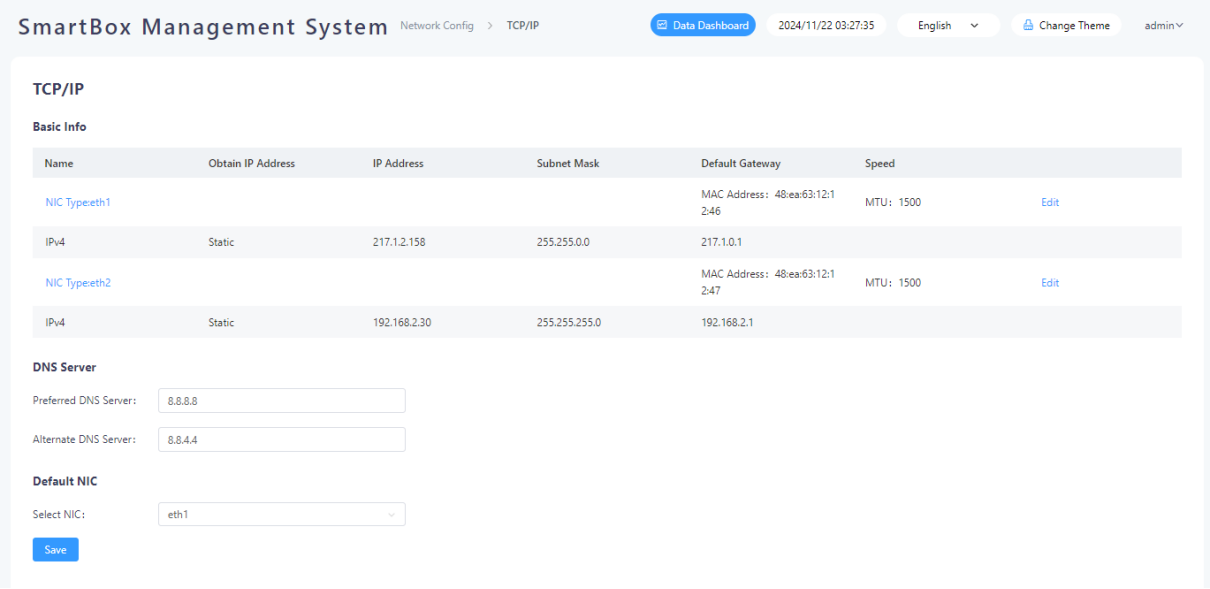
When changing the algorithm, a window appears. Selecting **Clear all channel configurations and uncheck the algorithm alarm record** will clear all channel configurations and alarm records. You can select it as needed.



11 Network Configuration

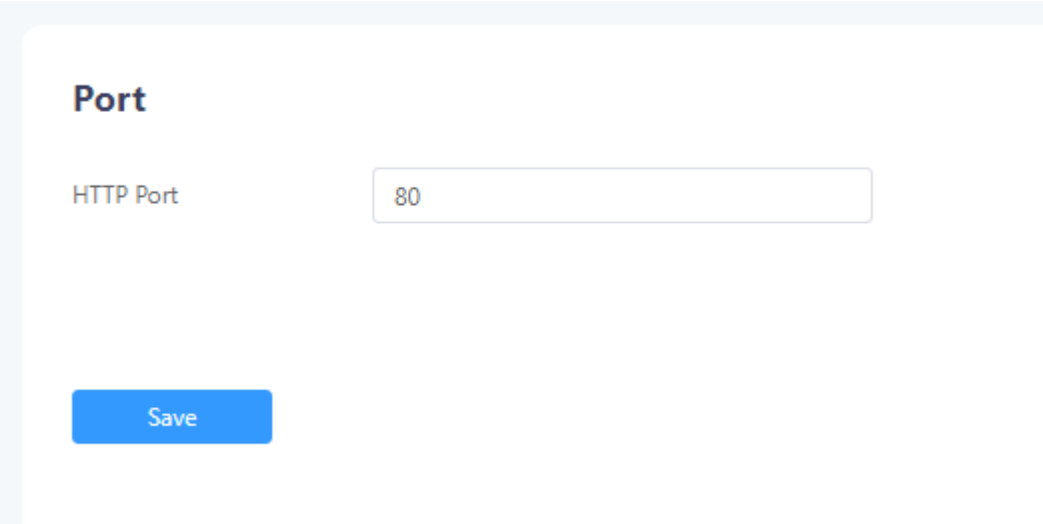
11.1 TCP/IP

Configure the network parameters as needed.



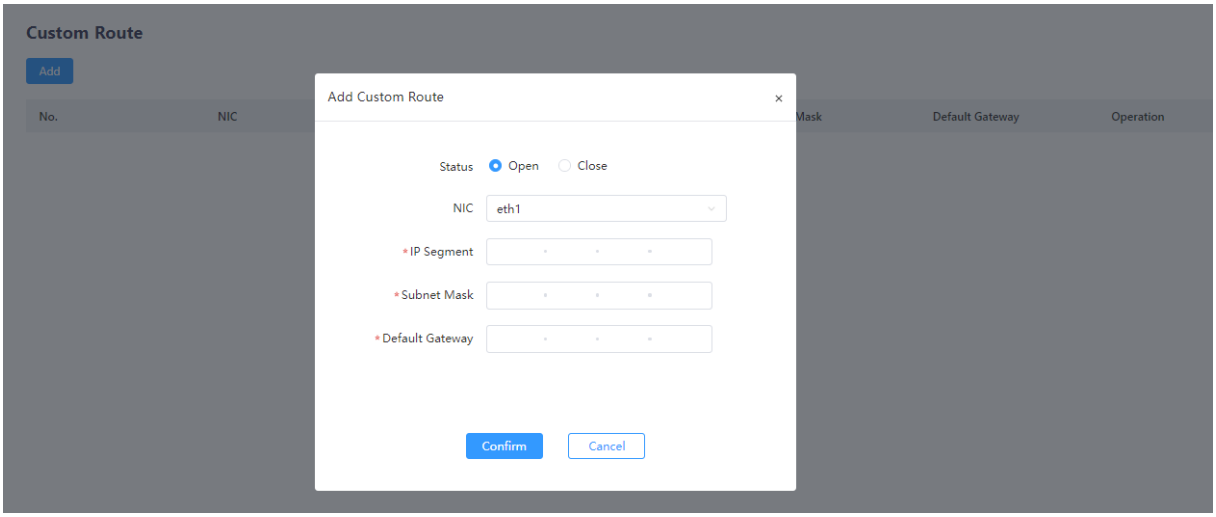
11.2 Port

After modifying the default HTTP port, you need to add the port number at the end of the IP address to access the device's Web interface.



11.3 Custom Route

Add routes as needed.

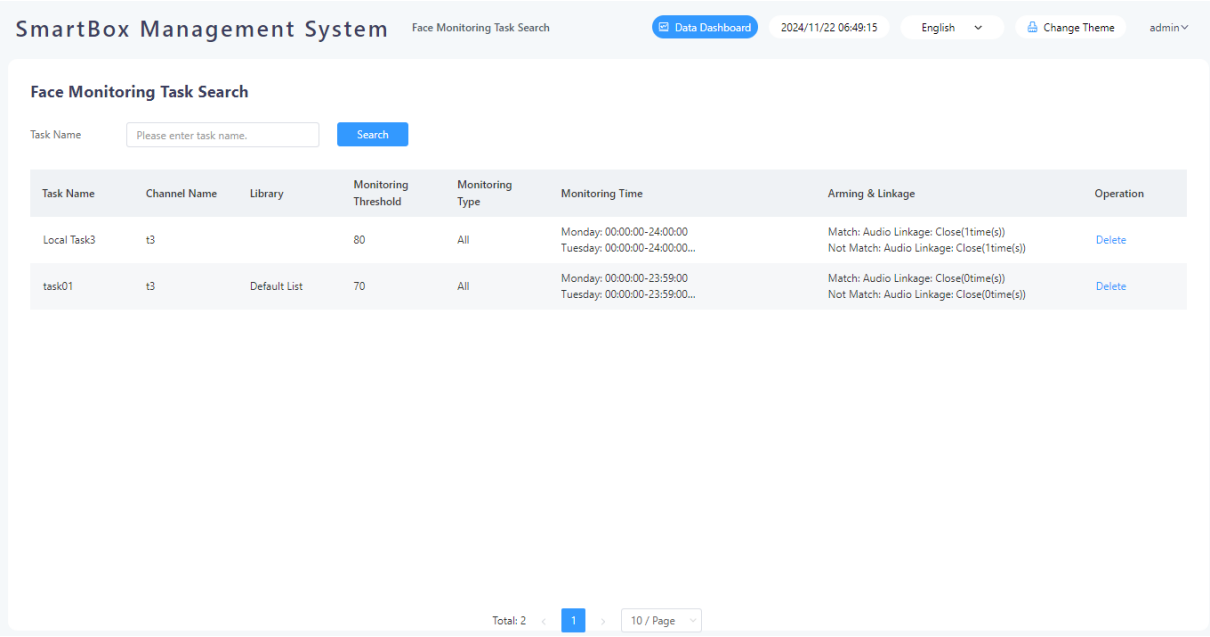


12 Face Monitoring Task Search

The page shows the local and platform monitoring tasks. You can view the task name, channel name, library, monitoring threshold, monitoring type, monitoring time, and arming & linkage. You can also delete the task, and search the task configured on the platform.

Local task: Configure face detection and enable face detection on the smart box, and a monitoring task named as local task will be generated.

Platform task: Sync a face monitoring task to the smart box from the connected platform. The task name can be customized on the platform.

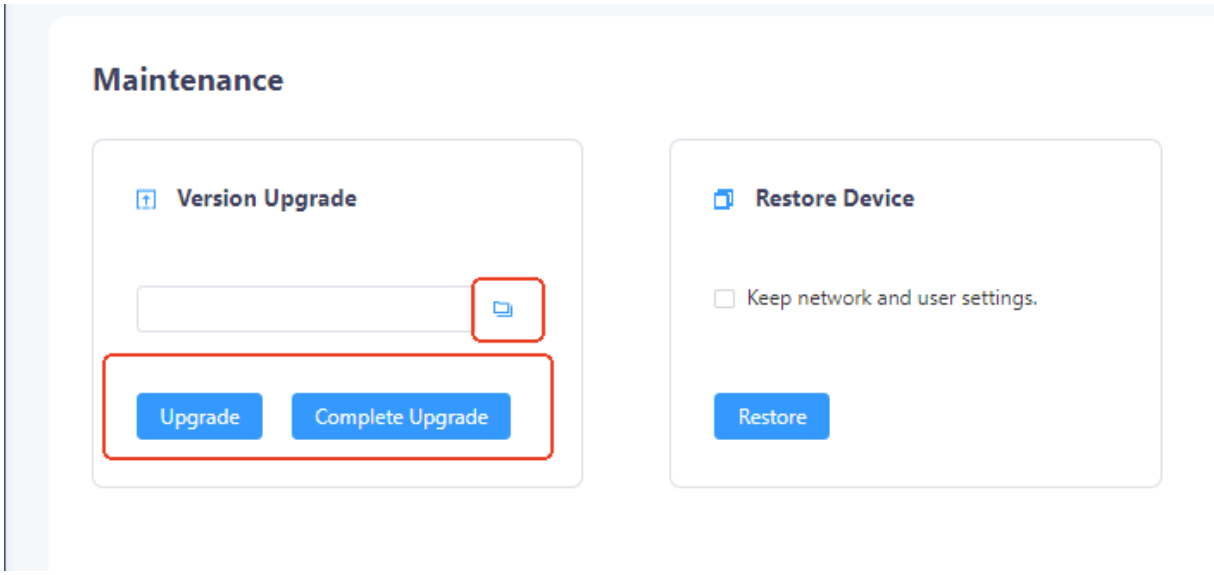


13 System Upgrade

CAUTION!
The software has been installed in the device before delivery.
Please enable **SSH** in **System Config** > **Security** before entering the device background.

