KEDACOM

User Manual for vStation Pro

Version 02
March 2020

Trademark

Kedacom™ and KEDACOM™ are registered trademarks of Suzhou Keda Technology Co., Ltd. in China and various other countries. All other trademarks mentioned in this document are the property of their respective holders.

Suzhou Keda Technology Co., Ltd.
131 Jinshan Road
New District, Suzhou, 215011
People's Republic of China
http://www.kedacom.com
Tel: +86-512-68418188
Fax: +86-512-68412699

© 2020 Suzhou Keda Technology Co., Ltd. All rights reserved.
Without the prior written permission of Suzhou Keda Technology Co., Ltd., any reproduction, translation or retransmission of all or any part of this document for any purpose in either electronic or mechanical form is not allowed.

Notice

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied. Suzhou Keda Technology Co., Ltd. is not responsible for printing or clerical errors.

Contents

About This Document

Intended Audience

This document is intended for the personnel who:

- Work with Network Video Recorders (NVRs)
- Know video surveillance basics

Document Versions

Version 02 (2020-03-26)

Compared with Version 01 (2019-12-17), Version 02 (2020-03-26) includes the changes described in the following table.

Change Type	Description
Feature change	Added viewing controls specific to fisheye cameras
Editorial change	Update screenshots.

Version 01 (2019-12-17)

Compared with Version 00 (2019-04-12), Version 01 (2019-12-17) includes the changes described in the following table.

Change Type	Description
Feature change	Added the following functions: • Face Detection • Vehicle Parking • Access Control • Visitor Traffic Statistics • Video Wall
Editorial change	Update screenshots.

Version 00 (2019-04-12)

This is a draft.

Compatibility

The following table provides the products, NVR software version, and vStation Pro version to which this document applies.

Product	All types of V7 NVRs **NOTE**: Unless otherwise specified, all functions in this document apply to all types of V7 NVRs.
NVR Software Version	All versions

vStation Pro Version	V7R1B2

Getting Started

Overview

The vStation Pro uses a server/client architecture, which means a vStation Pro Client (hereinafter referred to as the client) and a vStation Pro Server (hereinafter referred to as the server) are provided when you install the vStation Pro. One server can provide services for multiple clients.
With the client, you can view live videos, play back records, manage cameras, configure NVRs, and find persons of interest using artificial intelligence (AI) functions on maps.
The vStation Pro provides the following AI functions.

- Face Detection
- Figure Detection
- Vehicle Parking
- Access Control
- Visitor Traffic Statistics

Installing the vStation Pro

Preparations

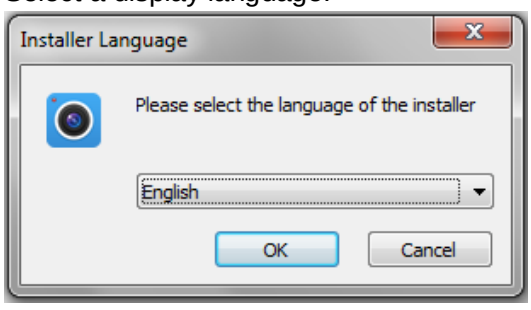
Ensure that your personal computer (PC) has the following configurations:

- Operating system: 32/64-bit Windows 7/10
- Processor: Intel Pentium IV 3.0 GHz or higher
- Memory: 2 GB or larger
- Resolution: 1280*720 or higher
- NIC speed: 1000 Mbps

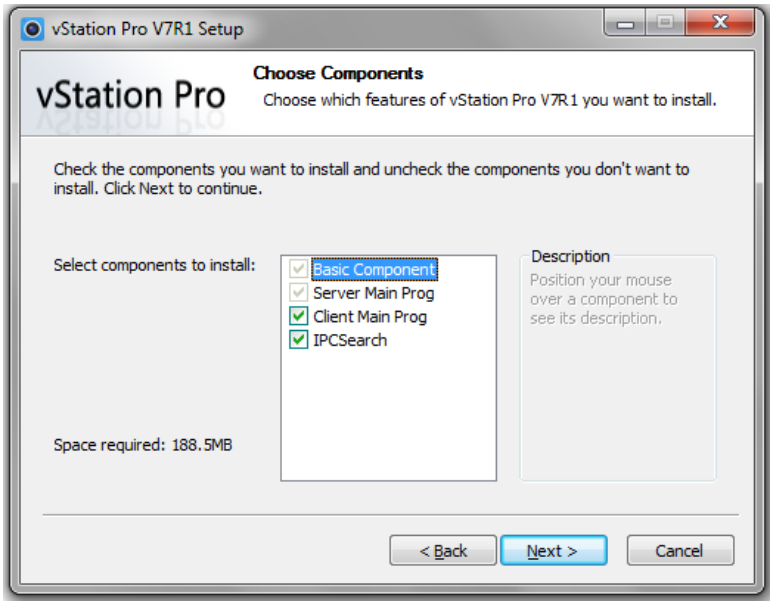
Procedure

To install the vStation Pro:

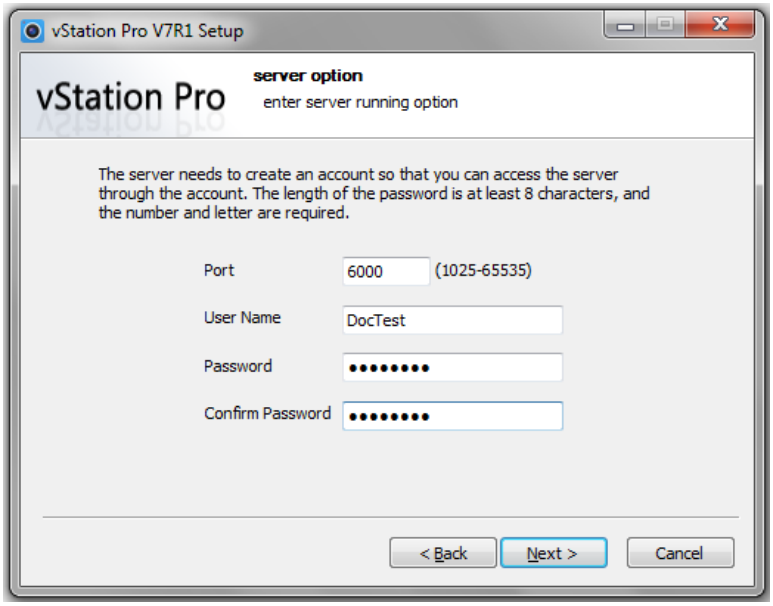
1. Download the **vStationProSetup.exe** from the CD-ROM of the product package.
2. Double-click **vStationProSetup.exe**.
3. Select a display language.



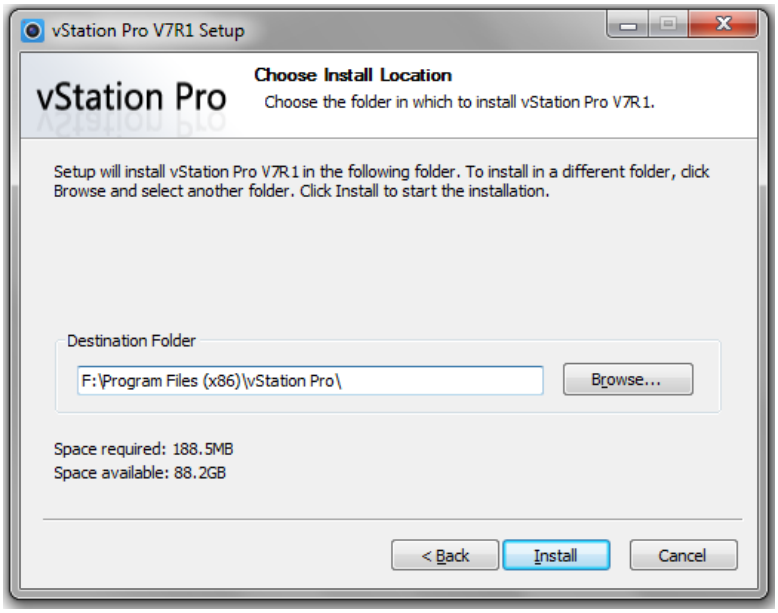
4. Follow the instructions.
   If you want to install only the server, deselect **Client Main Prog** and **IPCSearch**.



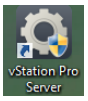
5. Create an account of the server installed on your PC.
   The following is an example.

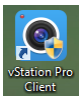


   This account is also the unique administrator of the client. In this document, this account is applied. The **Port** can be any port (from the range 1025-65535) on your PC and this port will be assigned to the server. This port is configurable and details are provided in section "Configuring the Server".
6. Click **Next**.
7. Select a path and click **Install**.



8. Click **Finish** when the installation is completed.

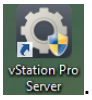
After the preceding steps are performed, you can find the 

and 

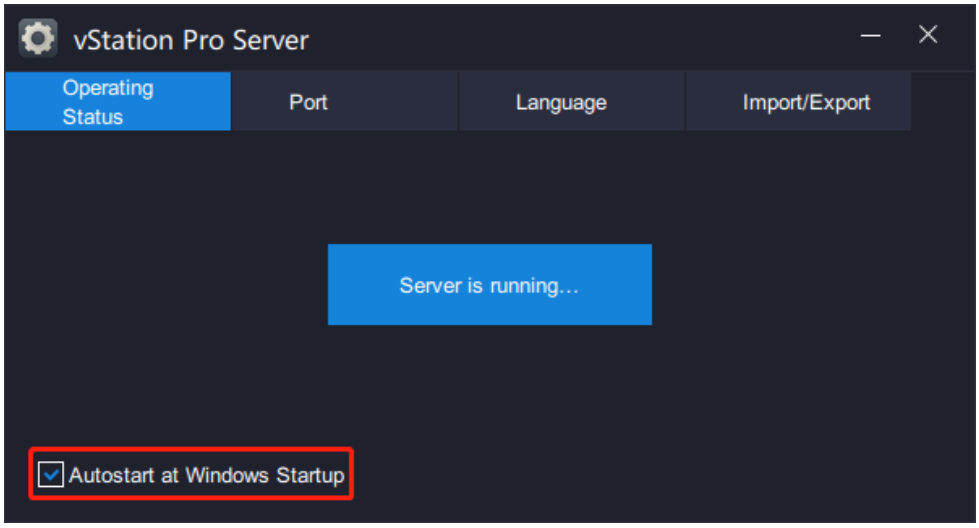
icons on the desktop.

Configuring the Server

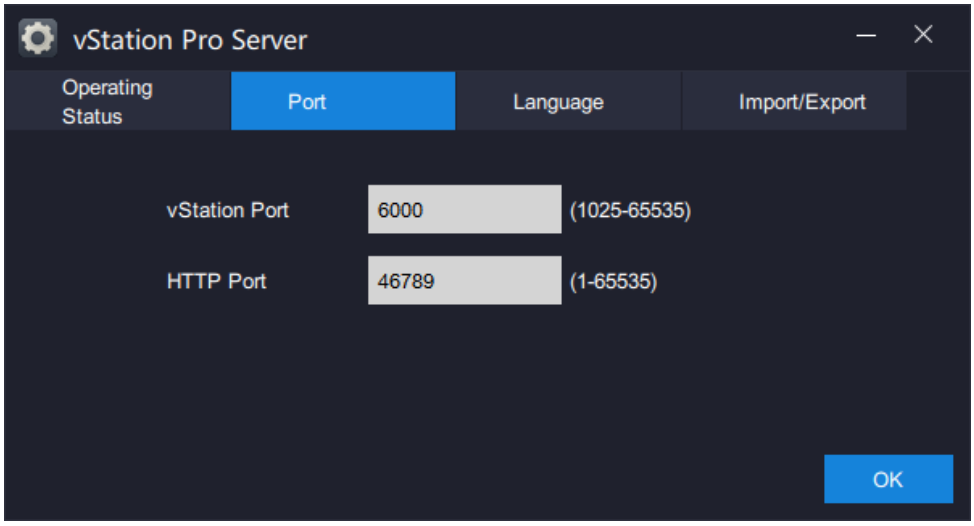
To configure the server:

1. Double-click 

.
2. Under **Operating Status**, determine whether to enable the server to start up together with the Windows startup.



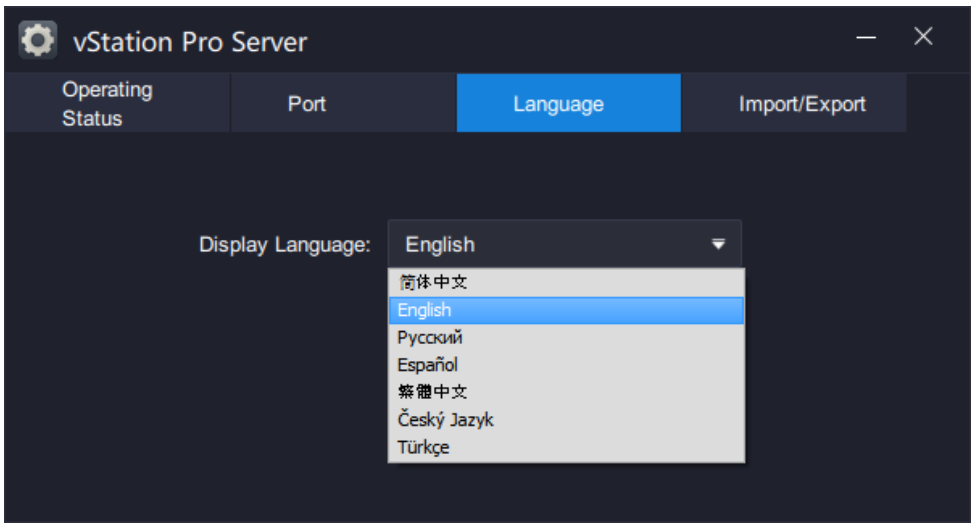
   In this step, you can check the server status.
3. Under **Port**, you can configure the server port and HTTP port.



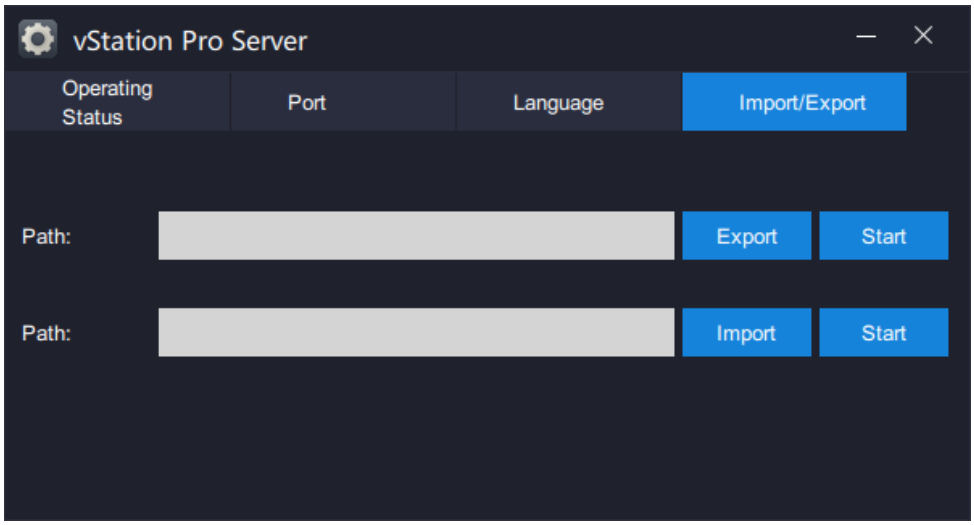
vStation Port: This is a port on your PC and it is assigned to the server.

HTTP Port: This is also a port on your PC and it is assigned to the server. This port is used to receive face/figure detection captures and face detection alarms pushed from an AI NVR. For details, see step 10 of section "Arming AI Cameras".

4. Under **Language**, you can choose a display language for the server.

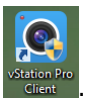


5. Under **Import/Export**, you can import or export configurations of NVRs.

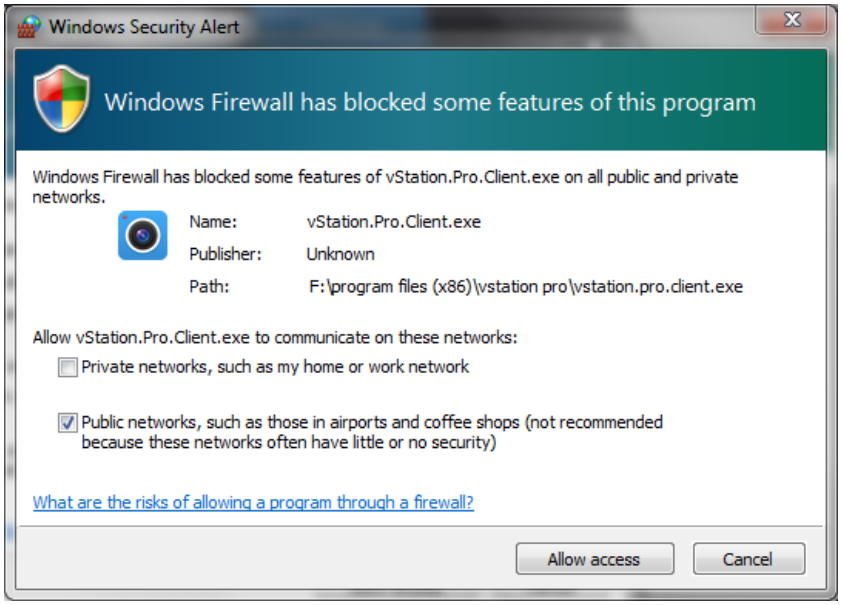


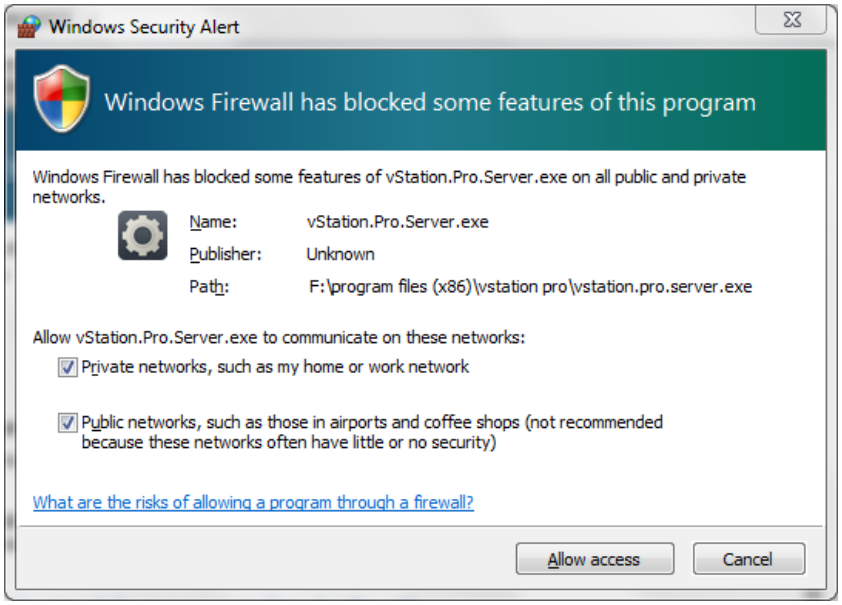
Logging In to the Client

To log in to the client:

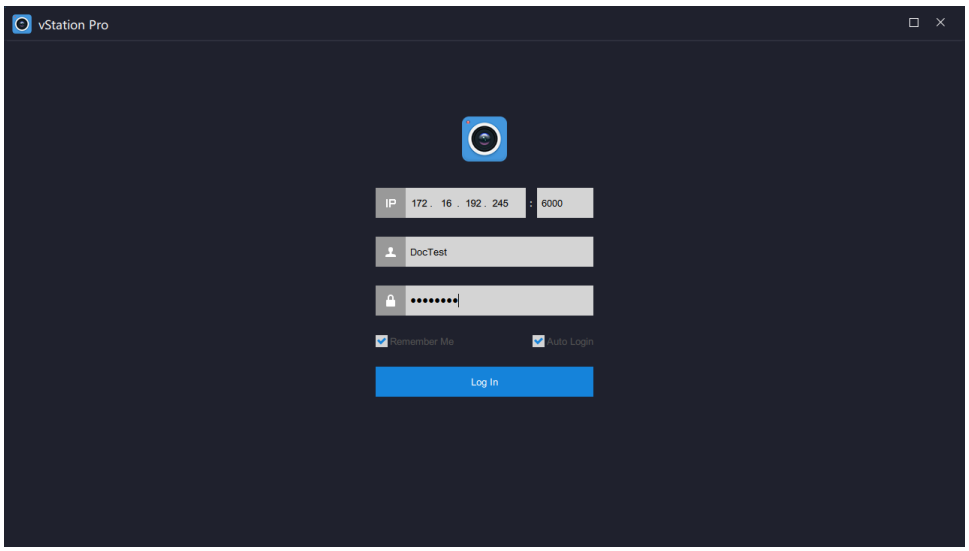
1. Double-click 

.
2. Allow the vStation Pro through the Windows Firewall.

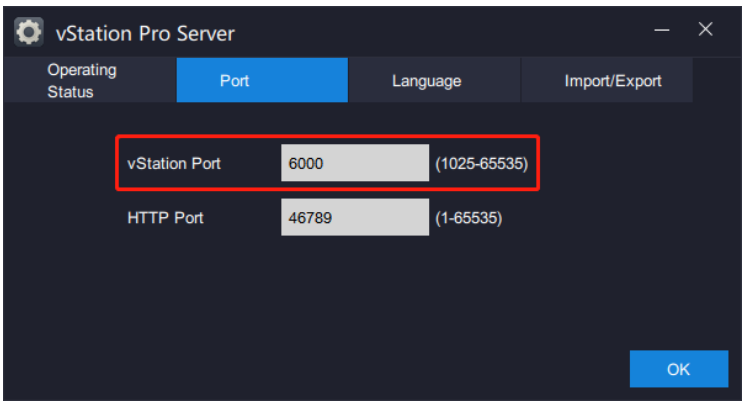
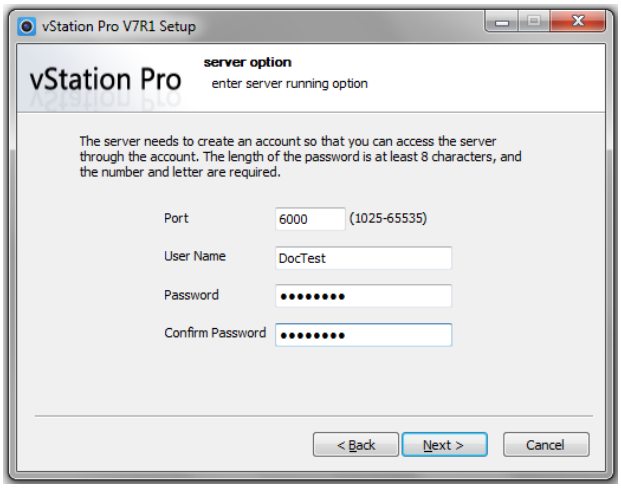




In the login dialog box, specify parameters displayed.



Parameters are described as follows.

IP	IP of the server. The server IP is the IP address of your PC where the server is installed. **6000** is the server port, which can be reconfigured on the server.  **NOTE:** If the IP address of your PC is changed, the server IP will be changed automatically.
	Account of the server, which is created in step 4 of section "Procedure". 
	Password of the server account

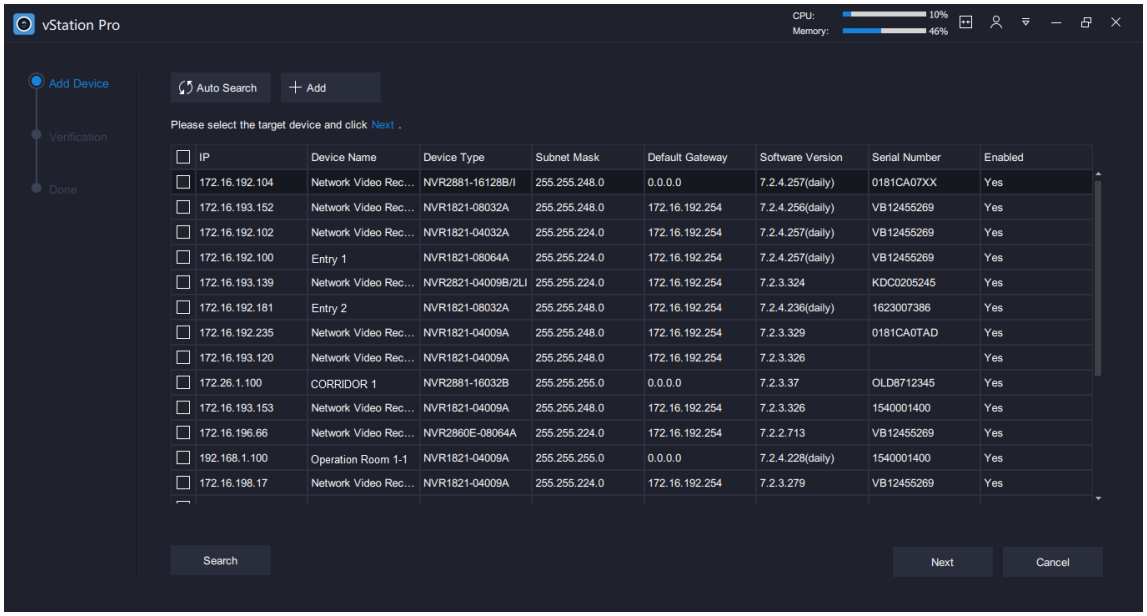
3. Click **Log In**.

After logged in to the client, do not close the server.

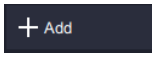
Setup Wizard

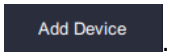
For the first login, the Setup Wizard will show up to guide you to add NVRs as follows.

1. On the displayed page, select the target NVR you want to add.
   Ensure that the target NVR is located on the same broadcast domain (in a LAN) as your PC.
   You can also select multiple target NVRs.



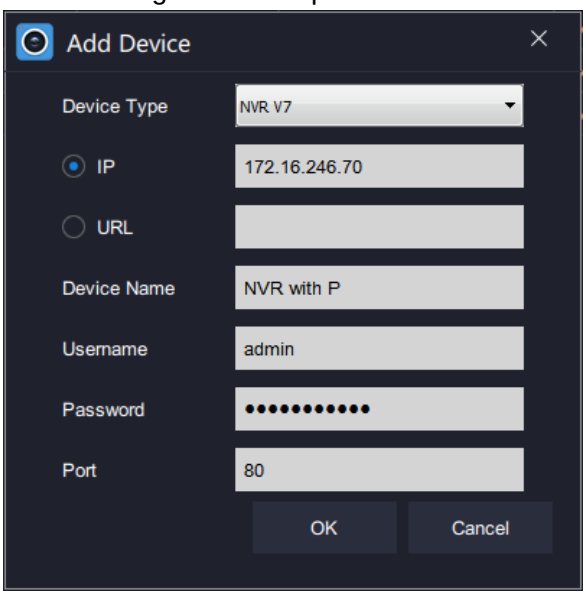
If the target NVR is not located on the same broadcast domain (in a LAN) as your PC but you can ping it from your PC, manually add it as follows:

1) Click 

> 

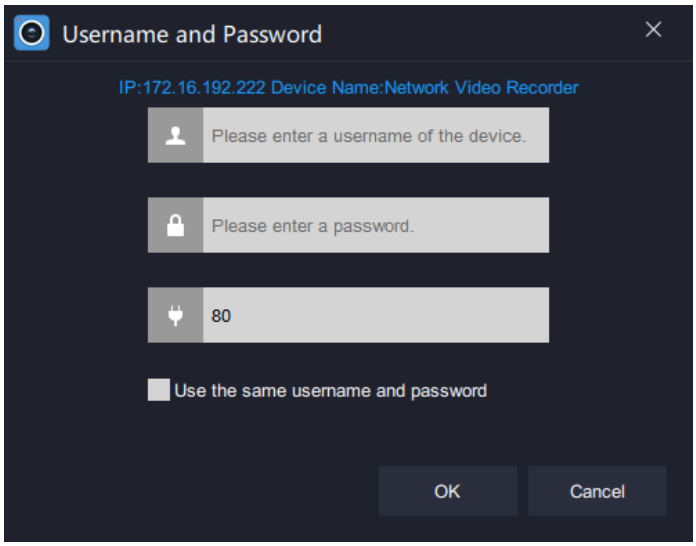
.

2) In the **Add Device** dialog box, specify parameters displayed.
   The following is an example.



3) Click **OK**.
4) Skip to step 5.

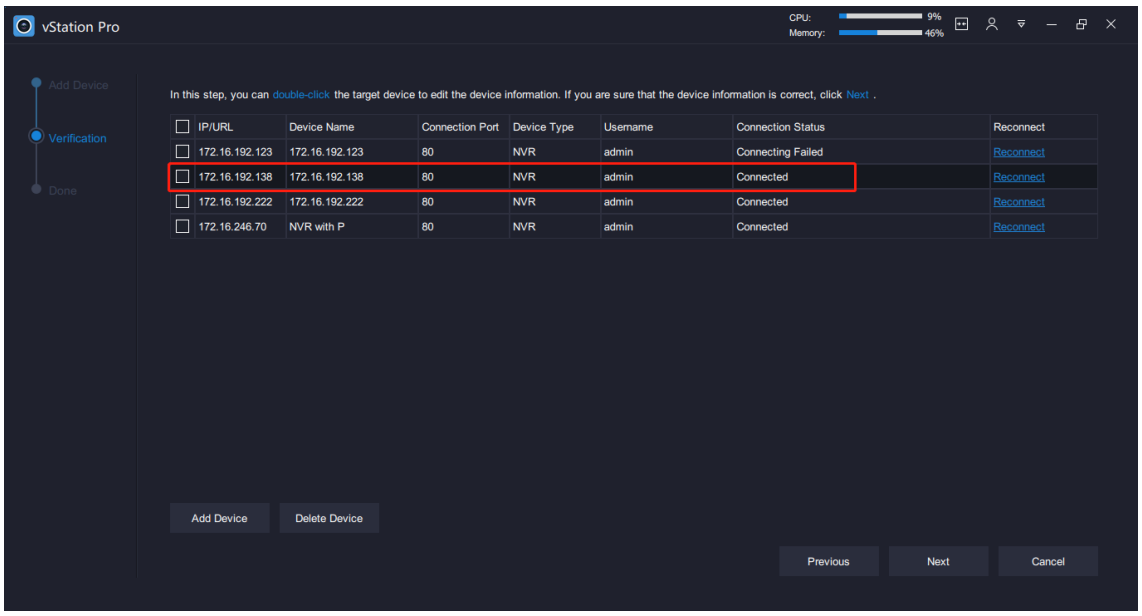
2. Click **Next**.
3. In the displayed dialog box, specify parameters displayed.



Parameters are described as follows.

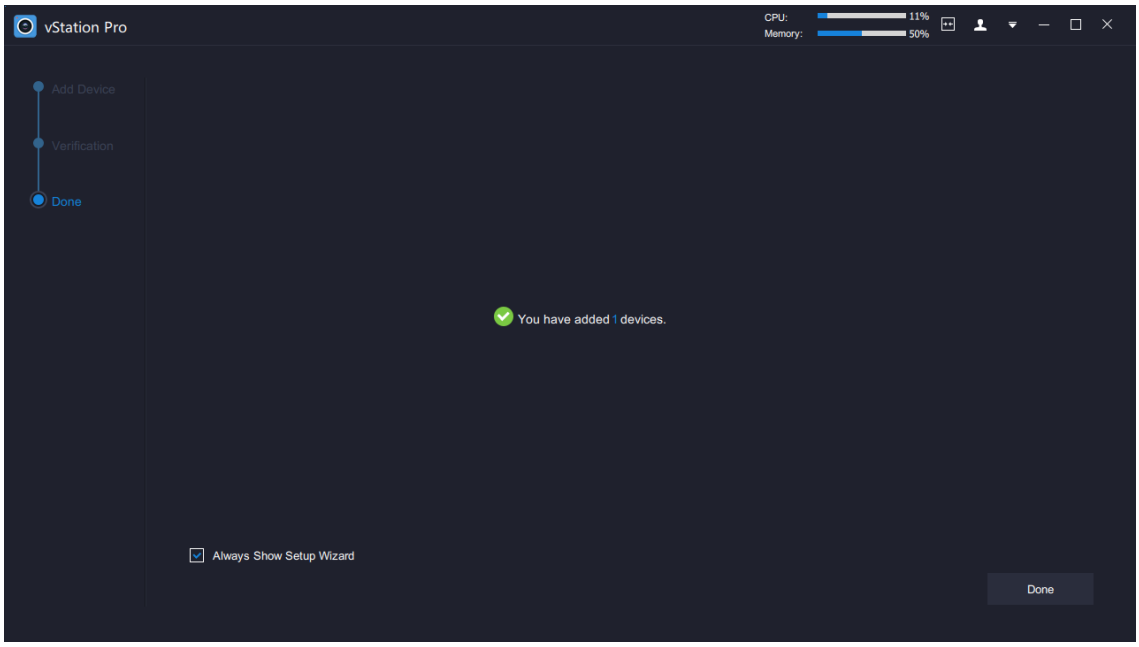
	Username of the target NVR
	Password of the username
	Connection port of the target NVR
Use the same username and password	If the target NVRs have the same account and password, you can check this option to add these NVRs in a shorter time. If you do not check this option, you need to enter a username and password for each target NVR.

4. Click **OK**.
5. (Optional) On the displayed page, you can double-click anywhere in the red box to change the target NVR information, such as the IP or port number.



6. Click **Next**.

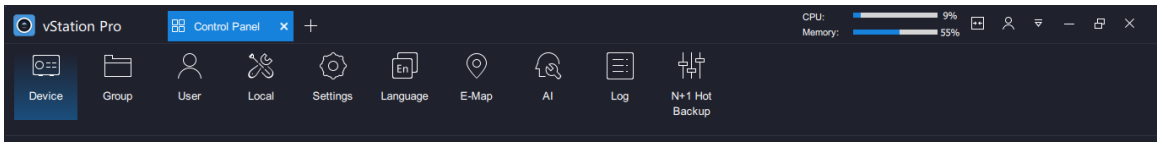
7. (Optional) Determine whether to show the Setup Wizard every time the client is started.



8. Click **Done**.

Control Panel

Under **Control Panel**, you can configure the following items.

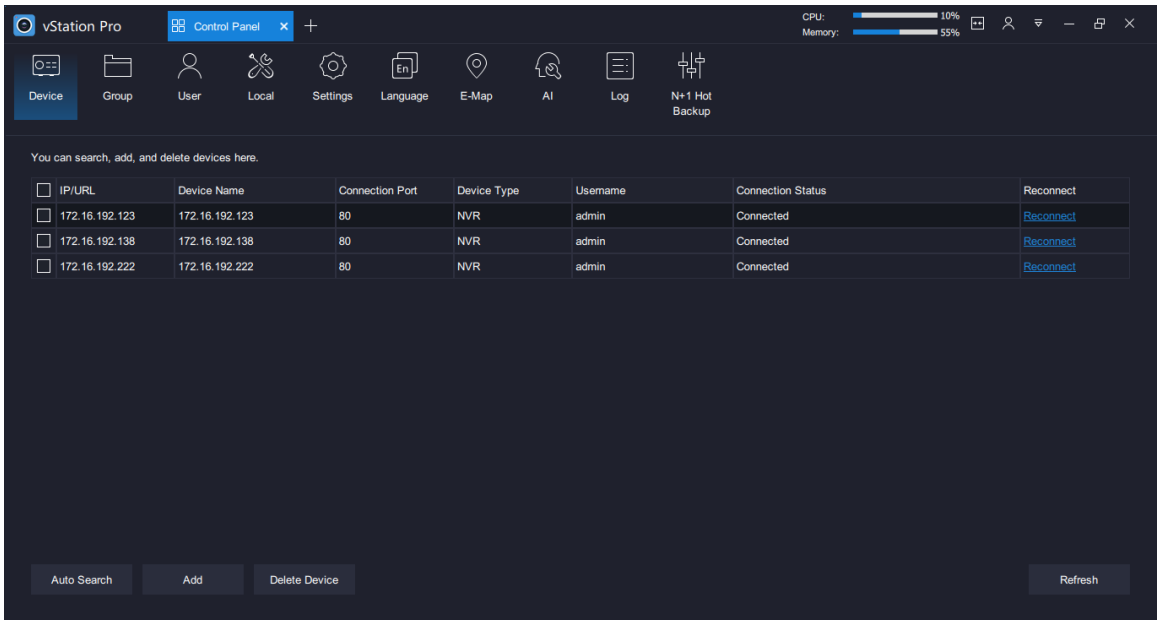


These items involve the following actions.

Device	Adding NVRs	Group	Grouping Cameras Registering with Different NVRs
User	Adding Client Accounts	Local	Configuring Client Settings
Settings	Configuring NVR Settings	Language	Choosing the Display Language
E-Map	Configuring E-Map	AI	Face Detection
Log	Querying Logs	N+1 Hot Backup	Configuring N+1 Hot Backup

Adding NVRs

Under **Device**, you can add NVRs.



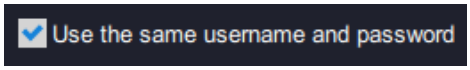
Method 1

To add a target NVR from searching results:

1. Click Auto Search.
2. Select the target NVR from the search results and click Add.

   You can also select multiple target NVRs you want to add.
3. In the displayed dialog box, enter a username, a password, and a port number.

   In this step, you can check the following option if the multiple target NVRs use the same username, password, and port number.

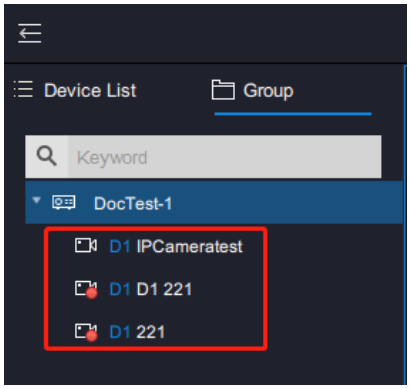
4. Click **OK**.

Method 2

To manually add a target NVR, see step 1 of section "Setup Wizard".

Grouping Cameras Registering with Different NVRs

Under **Group**, you can group cameras registering with different NVRs together. In this way, you can query these cameras' videos directly without bothering to unfold different NVRs in the first place. In the following figure, these cameras register with different NVRs.

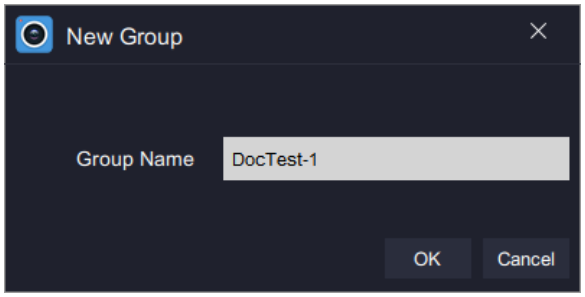


A maximum of 32 camera groups can be created.

To create a camera group:

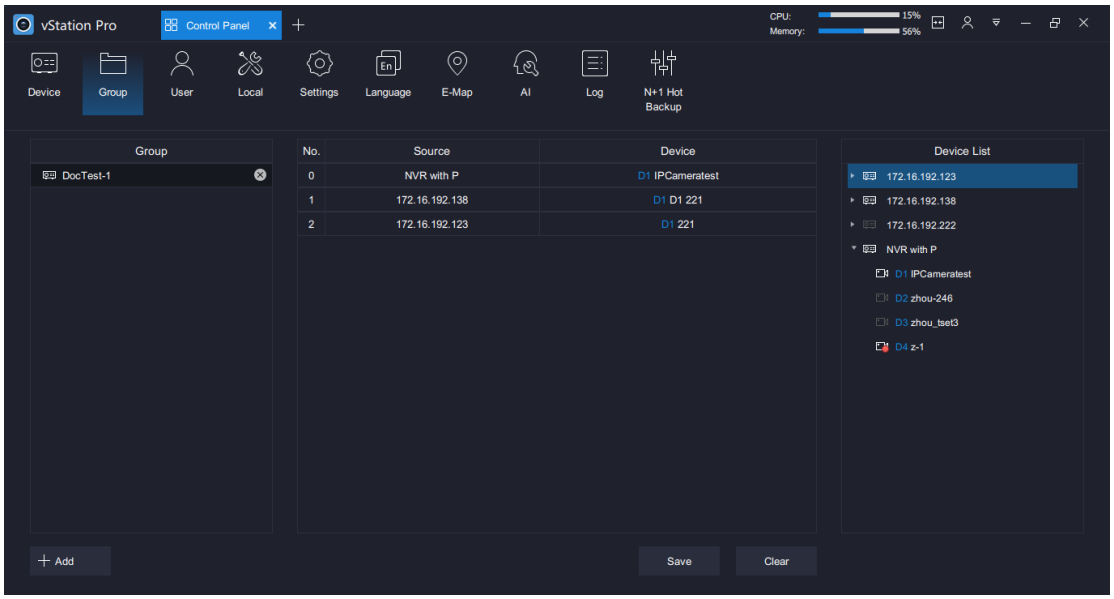
1. Click + Add.
2. In the displayed dialog box, enter a group name.

   The following is an example.

3. Click **OK**.

4. Drag cameras under the **Device List** to the middle pane.
   The following is an example.



5. Click **Save**.

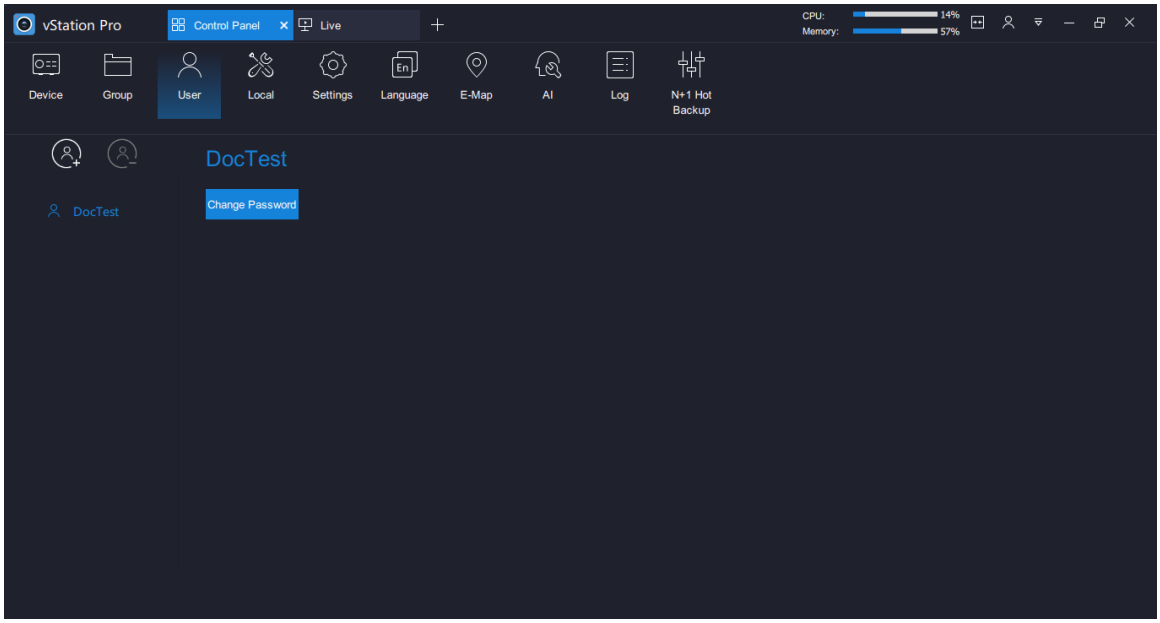
To rename a camera group, double-click it and enter a new name.

To delete a camera group, click  and confirm your operation.

To remove a camera from a camera group, click  and confirm your operation.

Adding Client Accounts

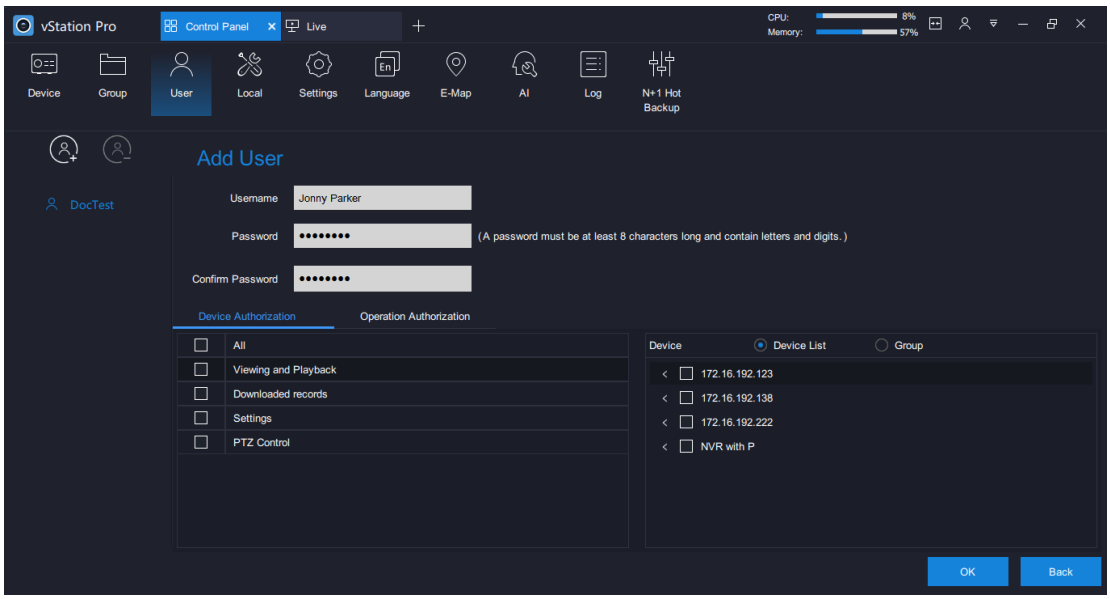
Under **User**, you can add client accounts.



To add a client account:

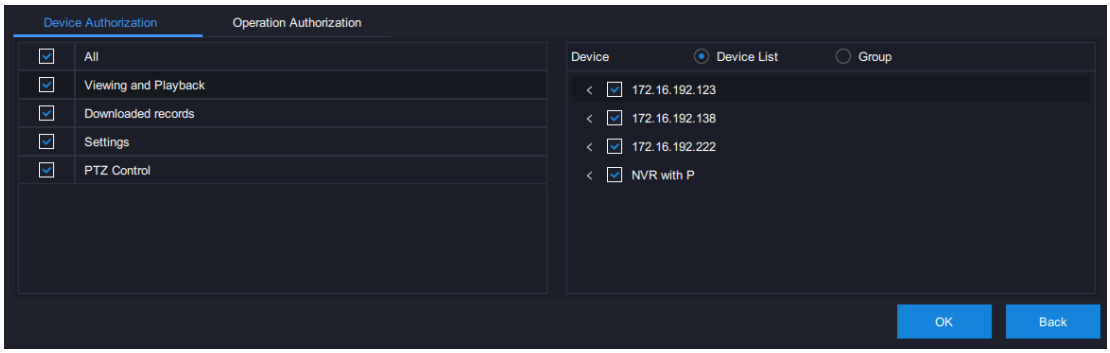
1. Click  .

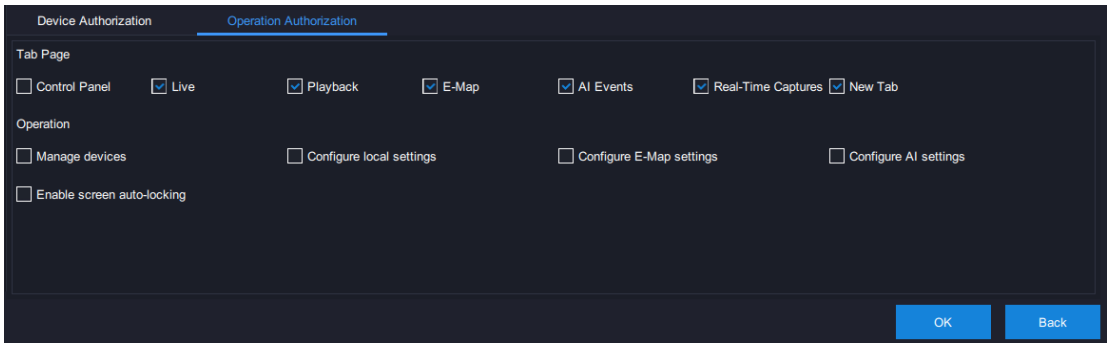
2. Enter a username and password and confirm the password.
   The following is an example.



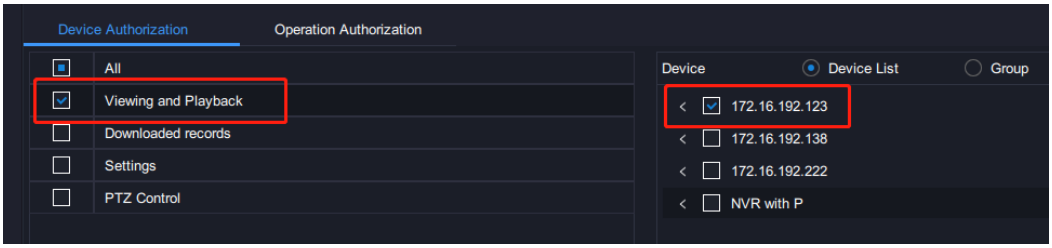
   The more complex a password is, the stronger it is. You are advised to use a strong password to ensure your data safety. Periodically changing your password at 3-month intervals would be appreciated. If your network environment is risky, you should change your password at weekly or monthly intervals. Additionally, do not leak your username and password.

3. Grant the account device/operation authorization.





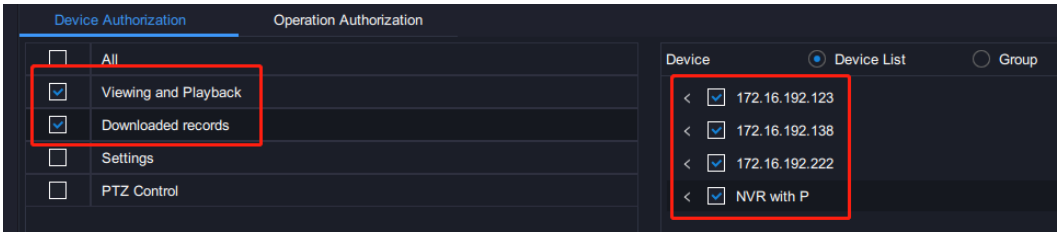
   ➢ If you want to grant the account the **live video viewing** and **playback** authorization for all cameras under NVR A (for example, 172.16.192.123), check the following:



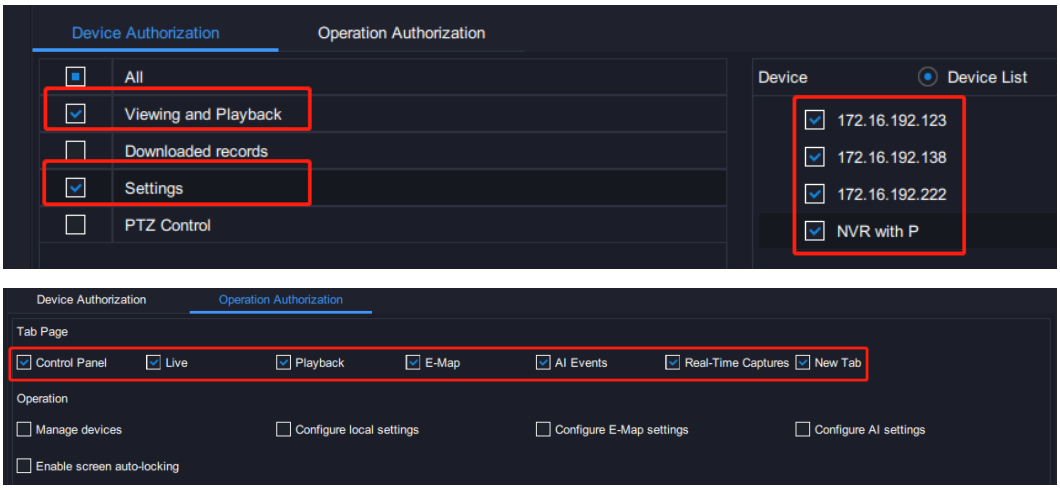
NOTE:

If you want to grant the account the authorization for all cameras under all NVRs, select all NVRs.

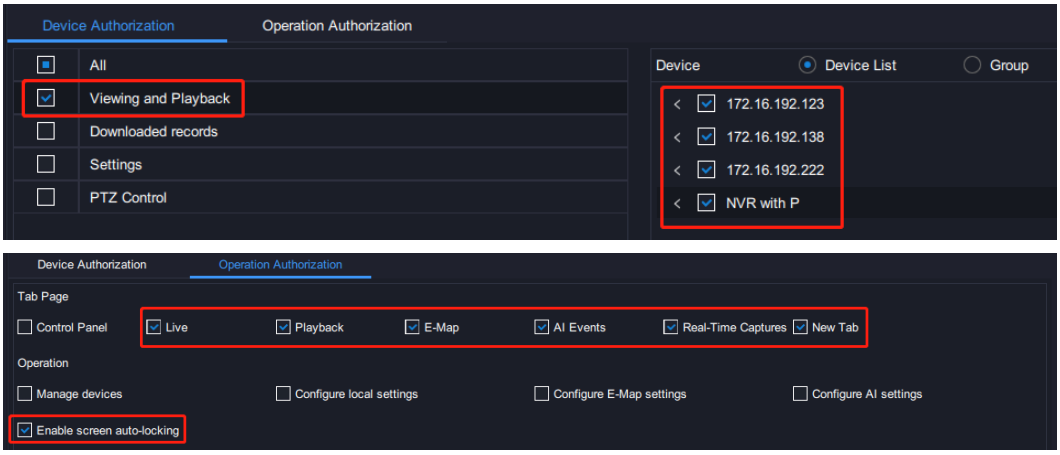
- If you want to grant the account the **record download** authorization for all cameras under NVR A, check the following:



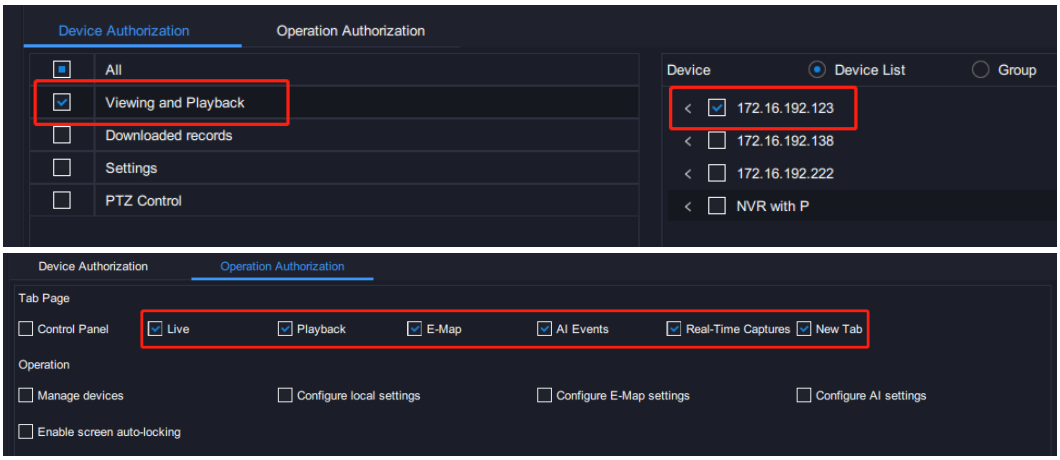
- If you want to grant the account the **NVR configuration** authorization for all NVRs on the vStation Pro, check the following:



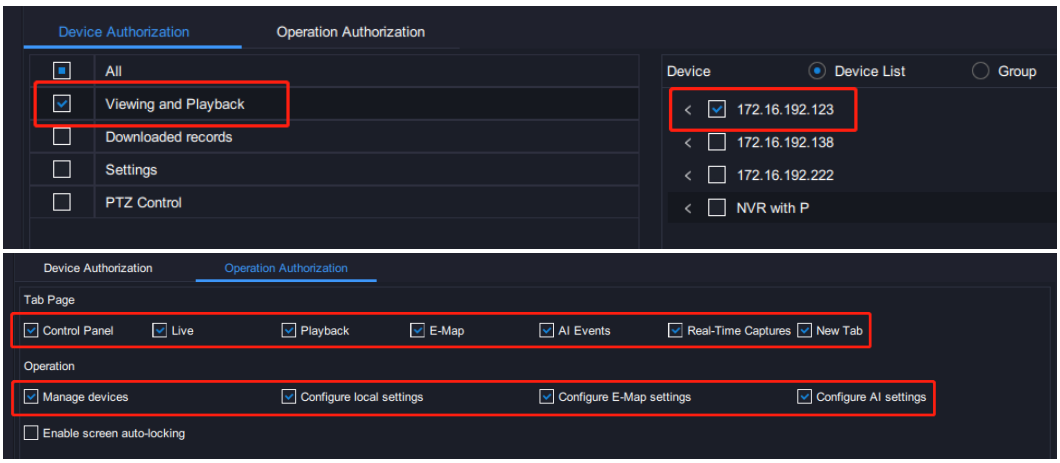
- If you want to grant the account the **screen auto-locking** authorization for the vStation Pro, check the following:



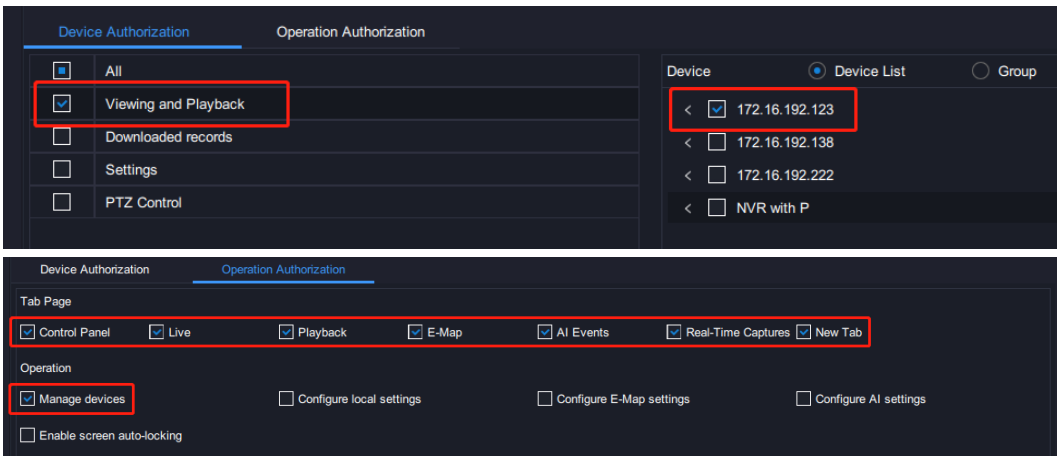
- If you want to grant the account the **creating a custom tab page** authorization for NVR A, check the following:



- If you want to grant the account the authorization of **managing devices**, **configuring local settings**, **configuring E-Map settings**, **and configuring AI settings** for NVR A, check the following:



- If you want to grant the account the authorization of only **managing devices** for NVR A, check the following:



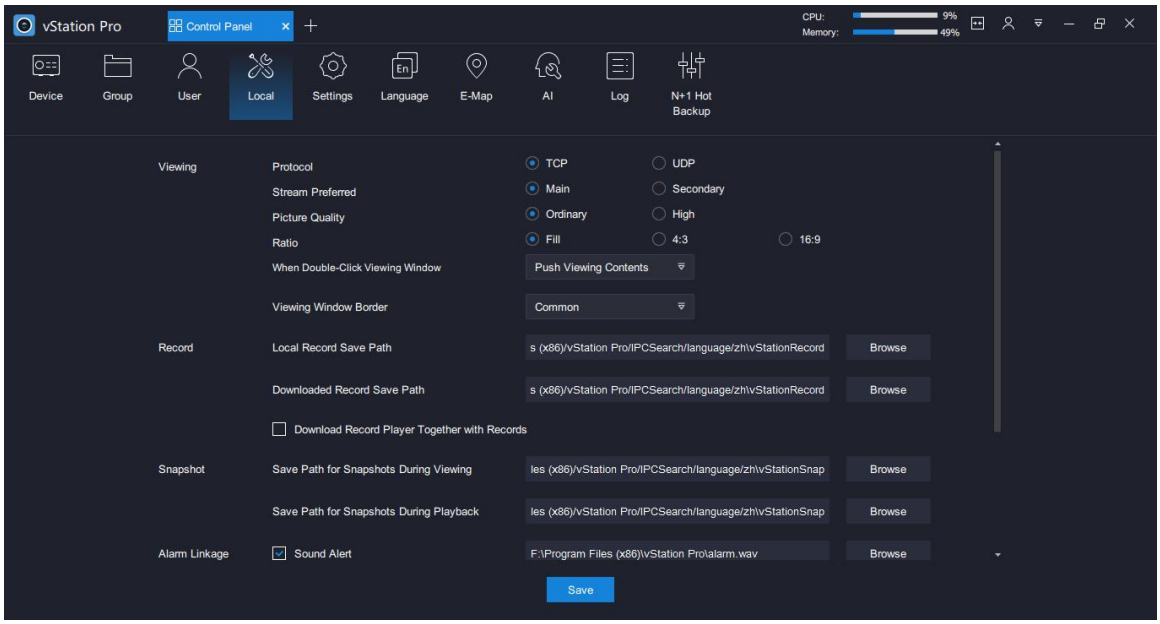
NOTE:

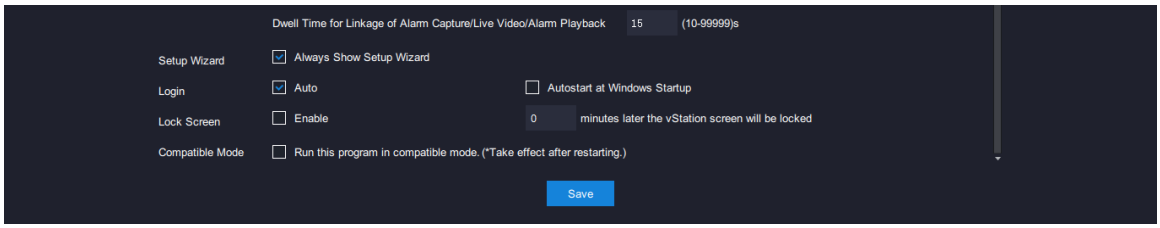
This method also applies to the authorization granting of **configuring local settings**, **configuring E-Map settings**, **and configuring AI settings**.

4. Click **OK**.

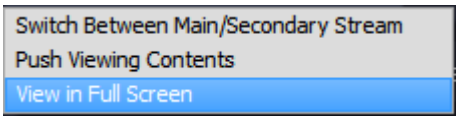
Configuring Client Settings

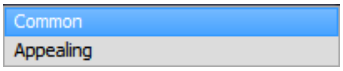
Under **Local**, you can configure client settings.





Parameters displayed are described as follows.

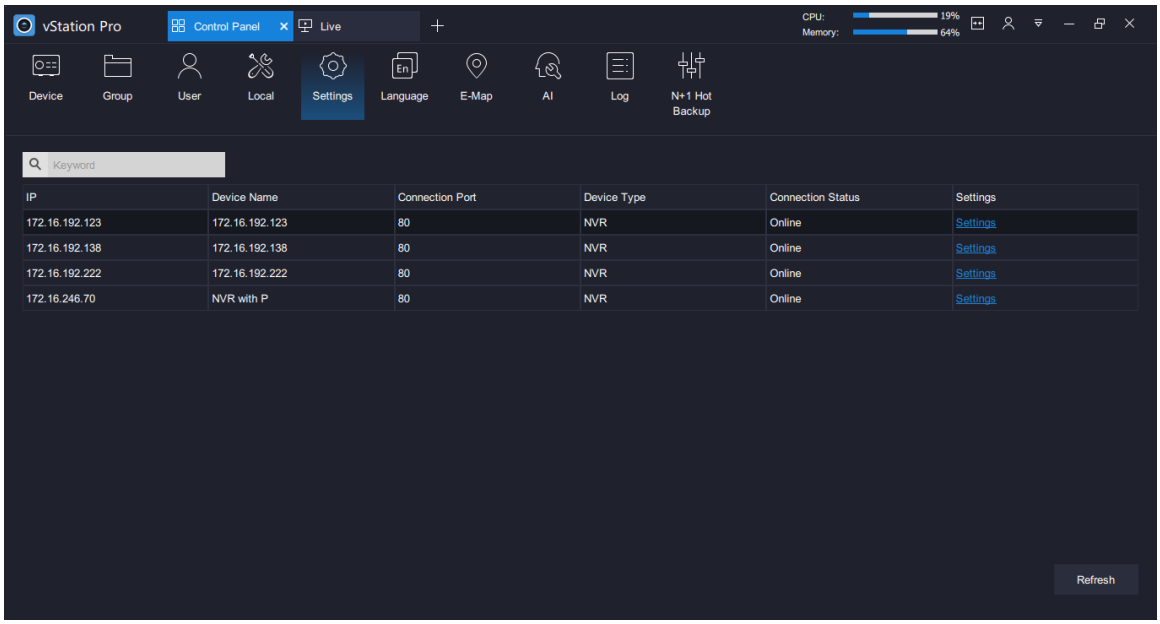
Viewing	Protocol	Viewing protocol
	Stream Preferred	Stream preferred for viewing
	Picture Quality	Picture quality
	Ratio	Video ratio
	When Double-Click Viewing Window	The available values are as follows:  • **View in Full Screen** This option enables the video played in the viewing window to be viewed in full screen mode. • **Switch Between Main/Secondary Stream** This option switches between the main/secondary streams in the viewing window. • **Push Viewing Contents** This option pushes the video played in a viewing window to viewing windows configured to receive pushed contents. For details, see section "Receiving Pushed Contents".
	Viewing Window	Select a border type for each viewing window.

	Border	The available values are as follows:  • **Common** The following is an example.  • **Appealing** The following is an example. 
Record	Local Record Save Path	Path for saving local records. For details, see section "Viewing Control".
	Downloaded Record Save Path	Path for saving downloaded camera records. For details, see section "Downloading Records".
	Download Record Player Together with Records	Whether to download our record player when records are being downloaded.
Snapshot	Save Path for Snapshots During Viewing	Path for saving local captures. For details, see section "Viewing Control".
	Save Path for Snapshots During Playback	Path for saving captures made during playbacks. For details, see section "Playback Controls".
Alarm Linkage	Sound Alert	When this option is checked, the sound alert will be raised if the client receives an alarm from an NVR or camera. The sound alert will stop when the related alarm is cleared.
	Dwell Time for Linkage of Alarm Capture/Live Video/Alarm Playback	For details, see section "Showing Linked Alarms".
Setup	Always Show	Whether to show the Setup Wizard every time the vStation Pro is

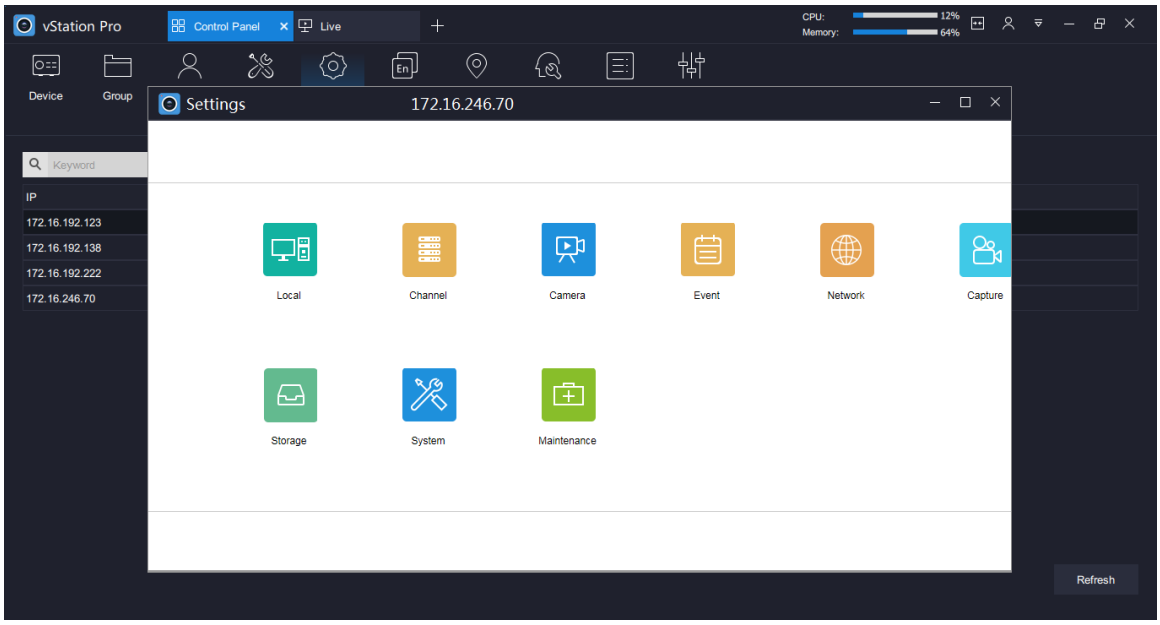
Wizard	Setup Wizard	started.
Login	Auto	Whether to enable automatic login
Lock Screen	Enable	Whether to enable screen auto-locking. If check ☐ Enable, you need to enter a value in the following text box. 0 minutes later the vStation screen will be locked
Compatible Mode	Run this program in compatible mode.	You are advised to check this option if you cannot run the vStation Pro on a PC using the Windows 7/10 operating system. If the problem persists, contact the local authorized Kedacom agent.

Configuring NVR Settings

Under **Settings**, you can configure NVRs.

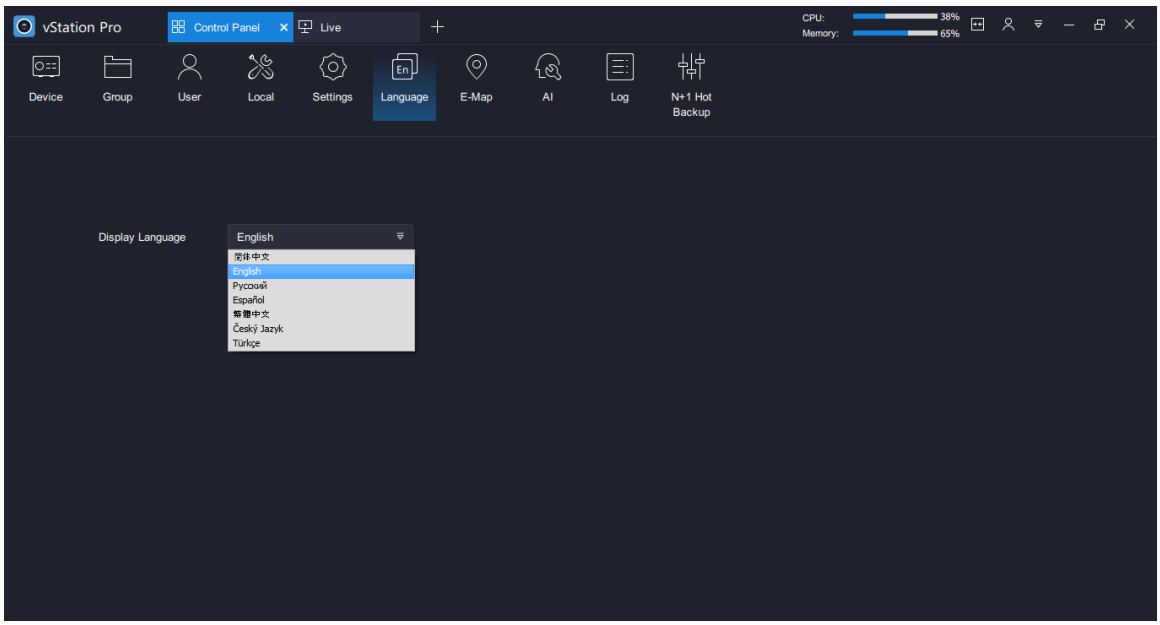


To configure an NVR, click **Settings** on its row. For details on how to configure an NVR, see the related user guide.



Choosing the Display Language

Under **Language**, you can configure the display language of the client.



Configuring E-Map

The E-Map function works together with the Face Detection function. When a person (labeled as "**Blacklist**" or "**Stranger**") is detected, an alarm notice will be prompted on the related map.

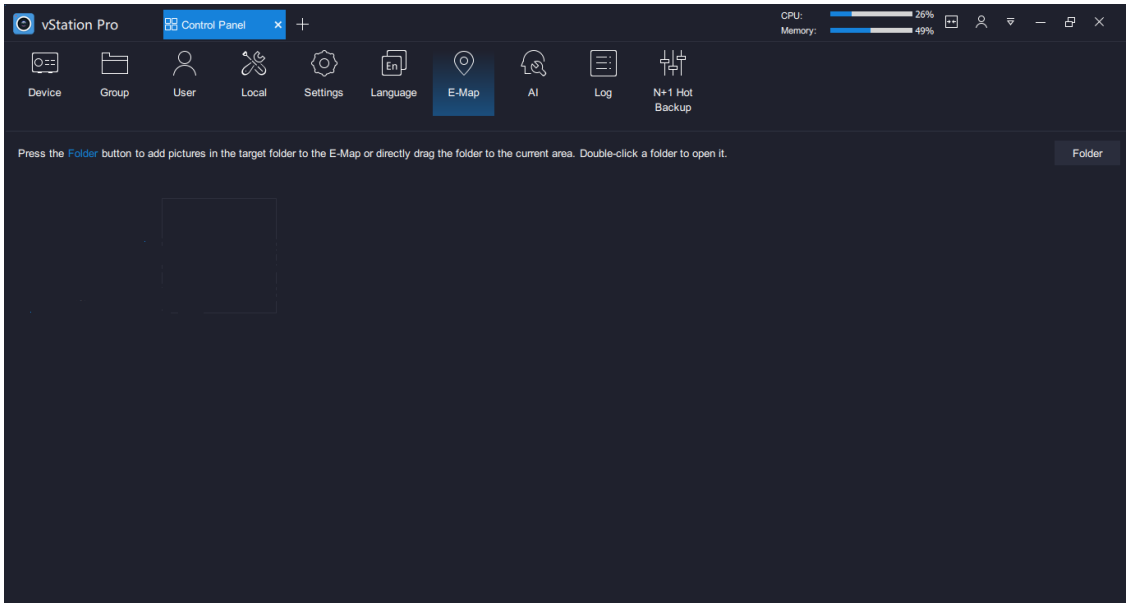
NOTE:

- For details about the labels "**Blacklist**" and "**Stranger**", see step 7 of section "Arming AI Cameras".
- You must configure the Face Detection function first before you can use the E-Map function.

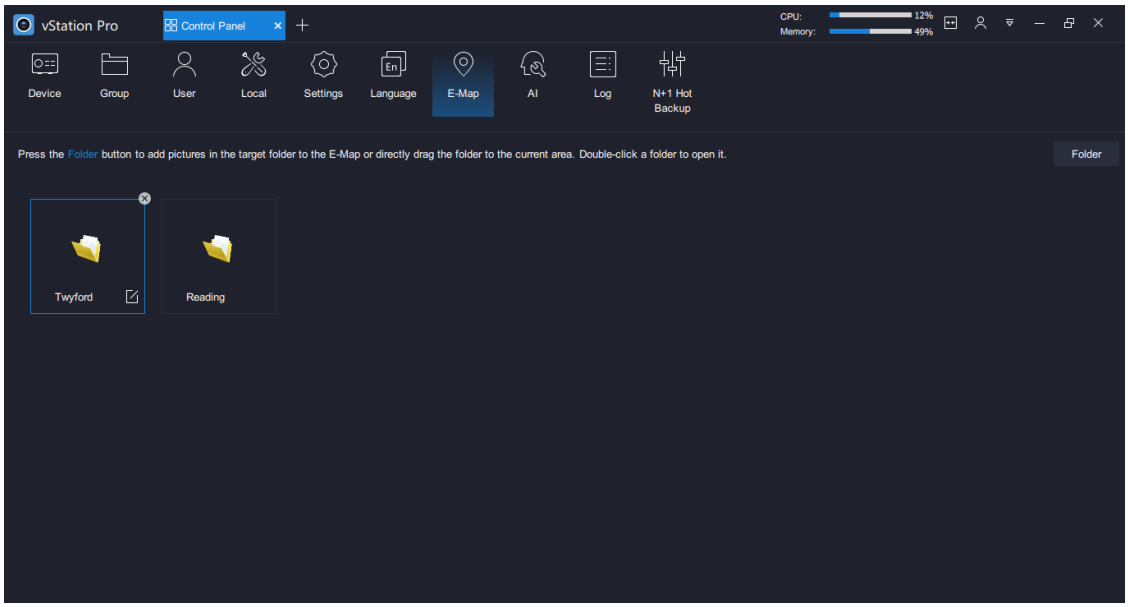
Configuring the Function

To configure the E-Map function:

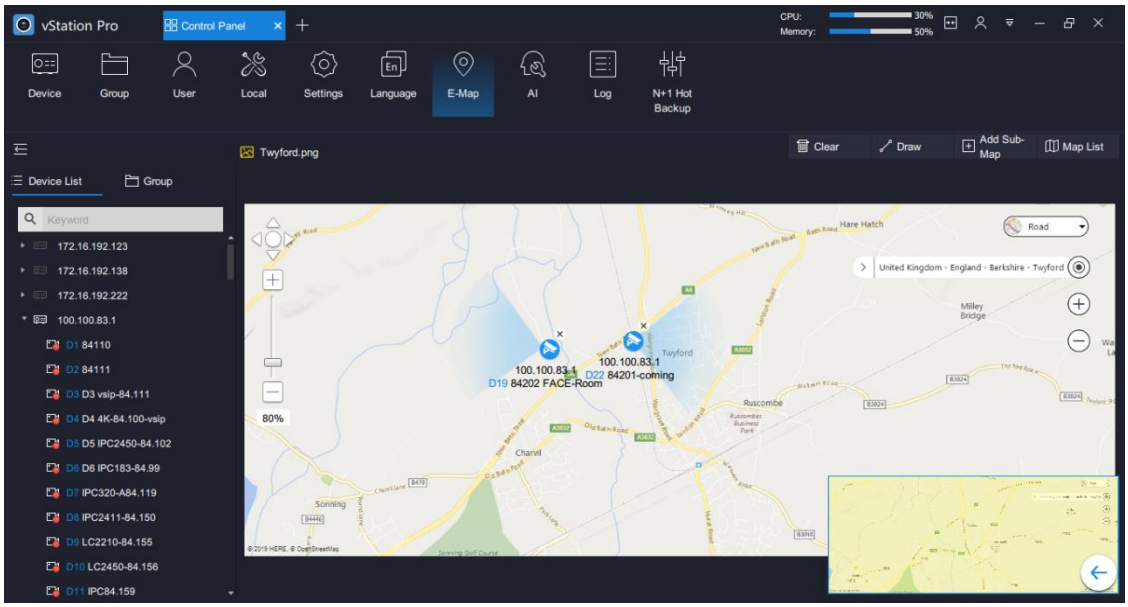
1. Click **Folder**.



2. Upload the target map folder.
   The following is an example.

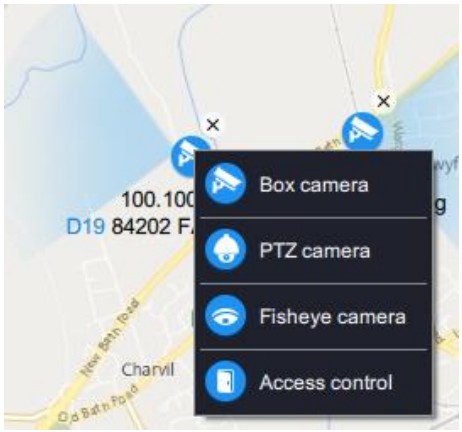


3. Double-click the target map folder and then the target map.
4. Drag AI cameras to the map.
   Ensure that these AI cameras have been armed. For details, see section "Arming AI Cameras" of the Face Detection function.
   The following is an example.



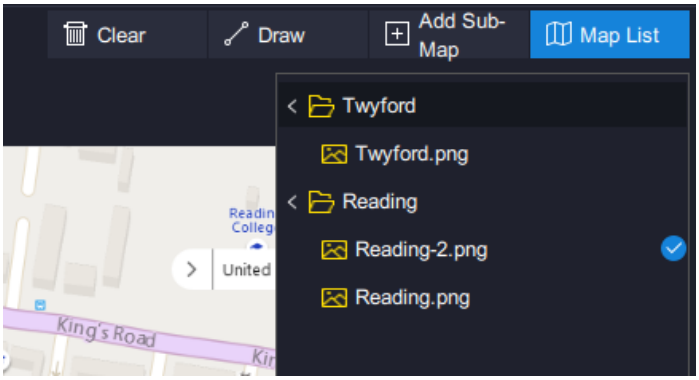
In the preceding figure, AI cameras are dragged to the spots where they are installed. You can press and hold a blue sector (as shown in the following figure) to change the camera coverage.

Right-clicking an AI camera will show you the following labels that allow you to label cameras on a map.