13.1 Upgrade on the Web Interface

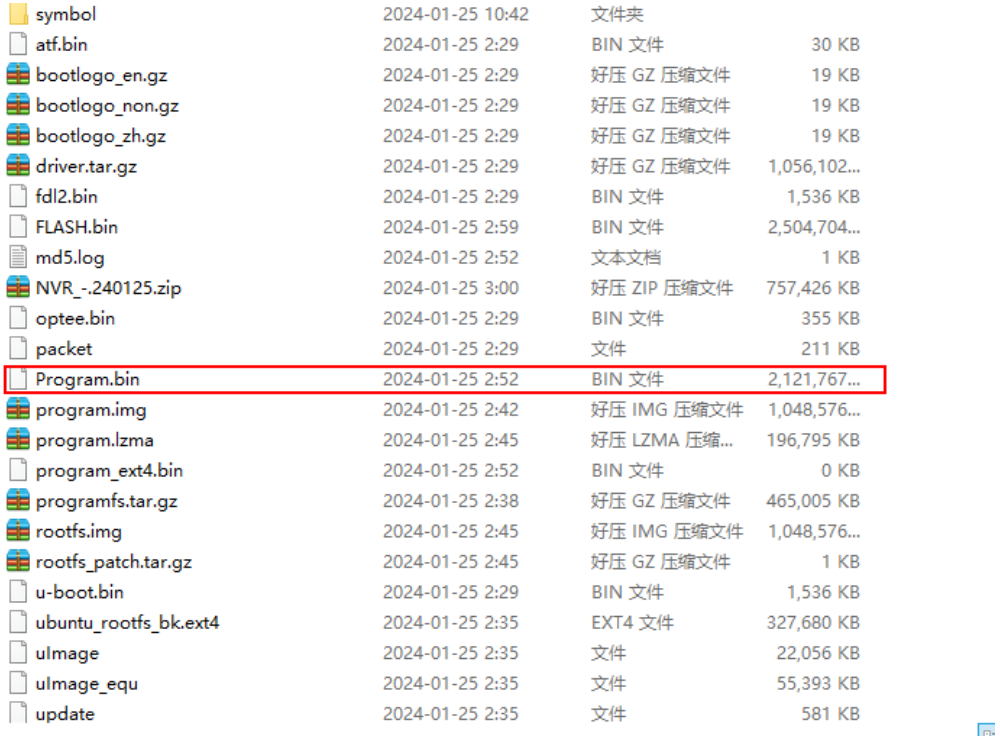
Go to **System Config** > **Maintenance**, click on the **Version Upgrade** tab, and choose the upgrade package. After the package is uploaded, click **Upgrade** or **Complete Upgrade**, and wait until the upgrade is successful. The upgrade means the compatibility upgrade, which will retain the device's network, channel, and intelligent service information, while complete upgrade will reset device's channel and network configuration.



13.2 Upgrade on the Background

1. Compatibility Upgrade

Open the **tftp64** tool, and select the directory containing the version's program.bin file. Enter the background of the device with the **SSH** tool, run the **update -tftp computer ip all -f** command, and the system will perform the compatibility upgrade that retains the network, channel, and intelligent service settings.



symbol	2024-01-25 10:42	文件夹	
atf.bin	2024-01-25 2:29	BIN 文件	30 KB
bootlogo_en.gz	2024-01-25 2:29	好压 GZ 压缩文件	19 KB
bootlogo_non.gz	2024-01-25 2:29	好压 GZ 压缩文件	19 KB
bootlogo_zh.gz	2024-01-25 2:29	好压 GZ 压缩文件	19 KB
driver.tar.gz	2024-01-25 2:29	好压 GZ 压缩文件	1,056,102...
fdl2.bin	2024-01-25 2:29	BIN 文件	1,536 KB
FLASH.bin	2024-01-25 2:59	BIN 文件	2,504,704...
md5.log	2024-01-25 2:52	文本文档	1 KB
NVR_-.240125.zip	2024-01-25 3:00	好压 ZIP 压缩文件	757,426 KB
optee.bin	2024-01-25 2:29	BIN 文件	355 KB
packet	2024-01-25 2:29	文件	211 KB
Program.bin	2024-01-25 2:52	BIN 文件	2,121,767...
program.img	2024-01-25 2:42	好压 IMG 压缩文件	1,048,576...
program.lzma	2024-01-25 2:45	好压 LZMA 压缩...	196,795 KB
program_ext4.bin	2024-01-25 2:52	BIN 文件	0 KB
programfs.tar.gz	2024-01-25 2:38	好压 GZ 压缩文件	465,005 KB
rootfs.img	2024-01-25 2:45	好压 IMG 压缩文件	1,048,576...
rootfs_patch.tar.gz	2024-01-25 2:45	好压 GZ 压缩文件	1 KB
u-boot.bin	2024-01-25 2:29	BIN 文件	1,536 KB
ubuntu_rootfs_bk.ext4	2024-01-25 2:35	EXT4 文件	327,680 KB
uImage	2024-01-25 2:35	文件	22,056 KB
uImage_equ	2024-01-25 2:35	文件	55,393 KB
update	2024-01-25 2:35	文件	581 KB

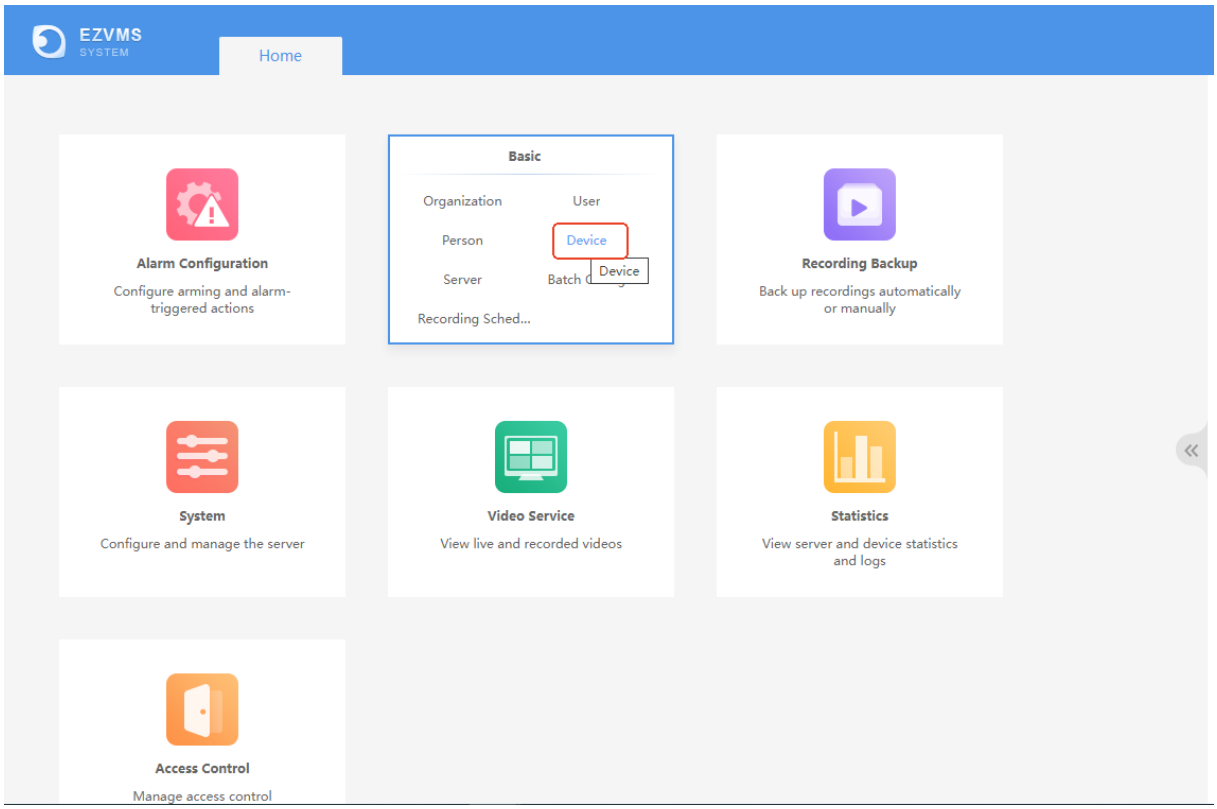
2. Complete Upgrade

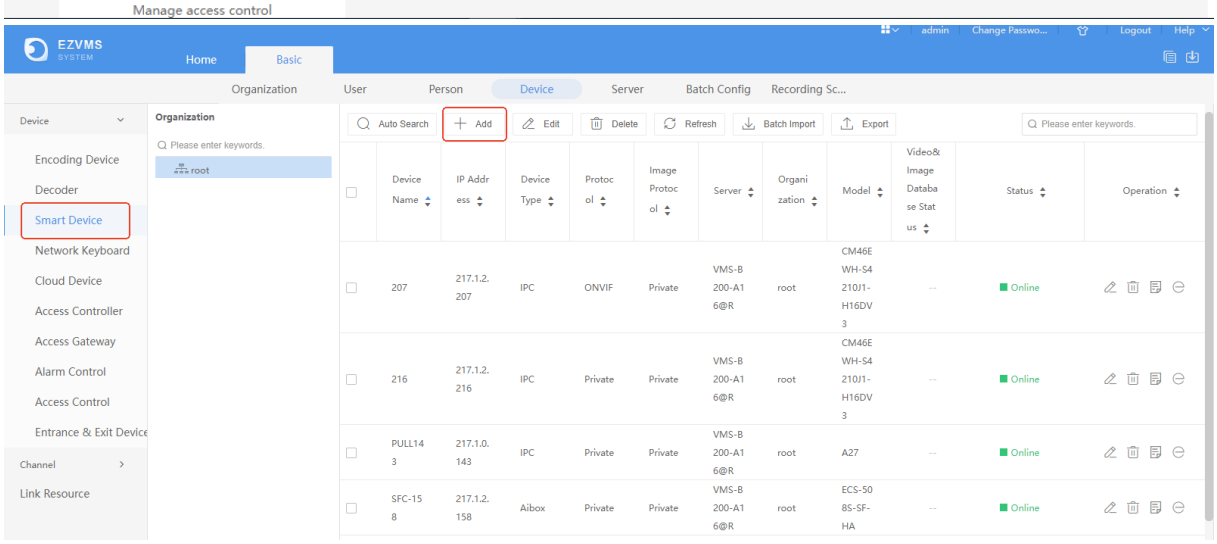
Open the **tftp64** tool, and select the directory containing the version's program.bin file. Enter the background of the device with the **SSH** tool, run the **update -tftp computer ip all config -f** command, and the system will perform the complete upgrade that resets the channel, network, and other settings.