5. (Optional) Using other options.
   In the top righter corner, you can find the following options.

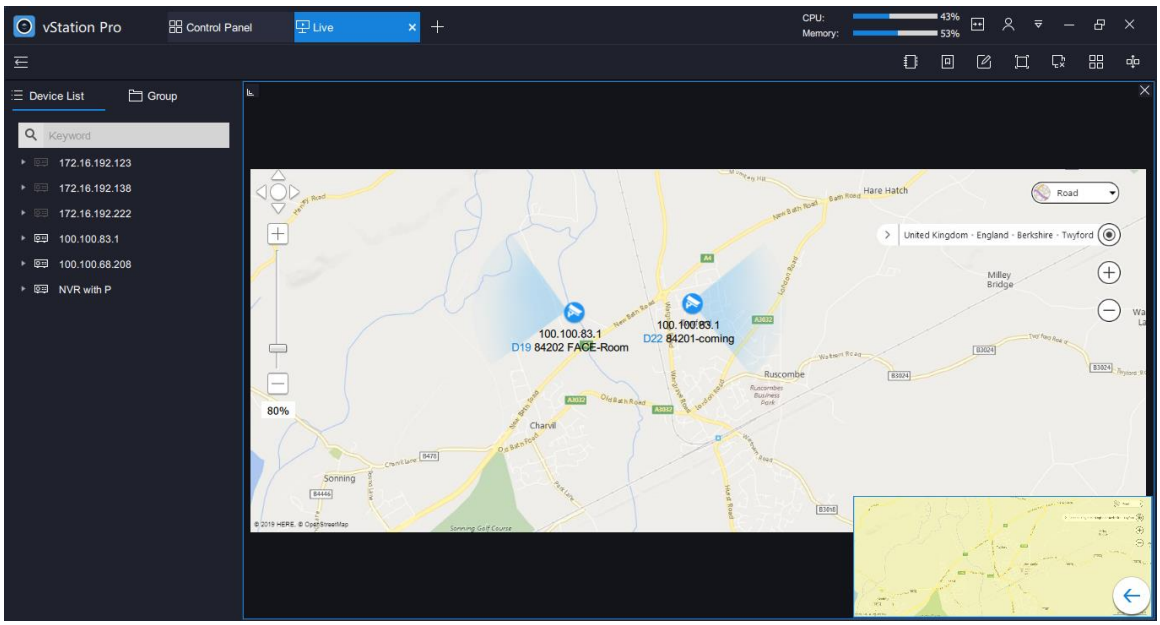
Draw	Draw lines to connect AI cameras on the map to form a camera network.
Clear	Clear all lines.
Add Sub-Map	Add a sub-map to a map. Sub-maps will be displayed above maps.

Map List	Show the map list. The following is an example.  The maps are listed in an ascending order of time they are created. This means the firstly created map will top the list.

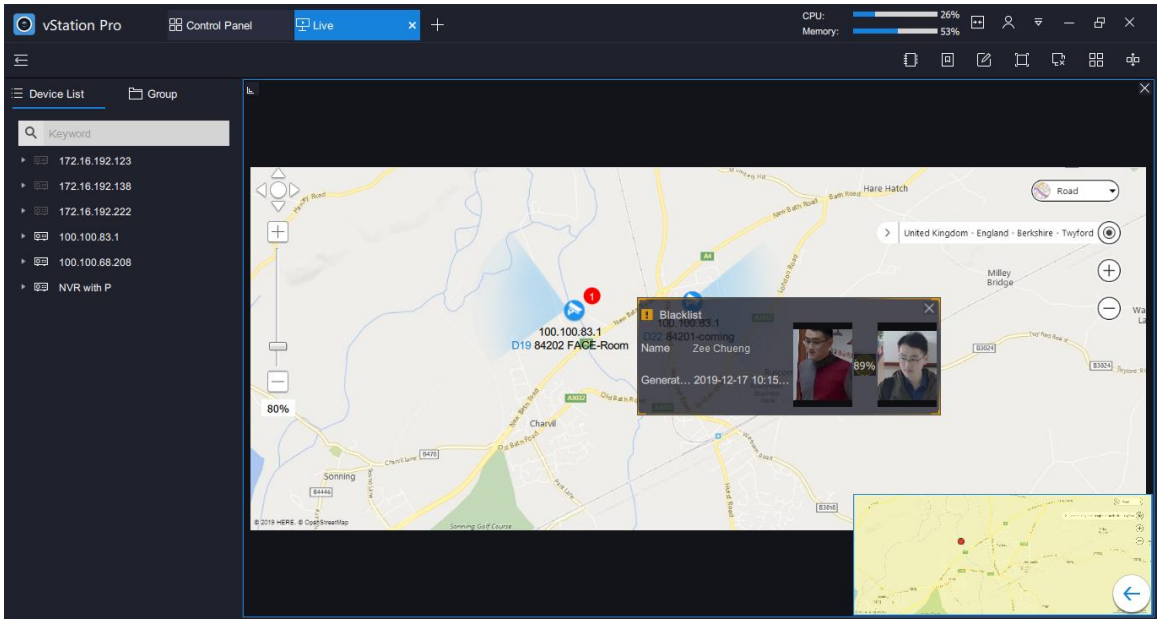
Querying the Function Effect

To query the function effect, choose > **E-Map** on an idle viewing window of the **Live** page.

By default, the first map which tops the map list is displayed. The following is an example.



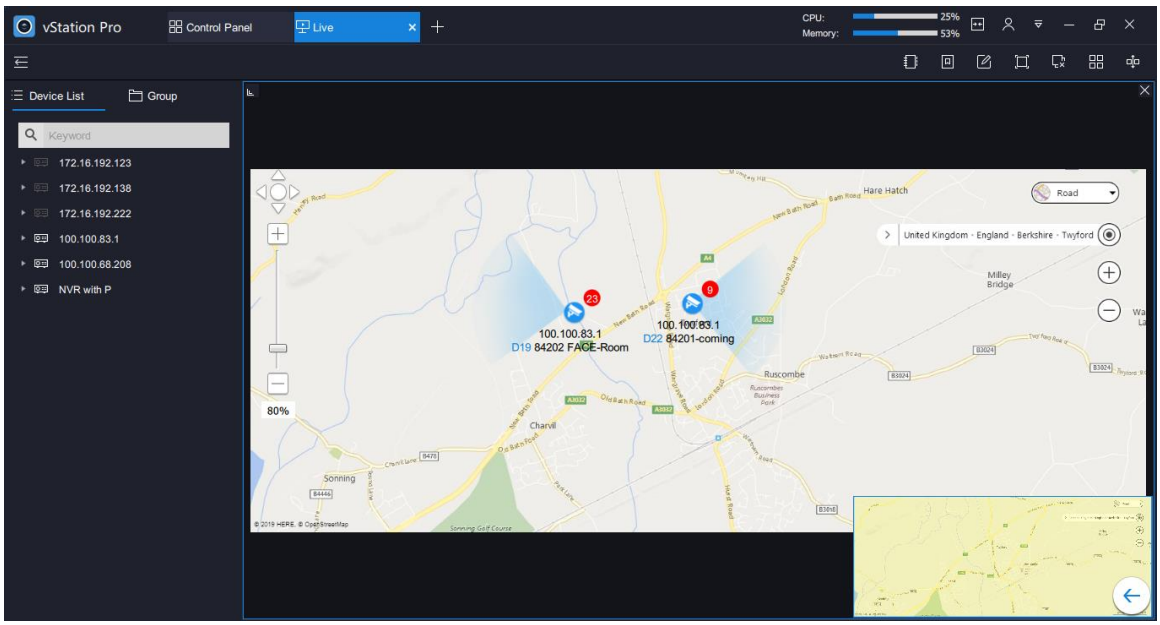
When a face detection alarm is generated, you can find the following.

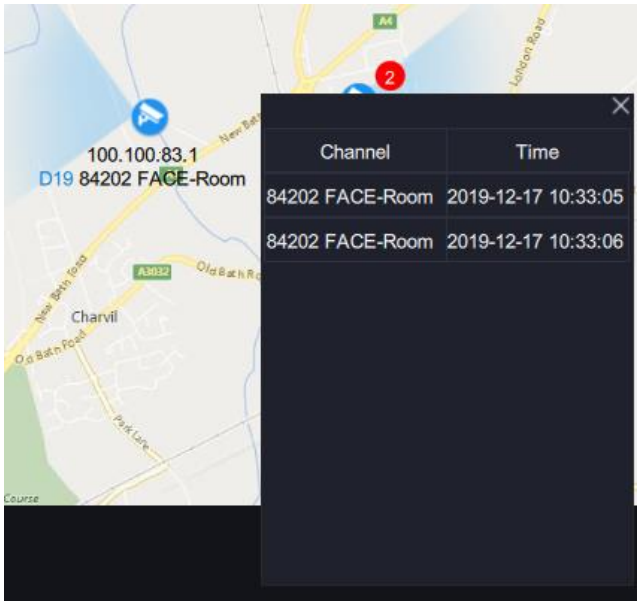


As shown in the following figure:

- The person named Zee Chueng is labeled as **Blacklist**.
- The face detection alarm is generated at 10:15 December 17th of 2019.
- The left picture is the person's face capture while the right one the person's face picture saved in a personnel group.
- The similarity between the face capture and face picture is 89%, which exceeds the similarity threshold. In such a case, the face detection alarm is generated.
- In the bottom right corner, a red spot blinks, indicating that a face detection alarm is already generated.
- The alarm notice and the red spot will show only for 10s, regardless of whether the alarm is cleared or not.

The number displayed on a camera indicates the number of history face detection alarms generated on this camera. If you click such numbers, you can query history face detection alarms. The following are examples.



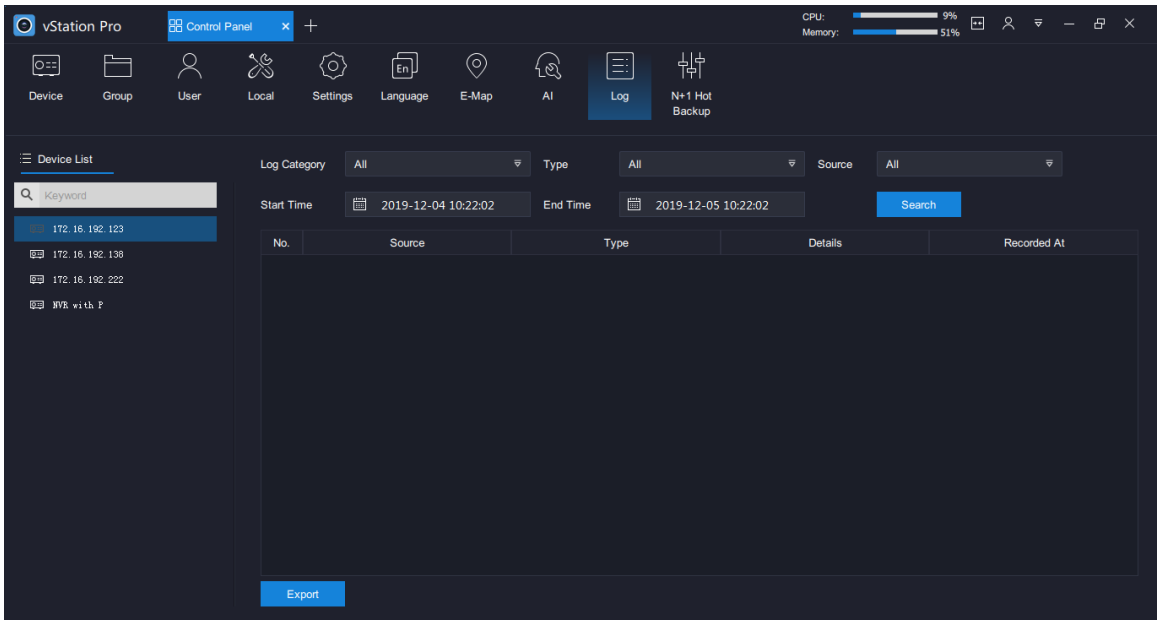


Using the AI Application

For details, see section "Using AI Applications".

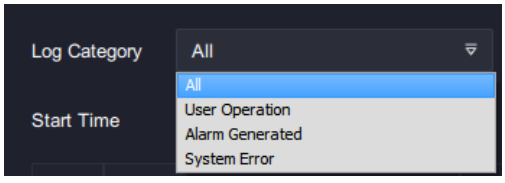
Querying Logs

Under **Log**, you can query logs.

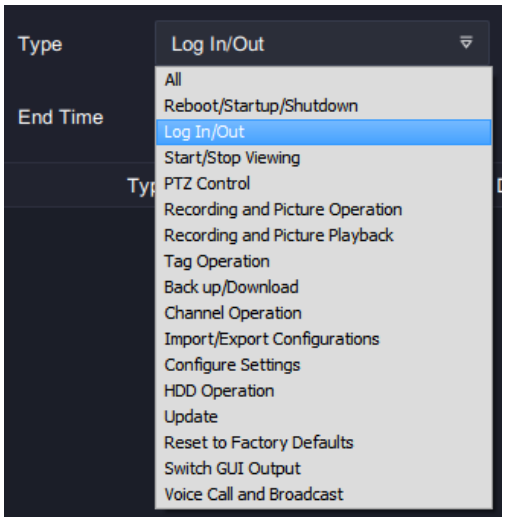


To query logs:

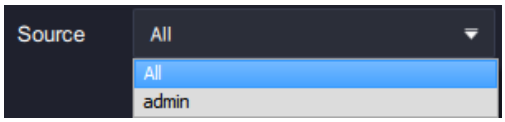
1. Specify **Log Category**.



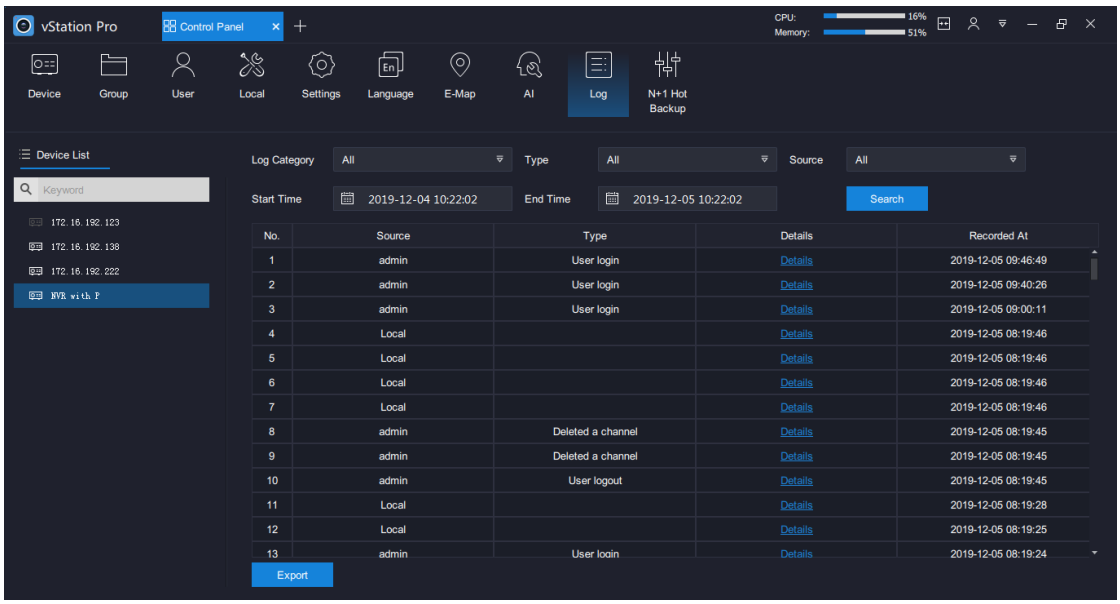
2. Select a specific log type.



3. Specify **Source**.



4. Select a start time and an end time.
5. Click **Search**.
   The following is an example for search results.



6. Click **Export** to export search results.

Configuring N+1 Hot Backup

NOTE:

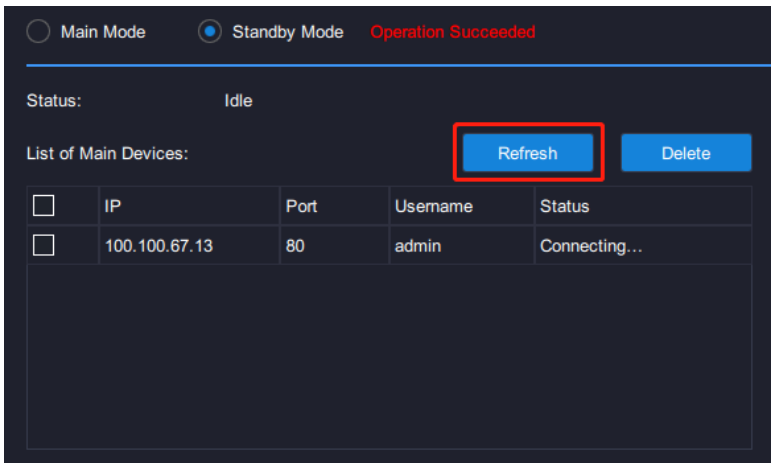
The N+1 hot backup function applies only to the NVR2860E of V7.

The N+1 hot backup function enables one standby NVR to work for multiple main or standby NVRs to prevent service interruption. By default, an NVR works in standby mode.

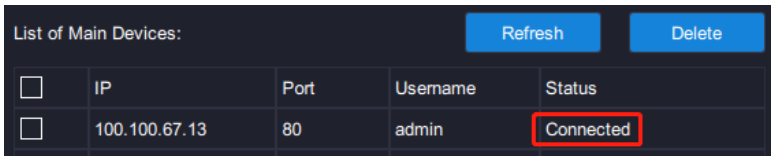
To enable a standby NVR to work for other NVRs:

1. Select the NVR from the **Device List**.
2. Add the following information for each target NVR.
   The following is an example.

3. Click **Add**.
4. Click **Refresh**.

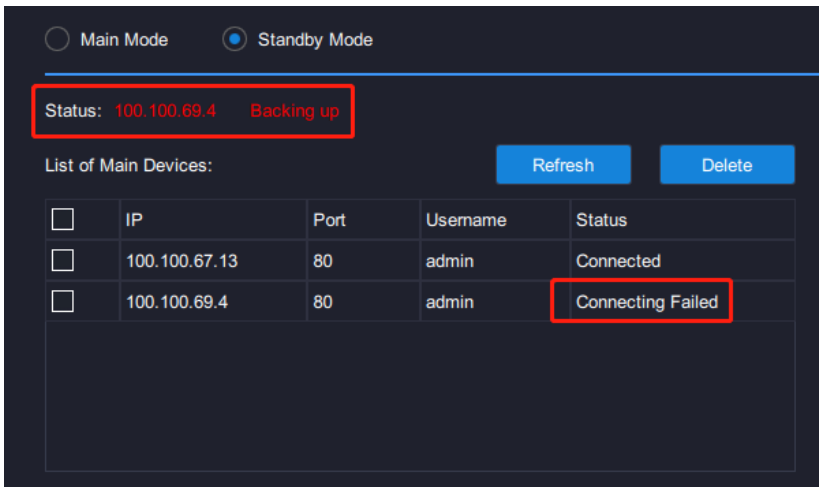


Then, you can find the following.



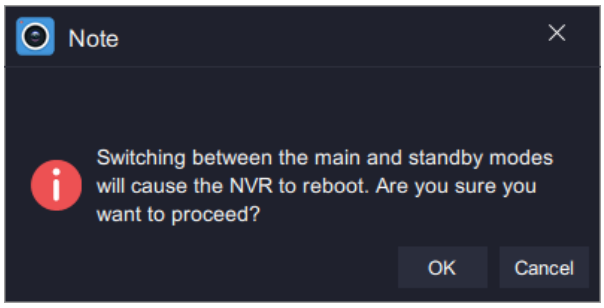
The status **Idle** indicates that the standby NVR is not processing services for any NVR.

If the status turns to **Backing up**, the standby NVR is processing services of an NVR. The following is an example.



To set a standby NVR to work in main mode:

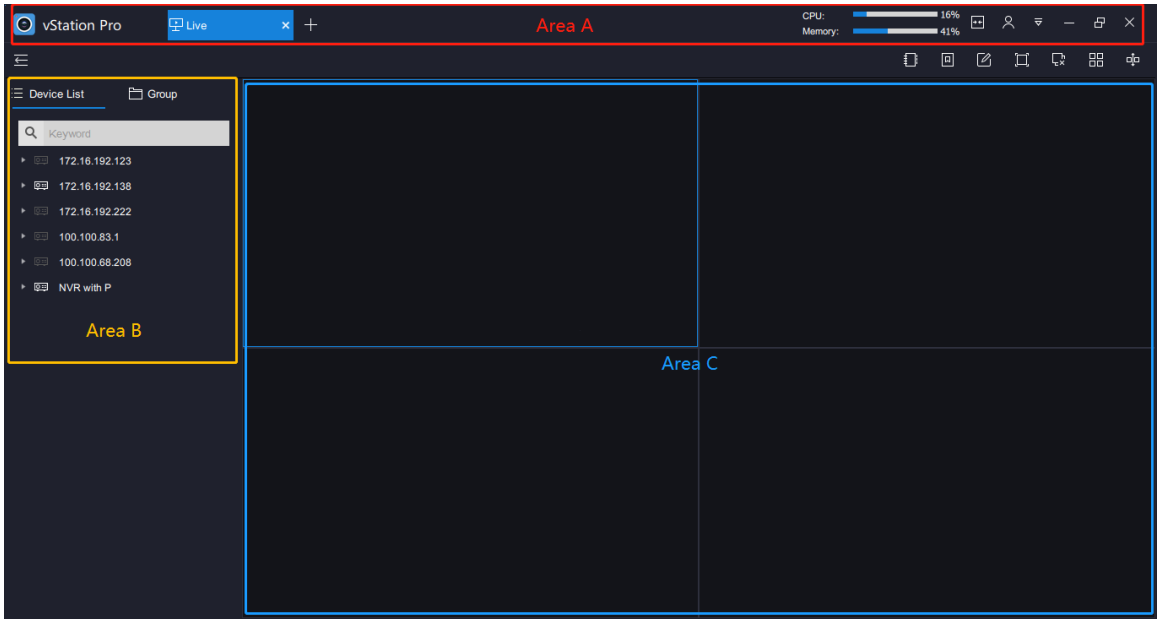
1. Select the NVR from the **Device List**.
2. Select **Main Mode**.
3. Click **OK** to confirm your operation.



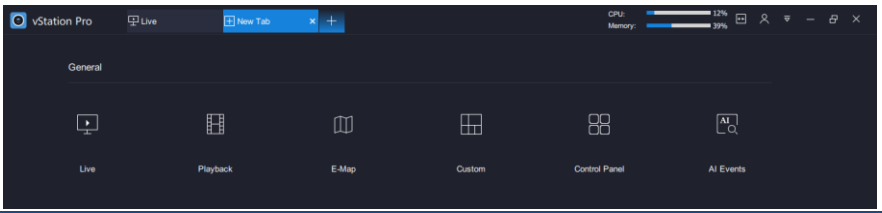
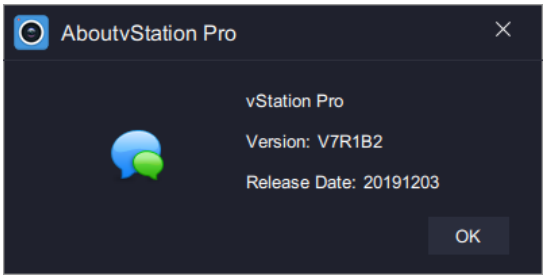
Live Viewing

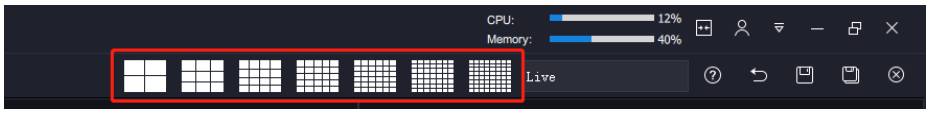
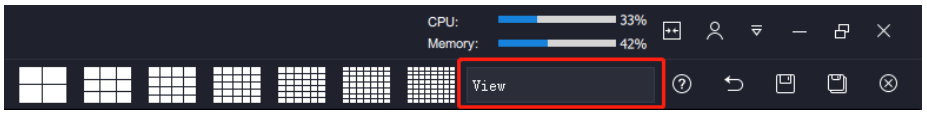
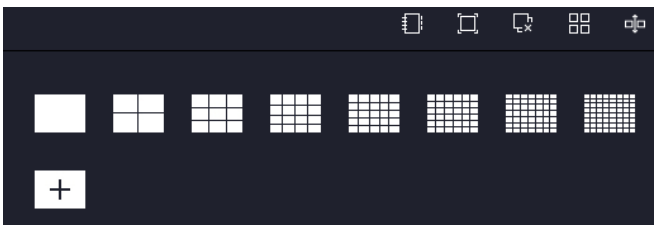
Main Interface

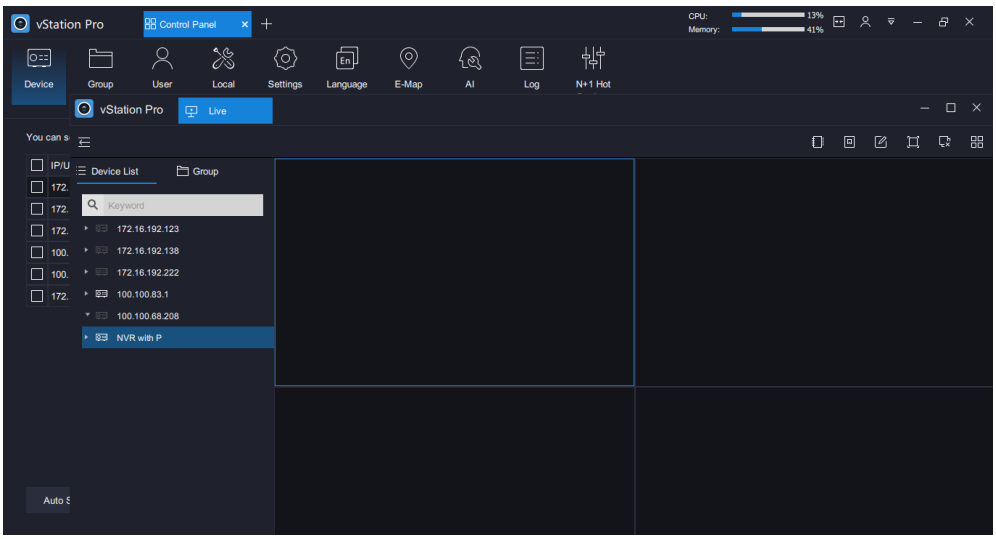
The following is the main interface of the **Live** page.



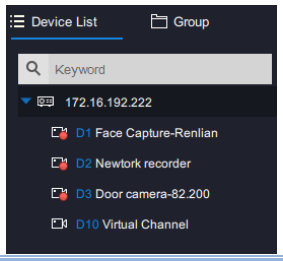
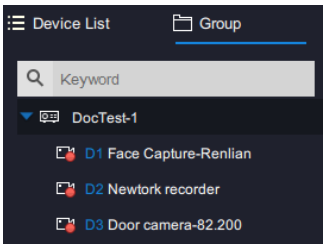
The items in area A are described as follows:

	Real-time CPU/memory usage
	Stop splitting the main screen.
	Create a new tab. 
	Current user
	Log out or query the client version 

	Create or tour schemes. For details, see section "Creating or Touring Schemes".
	Select a tab page to show.
	Edit the **Live** tab page or create a live viewing tab page. This involves the following steps: 1. Click . 2. Select a screen layout.  3. (Optional) Draw a pane to combine multiple viewing windows.  4. Enter a name for the tab page. The following is an example.  5. Click or to save the settings or save as a new tab page. 6. (Optional) Click for help information.
	View Area C in full screen mode.
	Stop all viewings.
	Select a screen layout. 
	Split the main screen and the tab page in operation will be separated from the main screen. The following is an example.



The items in area B are described as follows:

Device list 	Camera group list 

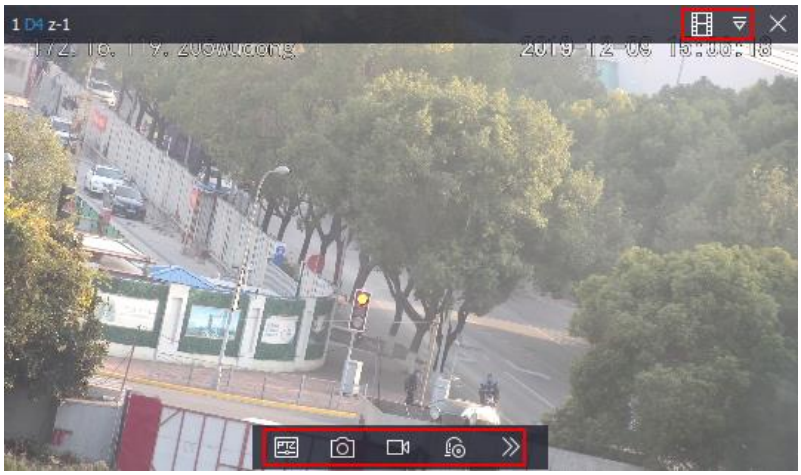
The table helps you read icons in Area B.

	The NVR is online		The NVR is offline.
	Recordings are in progress on the camera.		The camera is offline.

The items in area C are described in section "Options on an Idle Viewing Window".

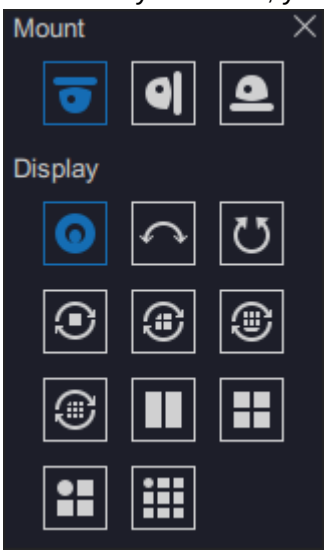
Viewing Control

When a viewing is started, you can find the following viewing controls.



	Starting an Instant Playback

For a fisheye camera, you can find the following options.



The preceding options are described in the following table.

	Ceiling mount, wall mount, desktop mount
	• Show fisheye videos. Note: Fisheye videos are full-view videos. • Show 180° view videos. Note: 180° view videos are rectangular videos that are tra from corrected fisheye videos. • Show 360° view videos.
	• Show 360° view videos and one PTZ-capable video. • Show 360° view videos and three PTZ-capable videos. • Show 360° view videos and six PTZ-capable videos. • Show 360° view videos and eight PTZ-capable videos.

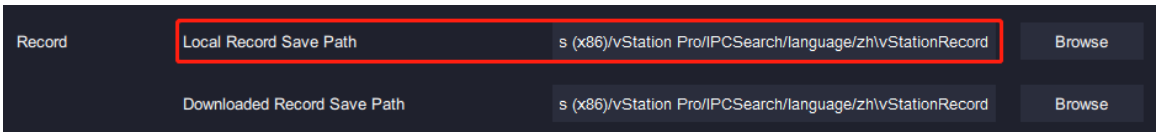
	• Show two PTZ-capable videos. Note: PTZ-capable videos are close-up videos of specific areas and they are taken from fisheye videos. Additionally, PTZ-capable videos support the e-PTZ function. • Show four PTZ-capable videos. • Show fisheye videos and three PTZ-capable videos. • Show fisheye videos and eight PTZ-capable videos.

For more details, access the fisheye camera through the IPC Web and refer to the IPC Web Help.

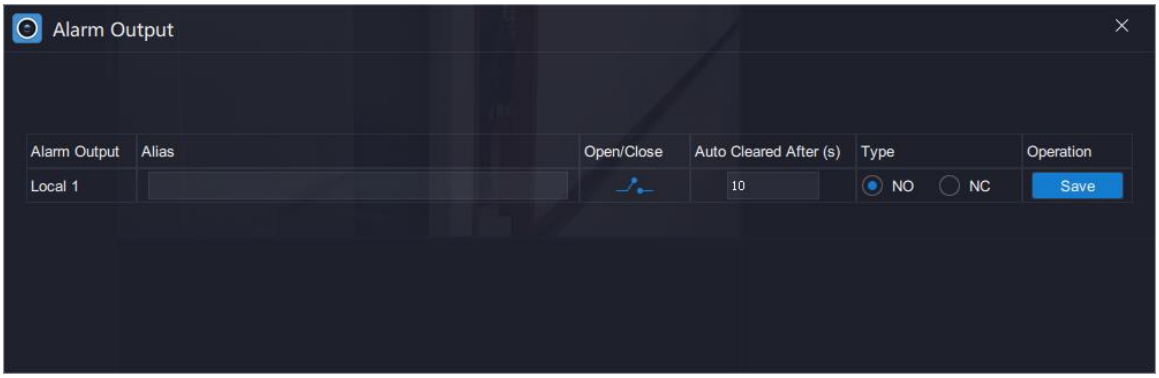
PTZ Controls

Make a local capture and the capture will be saved in the path specified by **Save Path for Snapshots During Viewing** (**Control Panel** > **Local** > **Snapshot**).

Start a local recording and the records will be saved in the path specified by **Local Record Save Path** (**Control Panel** > **Local** > **Record**).



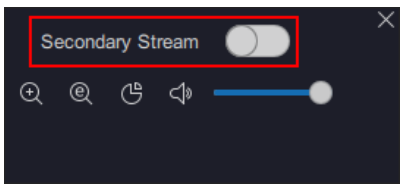
Configure the alarm outputs of a camera.



Note that not all cameras have alarm outputs.

- **Viewing Secondary Streams**

  Enabling **Secondary Stream** will switch to the secondary stream viewing.



- **Pan&Focus**

When you want to take a close-up of a particular area, you can enable the camera to go to the area and focus on the area center by clicking  .

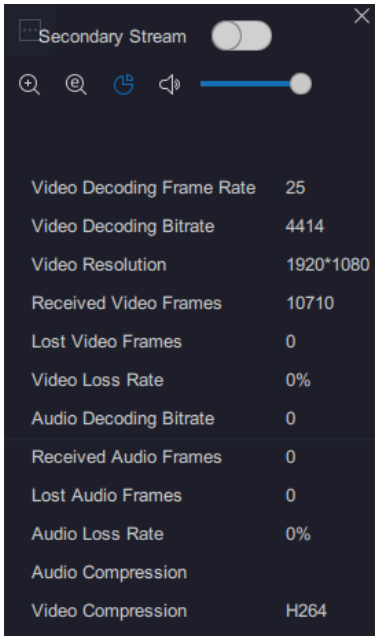
- **E-PTZ**

  Click  to electronically zoom in or out a video. To do so, click  and draw a pane starting from a top left corner. The following is an example.

  After this, the selected area will be zoomed in.
  To cancel the zooming, draw a pane in the reverse direction.

- **Viewing Streaming Details**

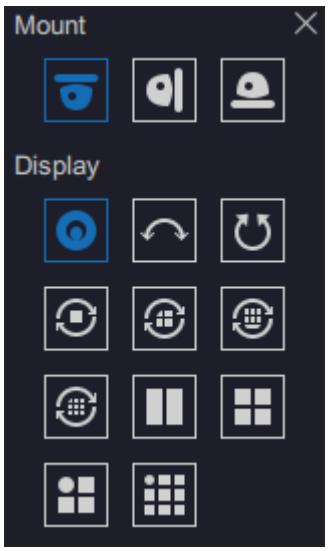
  Click  to view streaming details.



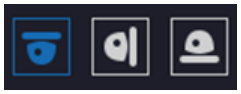
- **Adjusting the Output Volume**

  Adjust the output volume by dragging the volume slider.

For a fisheye camera, you can find the following options.



The preceding options are described in the following table.

	Ceiling mount, wall mount, desktop mount
	• Show fisheye videos. Note: Fisheye videos are full-view videos. • Show 180° view videos. Note: 180° view videos are rectangular videos that are transformed from corrected fisheye videos. • Show 360° view videos.
	• Show 360° view videos and one PTZ-capable video. • Show 360° view videos and three PTZ-capable videos. • Show 360° view videos and six PTZ-capable videos. • Show 360° view videos and eight PTZ-capable videos.
	• Show two PTZ-capable videos. Note: PTZ-capable videos are close-up videos of specific areas and they are taken from fisheye videos. Additionally, PTZ-capable videos support the e-PTZ function. • Show four PTZ-capable videos. • Show fisheye videos and three PTZ-capable videos. • Show fisheye videos and eight PTZ-capable videos.

For more details, access the fisheye camera through the IPC Web and refer to the IPC Web Help.

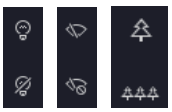
PTZ Controls

Basic Controls

NOTE:

PTZ controls take effect on only PTZ cameras.

PTZ controls are described as follows.

	Direction buttons. You can click  to reset the camera to the factory position.		Adjust the PTZ speed.
Click  **Expand** to show more PTZ controls.			
 	Increase or decrease the focus. Alternatively, use the automatic focus. Increase or decrease the aperture. Alternatively, use the automatic aperture.		Enable or disable the backlight. Enable or disable the wiper. Zoom in or out.

Presets and Paths

Creating a Preset

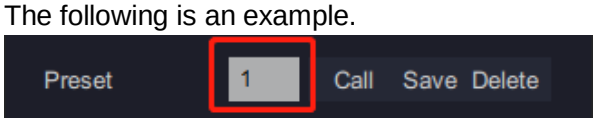
NOTE:

Only ONVIF/VSIP cameras support this operation.

To create a preset for a camera:

1. Move the camera in operation to a position using arrow buttons.

2. Enter a preset number in the **Preset** text filed.
   The following is an example.



3. Click **Save**.

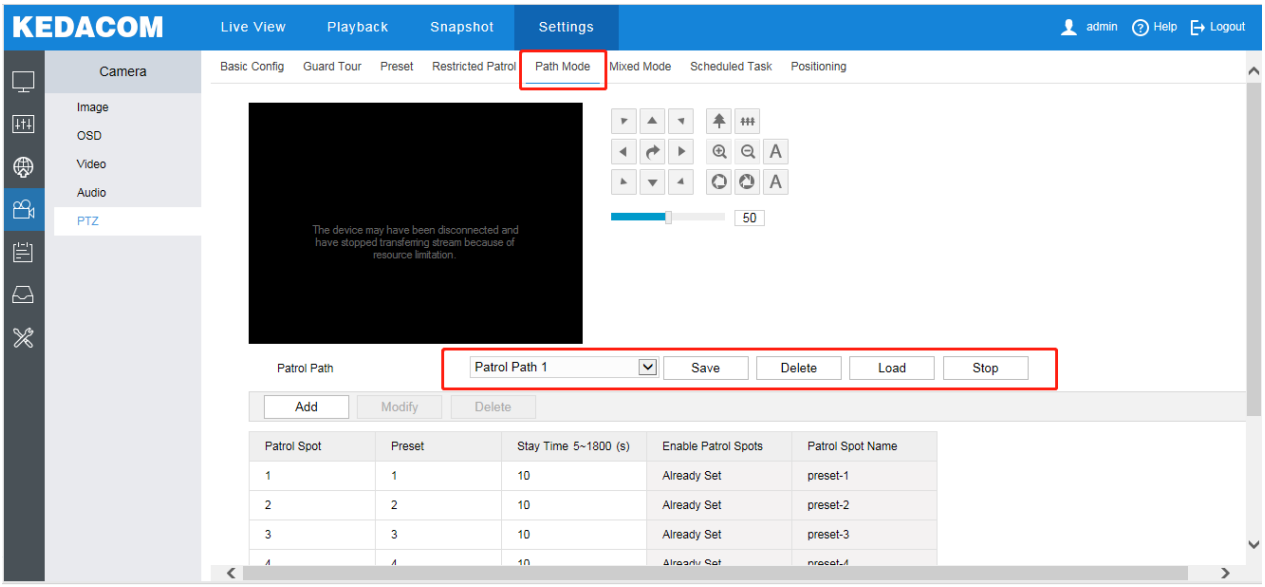
After the preceding steps are performed, a preset is saved. Clicking  will enable the camera to go to the preset.

Touring Presets

Go to the IPC Web of the camera in operation to tour its presets. For details, see the camera user manual.

Touring Paths

You can only tour paths and these paths can be configured only on the IPC Web of the camera in operation.

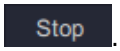


To tour paths of a camera:

1. Enter a path number in the **Tour Path** text filed.
   The following is an example.

2. Click 

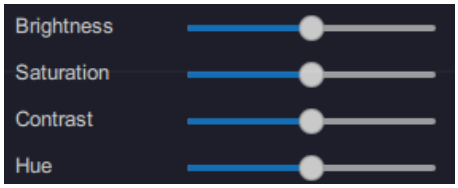
.

To stop the tour, click 

.

Adjusting a Video

To adjust a video, drag the following sliders.

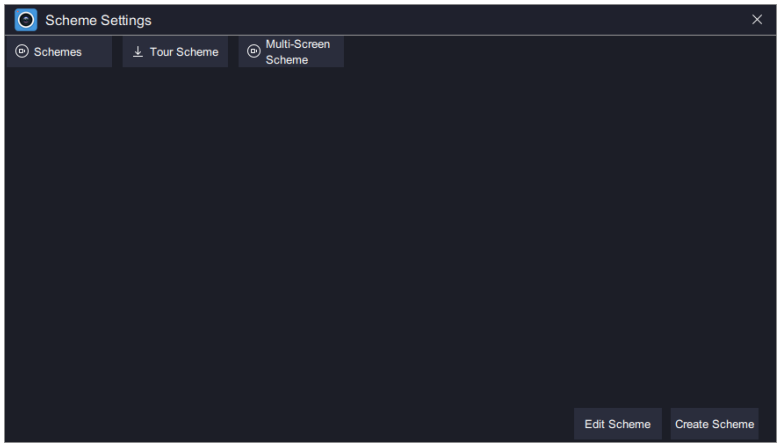


Creating or Touring Schemes

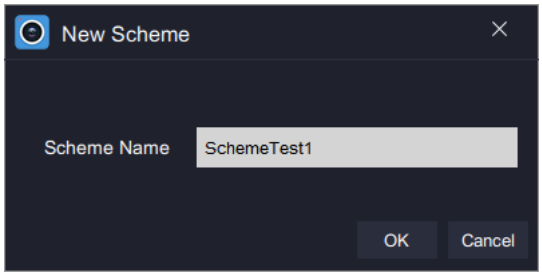
Creating a Single Screen Scheme

To create a single screen scheme:

1. On the **Live** page, select a screen layout using  and bind cameras and viewing windows together.
2. Choose  > **Create Scheme**.

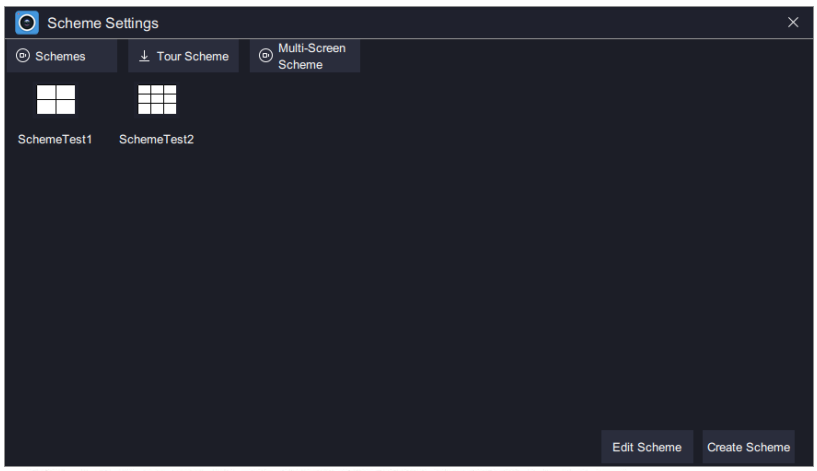


3. Enter a scheme name.
   The following is an example.



4. Click **OK**.

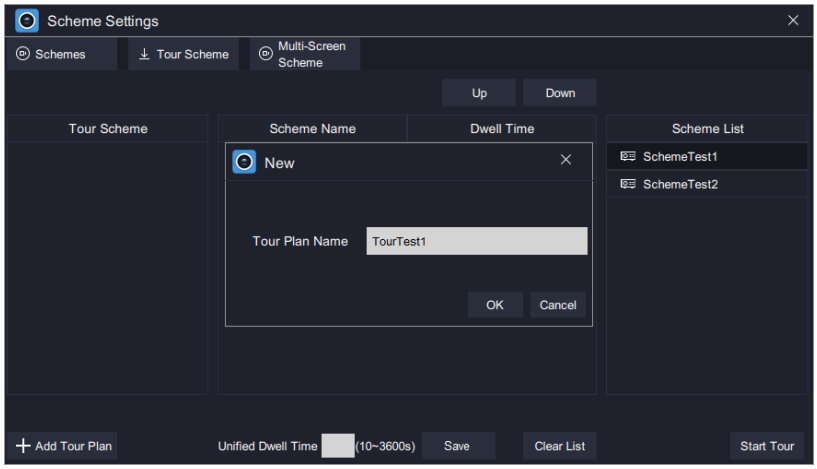
After the preceding steps are performed, a scheme is created.
The following is an example.



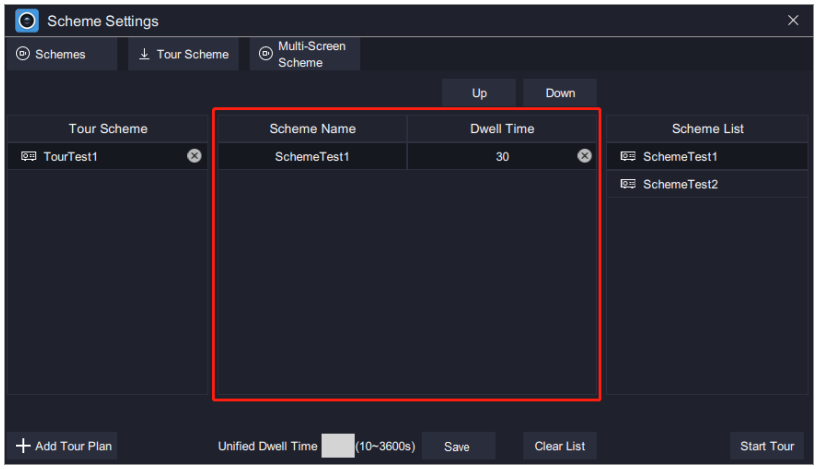
Touring Single Screen Schemes

To tour single screen schemes:

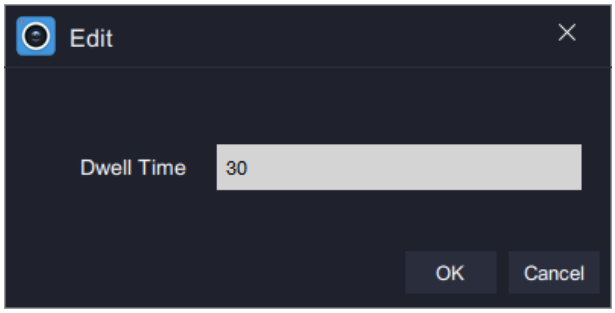
1. Choose Tour Scheme > Add Tour Plan.
2. Enter a tour plan name.



3. Click **OK**.
4. Drag schemes listed under **Scheme List** to the middle pane.
   The following is an example.



5. (Optional) Change the order of a scheme by clicking **Up** or **Down**.
6. (Optional) Double-click a scheme to change its dwell time.



7. (Optional) Enter a value for **Unified Dwell Time**.
   After this, all schemes in a tour plan use this unified dwell time.

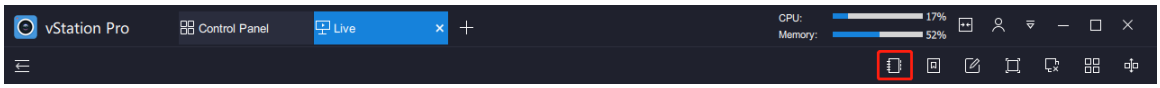
8. Click **Save**.
9. Click **Start Tour**.

After the preceding steps are performed, you can find the following two icons in the top right corner of the screen.

Creating a Multi-Screen Scheme

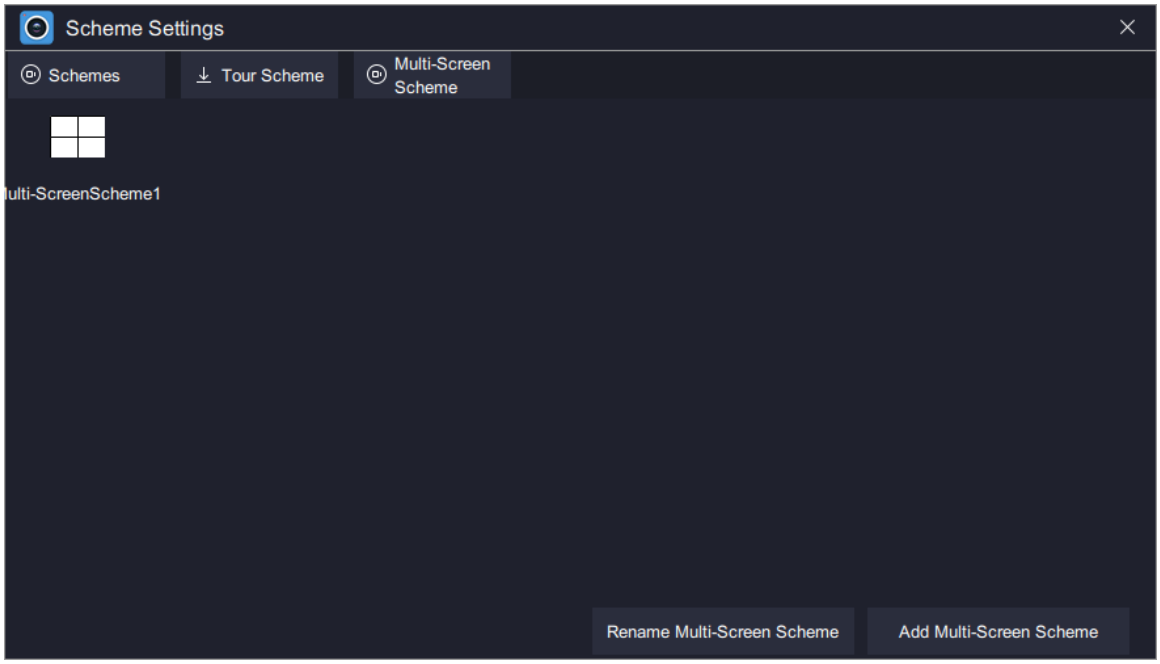
To create a multi-screen scheme:

1. On the **Live** page, select a screen layout and drag cameras to viewing screens.
2. Click  to send the screen to a display (for example, display 1).
3. Click  to add a new tab page.
4. Click  .
5. Repeat steps 1 and 2.
   In this step, send the screen to another display (for example, display 2).
6. Repeat steps 3, 4, and 1 in sequence.
7. Choose  > **Multi-Screen Scheme** > **Add Multi-Screen Scheme**.



After this, the current multi-screen settings (on display 1, display 2, and the local) are saved as a multi-screen scheme.

The following is an example.



You can double-click a multi-screen scheme to load it.

Options on an Idle Viewing Window

Preparations

- The following functions are configured.
  - ✓ Face Detection
  - ✓ Figure Detection
  - ✓ Access Control
  - ✓ Visitor Traffic Statistics
  - ✓ Vehicle Parking
  - ✓ Configuring E-Map
- You have performed step 10 of section "Arming AI Cameras".

Using Options

The following table describes the options available.

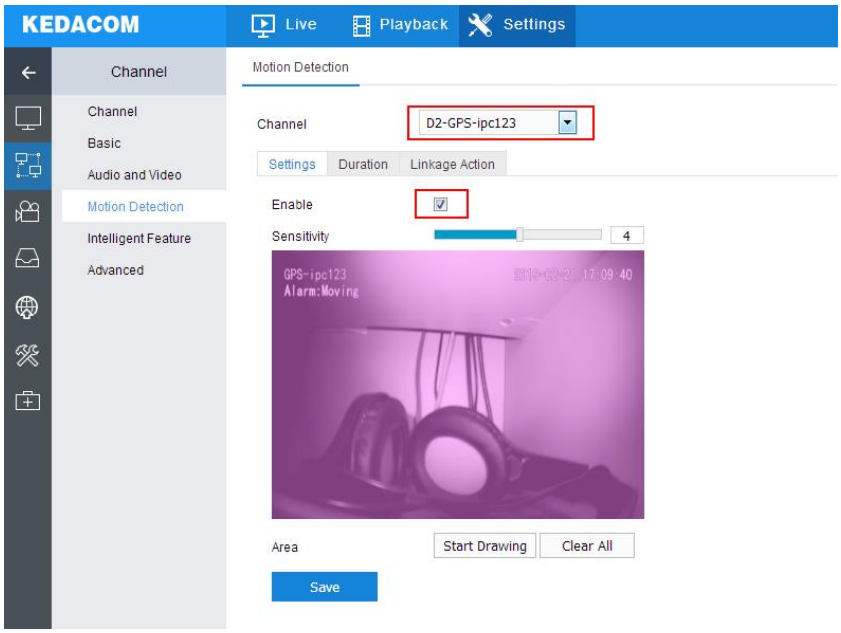
Active alarms	This option allows you to query active alarms except AI alarms.
Face Detection Captures	For details, see section Face Detection.
Figure Detection Captures	For details, see section Figure Detection.
Face Detection Alarms	For details, see section Face Detection.
Face Detection Alarm Captures (Channel)	
Face Detection Alarm Captures (Group)	
Person Capture Statistics	
E-Map	For details, see section "Configuring E-Map".
Vehicle Detection Captures	For details, see section "Vehicle Parking".
Vehicle Detection Panorama Captures	
Vehicle Detection Logs	
Vehicle Capture Statistics	
Vehicle Entries and Exits	
Linked Alarms	For details, see section "Showing Linked Alarms".
Linked Alarm Captures	
Linked Live Videos	
Linked Alarm Playbacks	
Receive Pushed Contents	For details, see section "Receiving Pushed Contents".
ACD Groups	For details, see section "Access Control".
Access Control Entries and Exits	
Personnel Import for Access Control	
Visitor Traffic Statistics	For details, see section "Visitor Traffic Statistics".
Customer Flow	

Showing Linked Alarms

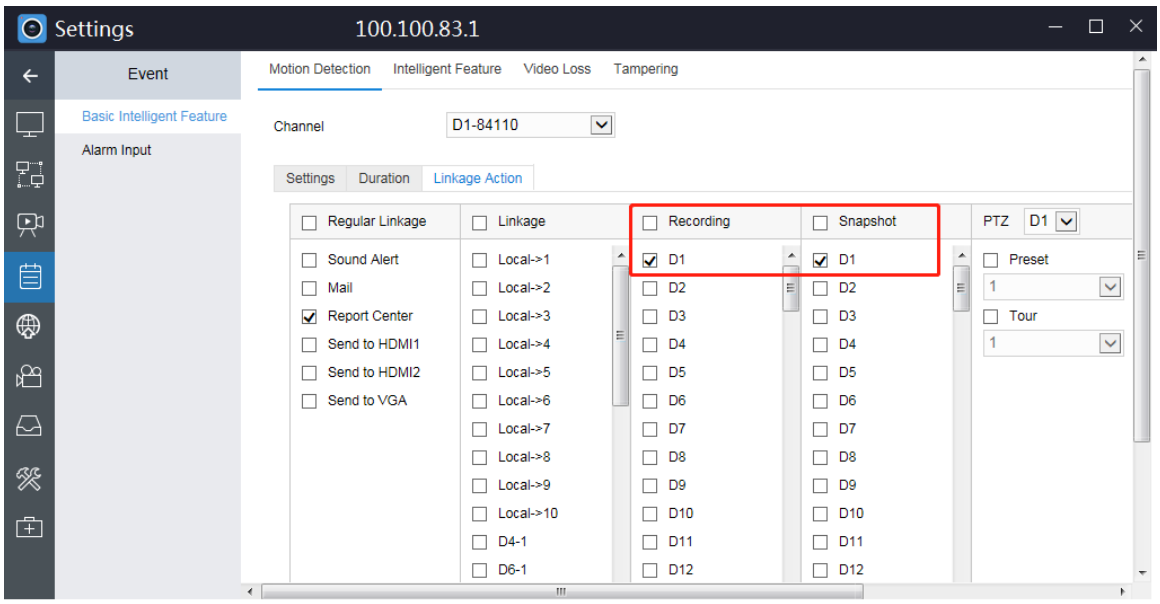
The alarms mentioned in this section are all the alarms related to the motion detection and intelligent feature detection.

Before using the function, ensure the following:

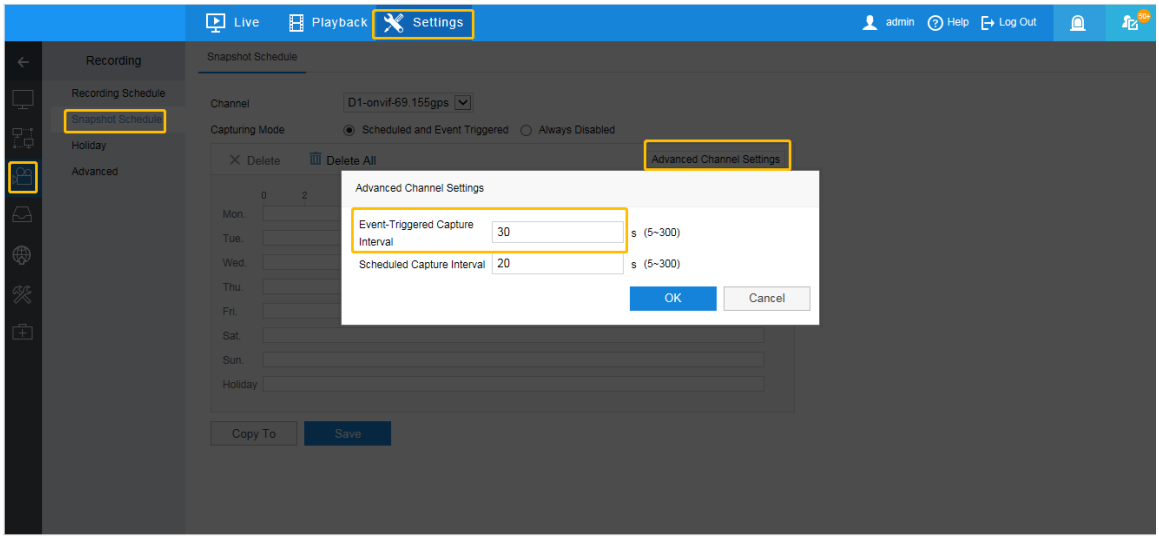
- The target NVR has HDDs installed and the HDDs have been formatted.
- The target camera registers with the target NVR using the ONVIF protocol and the camera registers only with this NVR.
- The motion detection and intelligent feature detections are enabled and configured for the target camera. The following is an example.



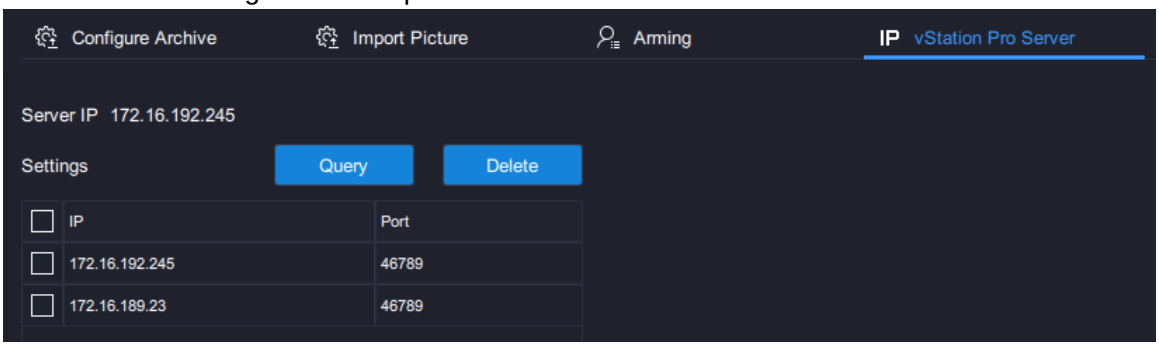
Additionally, the alarm linkage actions must include "**Recording**" and "**Snapshot**" (since there are no restrictions on snapshot channels, you can select any channels you want).



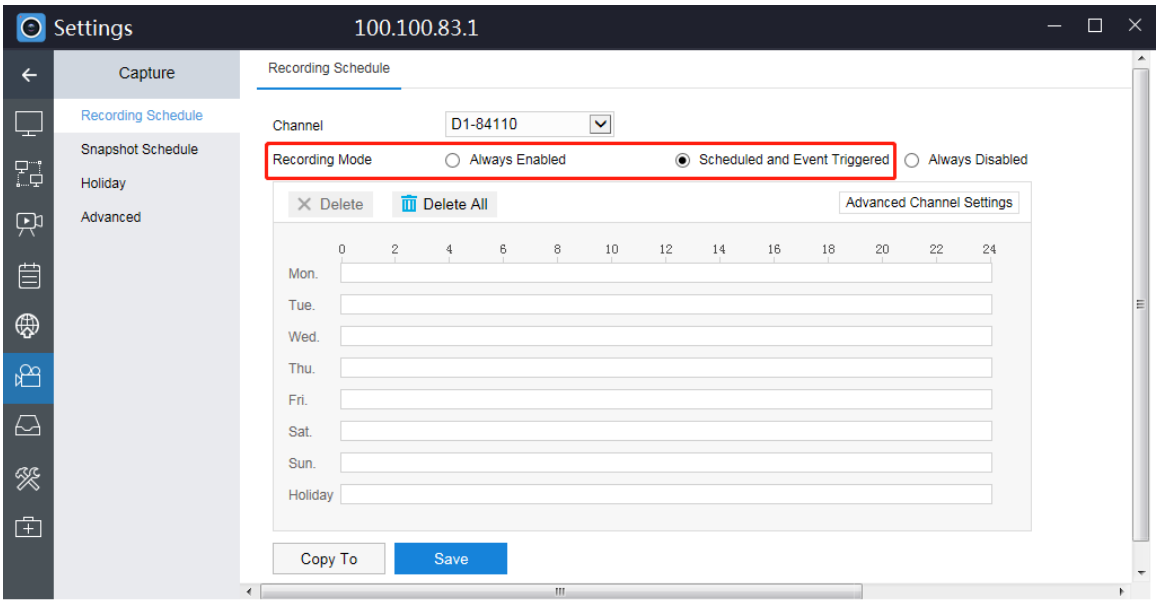
- The following parameter uses the default value.



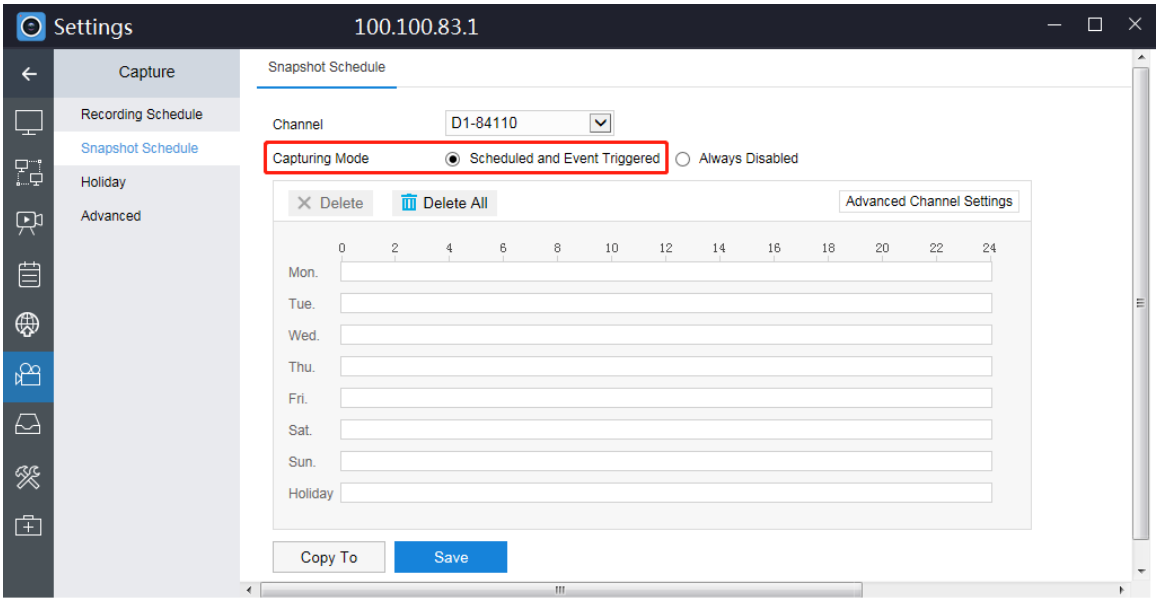
- The vStation Pro servers to which you want the target NVR to push alarms information have been added. The following is an example.



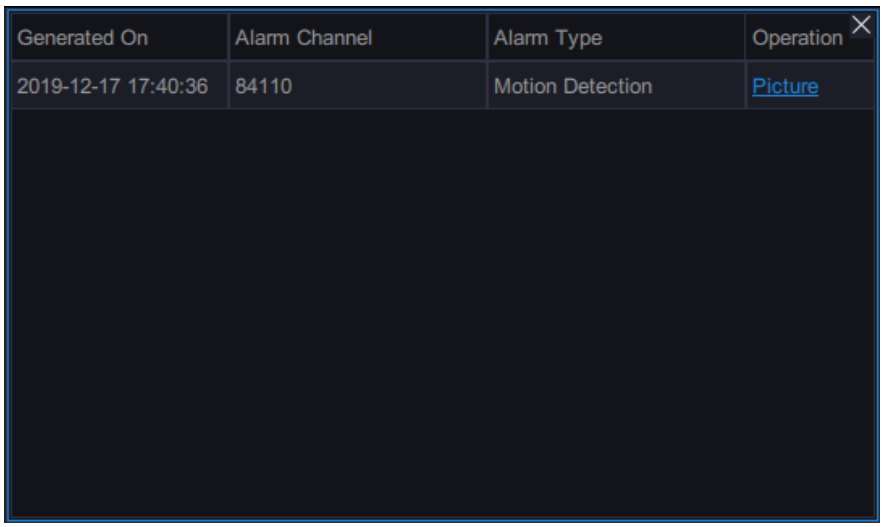
- For the target camera, the recording mode is set to **Scheduled and Event Triggered**.



- For the target camera, the capturing mod is set to **Scheduled and Event Triggered**.



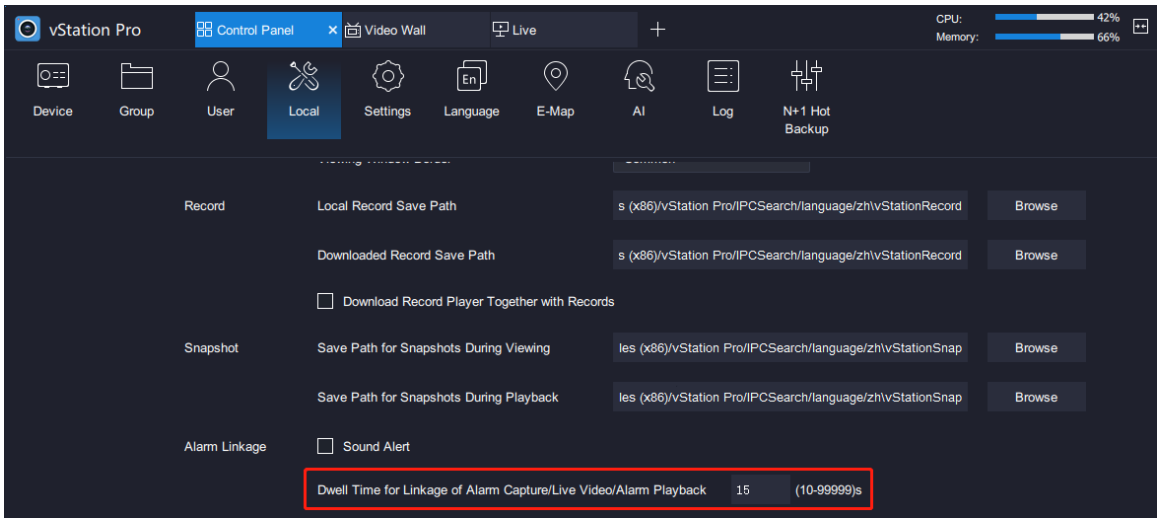
To show linked alarms, on an idle viewing window of the **Live** page, choose > **Linked Alarms**. The following is an example.



Clicking **Picture** will show you the alarm capture on the viewing window.

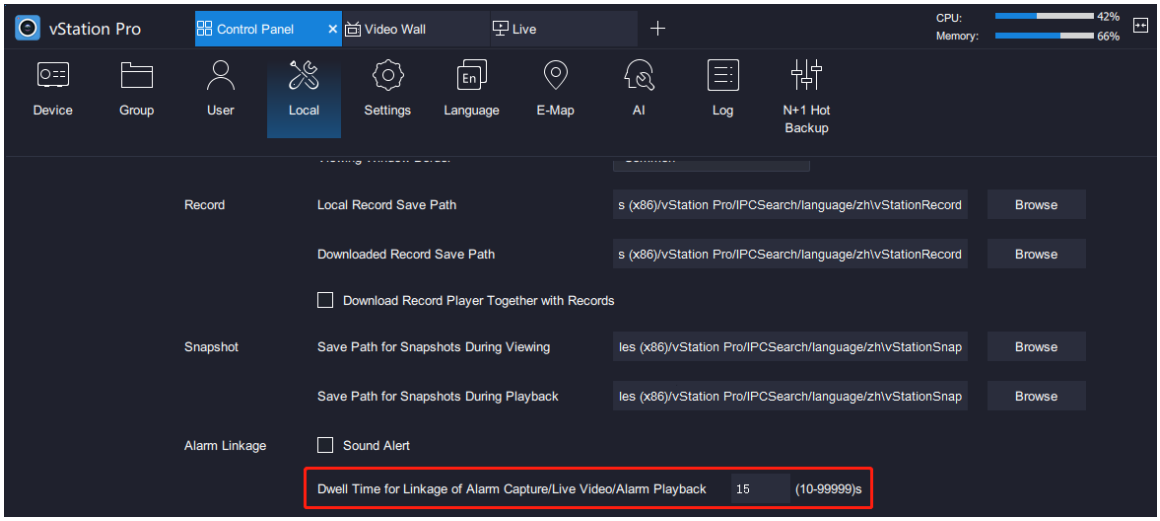
To show alarm captures, choose > **Linked Alarm Captures**. The following is an example.

The alarm capture will be displayed for a period of time determined by the following parameter.



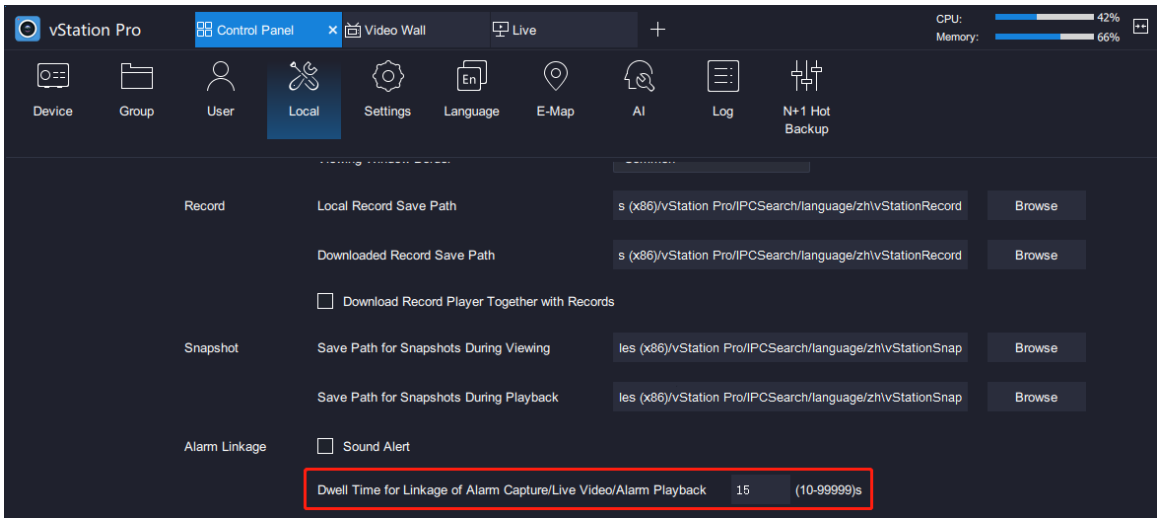
To show a linked live video from the camera where an alarm is generated, choose  > **Linked Live Videos**. The following is an example.

The live video viewing will last for a period of time determined by the following parameter.



To show a linked alarm playback from the camera where an alarm is generated, choose > **Linked Live Videos**. The following is an example.

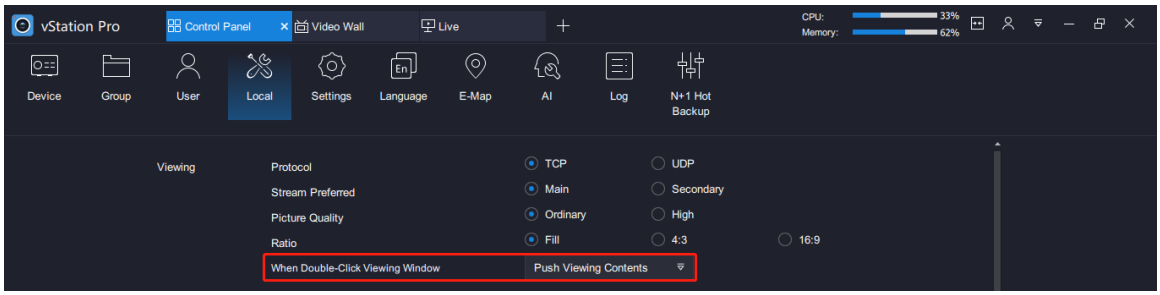
The playback starts around 10 seconds before the time when the alarm is generated and it lasts for a period of time determined by the following parameter.



Receiving Pushed Contents

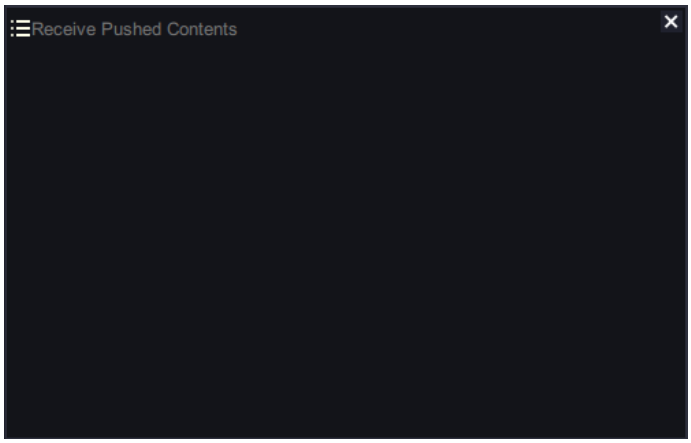
On an idle viewing window, you can choose  > **Receive Pushed Contents** to receive pushed viewing contents, which are pushed in the following way:

1. Set **When Double-Click Viewing Window** to **Push Viewing Contents**.



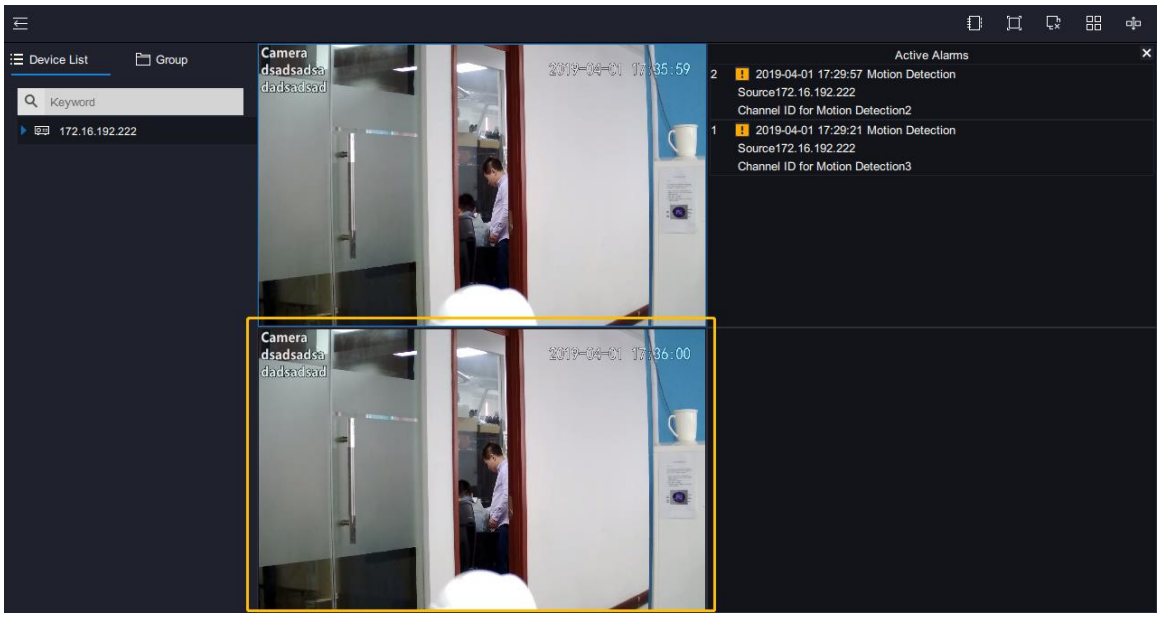
2. Click **Save**.
3. Select an idle viewing window and choose  > **Receive Pushed Contents**.

   After this, you can find the following on the idle viewing window.



   You can push viewing contents to multiple idle viewing windows.
4. On the **Live** page, double-click any viewing window with videos being viewed.

After the preceding steps are performed, you can find the pushed viewing contents on the idle viewing window. The following is an example.



To stop receiving pushed viewing contents, click  in the top right corner.

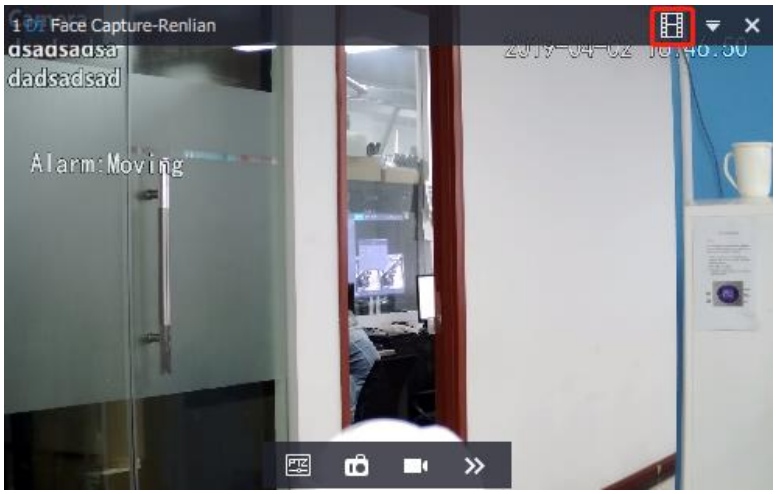
Playing Back

NOTE:

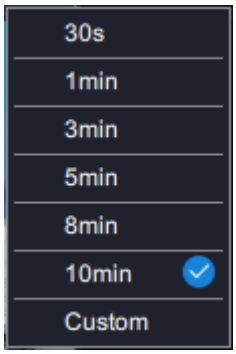
When a record is played back for the first time, the playback will start from the very beginning.

Starting an Instant Playback

On the **Live** page, clicking  in the top right corner allows you to start an instant playback.



You can click  to choose the instant playback length. For example, if you choose **10 min** and the current time is 16:30, the instant playback will start at 16:20.



After the instant playback is started, you can find the following controls.

	Resume the live video viewing.		Stop the instant playback.
	Pause the instant playback.		Play back frame by frame. If you click this button at an interval of 500 ms, one frame will be played back. To go back to the normal playback, click .
	Electronic zooming	-	-

Starting a Multi-Record Playback

NOTE:

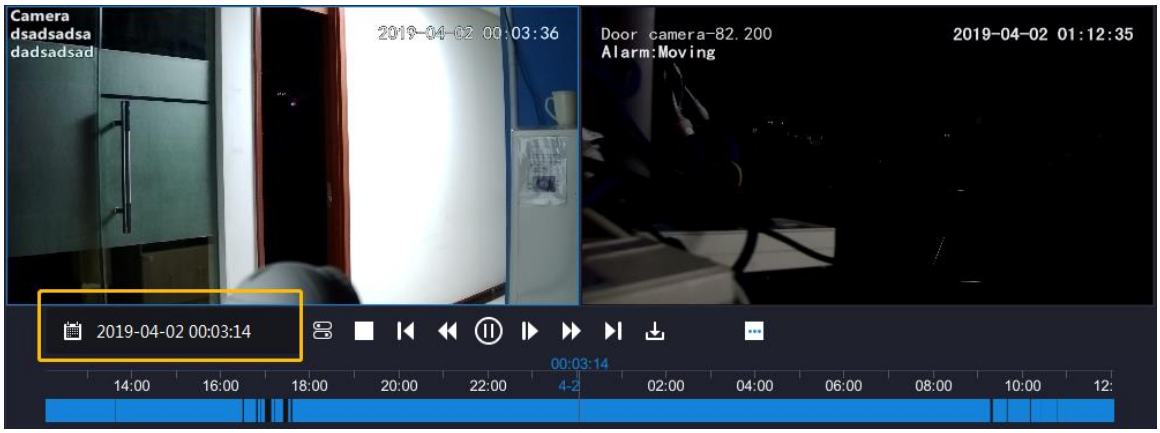
A maximum of 16 channels can be played back at the same time.