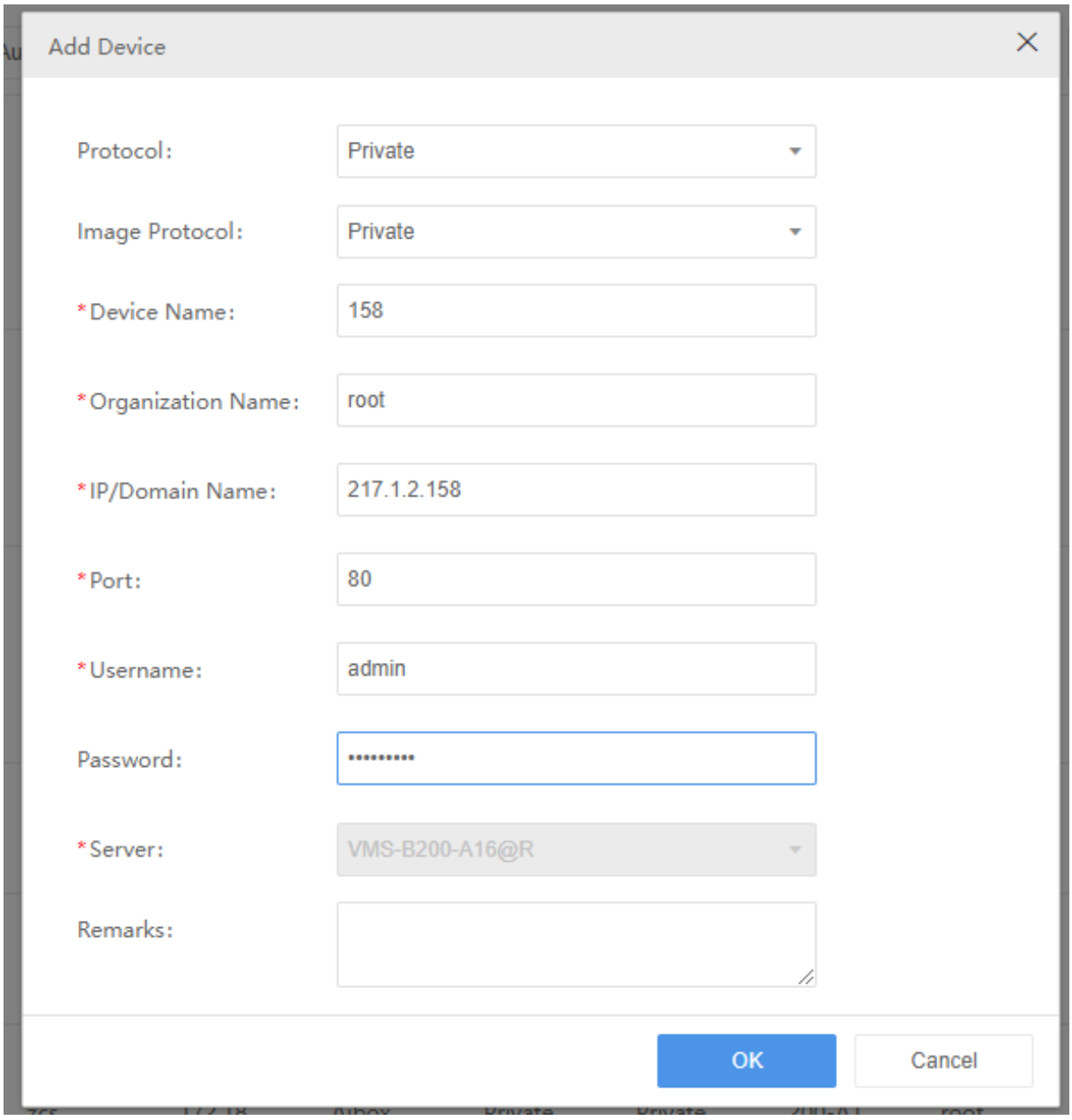
14 Platform Access

14.1 VMS Platform Configuration

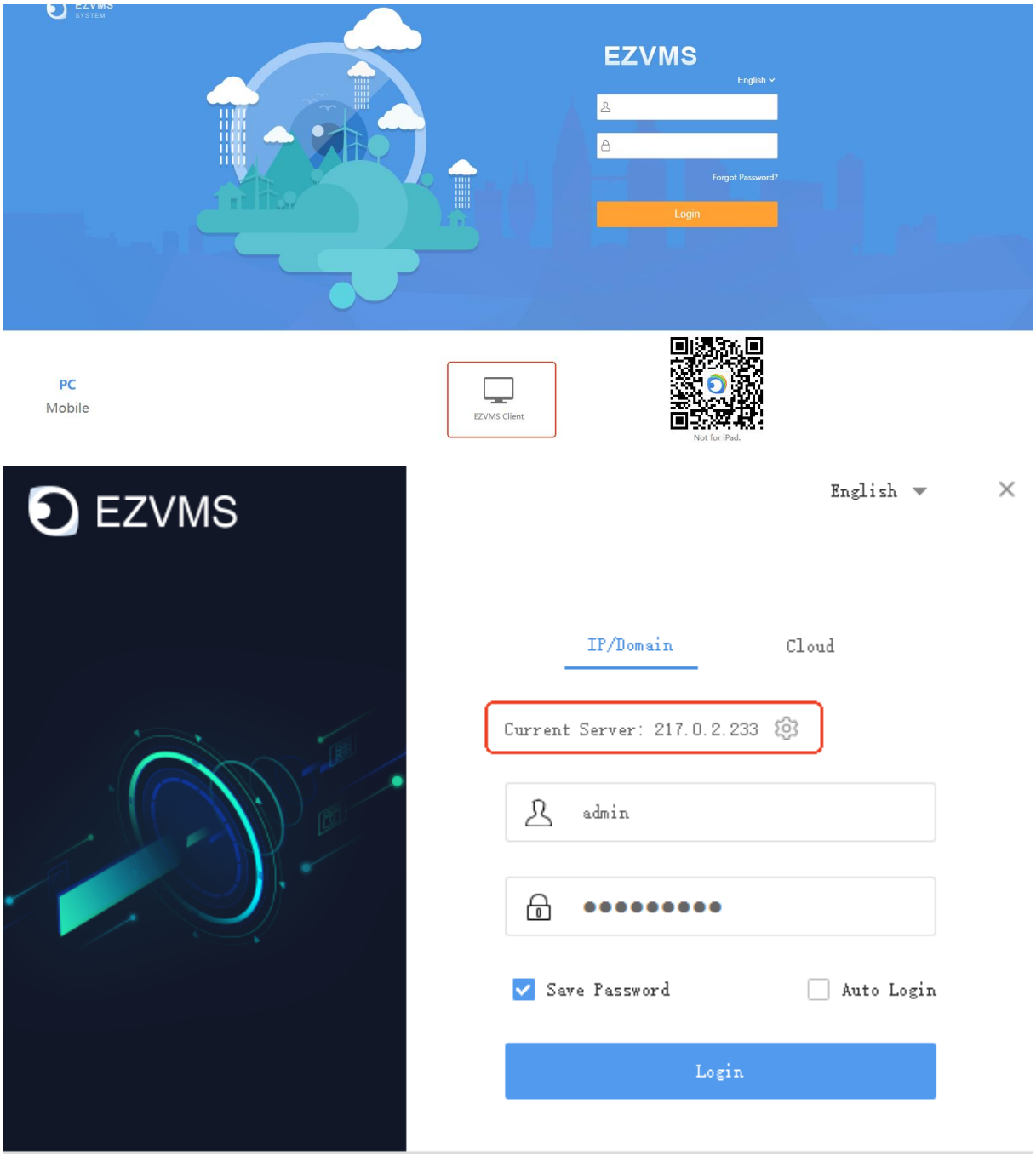
1. Log in to the VMS's web interface, go to **Basic** > **Device** > **Smart Device**, and click **Add** to add the device.


EZVMS
SYSTEM
Home
Alarm Configuration
Configure arming and alarm-triggered actions
Basic
Organization
User
Person
Device
Server
Batch C
Device
Recording Sched...
Recording Backup
Back up recordings automatically or manually
System
Configure and manage the server
Video Service
View live and recorded videos
Statistics
View server and device statistics and logs
Access Control
Manage access control

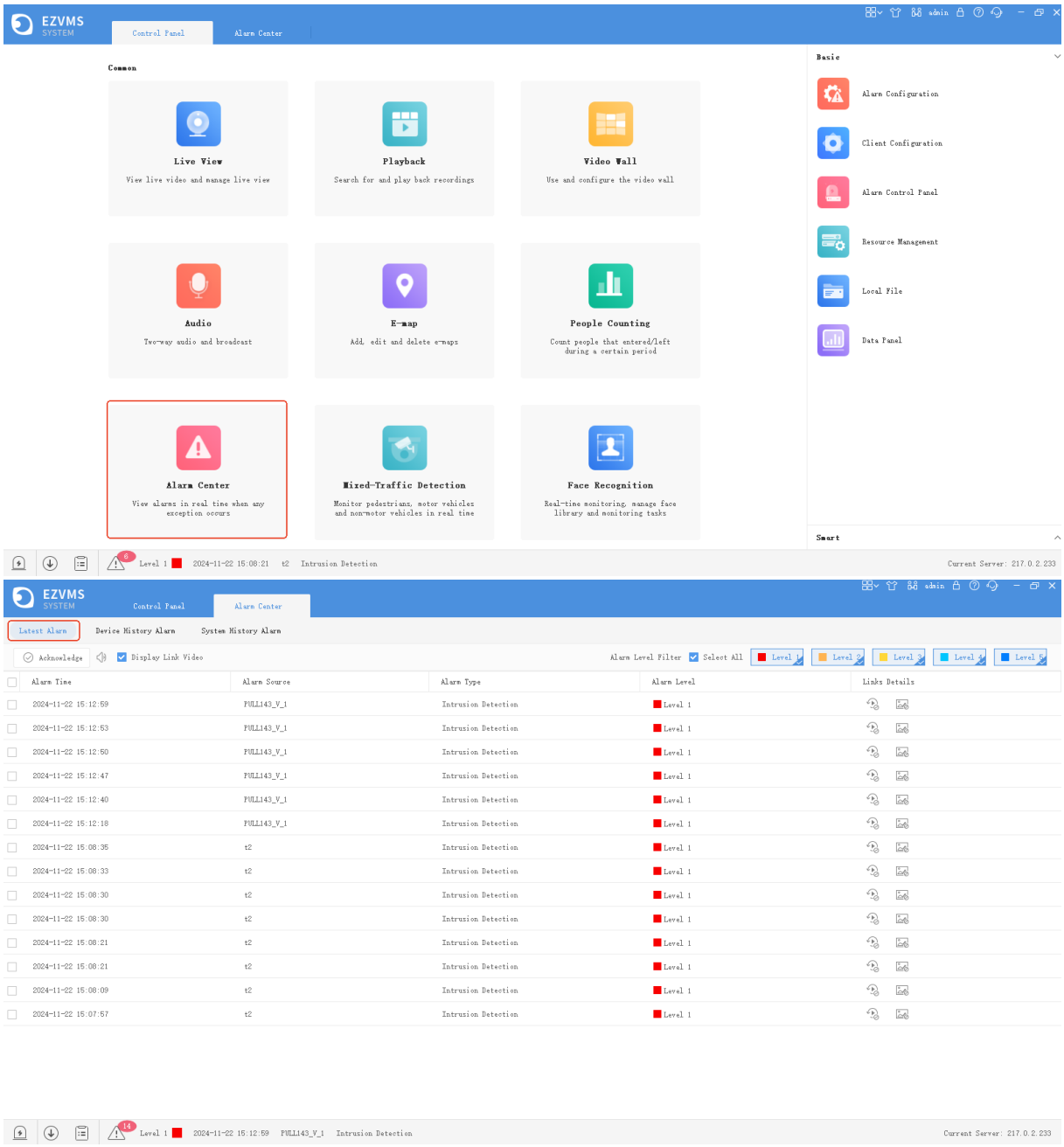

EZVMS
SYSTEM
Home
Basic
admin
Change Passwo...
Logout
Help
Organization
User
Person
Device
Server
Batch Config
Recording Sc...
Device
Encoding Device
Decoder
Smart Device
Network Keyboard
Cloud Device
Access Controller
Access Gateway
Alarm Control
Access Control
Entrance & Exit Device
Channel
Link Resource
Organization
Please enter keywords.
root
Auto Search
Add
Edit
Delete
Refresh
Batch Import
Export
Please enter keywords.
Device Name
IP Address
Device Type
Protocol
Image Protocol
Server
Organization
Model
Video&Image Database Status
Status
Operation
207
217.1.2.207
IPC
ONVIF
Private
VMS-B200-A16@R
root
CM46EWH-S4210J1-H16DV3
Online
216
217.1.2.216
IPC
Private
Private
VMS-B200-A16@R
root
CM46EWH-S4210J1-H16DV3
Online
PULL143
217.1.0.143
IPC
Private
Private
VMS-B200-A16@R
root
A27
Online
SFC-158
217.1.2.158
Aibox
Private
Private
VMS-B200-A16@R
root
ECS-508S-SF-HA
Online



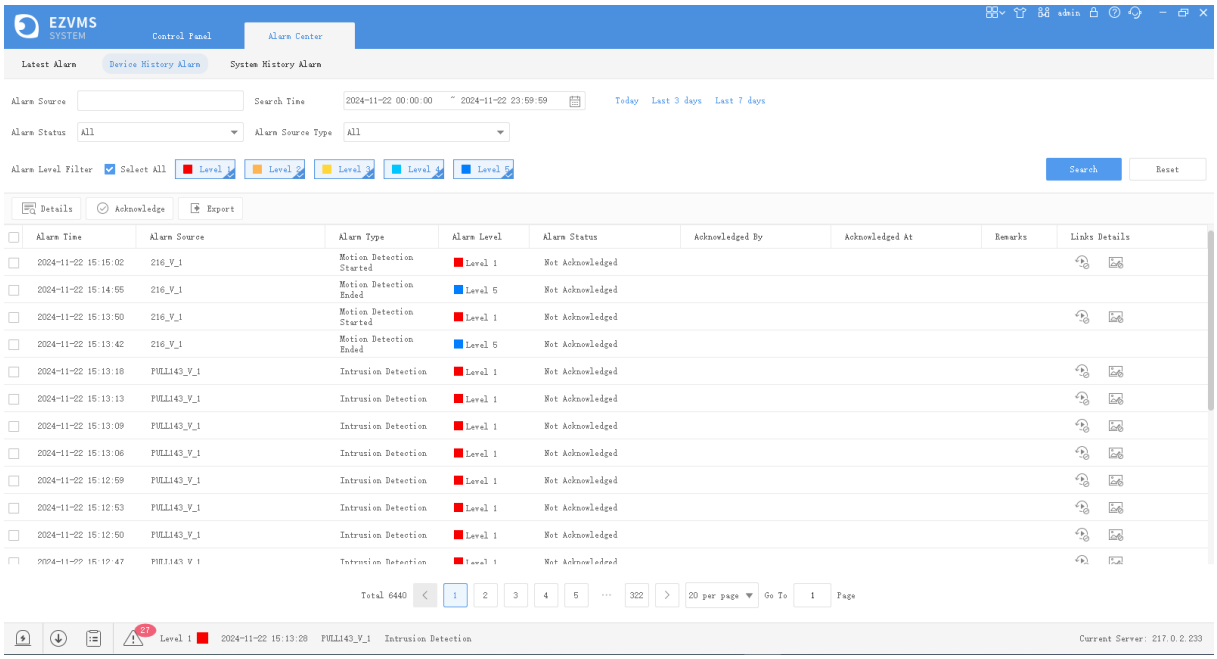
2. After the device goes online, log in to the VMS client to view the alarm records (the VMS client can be downloaded from the bottom of the VMS login page).