To start a channel playback, on the **Playback** page, drag the target channel from the **Device List** on the left panel to the target playback window. You can also drag multiple channels to playback windows.

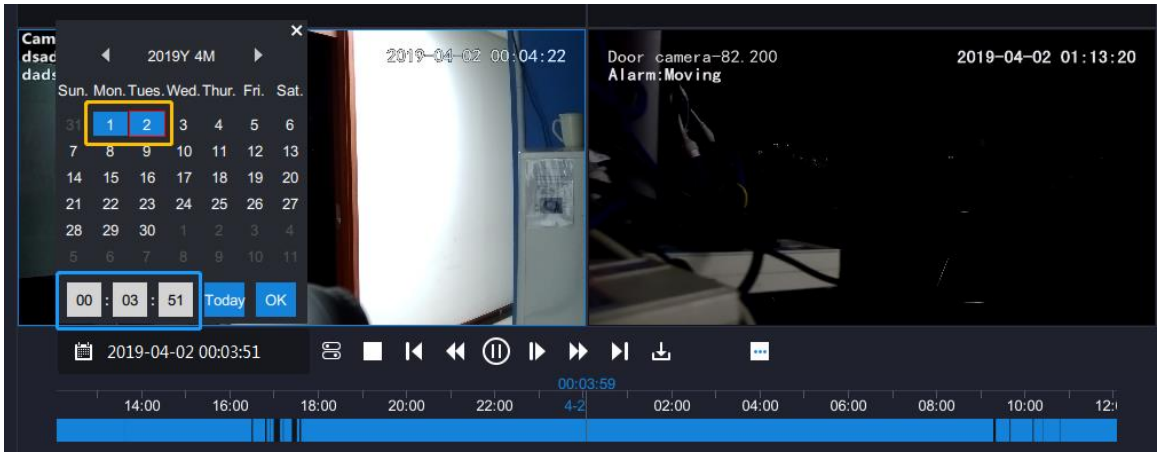
About the Playback Start Time

A playback is started immediately after the target channel is dragged to the target playback window. By default, the playback starts from the current day's earliest time when the record is available. For example, if a recording is started at 1:00, the playback will be started from 1:00 by default.

You can click to change the playback start time.



A blue date indicates a record-available date and the timeline at the bottom is accurate to the minute.



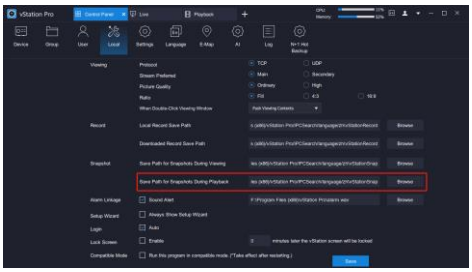
Playback Controls

Playback controls on the top of the page are described as follows.

View the playback page in full screen mode.	Stop all playbacks.
Change the screen layout.	Separate the **Playback** page from the main screen.

Playback controls at the bottom of the page are described as follows.

Starting a Synchronous Playback	Stop the playback.
Go backward 30s with each click.	Slow the playback down. Every click will slow down the speed from 1/2X to 1/4X and then 1/8X and finally 1/16X. When the speed is 1/16X, clicking it will make the speed normal again.

	Pause the playback.		Play back frame by frame. If you click this button at an interval of 500 ms, one frame will be played back. To go back to the normal playback, click .
	Accelerate the playback. Every click will increase the speed from 2X to 4X and then 8X 16X 32X and finally 64X. When the speed is 64X, clicking it will make the speed normal again.		Go forward 30s with each click.
	Downloading Records		Take a capture. This icon displays after you click . Captures are saved in the path specified by **Save Path for Snapshots During Playback**. 
	Click it to start a recording during a playback. Click it again to stop the recording. The record is saved in an external storage unit.		Electronically zoom in or out. To zoom in, draw a pane in the target area starting from a top left corner. To cancel the zooming, draw a pane in the reverse direction.
	Adjust the speaker volume or mute the speaker.	-	-

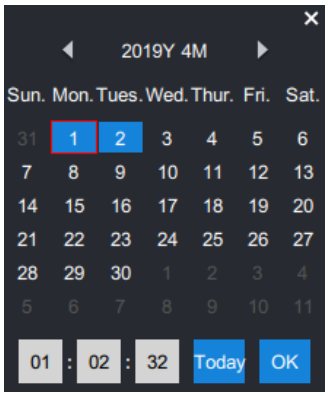
Starting a Synchronous Playback

NOTE:

The synchronous playback function applies only to the NVR2860E of V7.

To start a synchronous playback:

1. During a playback, click .
2. Drag target cameras to playback windows.
3. (Optional) Click to change the playback start time.



Usually, cameras have different record-available dates. For synchronous playbacks, all these dates are blue, for example, 2. From the view of the set theory, these blue dates are the union of the selected cameras' record-available dates. For example, records are available on March 1 for camera 1 and records are available on March 2 for camera 2. In such a case, the dates March 1 and 2 are blue. Additionally, all these blue dates are displayed no matter which playback window is currently selected, which means you cannot see the record-available dates of a specific camera.

By default, the playback starts from the very beginning of the first record-available date

4. Click  .

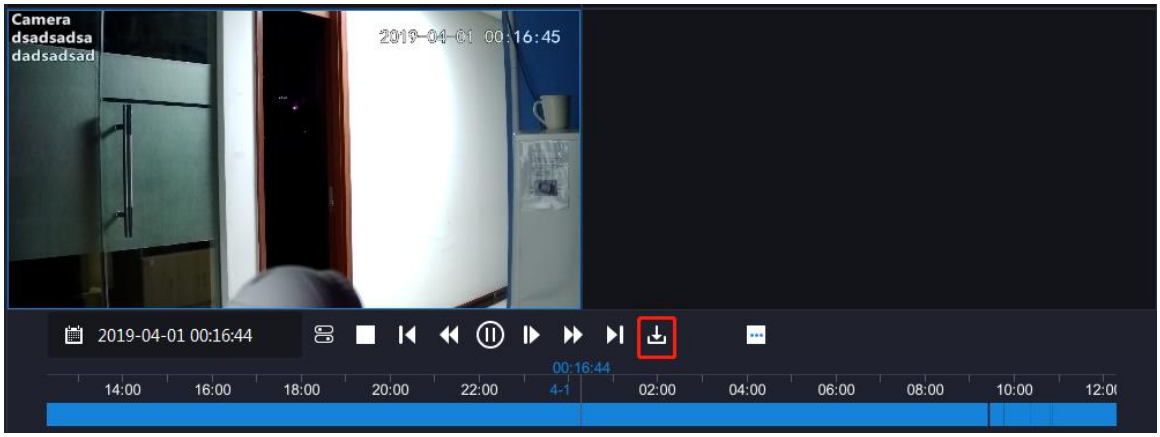
Downloading Records

NOTE:

If you cannot download records, check whether you have the record download authorization. For details, see section "Adding Client Accounts".

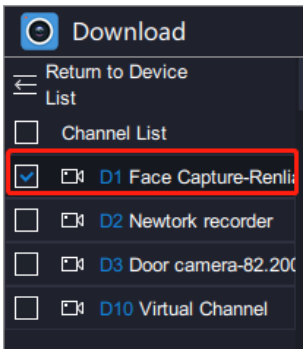
To download records of a camera:

1. During a playback of the camera, click  .

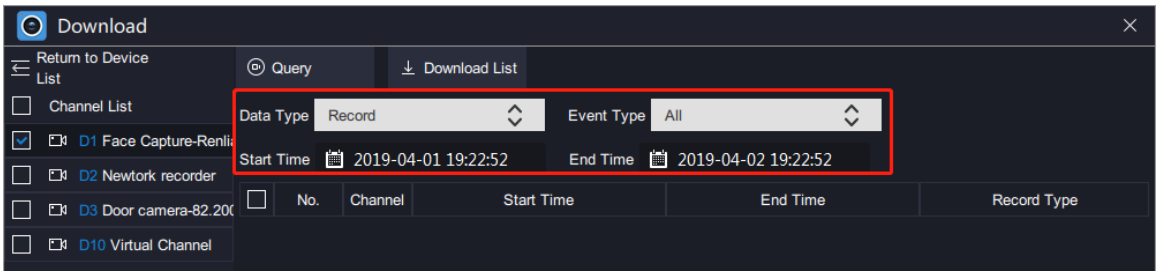


2. Click the NVR with which the camera registers.

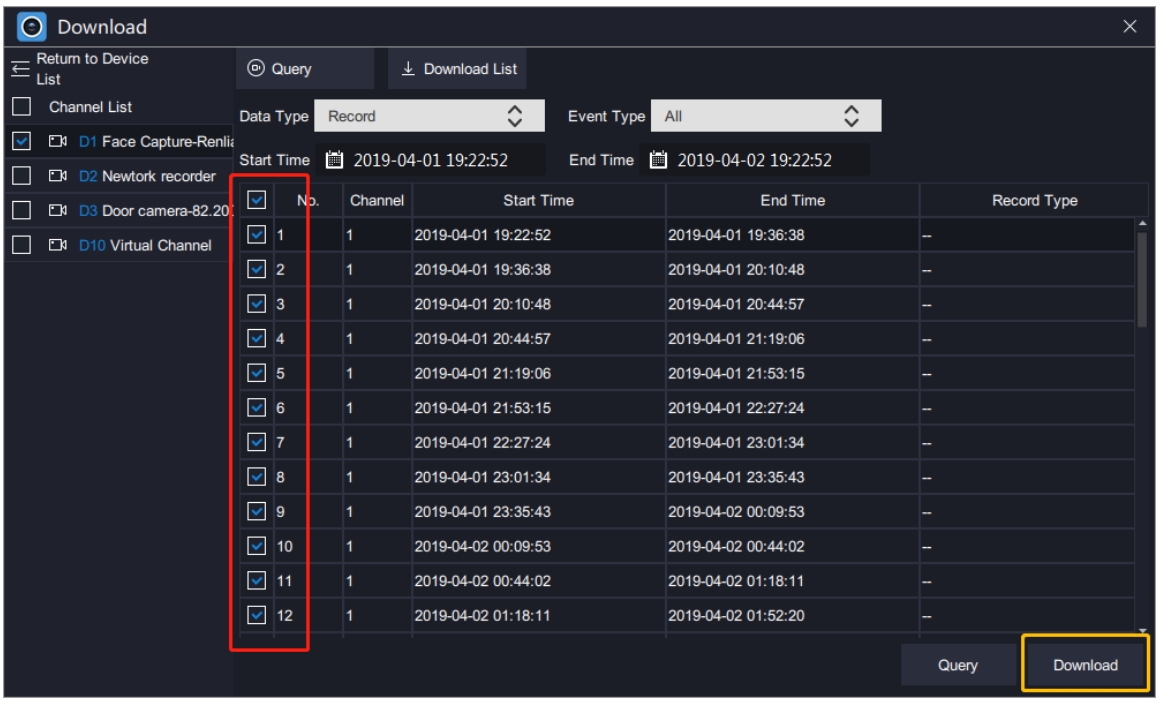
3. Select the camera from the **Channel List**.



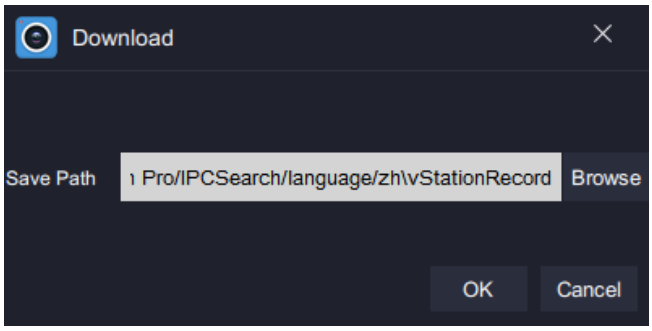
4. Specify **Data Type**, **Event Type**, **Start Time**, and **End Time**.



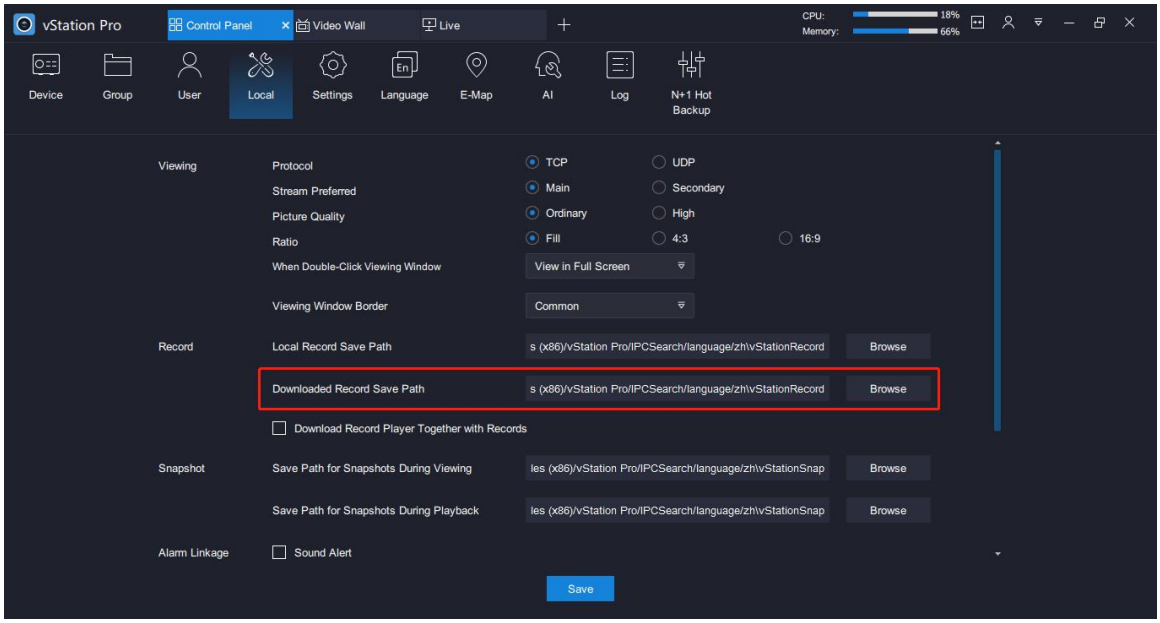
5. Click **Query**.
6. Select records you want to download and click **Download**.



7. Select a save path or use the default one.

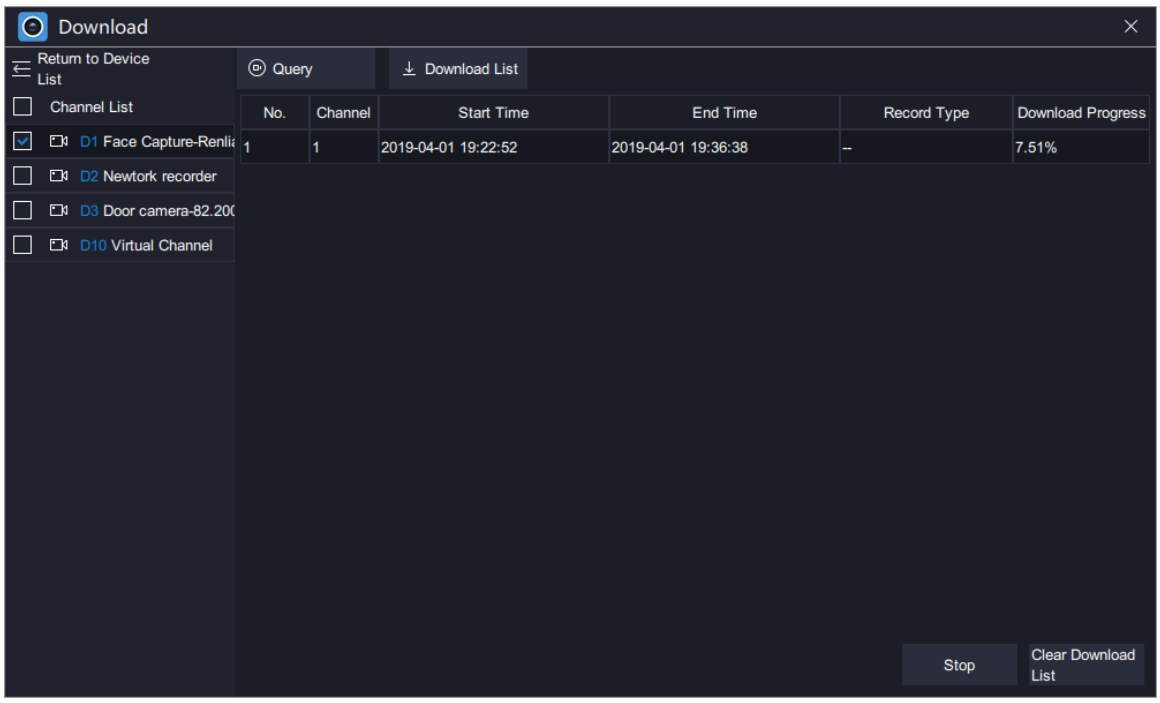


The save path can be configured under **Local**.



8. Click **OK**.

   After this, you can find the following.



In this step, you can stop the download.

Using AI Applications

The AI applications include the Face Detection, Figure Detection, Access Control, Visitor Traffic Statistics, and Vehicle Parking functions and apply only to the NVR2881-B of V7, NVR2821 of V7, and AI cameras.

The NVR sub-models are as follows.

Table 1 Sub-models of the NVR2881-B

4 Intelligent Channels	8 Intelligent Channels	16 Intelligent Channels
NVR2881-16016B/4HI NVR2881-16032B/4HI NVR2881-16064B/4HI NVR2881-16128B/4HI	NVR2881-16016B/8HI NVR2881-16032B/8HI NVR2881-16064B/8HI NVR2881-16128B/8HI	NVR2881-16016B/16HI NVR2881-16032B/16HI NVR2881-16064B/16HI NVR2881-16128B/16HI

Table 1 Sub-models of the NVR2821

2 Intelligent Channels	4 Intelligent Channels	8 Intelligent Channels
NVR2821-04009B/2LI NVR2821-04016B/2LI NVR2821-04032B/2LI	NVR2821-04009B/4HI NVR2821-04016B/4HI NVR2821-04032B/4HI	NVR2821-04009B/8HI NVR2821-04016B/8HI NVR2821-04032B/8HI

The AI camera sub-models are as follows.

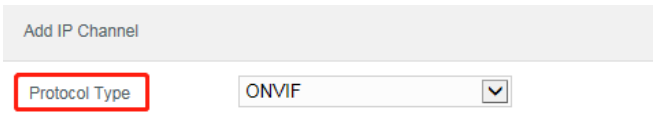
IPC123-Fi4N
IPC2255-Gi4N
IPC2255-Gi4N-SIR80-Z6048
IPC2655-Gi4N-SIR80-Z1550
IPC2855-Gi4N
IPC126-Fi4aNT
IPC146-Fi4aNT
IPC186-Fi4aNT
IPC2231-Gi4N-SIR40-Z7022
IPC2431-Gi4N
IPC2252-Gi4N-SIR50-Z7022
IPC2452-Gi4N
IPC2241-Gi4NW-SIR15-L0280
IPC2241-Gi4NW-SIR15-L0360
IPC2241-Gi4NW-SIR15-L0600
IPC425-i423-NWH
IPC445-i433-NWH

The following table provides the camera application and camera setttings required by the functions.

Function	Required Settings on the Camera Side	Applies Only to AI Cameras	Access Protocol of the Camera
Face Detection	VIIAS	Yes	SIP, ONVIF, or VSIP
Figure Detection	VIIAS and detection mode/objective	Yes	SIP, ONVIF, or VSIP
Access Control	VIID and COI	No	SIP, ONVIF, or VSIP
Visitor Traffic Statistics	VIID and COI	Yes	SIP, ONVIF, or VSIP
Vehicle Parking	Encoding format or compresssion, and VSIP	No	VSIP

NOTE

- All the required camera settings are detailed in function descriptions.
- The access protocol of the camera is specified by the **Protocol Type** parameter when you add the camera on the NVR Web (choose **Channel** > **Channel** > **IP Channel** > **Add**), as shown in the following figure.



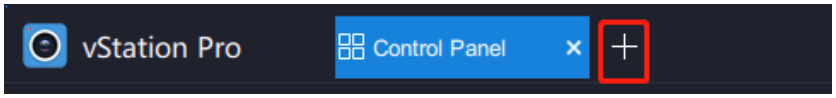
- As for the VSIP access protocol, refer to step 2 of section "Configuring the Function" of the Vehicle Parking function for details.

Face Detection

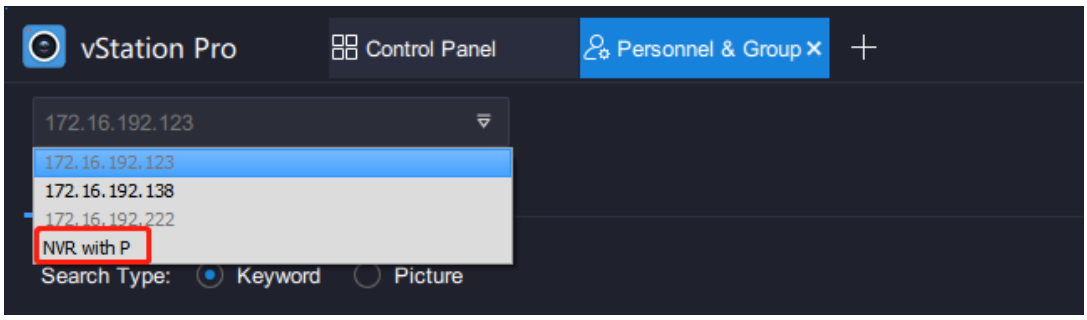
Uploading Personnel Data to a Personnel Group

Operations described in this section are mandatory to the Face Detection and Vehicle Parking functions. To upload personnel data to a personnel group of an AI NVR:

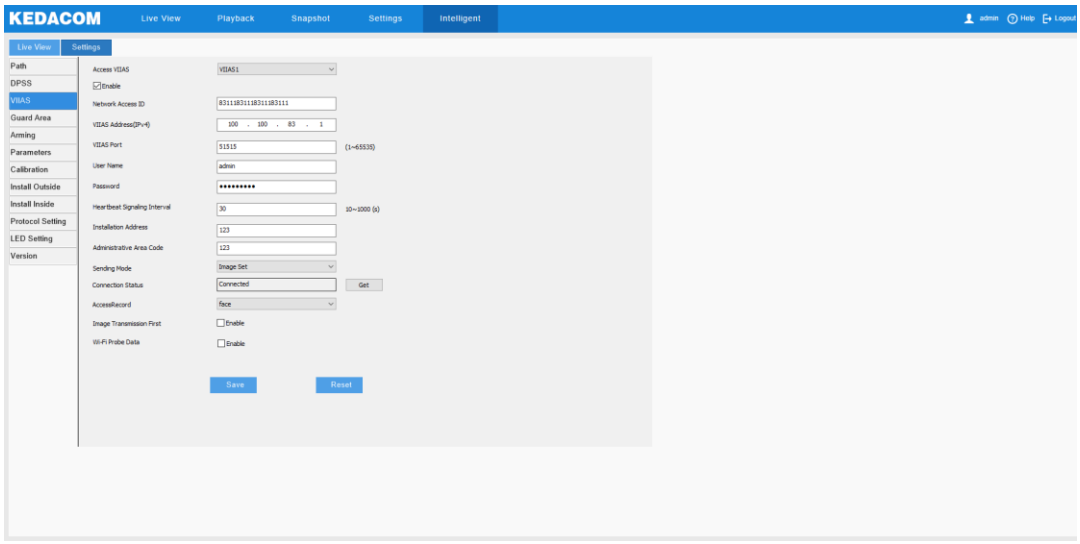
1. Click ⊞ and select **Personnel & Group**.



2. Select an AI NVR from the drop-down list and ensure that AI cameras have been added to this NVR.



3. Ensure that the VIIAS settings of the AI cameras have been configured.



Before configuring the VIIAS settings, note the following.

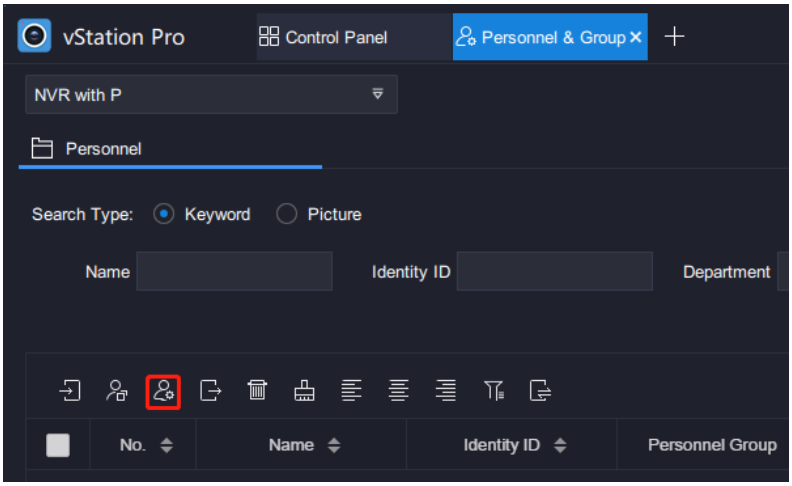
Access VIIAS	Keep the default value.
Enable	Check it.
Network Access ID	Enter a 20-digit number, which must be a unique ID on the AI NVR.
VIIAS Address	Enter the IP address of the AI NVR.
VIIAS Port	Set it to **51515**.
User Name	Enter a username of the AI NVR.
Password	Enter the password of the username.
AccessRecord	Set it to **face**.

Other Parameters	Keep the default values.

The AI cameras are capable of detecting faces, figures, and vehicles by default. You cannot enable or disable their detection capability.

4. Create a personnel group.

   1) Click  **Manage Group**.

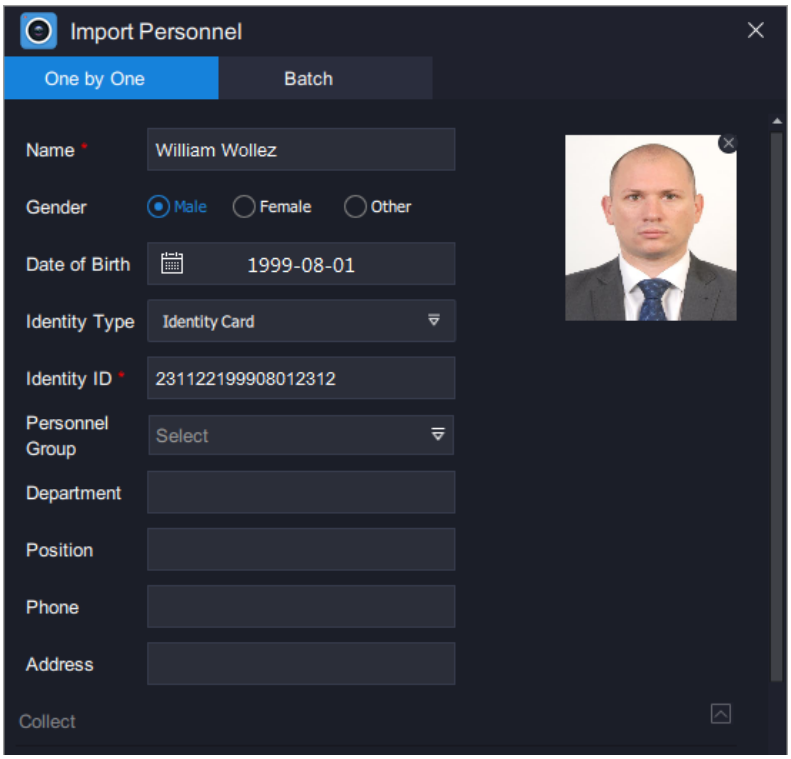


   2) Enter a personnel group name.
   3) Click **Create**.

5. Click  **Import**.
6. Upload personnel data one by one or in batches.

   One-by-one:

   1) Click **One by One**.
   2) Specify parameters displayed.
      The following is an example.



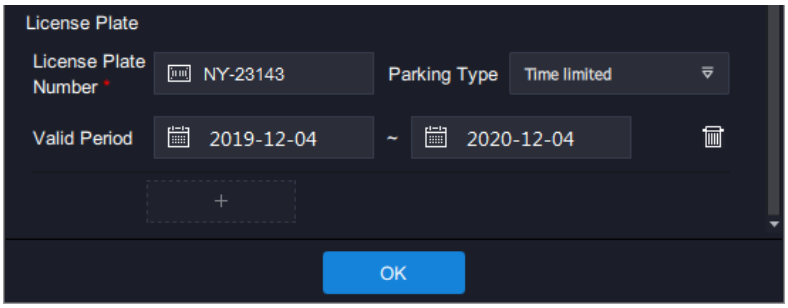
Before uploading pictures, note the following:

- Only .jpg and .jpeg pictures can be uploaded.
- The picture size should not be greater than 256 KB.
- Each picture must include a face.

3) Under **Collect**, enter vehicle information.

A maximum of four vehicle data entries can be added for one person.

The following is an example.



If you want to add more vehicle information, click  .

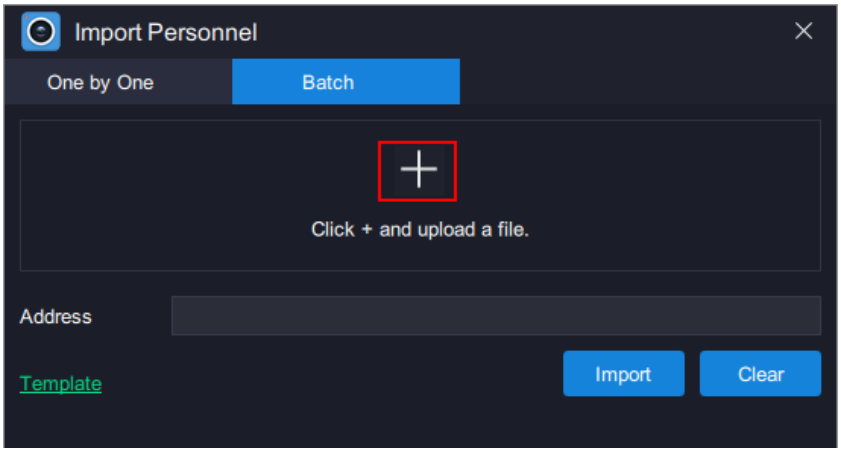
When the parking type is **Permanent**, you do not need to specify **Valid Period**.

4) Click **OK**.

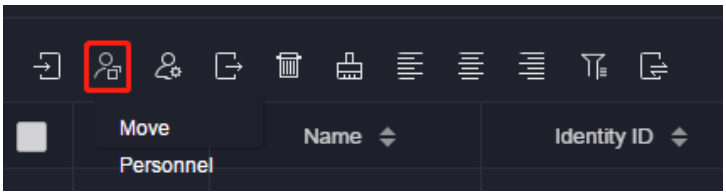
In batches:

1) Choose **Batch** > **Template**.
2) Enter personnel data into the template file.

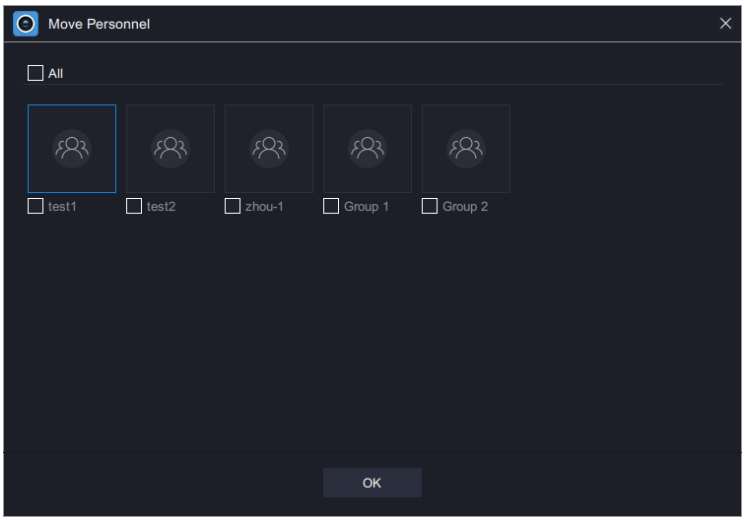
3) Click **+** to upload the template file and click **Import**.



7. (Optional) Move a person to a personnel group if you did not group him/her at the first place.
   1) Select the person from the personnel list.
   2) Click  **Move Personnel**.



   3) Select the target personnel group.



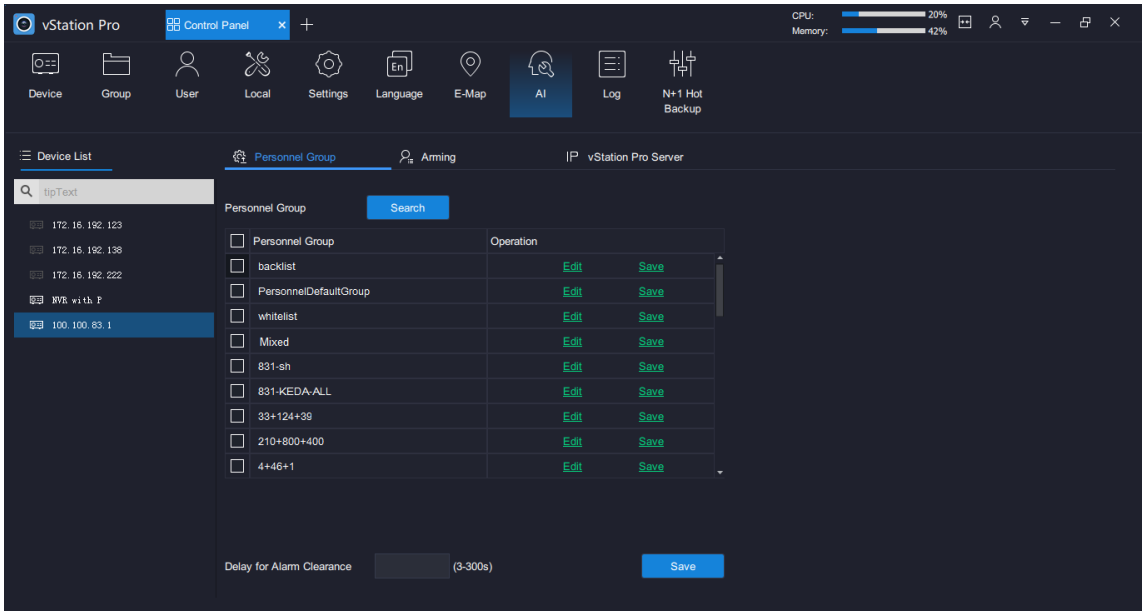
   4) Click **OK**.

8. (Optional) Export information of a person by clicking  **Export**.
9. (Optional) Determine what information items to show by clicking  **Items to Show**.
10. (Optional) Import data from another personnel database by clicking  **Database Import/Export**. In this step, you can also export data to another personnel database.

To query the personnel groups under an AI NVR:

1. Choose **Control Panel** > **AI** > **Personnel Group**.
2. Select the AI NVR.
3. Click **Search**.

The following is an example of a search result.



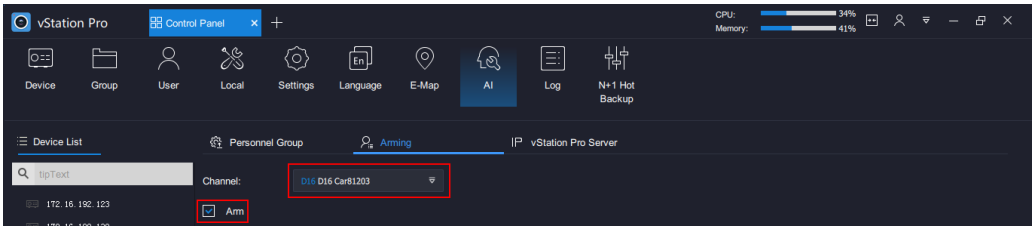
The **Delay for Alarm Clearance** parameter is described in sub-section "Querying Function Effect" of section "Face Detection".

Arming AI Cameras

After personnel data is uploaded to a personnel group, you need to arm AI cameras to enable them to detect faces.

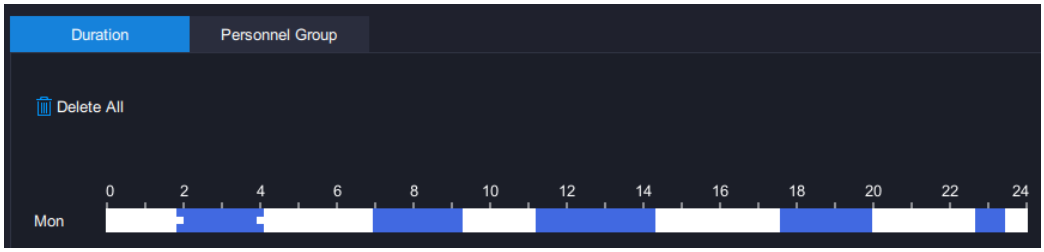
To arm an AI camera:

1. Choose **Control Panel** > **AI** > **Arming**.
2. Select the AI NVR from the device list and the AI camera from the **Channel** drop-down list, and check **Arm**.



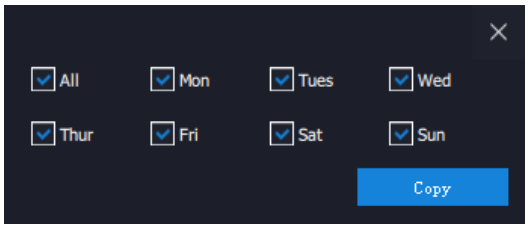
3. Select arming durations.

   In this step, you can drag the duration sliders to select specific durations. The following is an example.

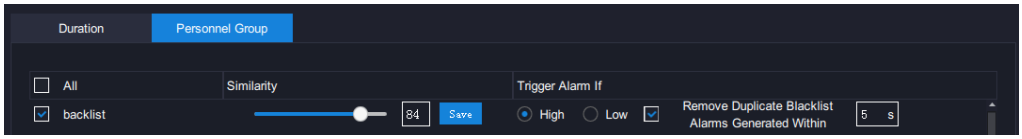


4. (Optional) Click  to copy the durations of a day to other days.

   The following is an example.



5. Click **Save**.
6. Under **Personnel Group**, select the personnel group to which you have imported personnel data in section "Uploading Personnel Data to a Personnel Group".

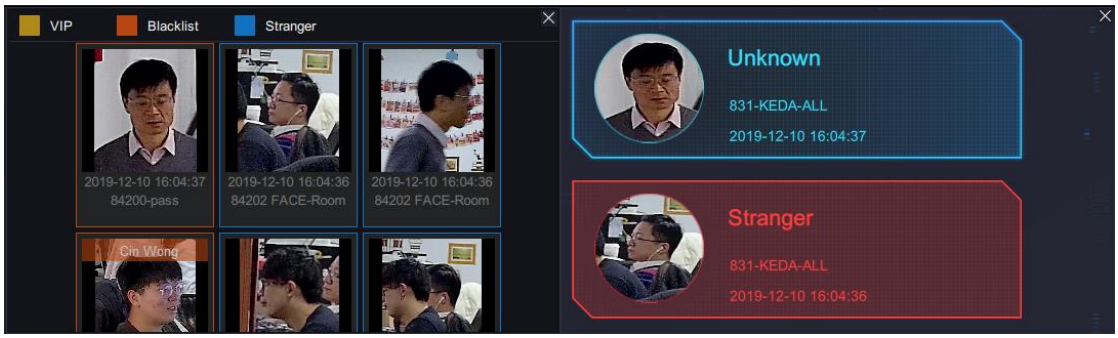


7. Determine the similarity and whether to trigger an alarm if the similarity threshold is exceeded or not exceeded.

   For example, if you are hunting for Person A, you can select **High**, assuming that you have uploaded Person A's data to the personnel group that you have selected in step 6. After this, if a face capture with a similarity exceeding the similarity threshold is reported, an alarm will be triggered to alert you that Person A has appeared on the capturing location. Additionally, you can check **Remove Duplicate Blacklist Alarms Generated Within** to remove duplicate alarms frequently generated within a short period of time.