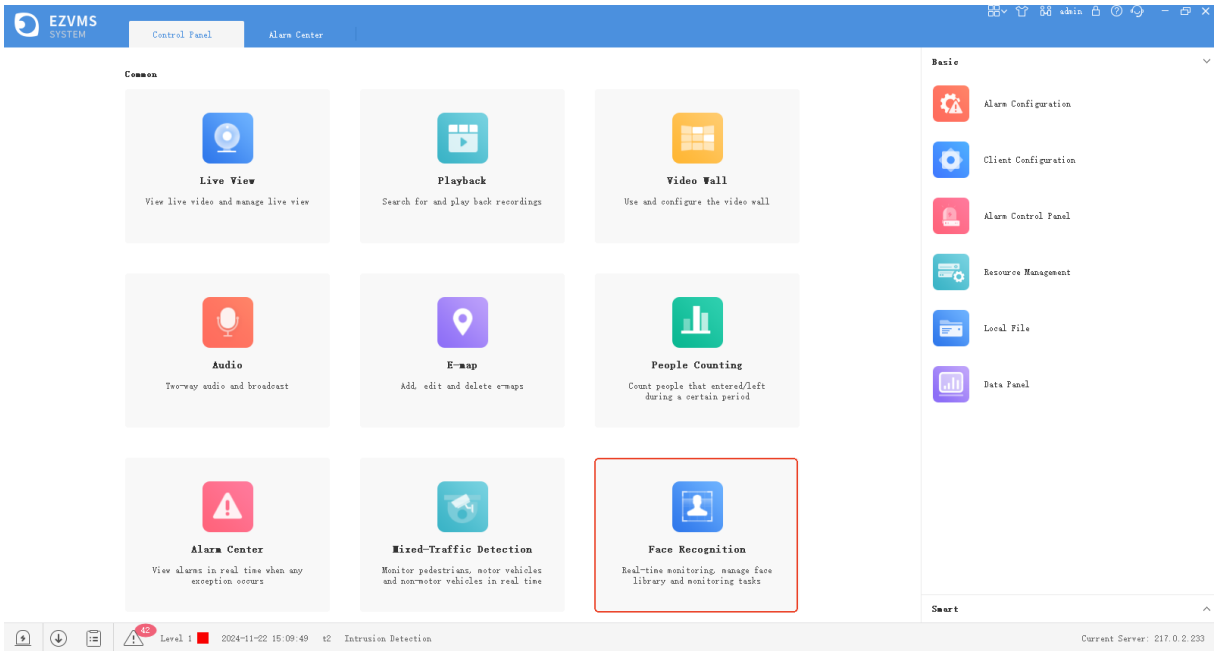
3. Go to **Control Panel** > **Alarm Center**, the **Latest Alarm** page shows the realtime alarm information, and the **Device History Alarm** page shows the server's historical alarm information. You can search alarm records on the **Device History Alarm** page based on the alarm source, alarm time, etc.

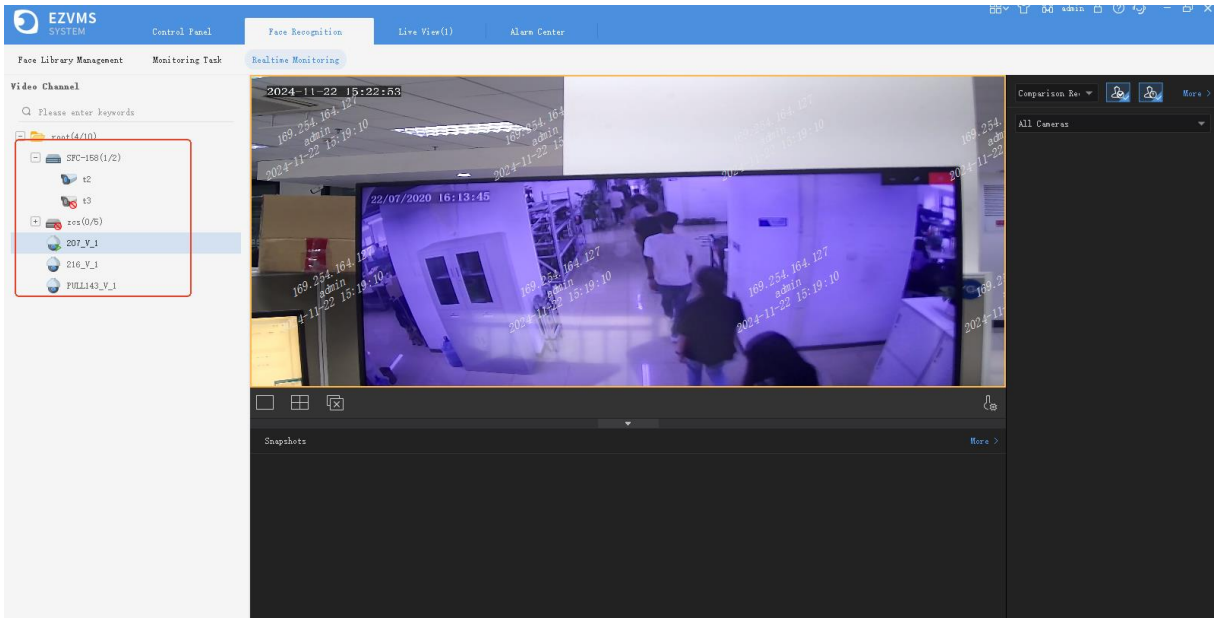

EZVMS
SYSTEM
Control Panel
Alarm Center
admin
Common
Live View
View live video and manage live view
Playback
Search for and play back recordings
Video Wall
Use and configure the video wall
Audio
Two-way audio and broadcast
E-map
Add, edit and delete e-maps
People Counting
Count people that entered/left during a certain period
Alarm Center
View alarms in real time when any exception occurs
Mixed-Traffic Detection
Monitor pedestrians, motor vehicles and non-motor vehicles in real time
Face Recognition
Real-time monitoring, manage face library and monitoring tasks
Basic
Alarm Configuration
Client Configuration
Alarm Control Panel
Resource Management
Local File
Data Panel
Smart
Level 1
2024-11-22 15:08:21
t2
Intrusion Detection
Current Server: 217.0.2.233

EZVMS
SYSTEM
Control Panel
Alarm Center
admin
Latest Alarm
Device History Alarm
System History Alarm
Acknowledge
Display Link Video
Alarm Level Filter
Select All
Level 1
Level 2
Level 3
Level 4
Level 5
Alarm Time
Alarm Source
Alarm Type
Alarm Level
Links Details
2024-11-22 15:12:59 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:12:53 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:12:50 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:12:47 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:12:40 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:12:18 FULL143_V_1 Intrusion Detection Level 1
2024-11-22 15:08:35 t2 Intrusion Detection Level 1
2024-11-22 15:08:33 t2 Intrusion Detection Level 1
2024-11-22 15:08:30 t2 Intrusion Detection Level 1
2024-11-22 15:08:30 t2 Intrusion Detection Level 1
2024-11-22 15:08:21 t2 Intrusion Detection Level 1
2024-11-22 15:08:21 t2 Intrusion Detection Level 1
2024-11-22 15:08:09 t2 Intrusion Detection Level 1
2024-11-22 15:07:57 t2 Intrusion Detection Level 1
Level 1
2024-11-22 15:12:59
FULL143_V_1
Intrusion Detection
Current Server: 217.0.2.233

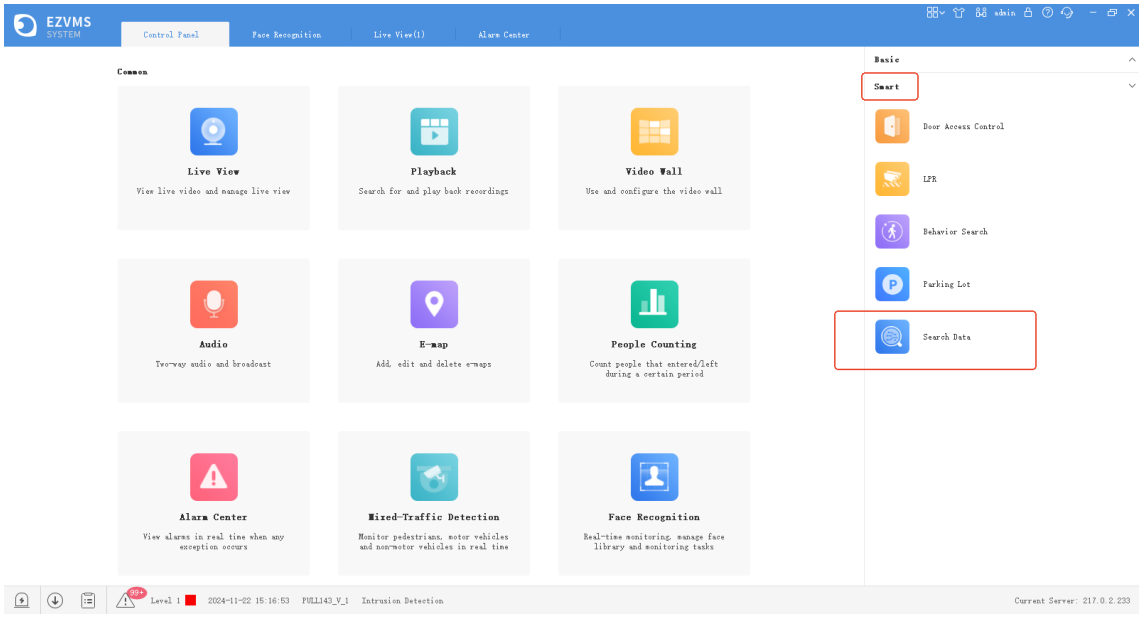


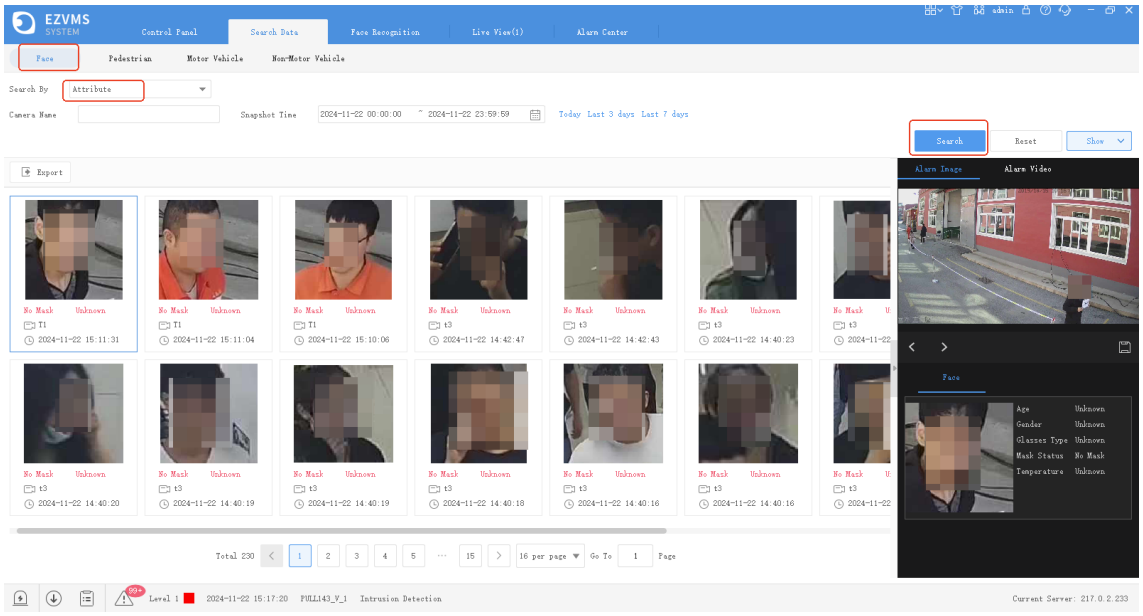
4. Go to **Face Detection**> **Realtime Monitoring**, and choose a channel. You can view the snapshot information in real time when the device captures faces.



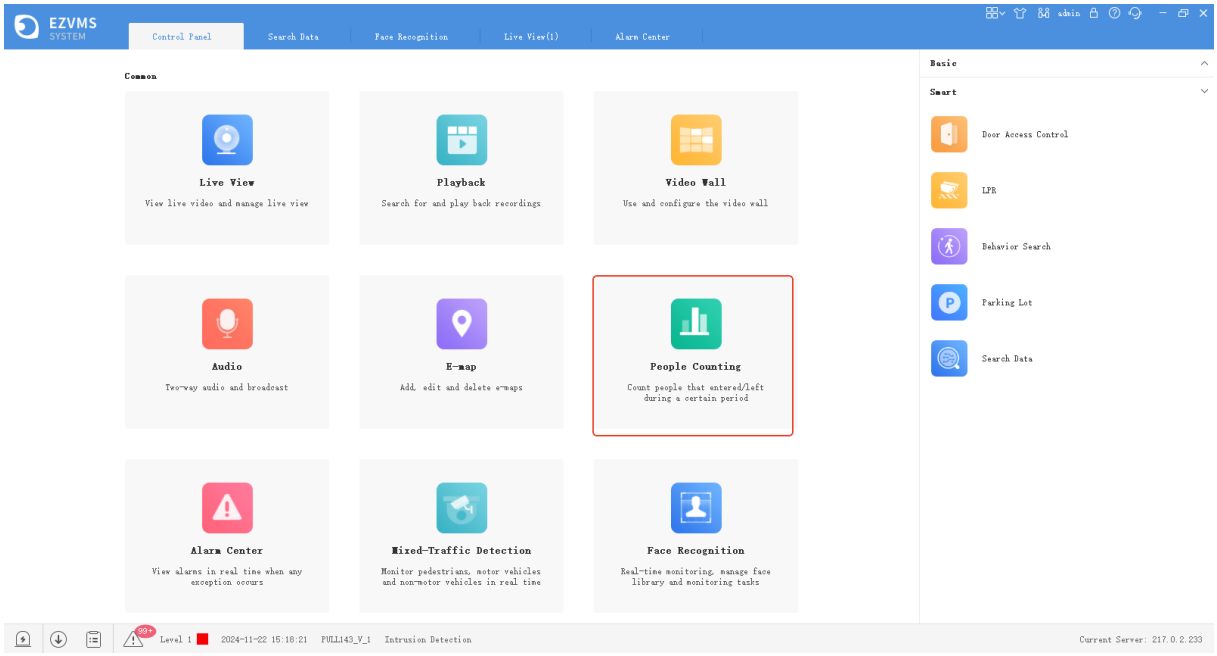


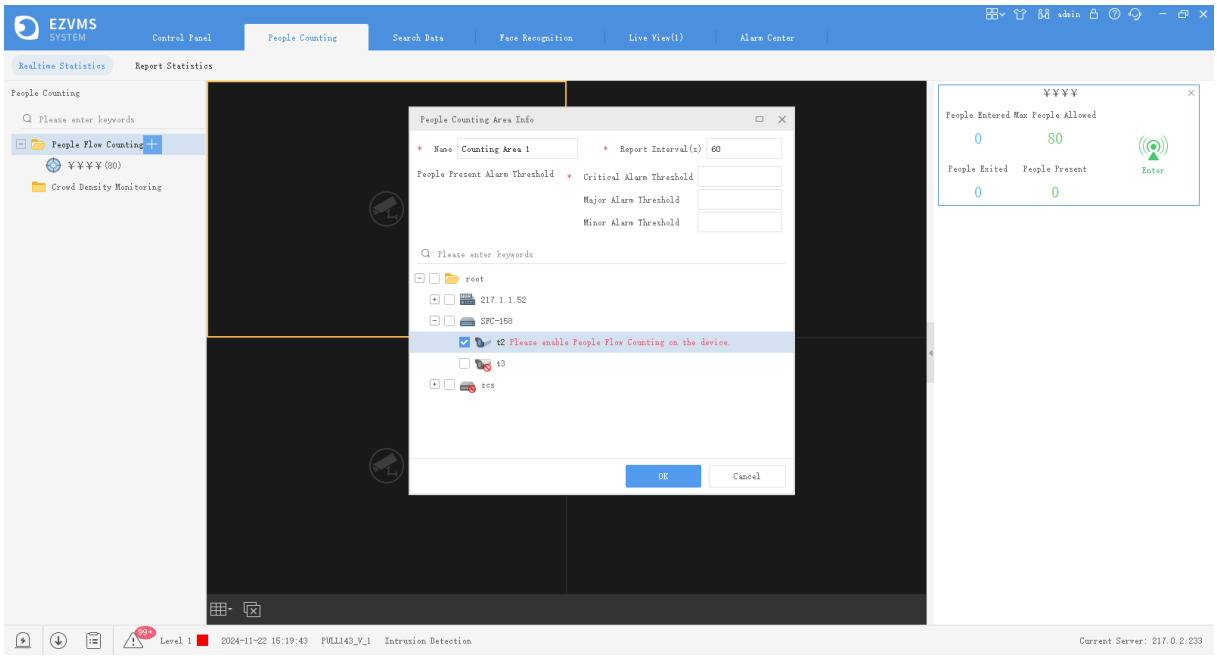
5. Go to **Control Panel** > **Smart** > **Search Data** > **Face**, set the search condition, click **Search**, and the historical face detection will be displayed.





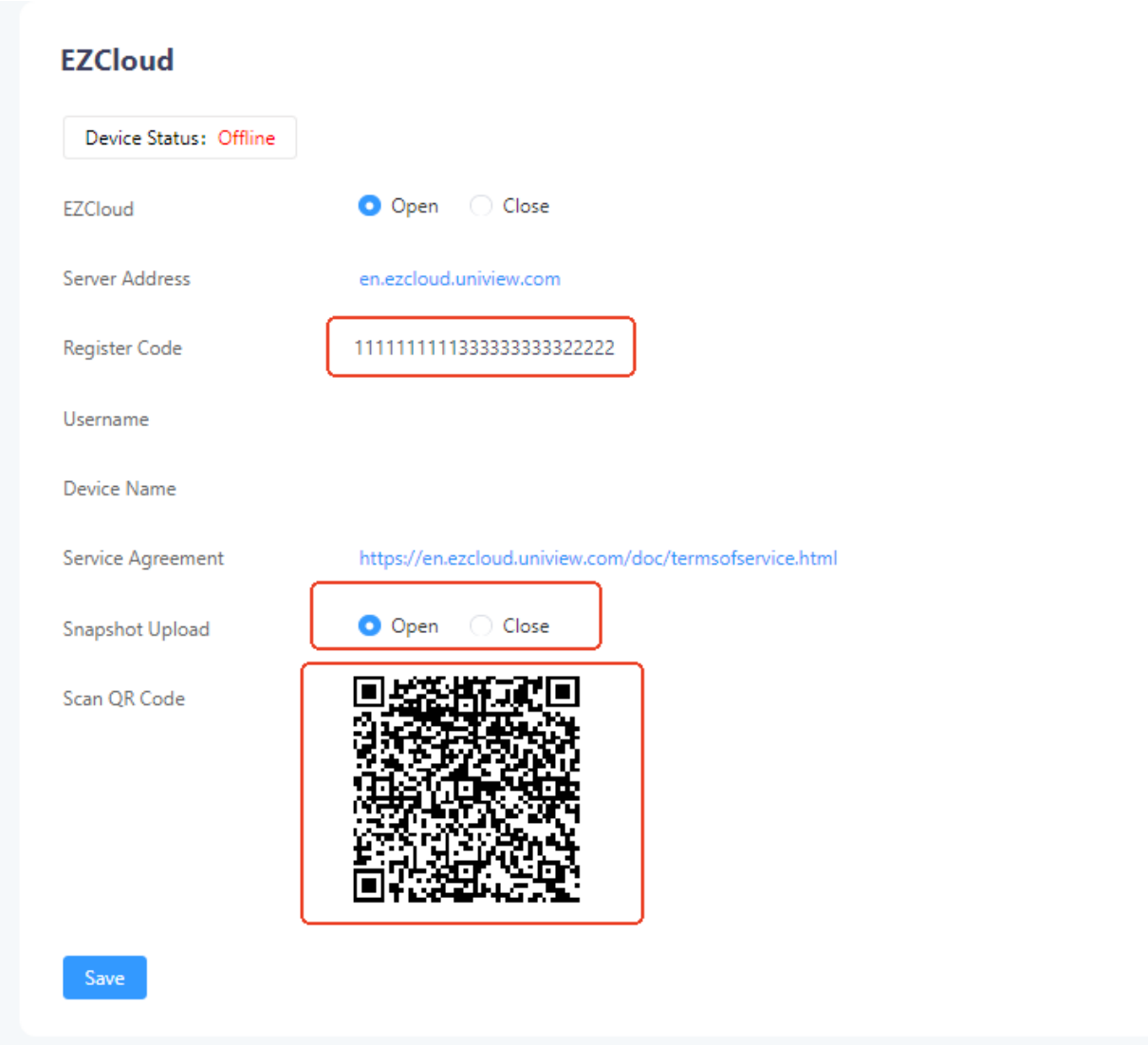
6. Go to **Control Panel** > **People Counting** > **Realtime Statistics** > **People Flow Counting**, click + to add a counting area, and then you can view the detailed people flow information in the current counting area. The alarm will occur if the number of people entered exceeds the number of people allowed.





14.2 EZCloud Platform Configuration

EZCloud is disabled by default. When enabled, the smart box will connect to the EZCloud platform. The IP address of the smart box must be in the same network segment as that of the EZCloud. When **Snapshot Upload** is enabled, you can view the alarm snapshots on the alarm record page of the EZCloud platform.