   If you are preventing strangers from entering a private property, you can select **Low**, assuming that you have uploaded data of personnel who are allowed to enter the property to the personnel group. After this, if a face capture with a similarity not exceeding the similarity threshold is reported, an alarm will be triggered to alert you that a stranger has entered the property.

   If you set **Trigger Alarm If** to **High**, a person whose face is detected will be labeled as **Blacklist**; if you set **Trigger Alarm If** to **Low**, a person whose face is detected will be labeled as **Stranger**; as shown in the following figure.



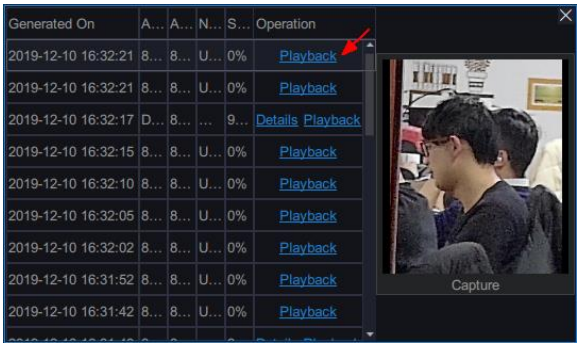
NOTE

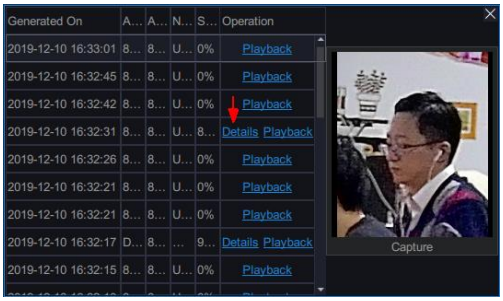
The **VIP** label is reserved for future use.

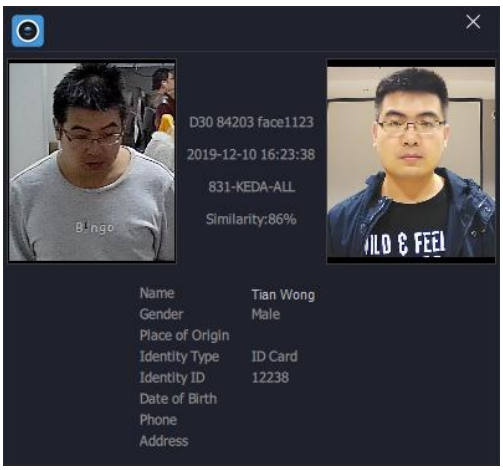
Unknown indicates that the person's name is not specified when his or her data is being uploaded to the related personnel group.

Additionally:

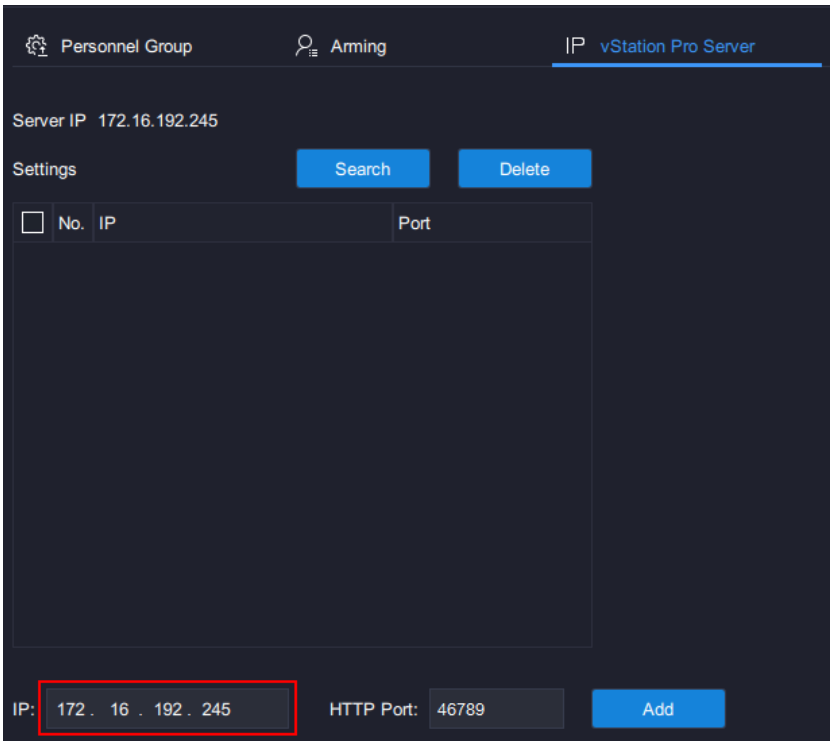
For **Strangers**, there are no **Details**, as shown in the following figure.	For **Blacklists**, there are **Details**, which show the face matching results. The following are examples.





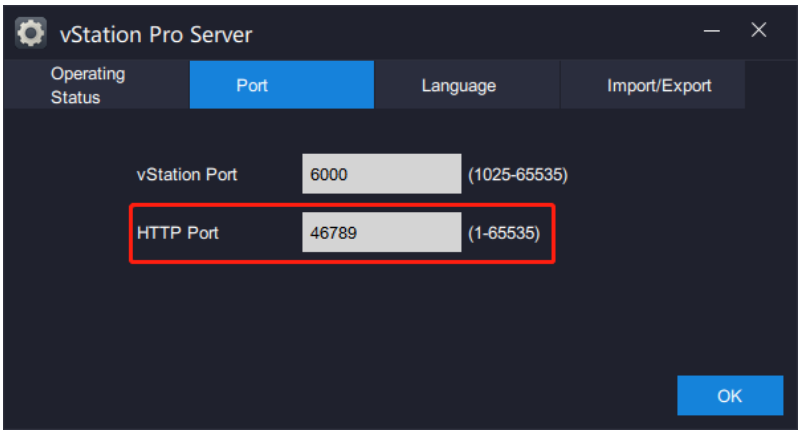


8. Click **Save**.
9. Under **vStation Pro Server**, add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   You can add a maximum of 32 servers.
   1) Enter the IP address of each target server in the **IP** text field.



   The default value is the local server's IP address.
   2) Enter the HTTP port of each target server in the **HTTP Port** text field.

The **HTTP Port** can be configured on the server.



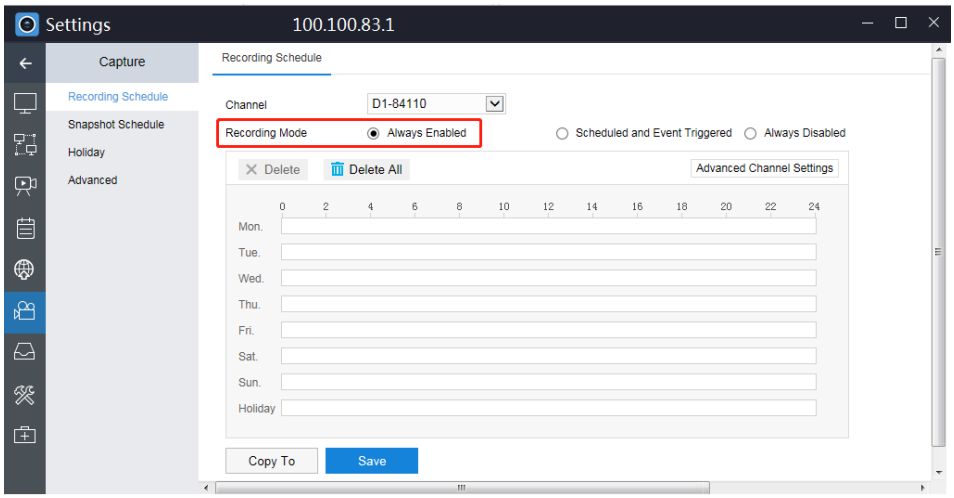
3) Click **Add**.

Querying Function Effect

Preparations

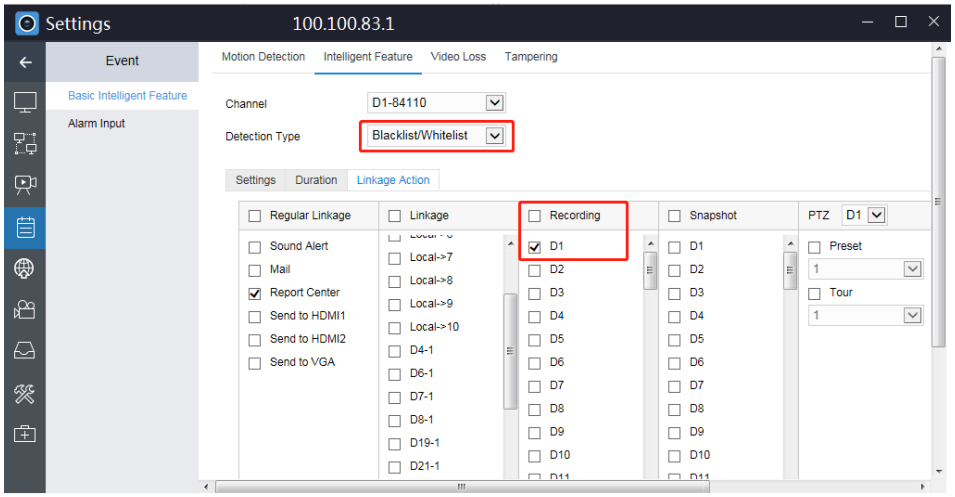
For Cameras

Before querying the function effect, ensure that the recording function has been enabled for each AI camera.

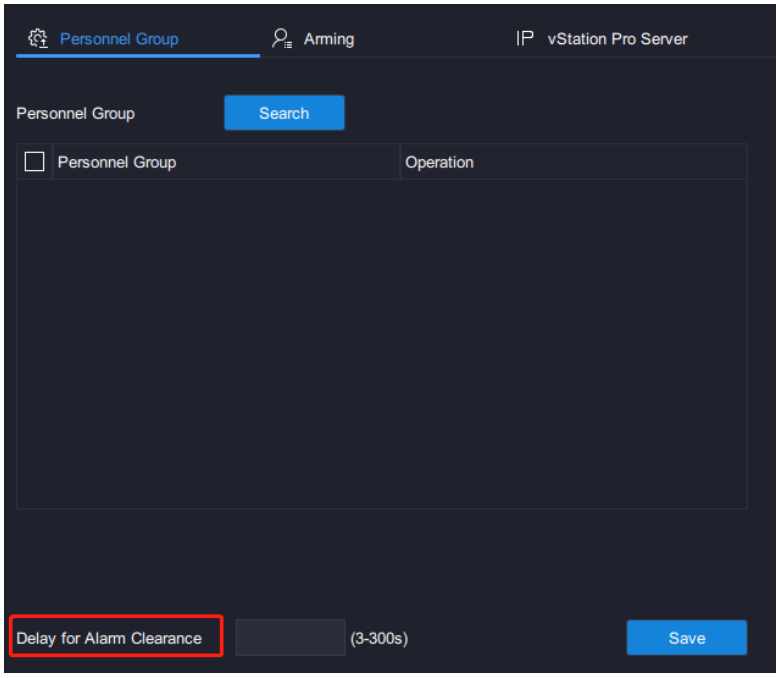


If you set **Recording Mode** to **Scheduled and Event Triggered**, you can perform any of the following.

- Schedule recordings for each AI camera.
- Enable the intelligent feature alarm **Blacklist/Whitelist** with the alarm linkage action configured as follows.



Additionally, on the vStation Pro, the **Delay for Alarm Clearance** parameter must be configured.



The **Delay for Alarm Clearance** parameter applies only to the face detection function. When a face is detected, a face detection alarm will be generated on the vStation Pro and a Blacklist/Whitelist alarm is generated on the camera side, and this parameter specifies the time after which the two alarms are cleared. The default value is **6**.

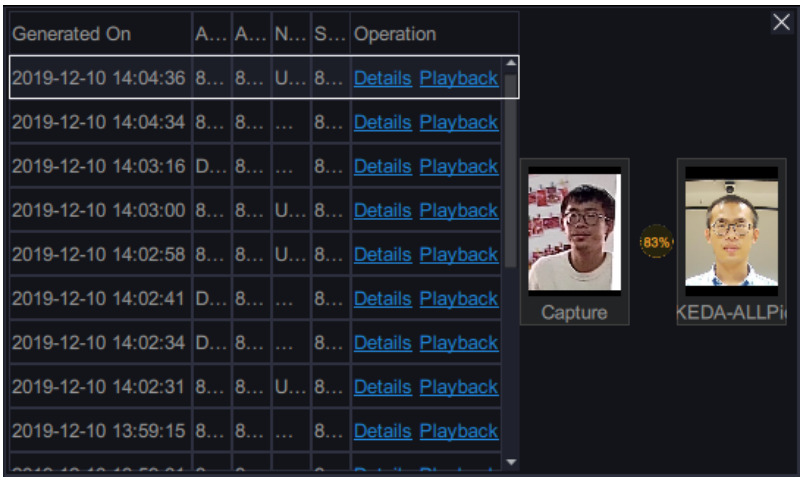
For Content Pushing

Ensure that you have performed step 10 of section "Arming AI Cameras".

Procedure

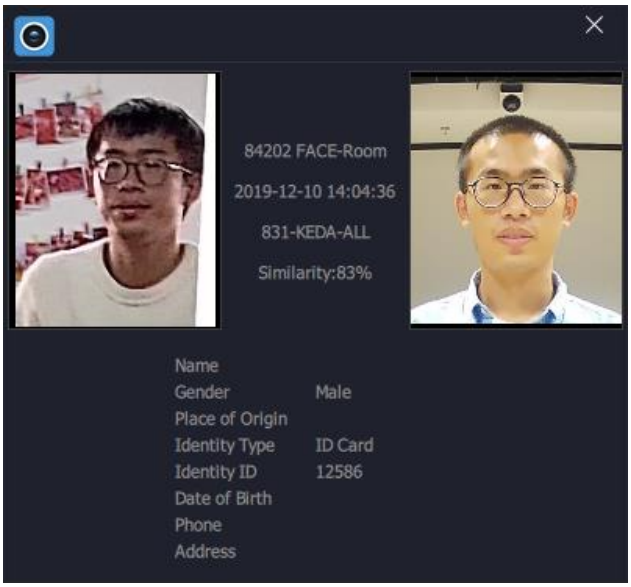
To query the function effect:

1. Go to the **Live** page.
2. Select an idle viewing window and choose **Face Detection Alarms**.
   After this, you can find the following.

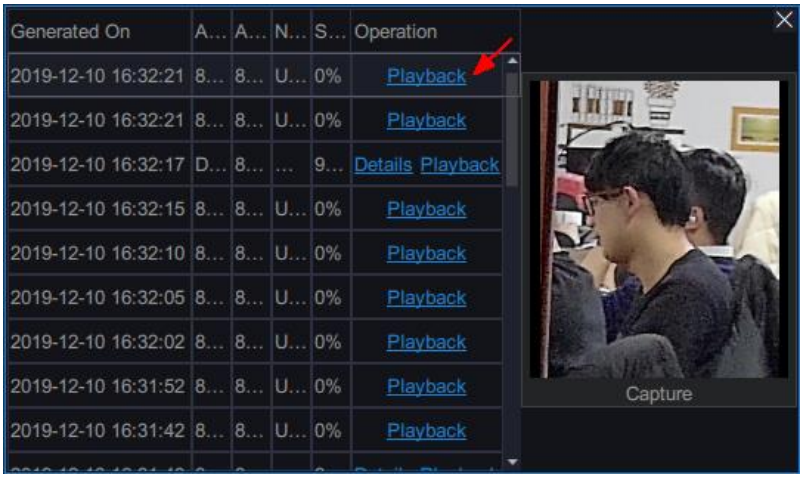


As shown in the preceding figure, the latest alarm will be highlighted.

Clicking **Details** will show you the following.



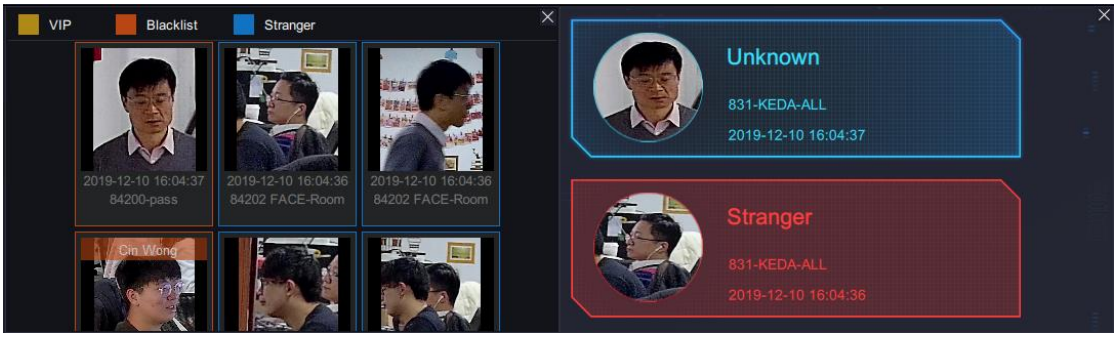
For personnel labeled as **Strangers**, there are no **Details**.



For the description about **Strangers**, see step 7 of section "Arming AI Cameras".

Clicking **Playback** will start a playback, which starts around 10 seconds before the time when the face detection alarm is generated. For example, if the alarm is generated at 14:01:35, the playback will start at 14:01:25.

3. Select an idle viewing window and choose **Face Detection Alarm Captures (Channel)** or **Face Detection Alarm Captures (Group)**.
   After this, you can find the following.

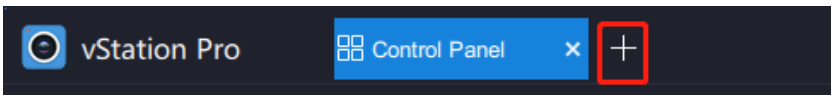


The preceding figure is explained in step 7 of section "Arming AI Cameras".

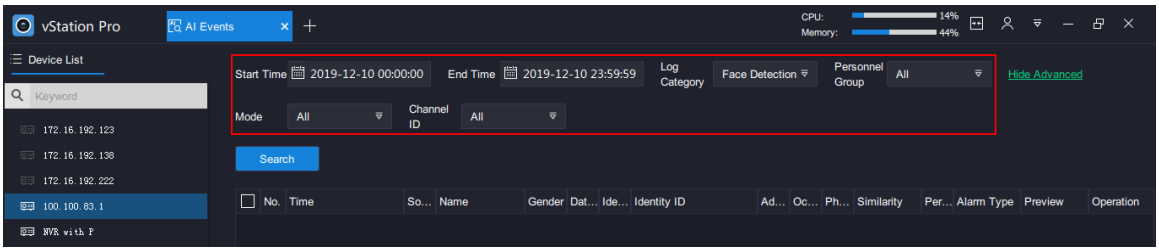
Searching History Face Detection Alarms

To query the history Face Detection alarms:

1. Click ⊞ and select **AI Events**.

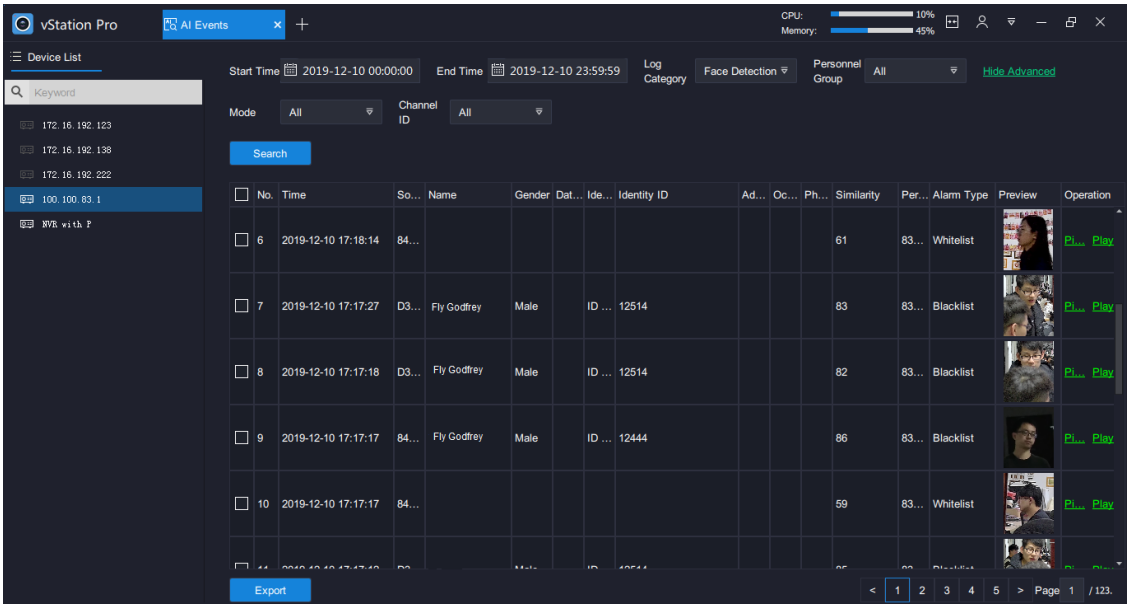


2. Select the target AI NVR.
3. Specify the search criteria.



In this step, set **Log Category** to **Face Detection**. The **Vehicle Detection** value is reserved for future use.

4. Click **Search**.
   The following is an example of a search result.



Clicking **Picture** will show you either a captured face (the related person is labeled as **Stranger**) or face matching result (the related person is labeled as **Blacklist**), and clicking **Playback** will start a playback, which starts 5 seconds before the time when the face detection alarm is generated. For example, if the alarm is generated at 14:01:35, the playback will start at 14:01:30.

NOTE

For the description about **Stranger** or **Blacklist**, see step 7 of section "Arming AI Cameras".

Searching Face Detection Captures

To query the Face Detection captures:

1. Go to the **Live** page.
2. Select an idle viewing window and choose **Face Detection Captures**.

After this, you can find the following.

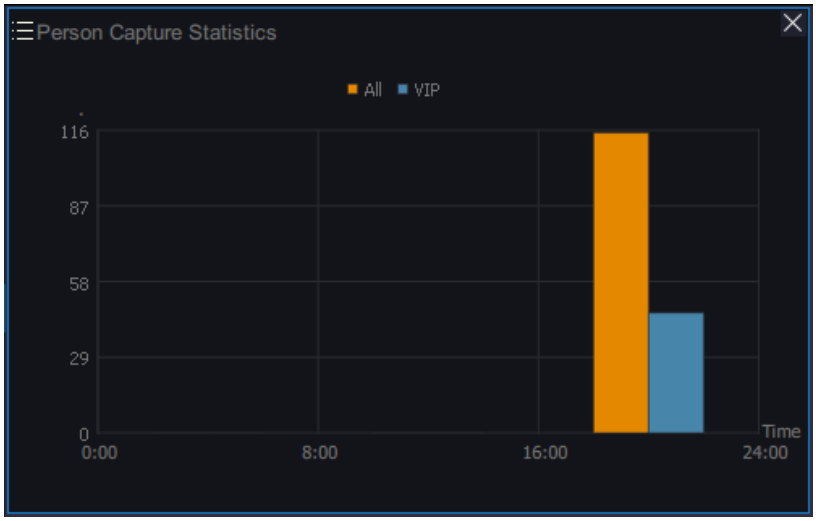
In the preceding figure, the personnel "Zee Chong" and "Sun Quan" are recognized by the camera through face matching.

Querying Person Capture Statistics

To query the person capture statistics, which specify the number of personnel labeled as "**Blacklist**" and "**Stranger**":

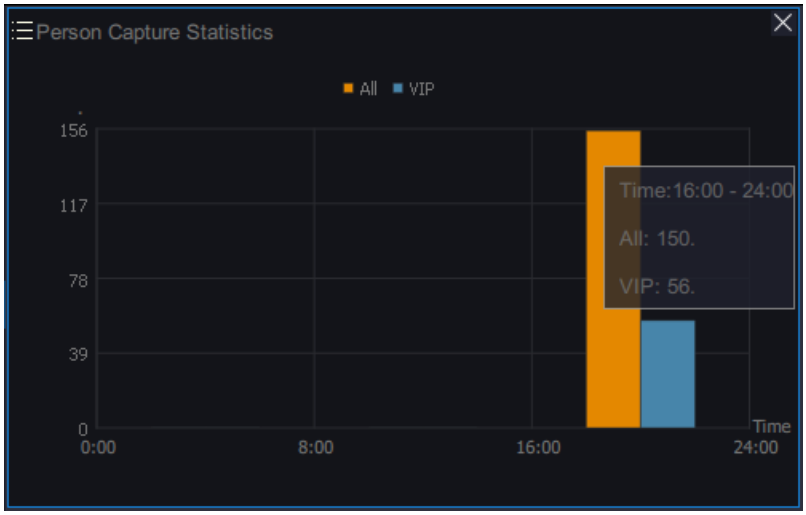
1. Go to the **Live** page.
2. Select an idle viewing window and choose **Person Capture Statistics**.

After this, you can find the following.



In the preceding figure, VIPs are personnel labeled as "**Blacklist**". For details about "**Blacklist**" and "**Stranger**", see step 7 of section "Arming AI Cameras".

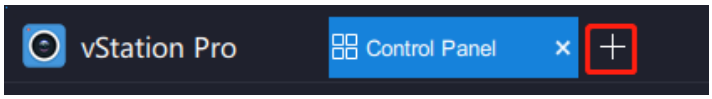
Clicking any section of a day will show you the following.



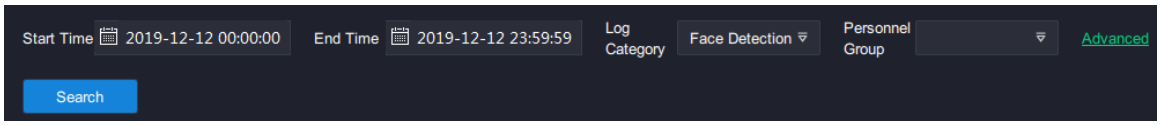
Searching History Face Detection Captures

To search history Face Detection captures:

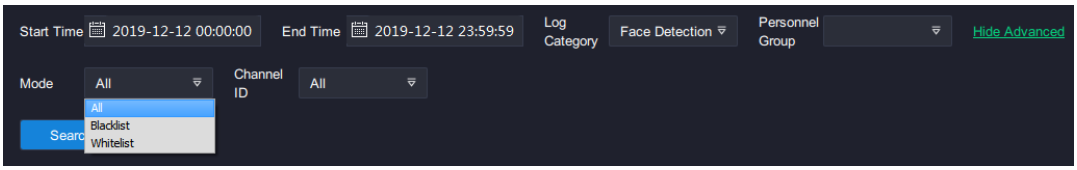
1. Click **+** and select **AI Events**.



2. Select the target AI NVR from the device list on the left panel.
3. Specify the search criteria.

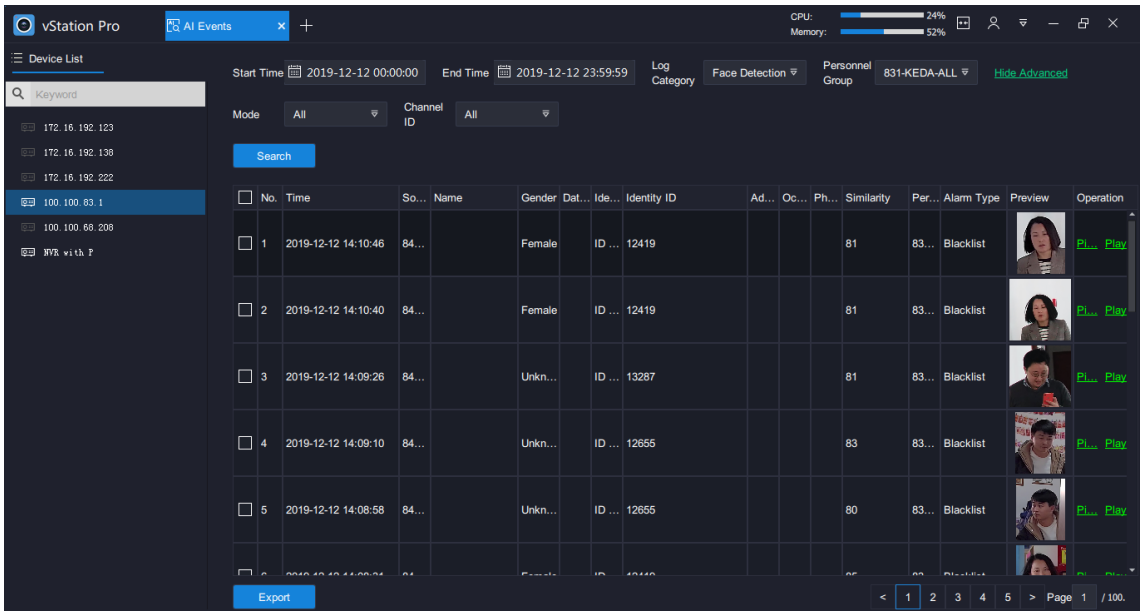


1) Specify a start time and an end time.
2) Set **Log Category** to **Face Detection**.
   The **Vehicle Detection** value is reserved for future use.
3) Select a personnel group.
4) (Optional) Click **Advanced** to add more conditions.

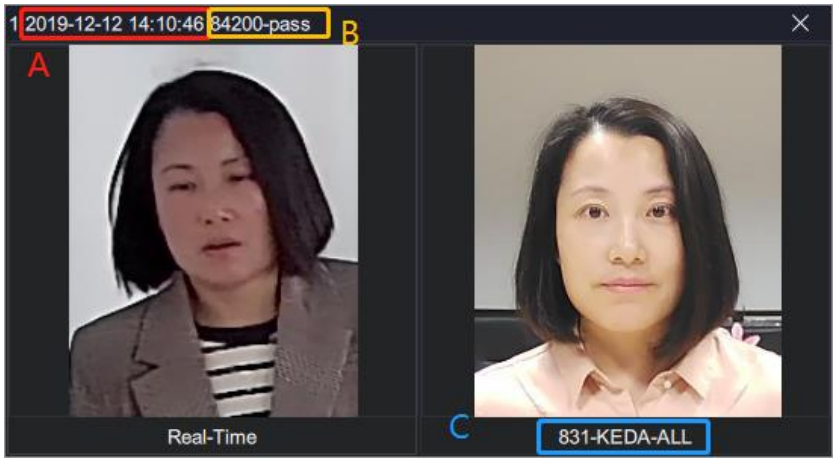


The "**Blacklist**" and "**Whitelist**" modes indicate the labels "**Blacklist**" and "**Stranger**", respectively. The two labels are described in step 7 of section "Arming AI Cameras".

4. Click **Search**.
   The following is an example.



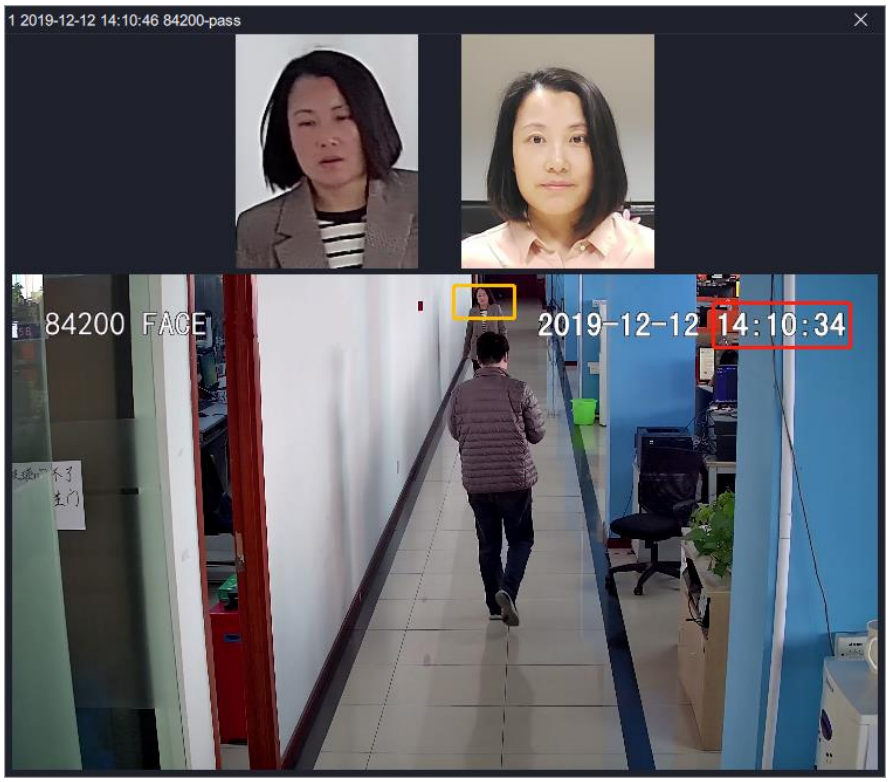
In this step, for each data entry, you can click **Picture** to see the face picture saved in the personnel group and the capture. The following is an example.



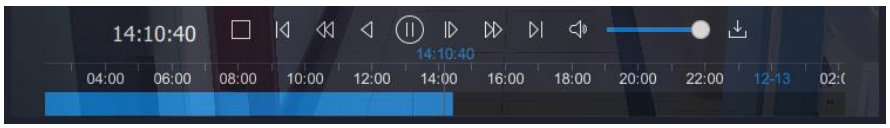
In the preceding figure:

- A: indicates the capturing time.
- B: indicates the source camera.
- C: indicates the person's name
- Real-Time: represents the capture. The picture on the right side is the face picture saved in the personnel group.

Clicking **Playback** will start a playback, which starts around 10 seconds before the time when the face detection alarm is generated. For example, if the alarm is generated at 14:01:35, the playback will start at 14:01:25. The following is an example.



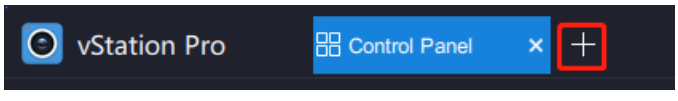
You can drag the timeline at the bottom to play back more videos.



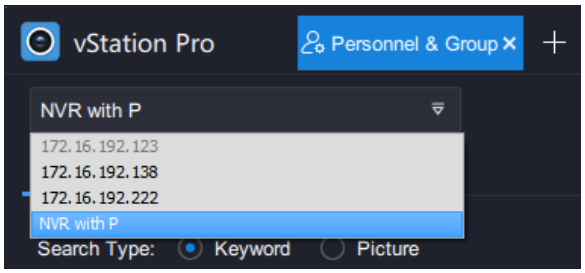
Querying Data in a Personnel Group

To query data in a personnel group:

1. Click **+** and select **Personnel & Group**.

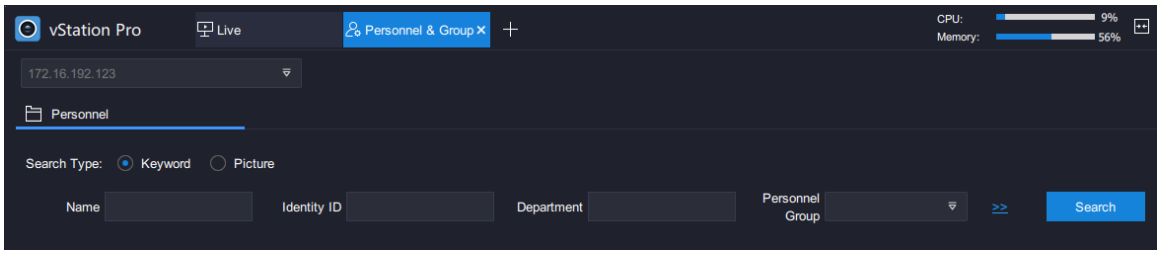


2. In the displayed interface, select the target AI NVR from the NVR list.

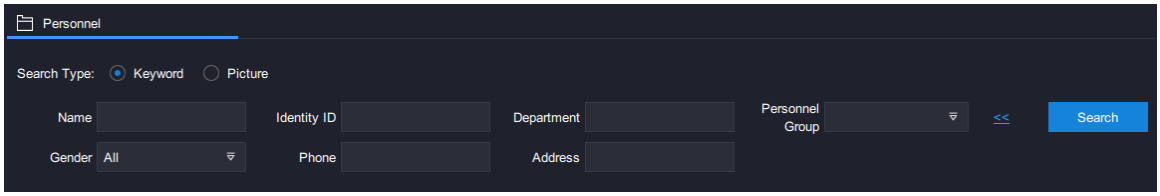


3. Set **Search Type** to **Keyword** or **Picture** and specify search criteria.

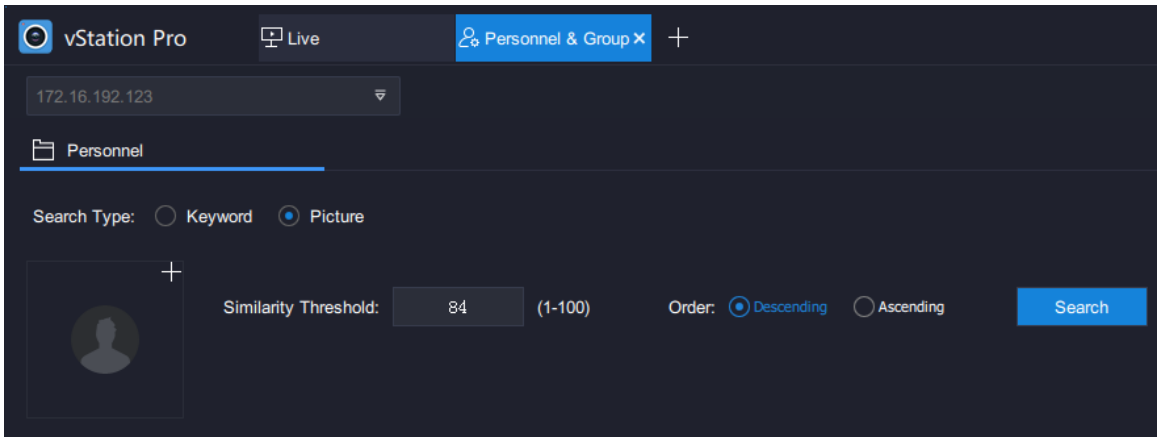
   If **Keyword** is selected, specify the following.



   You can click  to add more search conditions.

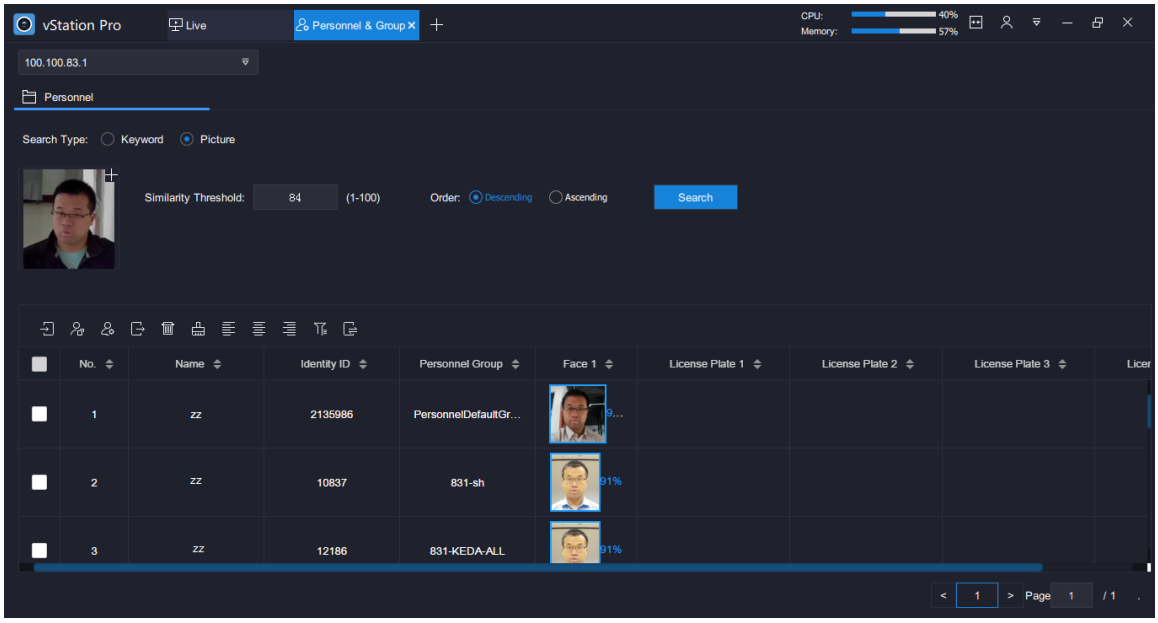


   If **Picture** is selected, upload a reference picture and specify the following.