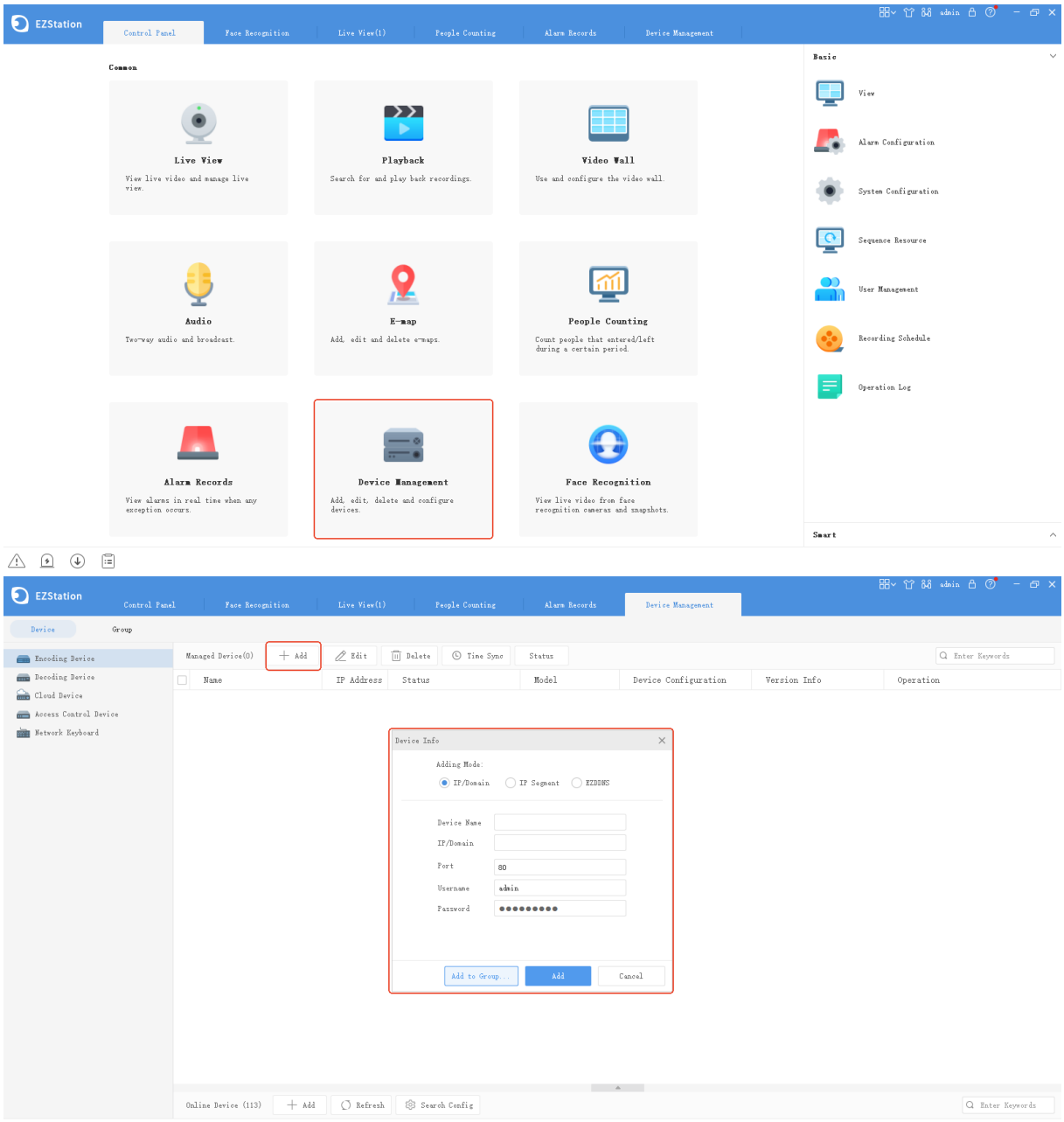


14.2.1 UNV-Link APP

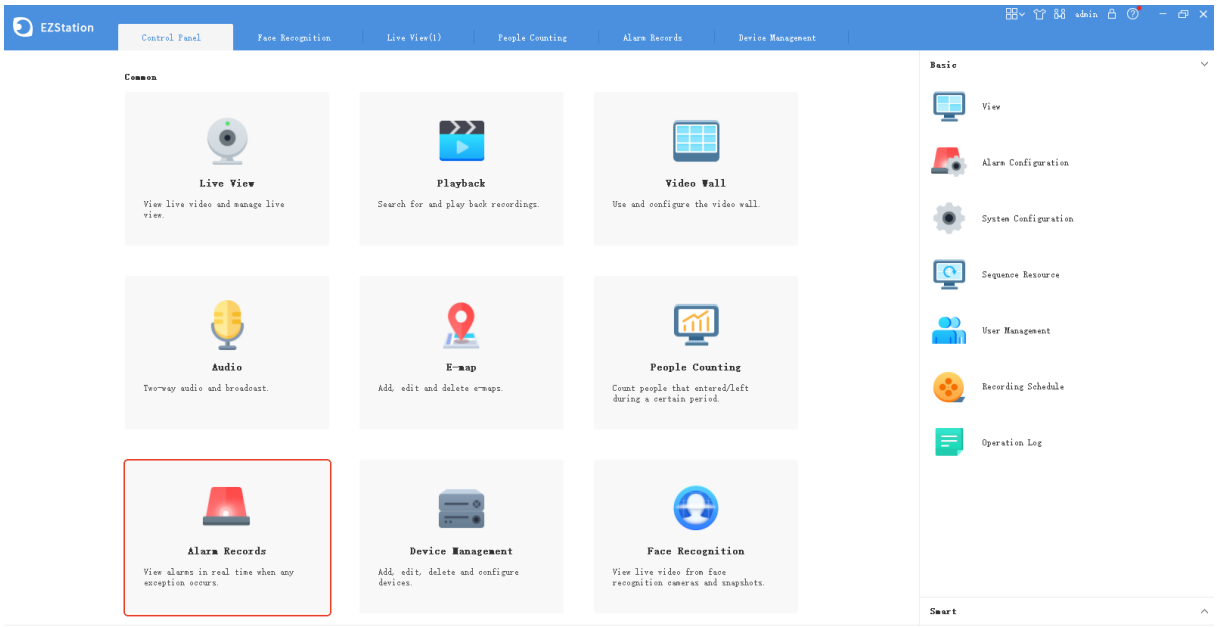
1. Log in to the UNV-Link app, tap **Add** in the upper-right corner of the screen. You can add the device by scanning the QR code or entering the register code.
2. Tap ..., enable alarm receiving, and the alarm will be sent to the app when an alarm is generated on the server.
3. Tap **Notification** to view the currently generated alarms.

14.3 EZStation Platform Configuration

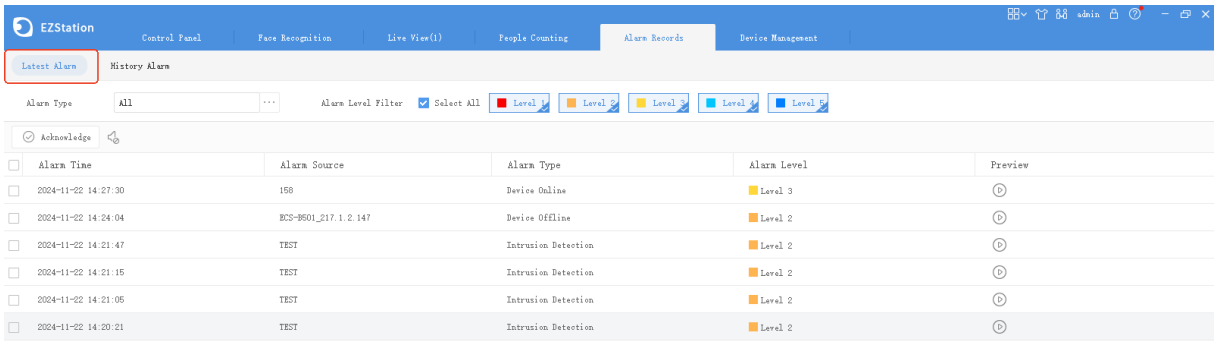
Log in to the EZStation client, and go to **Device Management** > **Device** > **Encoding Device**. Click **Add**, set the adding mode to **IP/Domain**, enter the device IP, port (80), username, and password, and click **Add**. Then, the added device will be displayed in the list.

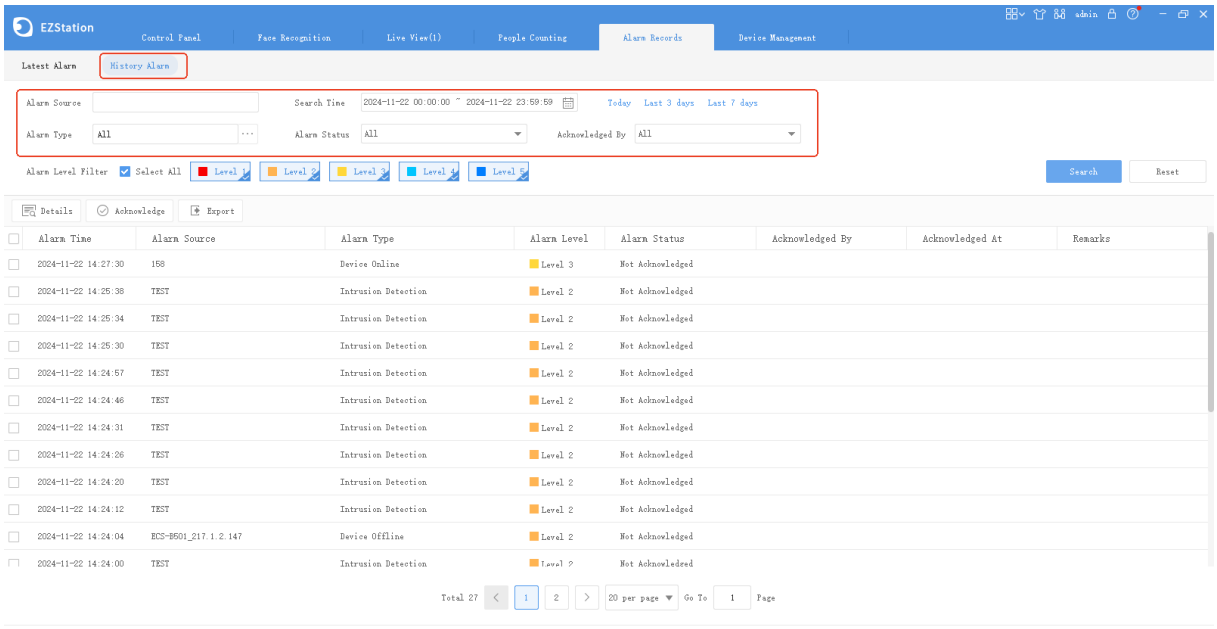


After the device goes online, you can view the reported behavioral analysis alarms on the **Alarm Records** page.

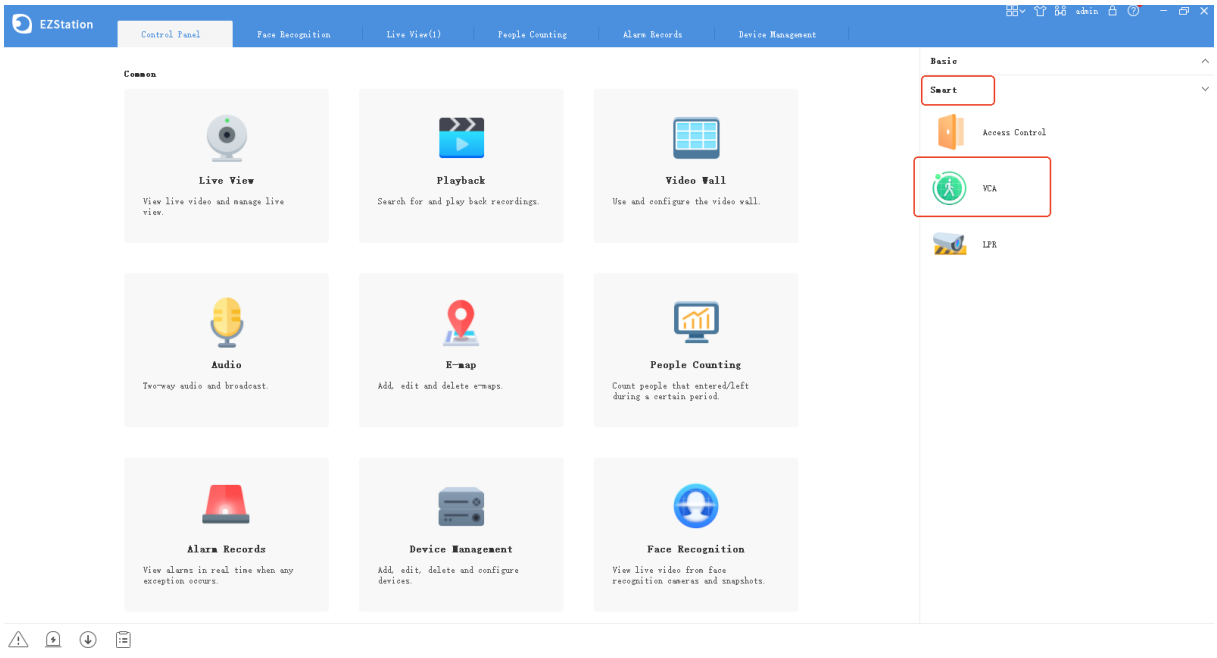


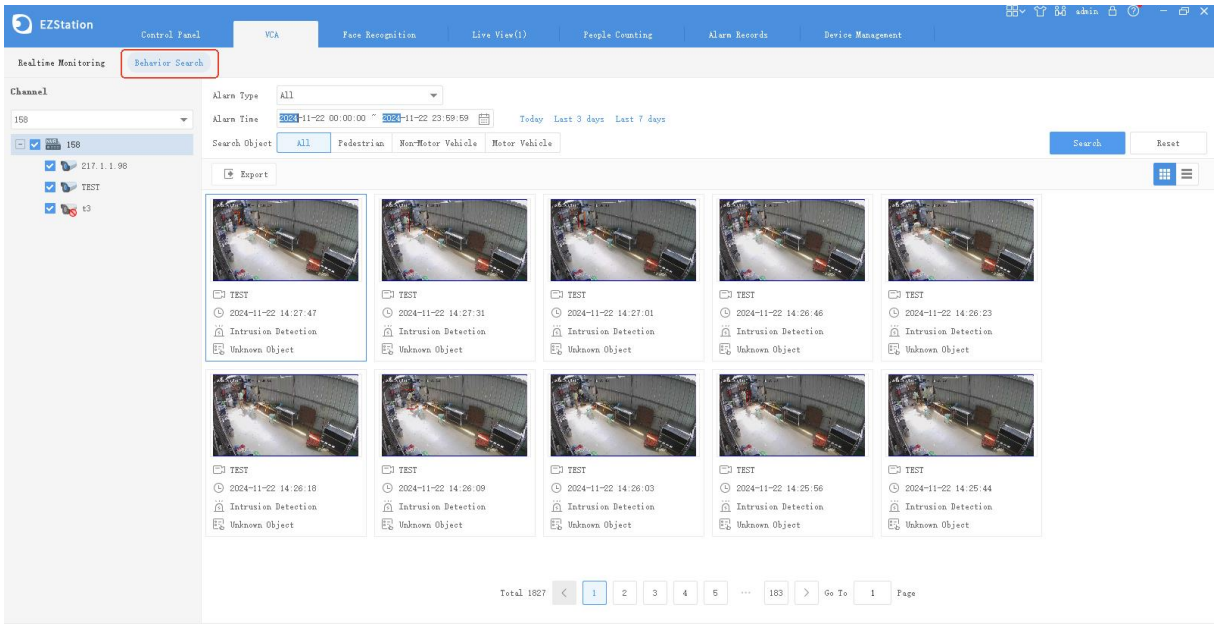
The **Latest Alarm** tab displays the device real-time alarms and historical alarms. You can search alarm records based on the alarm source, alarm time, and other conditions on the **History Alarm** tab.