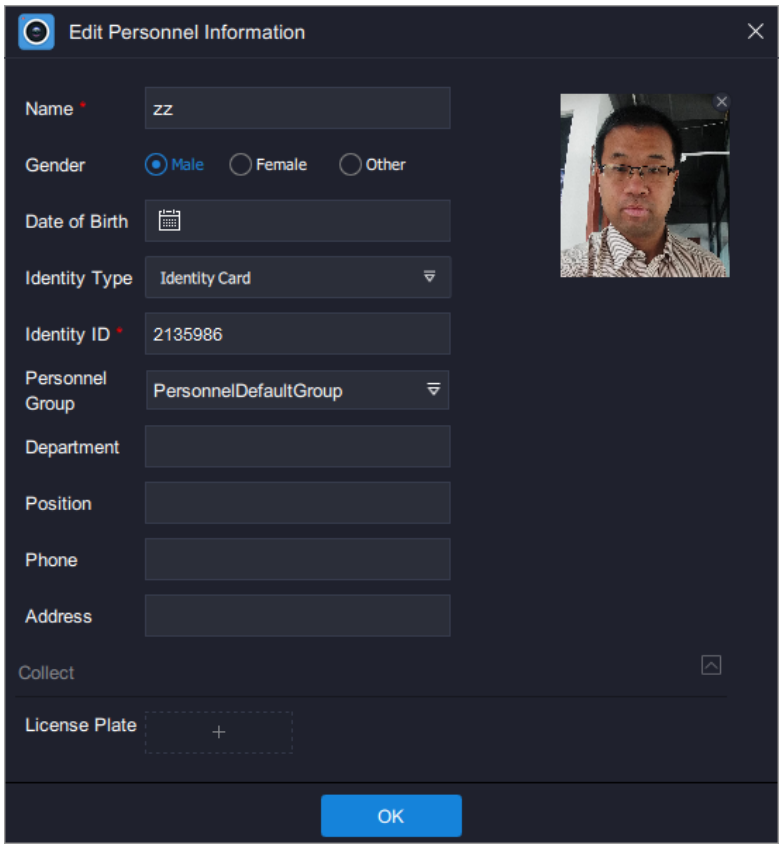


   The search results will be displayed in descending or ascending order of the similarity between the reference picture and the face picture saved in the personnel group.

   The following is an example.



Double-clicking a data entry will allow you edit it. The following is an example.



The following options are described in section "Uploading Personnel Data to a Personnel Group".

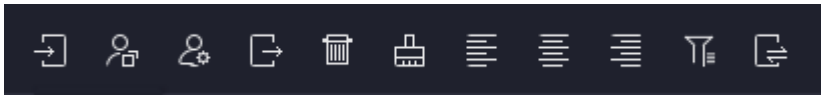
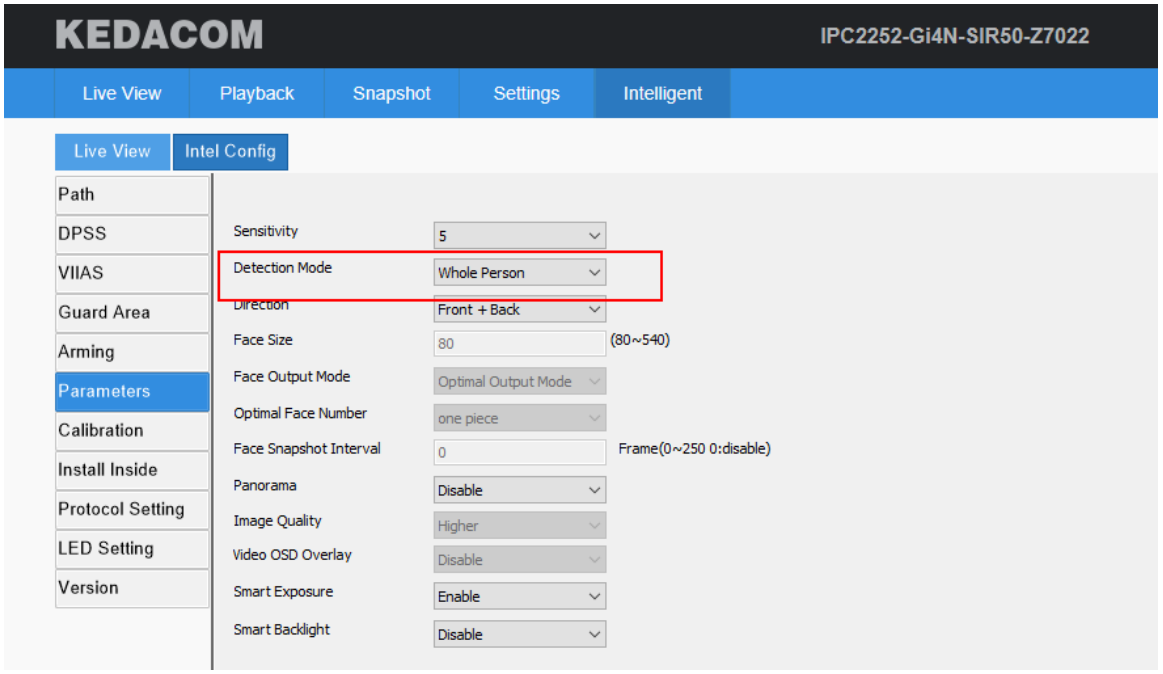


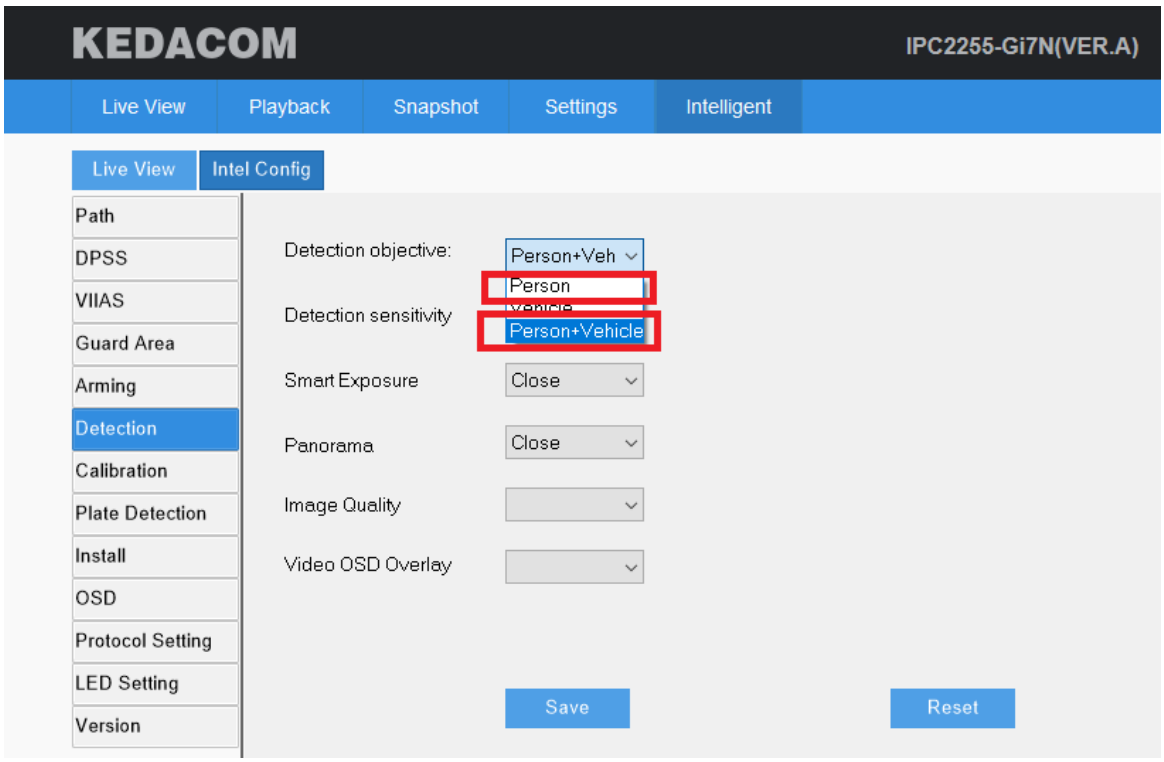
Figure Detection

Configuring the Function

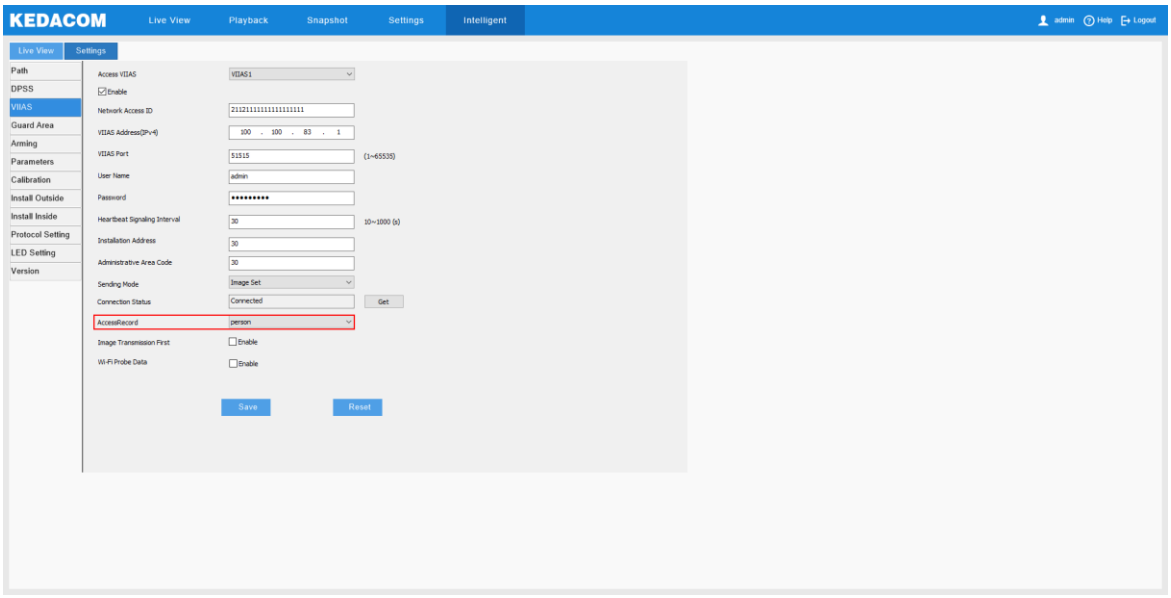
To configure the function on the camera side:

1. Set **Detection Mode** to **Whole Person** or set **Detection objective** to **Person** or **Person+Vehicle**.





2. For VIIAS settings, set **AccessRecord** to **person**.



For other parameter settings, see step 3 of section "Uploading Personnel Data to a Personnel Group".

3. Click **Save**.

Querying the Function Effect

Preparations

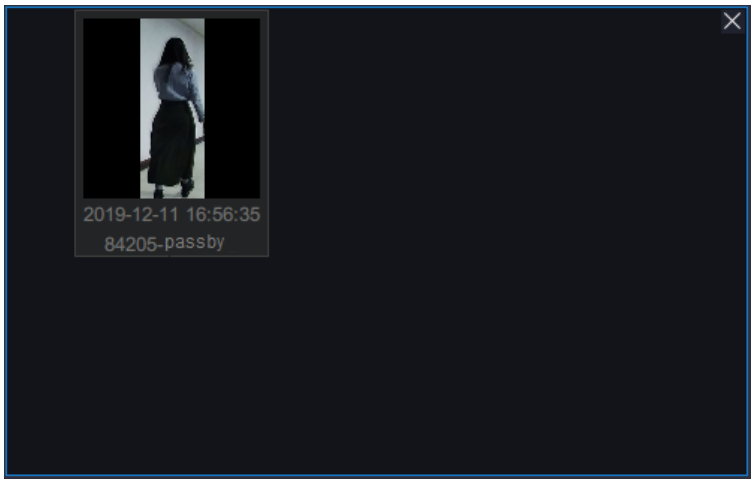
Ensure that you have performed step 10 of section "Arming AI Cameras".

Procedure

To query the function effect,

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page.
3. Select an idle viewing window and choose **Figure Detection Captures**.

After this, you can find the following.



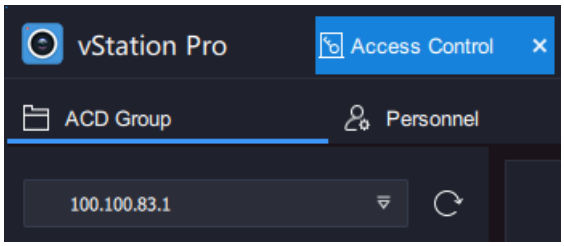
Access Control

This function applies only to the KSCA120-AI-FC and KSCA120-AIG-FC from KEDACOM.

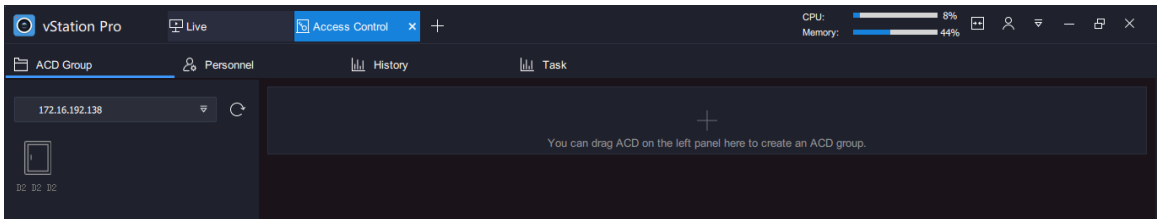
Configuring the Function

To configure the function:

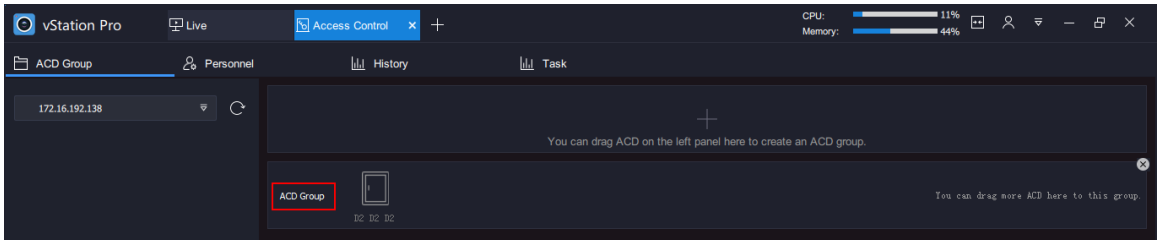
1. Add access control devices (ACDs) to the target AI NVR.
2. Configure the ACDs.
   For details, see step 2 in sub-section "Configuring the Function" of section "Visitor Traffic Statistics".
3. Upload personnel information.
   For details, see section "Uploading Personnel Data to a Personnel Group".
4. Click + and choose **Access Control** > **ACD Group**.
5. Select the target AI NVR from the drop-down list.



6. Drag an ACD to the right pane to create an ACD group.

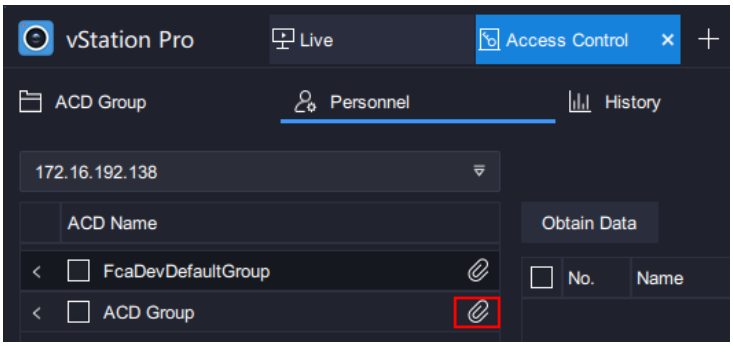


   The default group name is **ACD Group**.

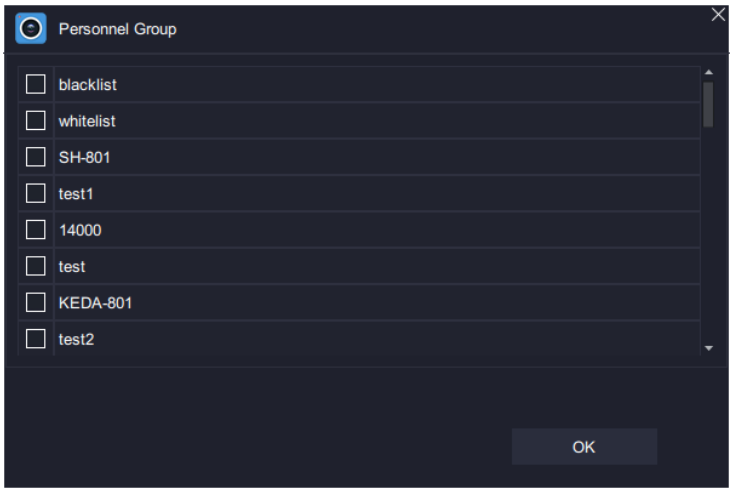


7. Send data of one or multiple personnel groups to the ACD group to allow the personnel to enter the area guarded by the ACDs.

   1) Go to the **Personnel** tab page.
   2) Select the target AI NVR.
   3) Select the newly created ACD group and click  .

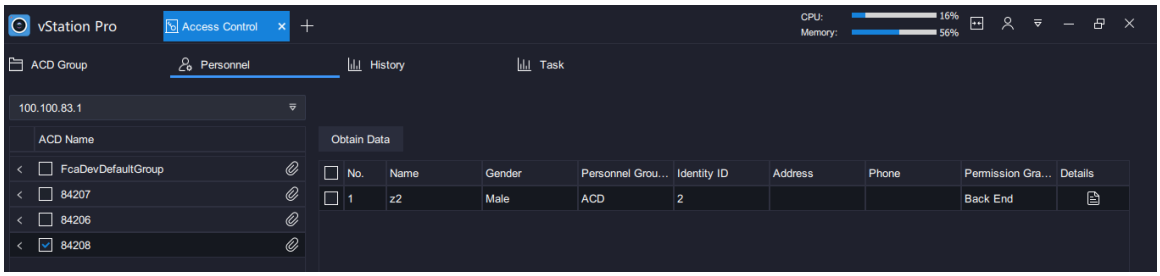


   4) Select one or multiple personnel groups.

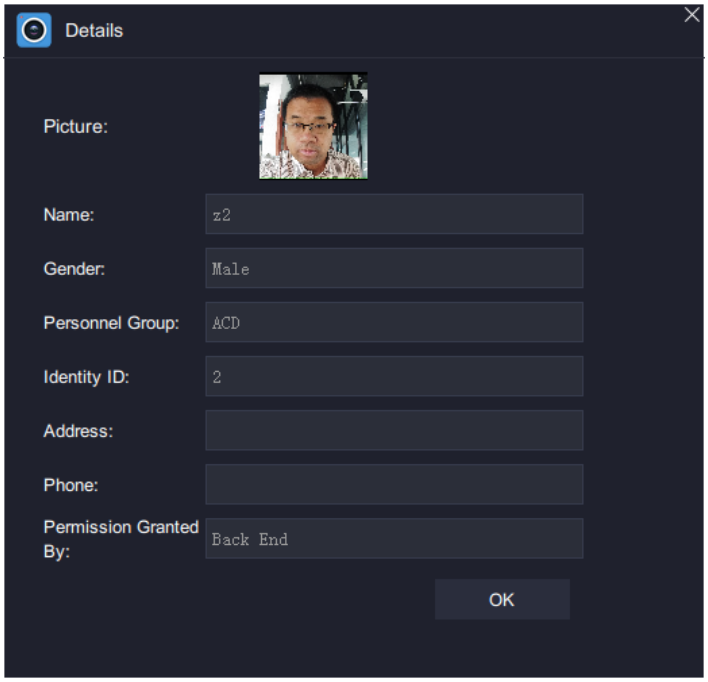


   5) Click **OK**.

If you select an ACD group and click **Obtain Data**, the personnel information sent to this ACD group will be displayed. The following is an example.



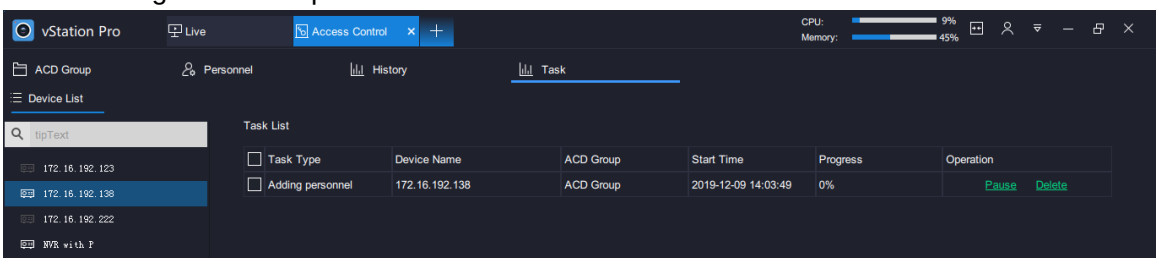
Clicking  will show you the complete personnel information, as shown in the following figure.



The values for **Permission Granted By** are as follows:

- **Front End**: indicates that an ACD grants the person the permission to enter the guarded area. To put it simply, information about this person is imported to the ACD at the first place.
- **Back End**: indicates that an AI NVR grants the person the permission to enter the guarded area. To put it simply, information about this person is imported to the AI NVR at the first place.

8. Go the **Task** tab page to query the progress of sending personnel data to the ACD group.
   The following is an example.



On this tab page, you have the following options for the sending process.

Querying the Function Effect

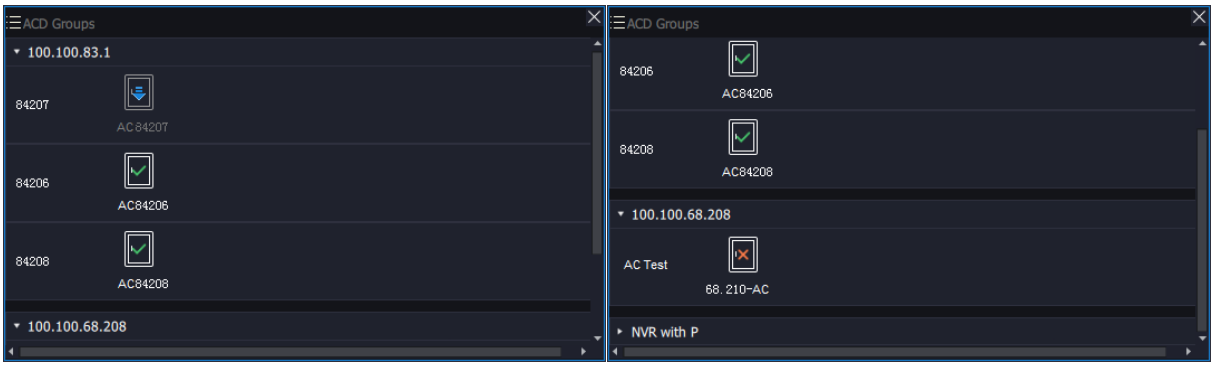
Preparations

Ensure that you have performed step 10 of section "Arming AI Cameras".

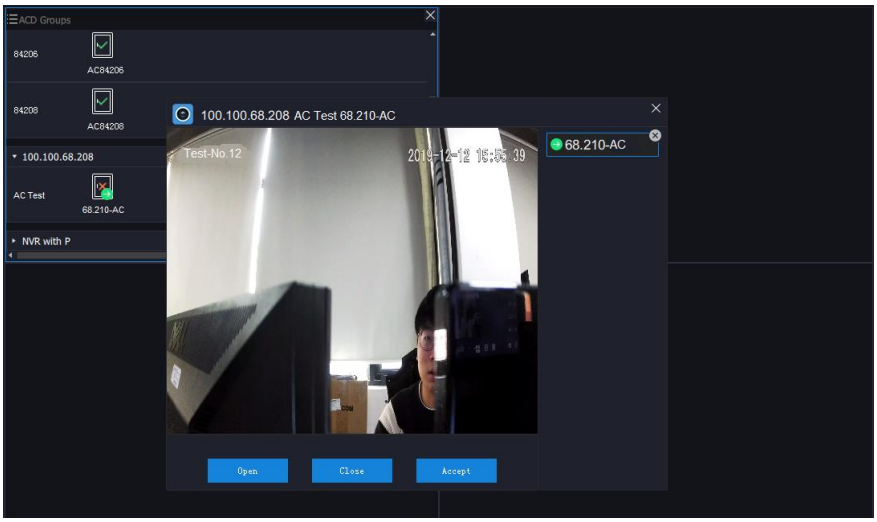
Procedure

To query the function effect:

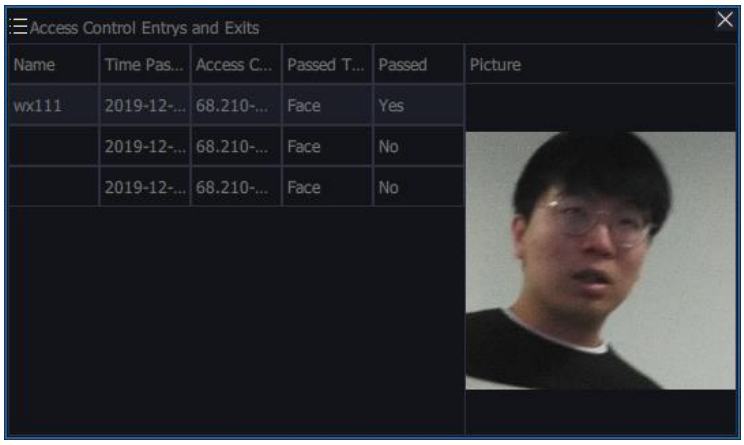
1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page.
3. Select an idle viewing window and choose **ACD Groups**.
   After this, you can find the following.



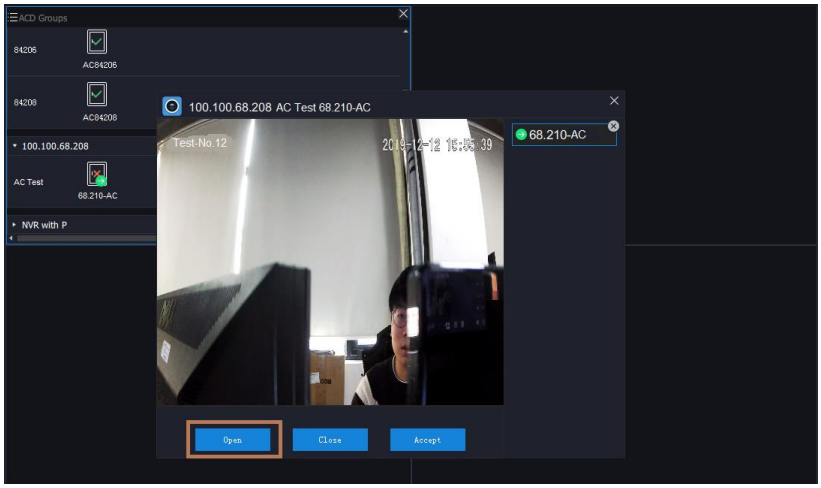
The following table helps you read the icons on ACDs.

	The ACD is receiving data.
	The ACD has received data.
	The ACD has not received all the data.
	The ACD places a voice call to the AI NVR. And then, you can find the following window is displayed.  As shown in the preceding figure, at this time, you can open/close a door or simply accept the voice call. To place a voice call to the AI NVR on the ACD side, tap **Call Center**.

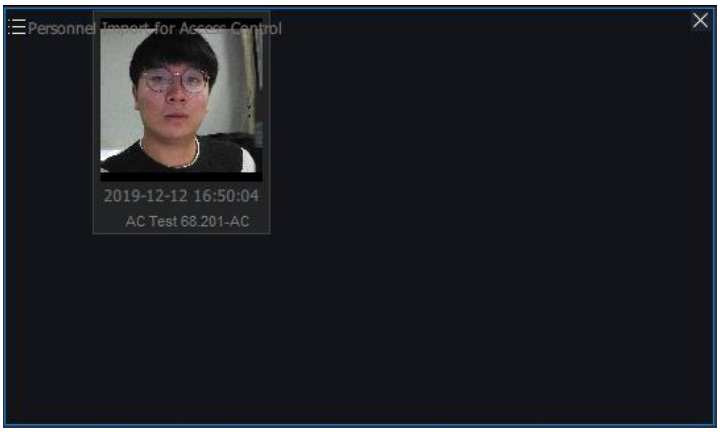
4. Select an idle viewing window and choose **Access Control Entries and Exits**.
   After this, you can find the following.



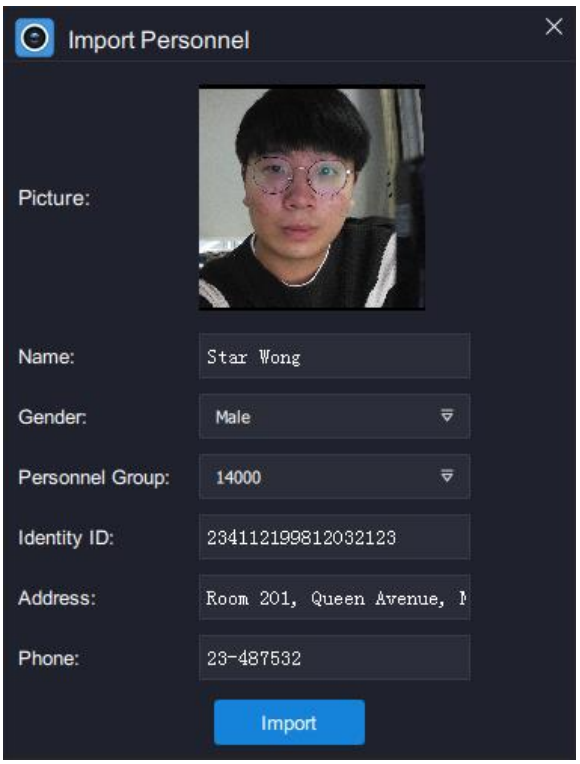
As shown in the preceding figure, you can find the following information:

Time Passed	Time a person passed
Access Control Device	Responsible ACD
Passed Through	The values available are as follows: • **Face**: The person's face capture matches a picture saved in the ACD. • **Platform**: The person is granted the access permission by the AI NVR, which is achieved by clicking **Open**. 
Passed	Whether the person is granted the access permission or not
Picture	Face capture of the person

5. Select an idle viewing window and choose **Personnel Import for Access Control**.
6. This step allows you to receive personnel information from an ACD, and edit and save the information on the AI NVR.
   1) On the ACD side, perform the following.
      a) Tap and hold on the main screen.
      b) Enter the password.
      c) Choose **Personnel** > **Personnel Registration**.
      d) Take a picture of a person.
      e) Click **OK** and **Skip**.
   2) On the AI NVR side, perform the following.
      a) Double-click the person's picture.

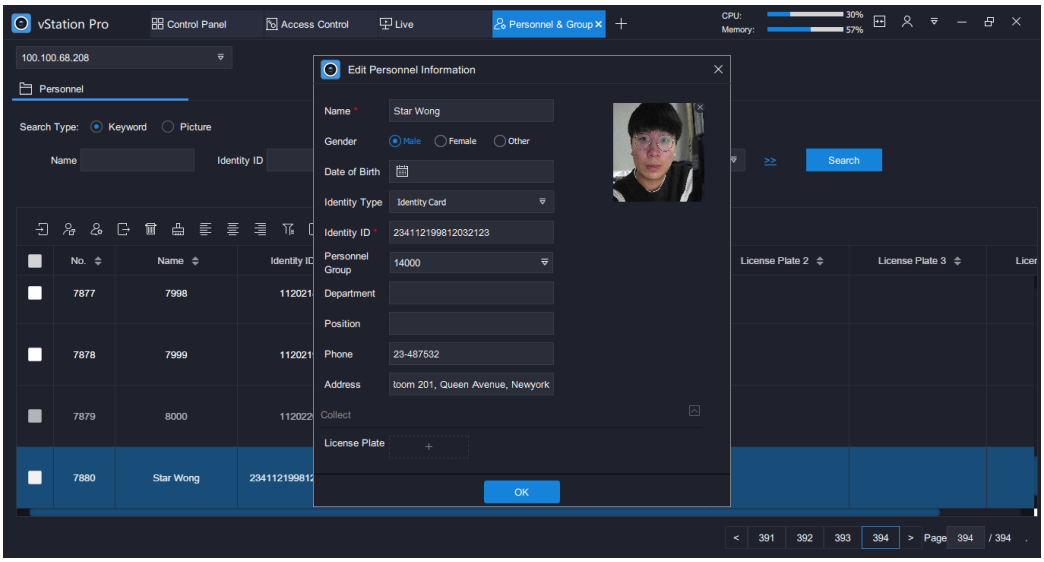


b) In the displayed dialog box, enter the person information.
The following is an example.



c) Click **Import**.

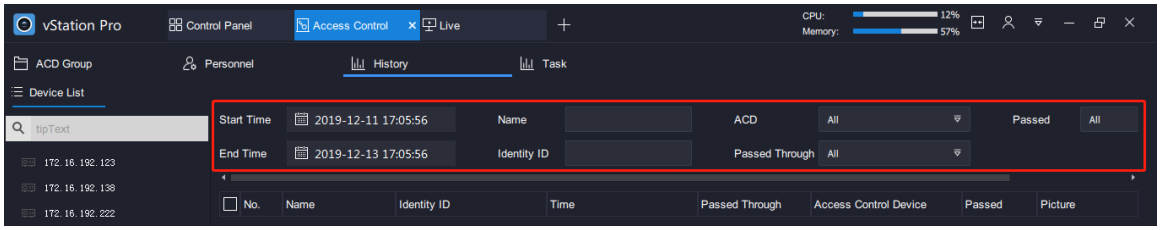
d) (Optional) Find the person under **Personnel&Group** to re-edit the person information.



Searching History Entries and Exits

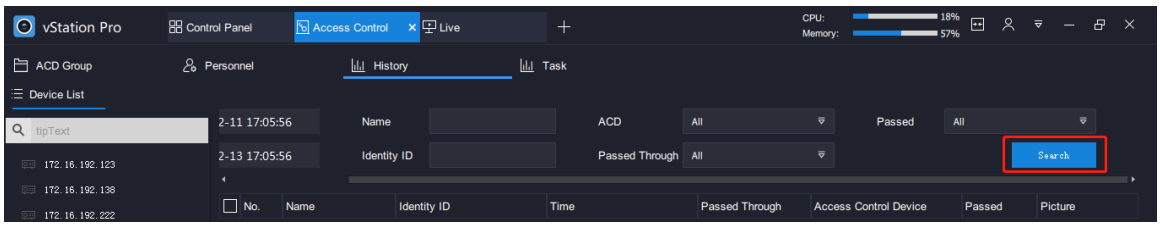
To query the history entries and exits:

1. Under **Access Control**, select **History**.
2. Select the target AI NVR and specify the search criteria.

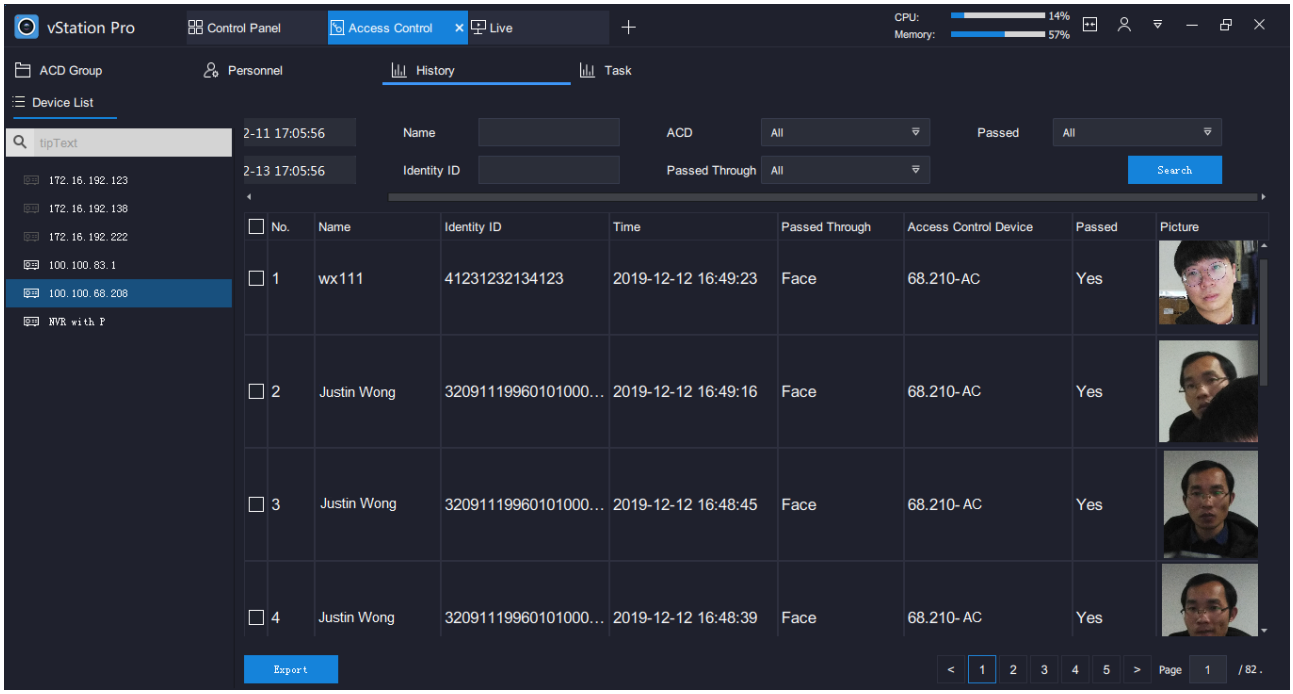


For the description about the **Passed Through** parameter, see step 3 of sub-section "Querying the Function Effect" of section "Access Control".

3. Click **Search**.



The following is an example of a search result.

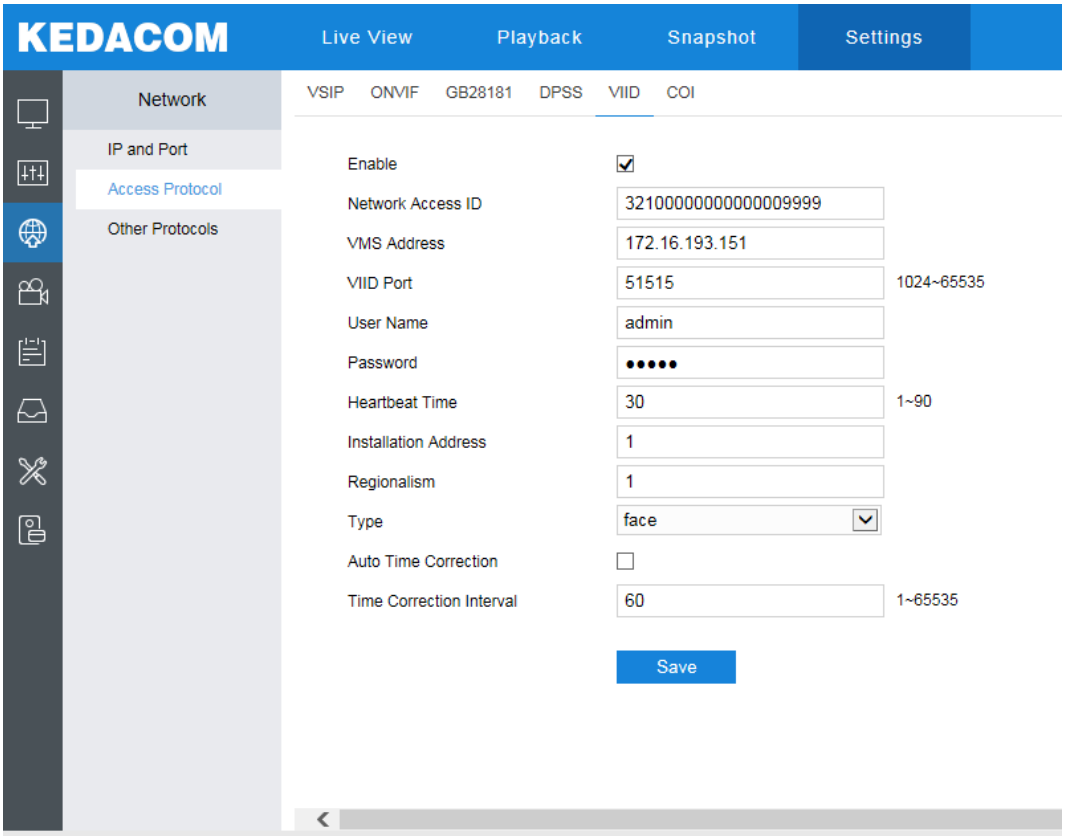


Visitor Traffic Statistics

Configuring the Function

To configure the function:

1. Add access control devices (the KSCA120-AI-FC and KSCA120-AIG-FC from KEDACOM), AI cameras, and/or traffic counter (the PC4 from OP Retail) to the target AI NVR.
2. Configure the access control devices, AI cameras, and/or traffic counting devices.
   Ensure that the following settings of these devices have been configured as follows.
   NOTE
   To access an access control device, enter http://X.X.X.X:8080 (for example, http://100.100.12.14:8080) into the address bar of a webpage browser.
   - VIID settings
     The following is an example.