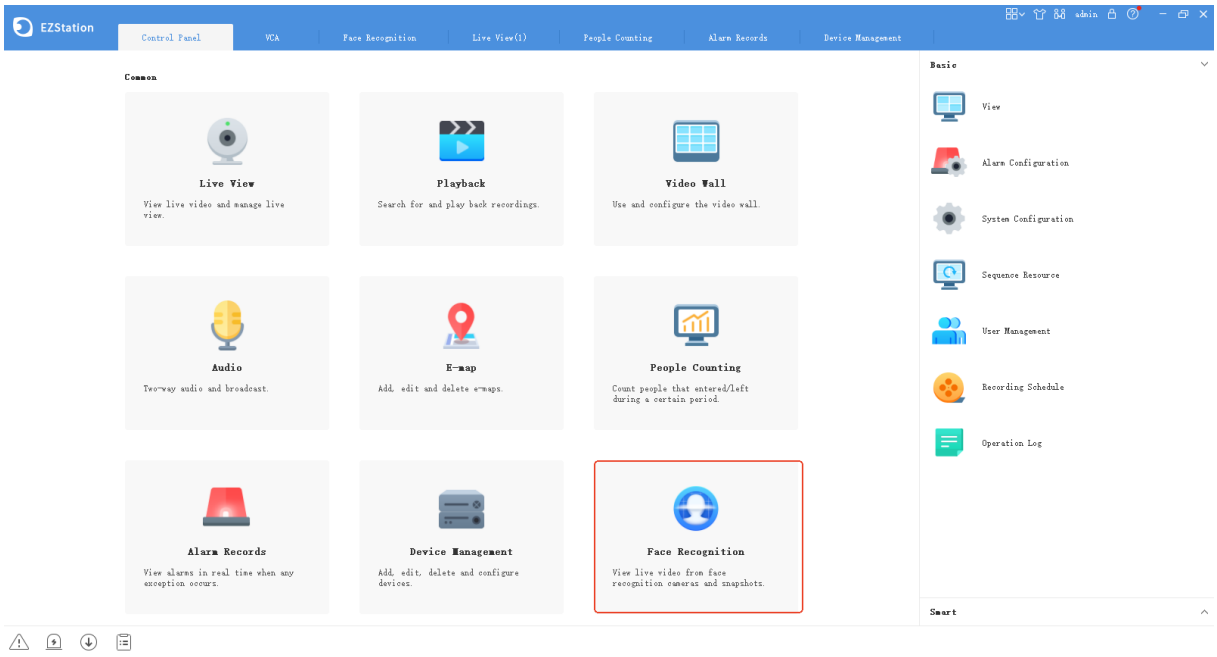


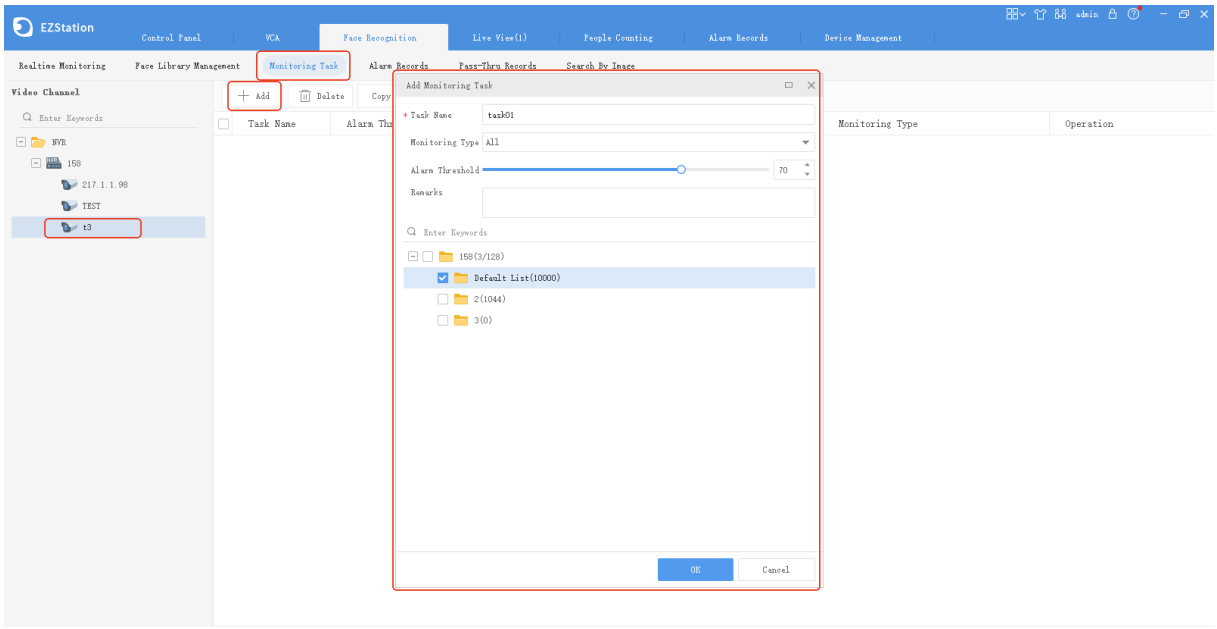
The behavior alarm snapshots can be displayed at **Smart** > **VCA** > **Realtime Monitoring/Behavior Search**.





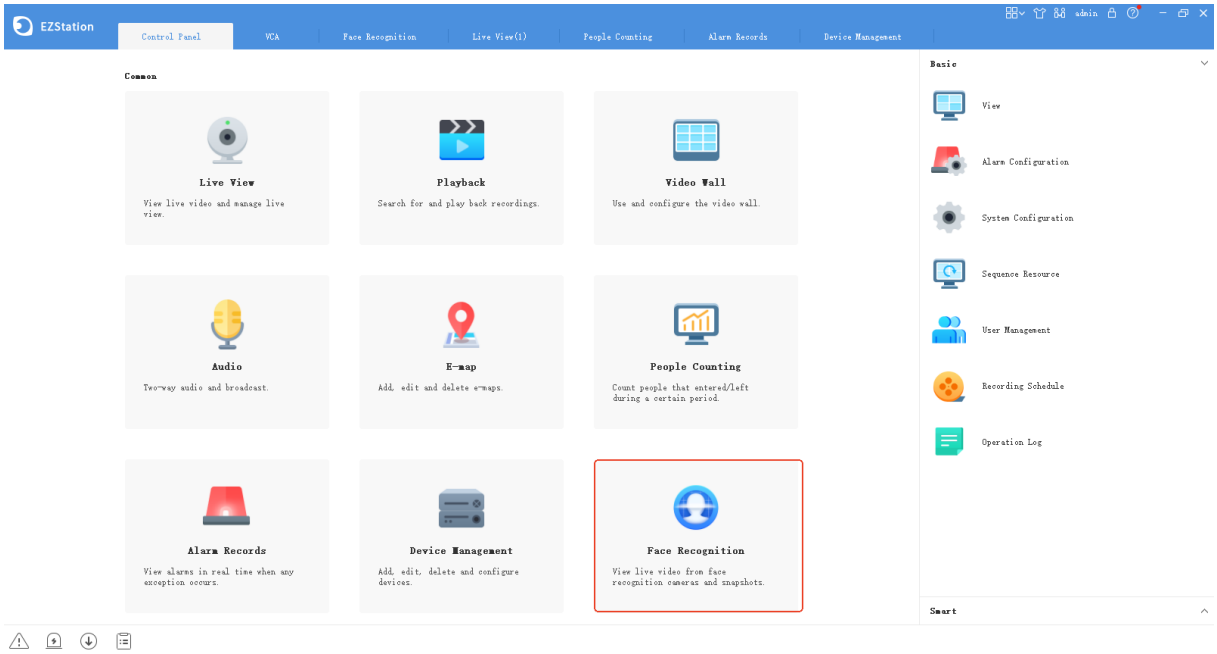
Go to **Face Detection** > **Monitoring Task**, choose a channel, click **Add** to add a monitoring task and sync it to the smart box.

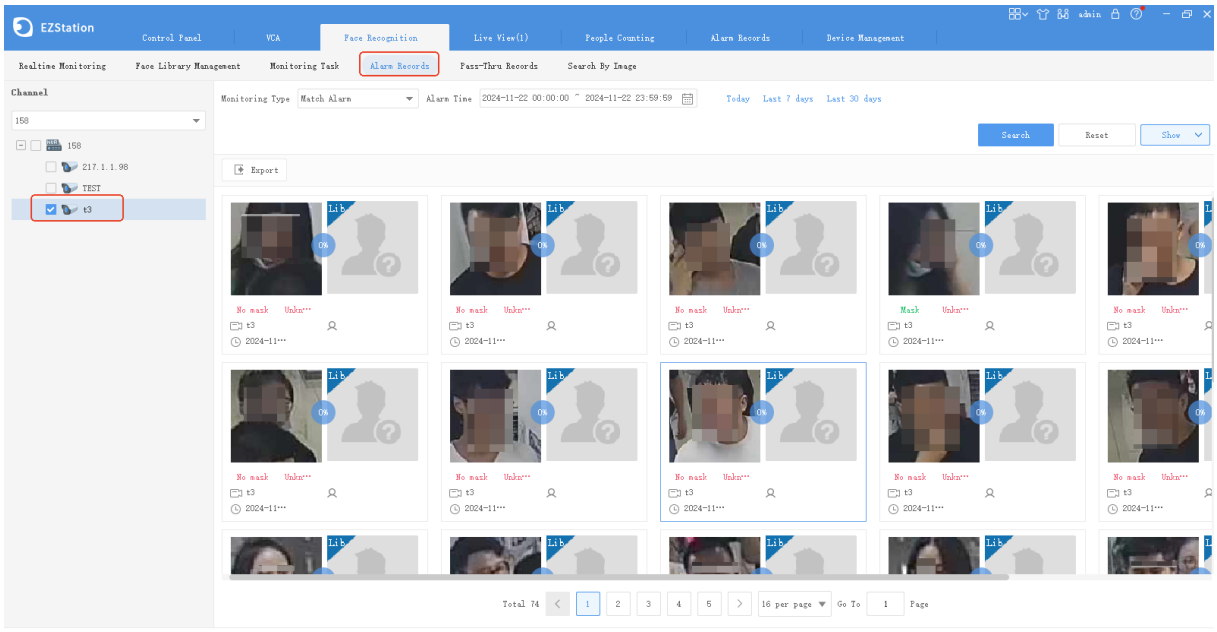




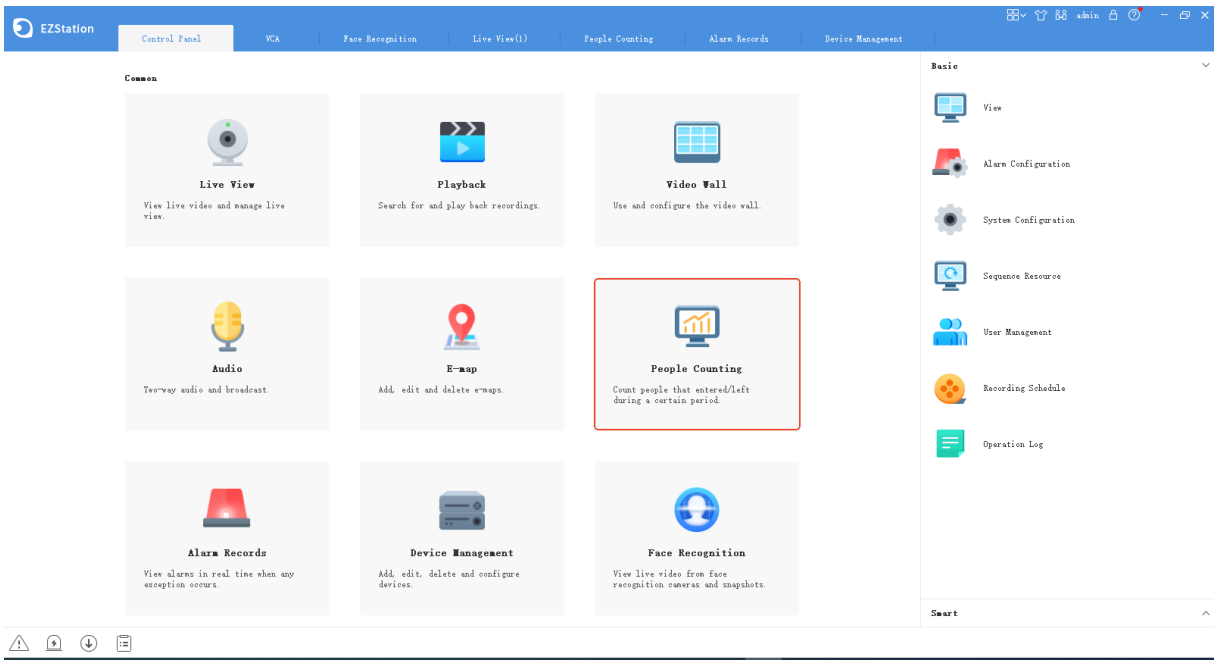
Go to **Face Detection** > **Realtime Monitoring**, and choose a channel. You can view the snapshot information in real time when the device captures faces.

Go to **Face Detection** > **Alarm Records**, and choose a channel. You can view the snapshot information in real time when the devices capture faces.

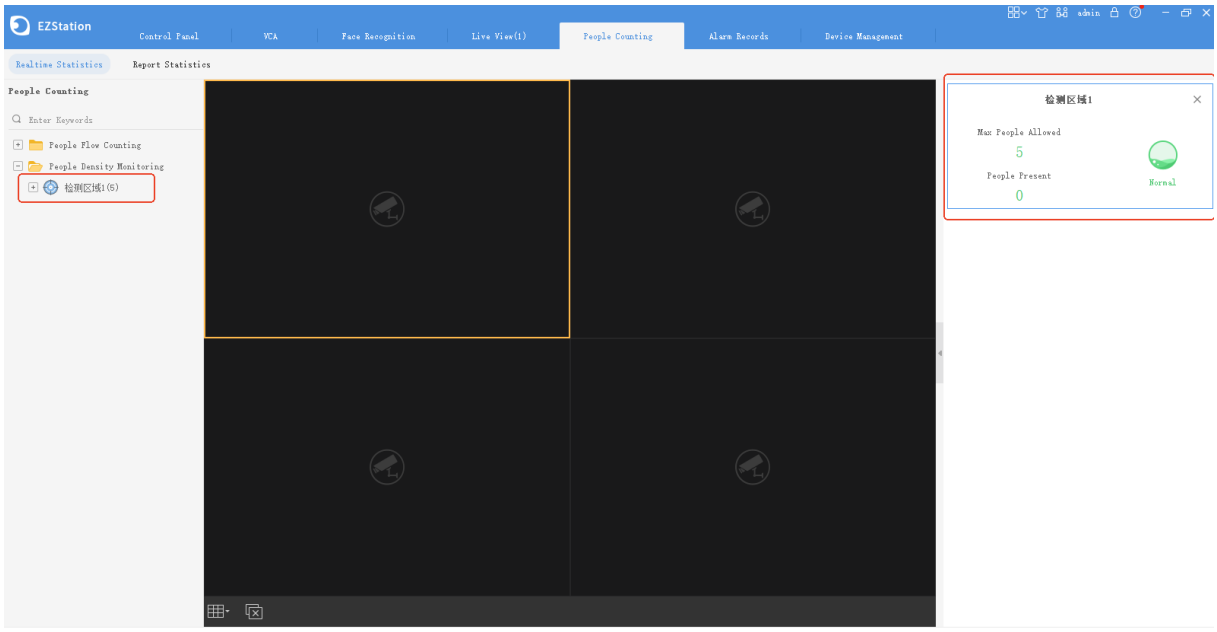




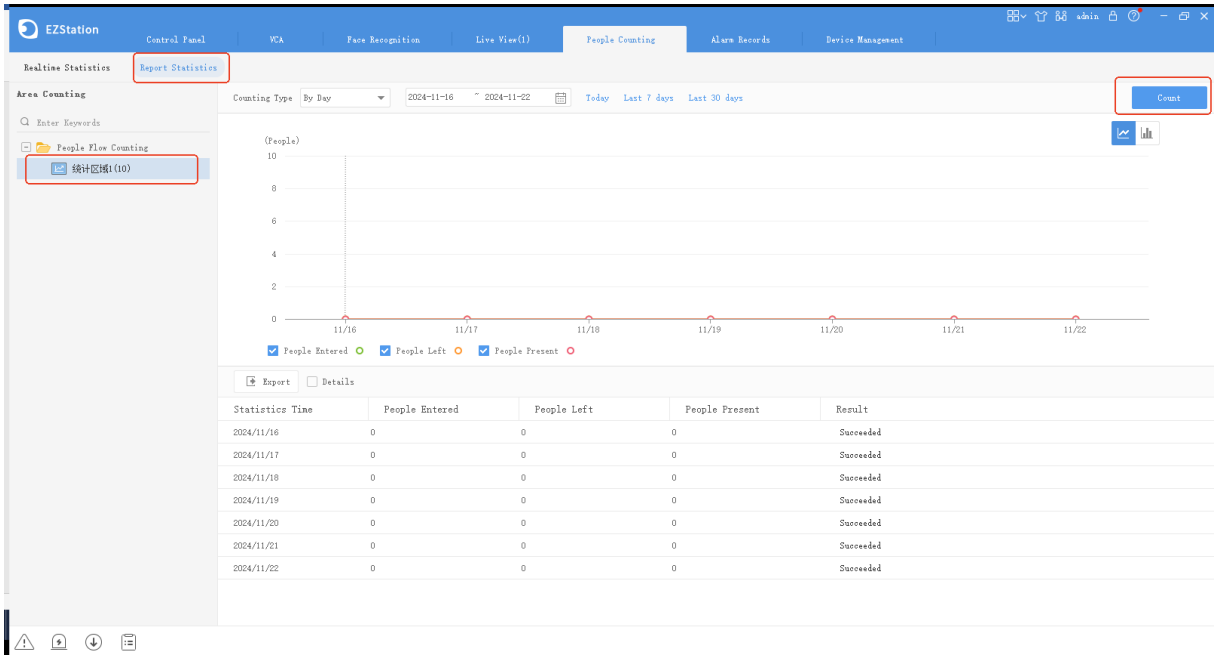
Enter the **People Counting** page, add a counting area, and then you can view the detailed people flow information in the current counting area. The alarm will occur if the number of people entered exceeds the number of people allowed.



The area people counting results will be displayed at **People Counting** > **Realtime Statistics** > **People Density Monitoring**.



The tripwire people counting results will be displayed at **People Counting** > **Report Statistics**.



15 FAQ

15.1 Survey Requirements

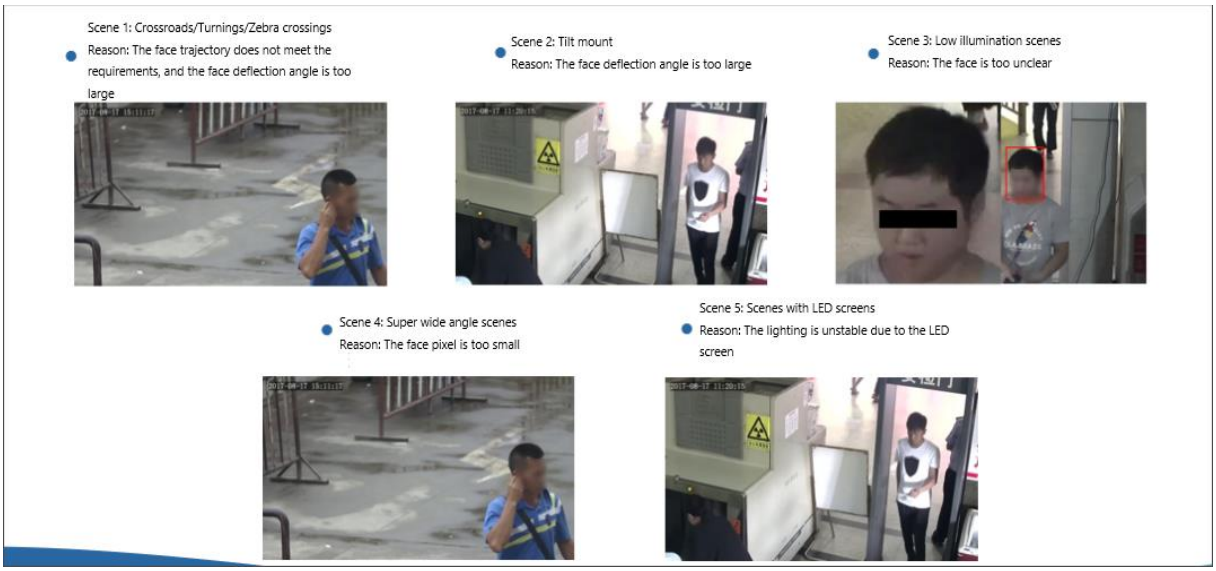
15.1.1 Face Requirements

1. 2MP camera, 1920*1080 pixels (1080P).
2. Camera mounting height: 1.9m to 2.3m; tilt angle: 10° to 15°; no image distortion.
3. Clear image, no occlusion.

4. Only color daytime images are supported; infrared and thermal images are not supported.

5. Examples of recommended scenes:

6. Examples of scenes that are not recommended:



15.1.2 General Behavior Requirements

1. 2MP camera, 1920*1080 pixels (1080P).

2. Camera mounting height: 2.5m to 4.0m (indoor), 3.0m to 5.0m (outdoor); tilt angle: 15° to 60° (best: 30° to 45°); no image distortion.

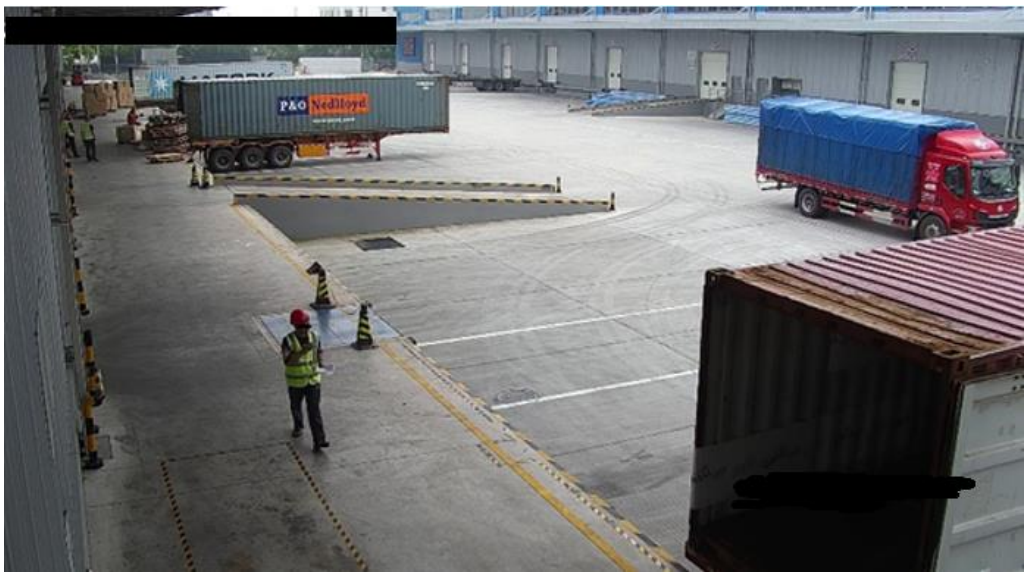
3. Clear image, no occlusion.

4. Only color daytime images are supported; infrared and thermal images are not supported.

5. Examples of recommended scenes:

Indoor scenes:

Outdoor scenes:



6. Examples of scenes that are not recommended:

Occlusion	Moving or staying crowds
	
Infrared light	**Strong backlight**