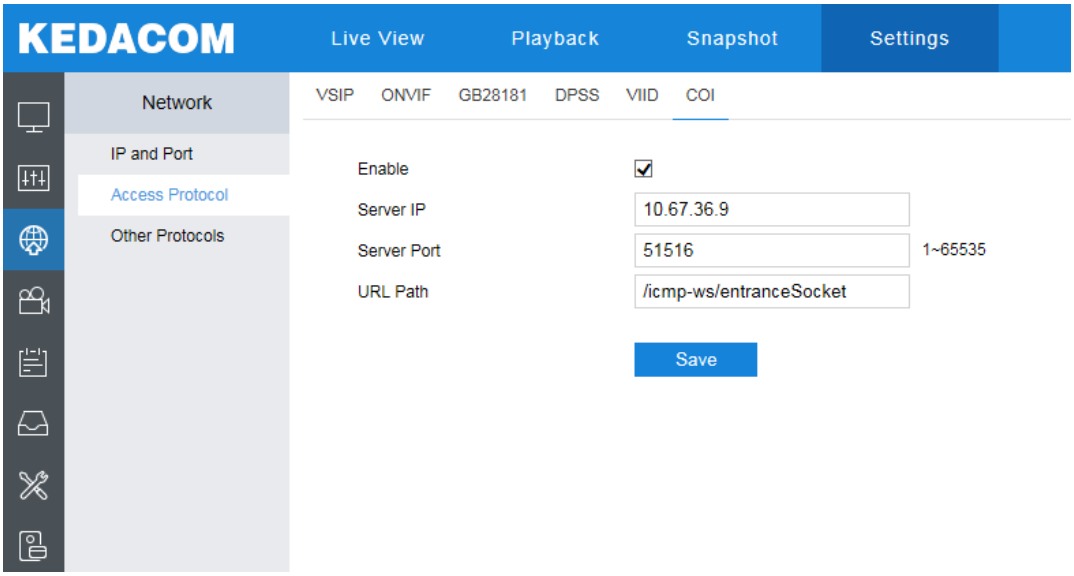


Before configuring the VIID settings, read the following.

Network Access ID	Enter an ID, which must be unique on the AI NVR.
VMS Address	Enter the IP address of the AI NVR.
VIID Port	Set it to **51515**.
User Name	Enter an account of the AI NVR.
Password	Enter the password of the AI NVR account.
Type	Set it to **face**.
Other parameters	Keep the default values.

- COI settings

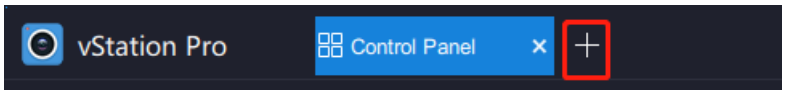
  The following is an example.



Before configuring the VIID settings, read the following.

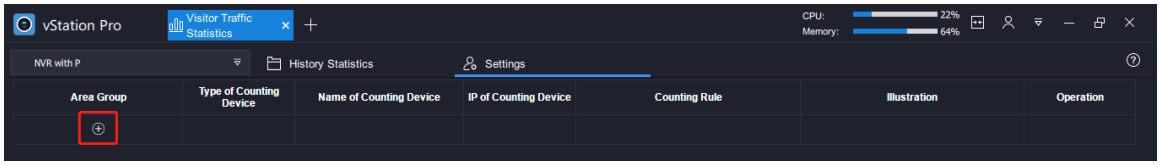
Server IP	Enter the IP address of the AI NVR.
Server Port	Set it to **51516**.
URL Path	Keep the default value.

3. Click + and choose **Visit Traffic Statistics** > **Settings.**



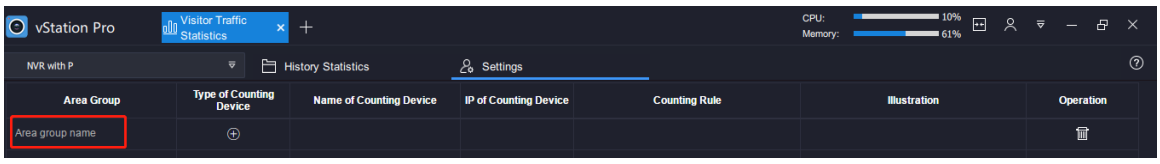
4. Select the target AI NVR from the drop-down list.

5. Click ⊕ to add a surveillance area group.

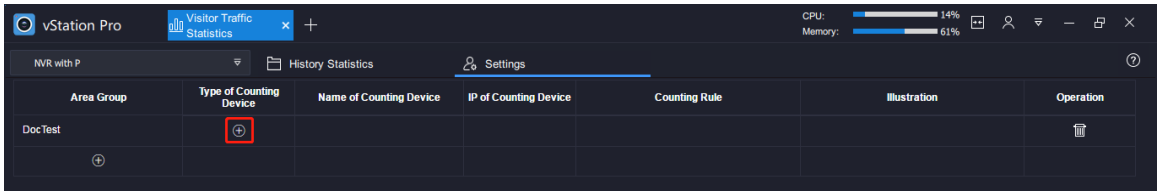


One surveillance area group can include multiple surveillance devices.

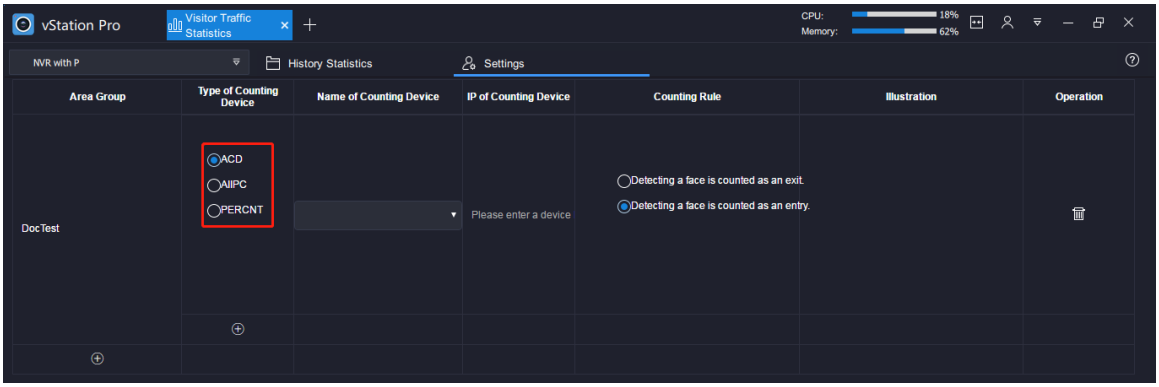
6. Enter a group name.



7. Click ⊕ to add a counting device type.



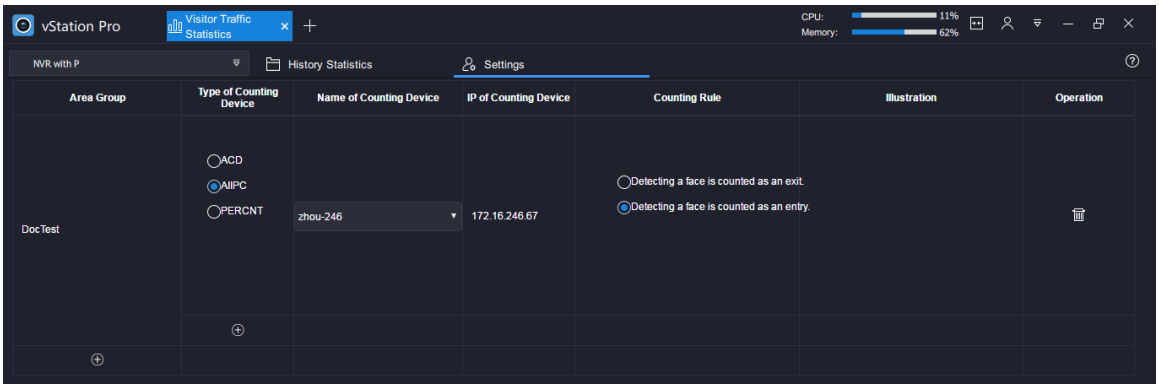
8. Select a counting device type.



The following table describes the counting device types.

ACD	Access control device (the KSCA120-AI-FC and KSCA120-AIG-FC from KEDACOM)
AIIPC	AI camera
PERCNT	Traffic counter (the PC4 from OP Retail)

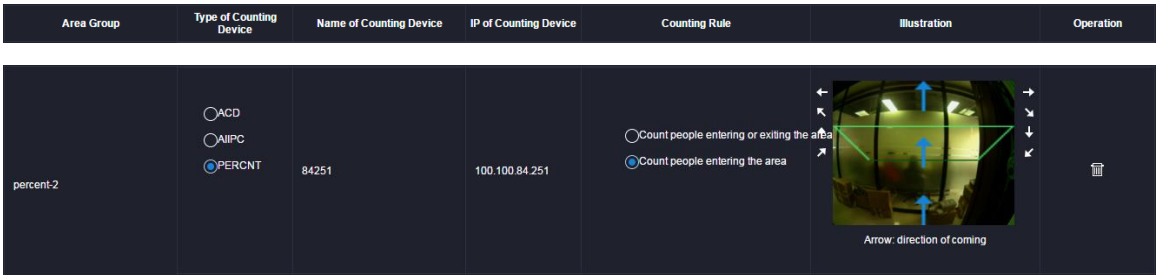
9. Configure the other parameters.
The following is an example.



Parameters are described in the following table.

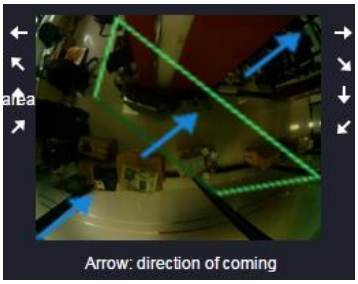
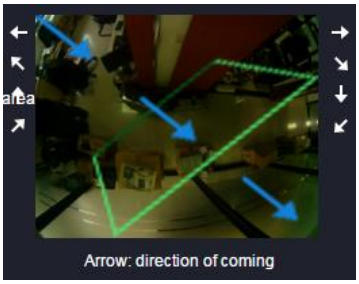
Name of Counting Device	The channel name is displayed here. This parameter is unconfigurable.
IP of Counting Device	The device IP is displayed here. This parameter is unconfigurable.
Counting Rule	Determine whether detecting a face is counted as an exit or entry.

If **Type of Counting Device** is set to **PERCNT**, you need to configure the following.



Parameters are described in the following table.

Name of	Name of the counting device

Counting Device	
IP of Counting Device	IP of the counting device
Counting Rule	Determine whether to count people entering or exiting the surveillance area.
Illustration	Select the direction of coming to or entering the area using direction buttons. The following are examples.  

10. Click **Save**.
11. (Optional) Repeat steps 7 through 9 to add more surveillance devices.

Querying the Function Effect

Preparations

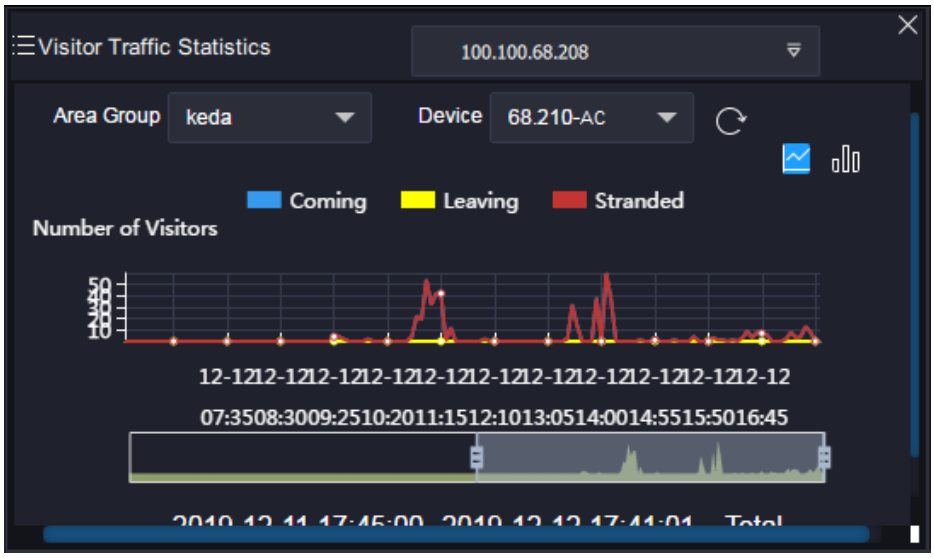
Ensure that you have performed step 10 of section "Arming AI Cameras".

Procedure

To query the function effect:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page.
3. Select an idle viewing window and choose **Visitor Traffic Statistics**.
4. Select the AI NVR, surveillance area group, and counting device that are configured in section "Configuring the Function".

After this, you can find the following.

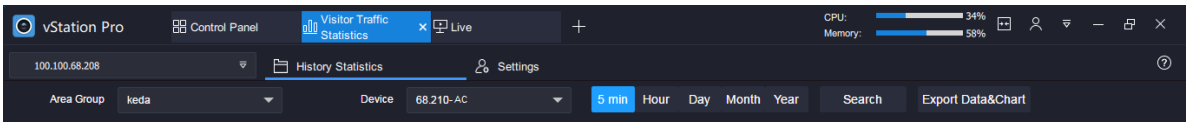


Note that all the personnel detected by ACDs and cameras are counted as the **Stranded** since these devices count only coming or leaving.

Searching History Statistics

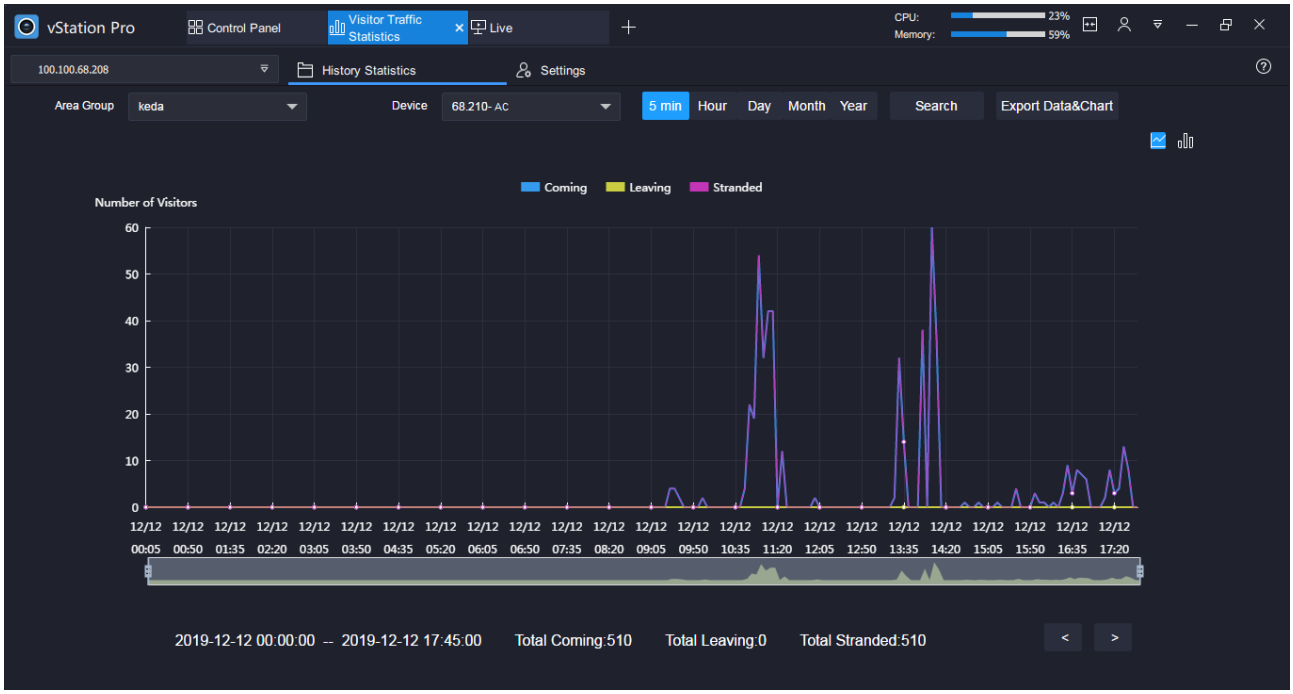
To search the history statistics:

1. Under **Visitor Traffic Statistics**, click **History Statistics**.
2. Select the AI NVR, surveillance area group, and counting device that are configured in section "Configuring the Function".
3. Select a period.



4. Click **Search**.

After this, you can find the following.



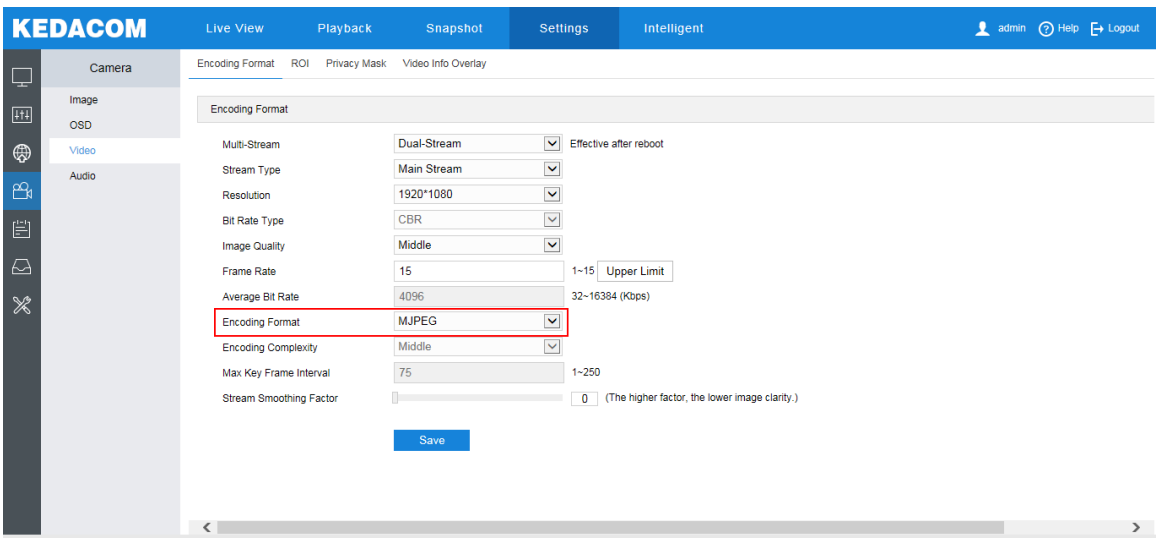
Note that all the personnel detected by ACDs and cameras are counted as the **Stranded** since these devices count only coming or leaving.

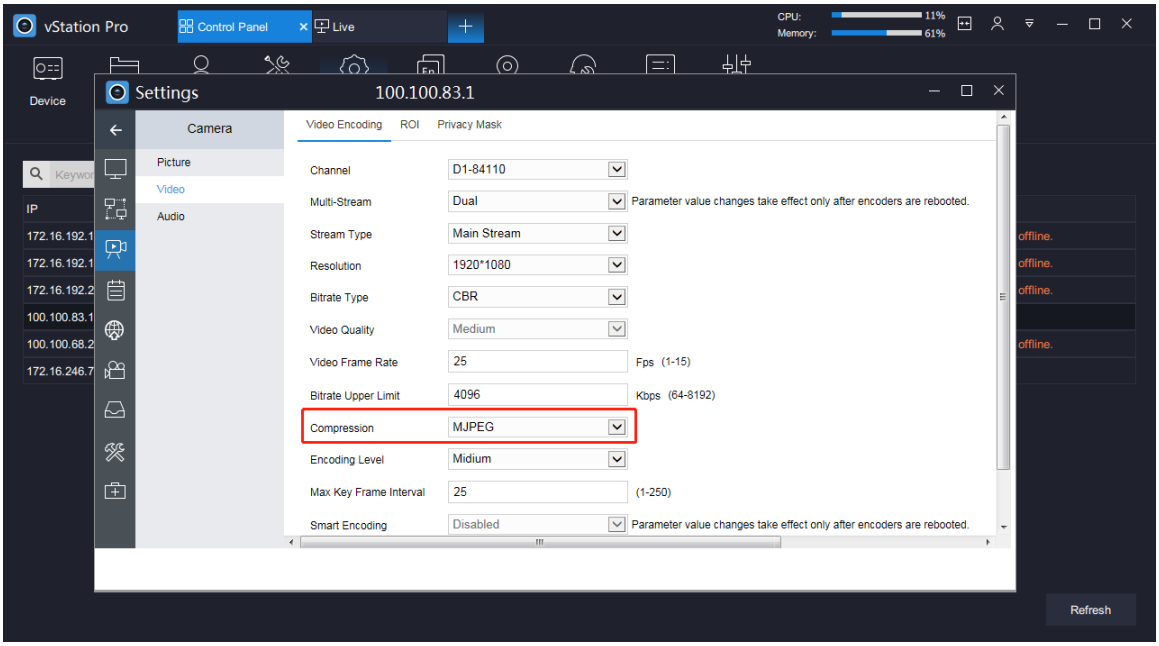
Vehicle Parking

Configuring the Function

To configure the function:

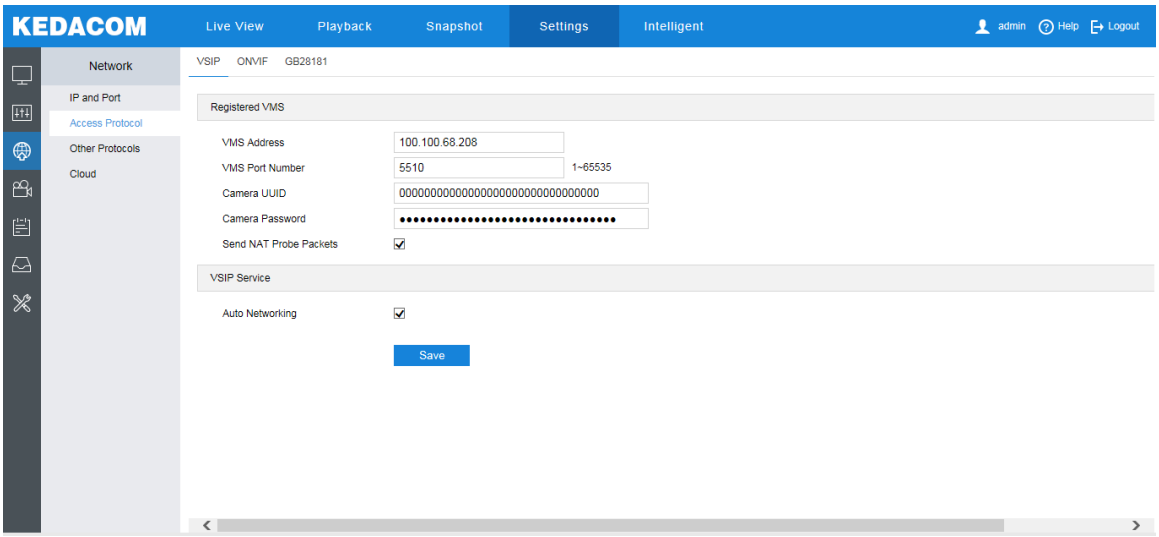
1. Upload vehicle plate information as described in section "Uploading Personnel Data to a Personnel Group".
   If this step is not performed, all vehicles will be regarded as unregistered or visiting vehicles, which may incur parking fees charged on an hourly basis.
2. On the camera side, ensure that the following settings are applied.
   1) Set **Encoding Format** or **Compression** to **MJPEG**.





2) VSIP settings are configured as follows.

The following is an example.

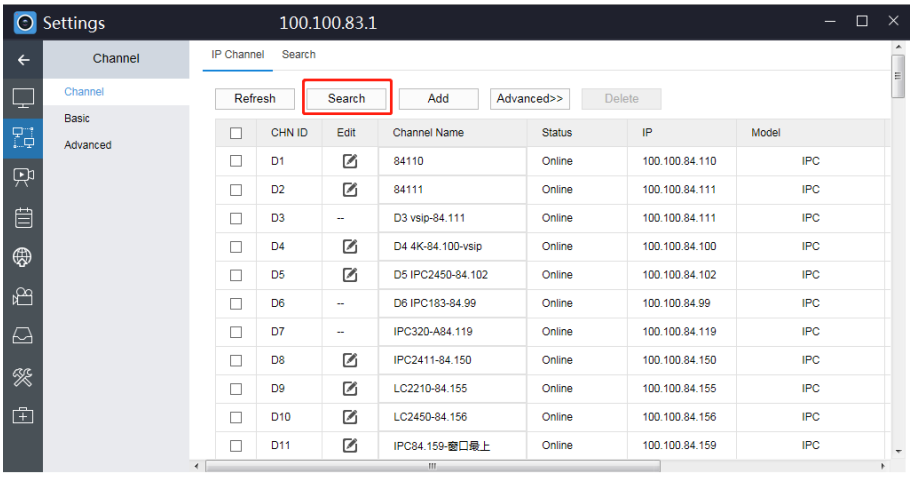


Before configuring the VSIP settings, read the following.

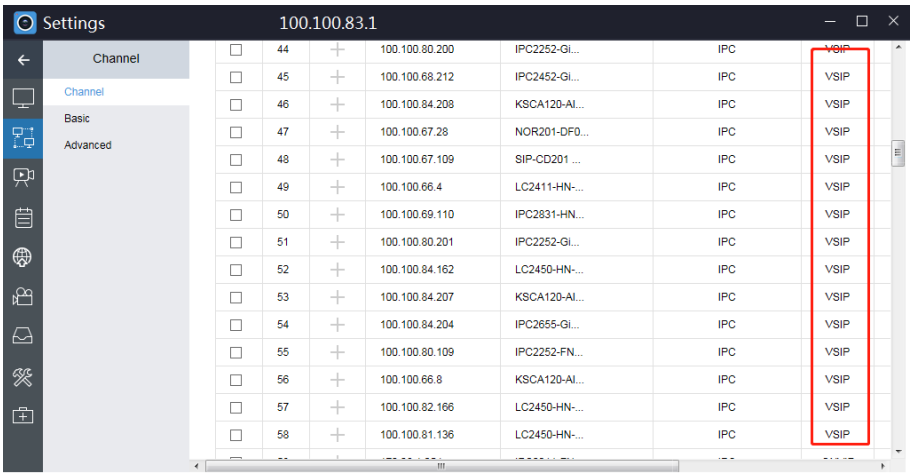
VMS Address	Enter the IP address of the target AI NVR.
VMS Port Number	Set it to **5510**.
Camera UUID	Keep the default value.
Camera Password	Keep the default value.
Send NAT Probe Packets	Keep the default value.
Auto Networking	Check it.

3. Search the target cameras and add them as VSIP cameras.

1) Click **Search** on the NVR Web.

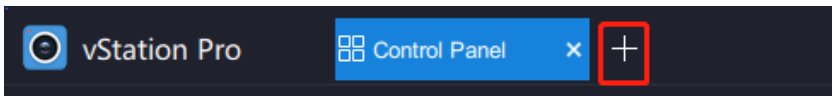


2) Find the target cameras whose protocol is VSIP, as shown in the following figure.



3) Select and add them.

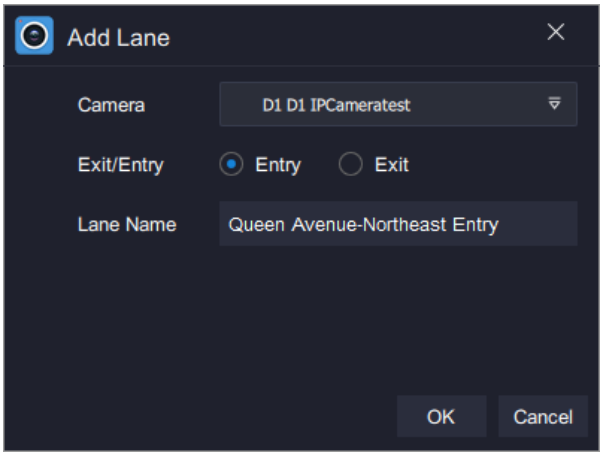
4. Click + and choose **Vehicle Parking** > **Settings**.



5. Select the target AI NVR from the drop-down list.
6. Add a lane.

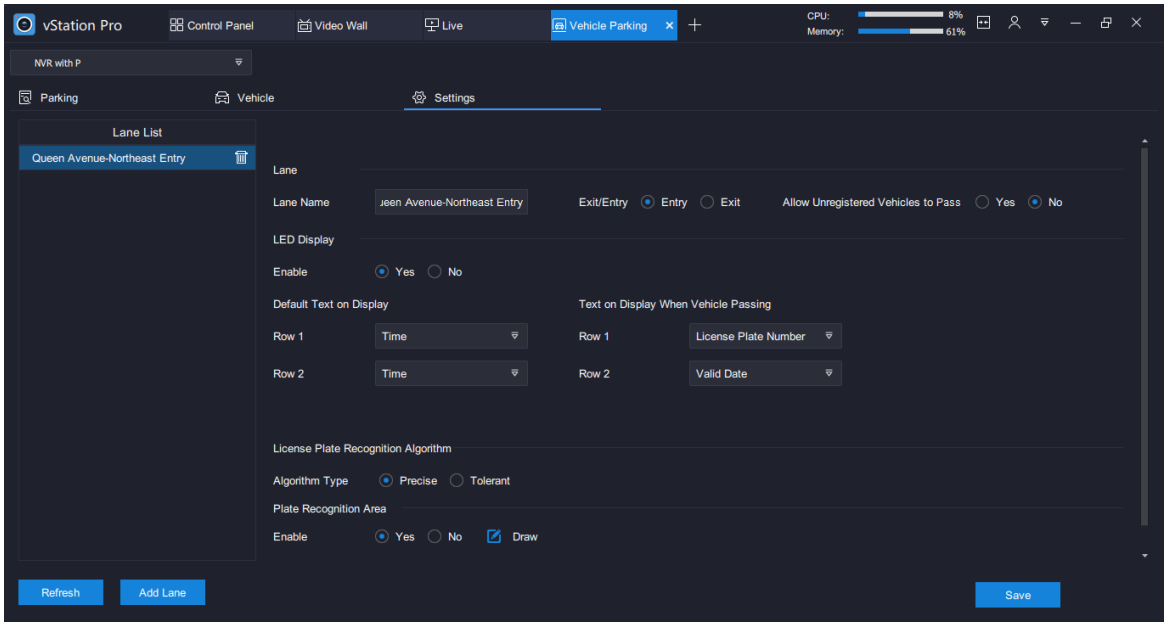
1) Click Add Lane.

2) Select a source camera, determine the lane role, and enter a lane name. The following is an example.



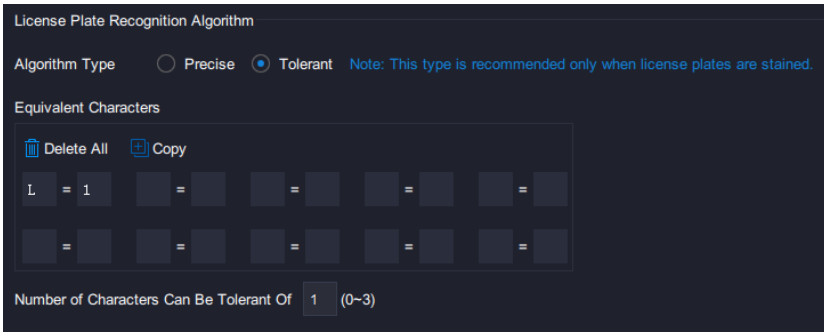
3) Click **OK**.

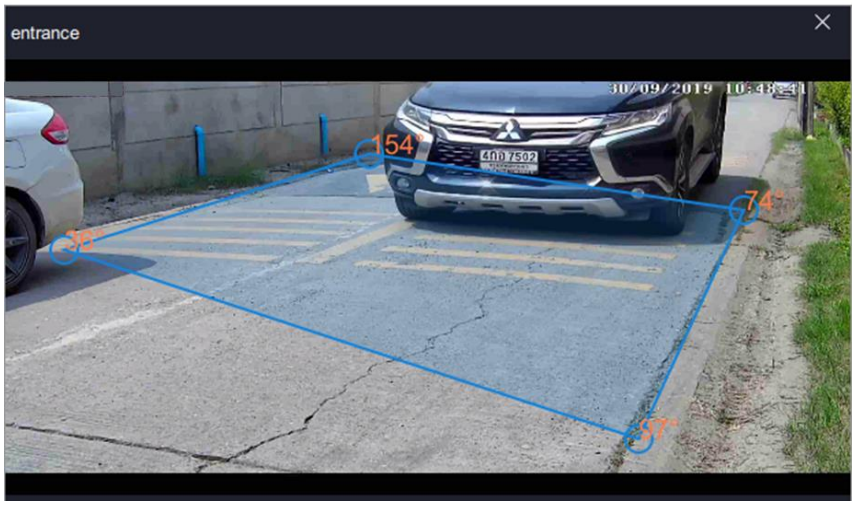
7. Configure the lane.



The parameters displayed are described in the following table.

Lane	Lane Name	Lane name
	Exit/Entry	Lane role
	Allow Unregistered Vehicles to Pass	Whether to allow unregistered vehicles to enter or exit
LED Display	Default Text on Display	Default texts showed on the LED display when no vehicles enter or exit
	Text on Display When Vehicle Passing	Texts showed on the LED display when vehicles enter or exit

License Plate Recognition Algorithm	Algorithm Type	• **Precise**: In this mode, recognized vehicle license plates must match the actual ones. Otherwise: ➢ A registered vehicle cannot enter/exit the parking lot. ➢ An unregistered vehicle cannot exit the parking lot. • **Tolerant**: In this mode, recognized vehicle license plates do not need to perfectly match the actual ones. Additionally, you can add equivalent characters. The following is an example.  With the preceding equivalent character, a vehicle with a license plate "6ABL23" can enter or exit the parking lot if its license plate is recognized as "**6AB123**". When you set **Number of Characters Can Be Tolerant Of** to **1**, the vehicle can still enter or exit even if one of its recognized license plate numbers is incorrect, such as "**8AB123**". When you set this parameter to **2**, two of its recognized license plate numbers can be incorrect, such as "**8A8123**"; when you set it to **3**, three can be incorrect. If you click **Copy**, you can copy equivalent character settings of a lane to another lane.
Plate Recognition Area	Enable	When to enable a plate recognition area.
	Draw	Draw a plate recognition area. When you are drawing such an area, you can drag the four corners to any direction, concerning that the camera may not point to the road center due to its installation on one side of the road or that the road is not straight. The following is an example.



8. Click **Save**.

Querying the Function Effect

Preparations

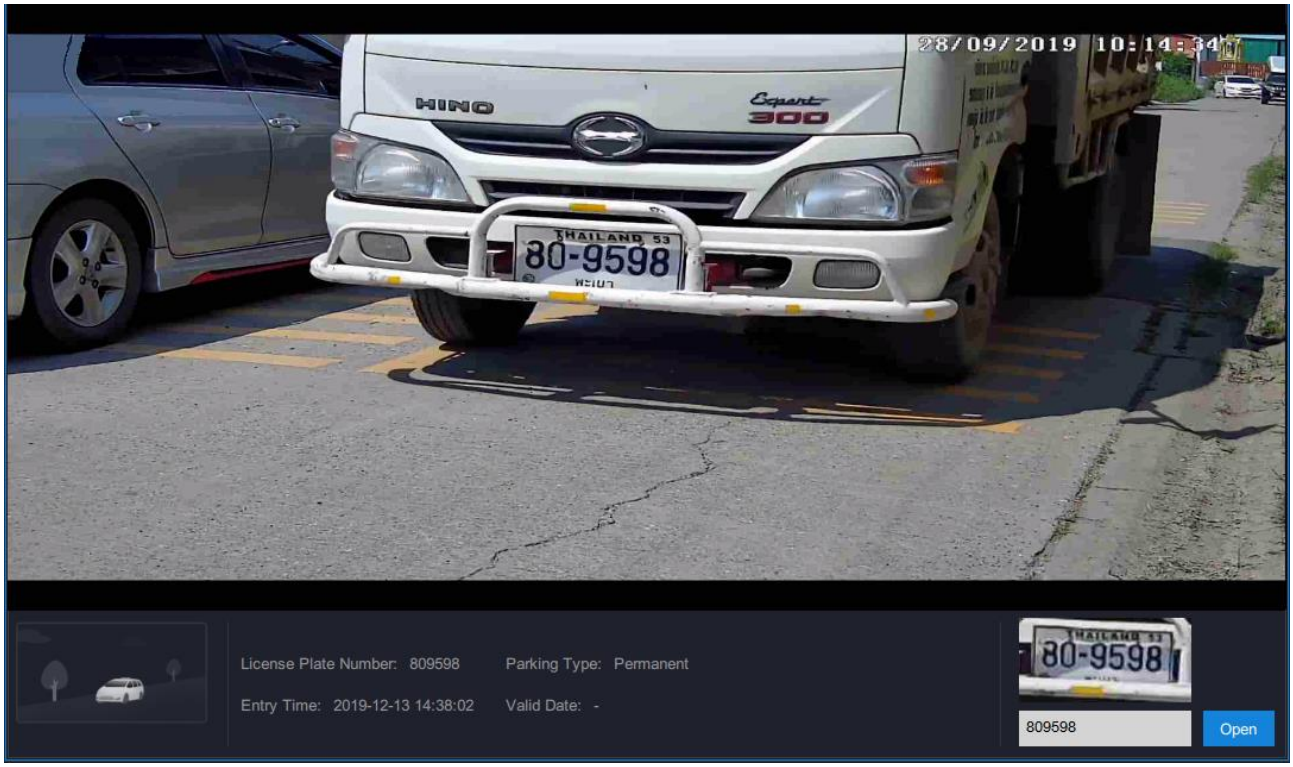
Ensure that you have performed step 10 of section "Arming AI Cameras".

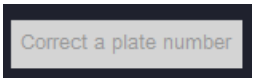
Procedure

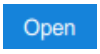
To query the function effect:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page.
3. Select an idle viewing window and choose **Vehicle Entries and Exits**.
4. Drag the target camera or lane to the viewing window.

After this, you can find the following.



The viewing controls showed in the preceding figure are described in section "Viewing Control".
In addition, the picture showed in the bottom left corner is the capture made when the vehicle enters the parking lot. When recognition results are inaccurate, you can manually enter correct plate numbers in the 

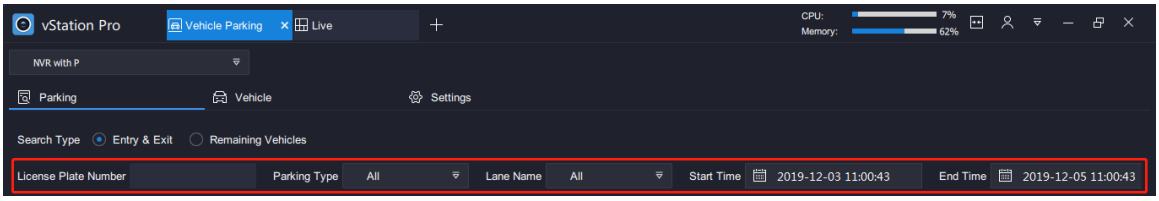
text field and click 

to allow vehicles to enter or exit for once. And then, you are advised to reconfigure equivalent characters as described in step 7 of section "Configuring the Function" to improve vehicle entering/exiting efficiency.

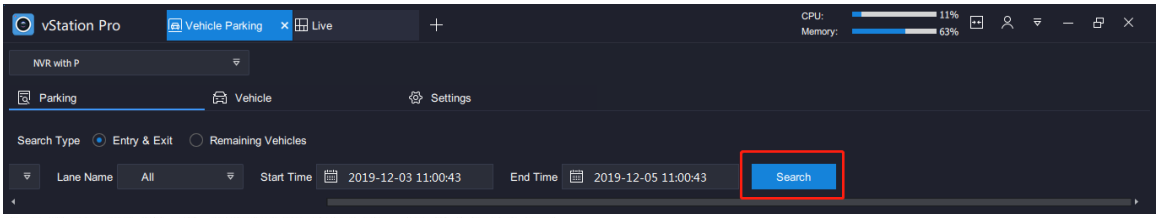
Querying Parking Logs

To query the exits and entries of vehicles or lanes:

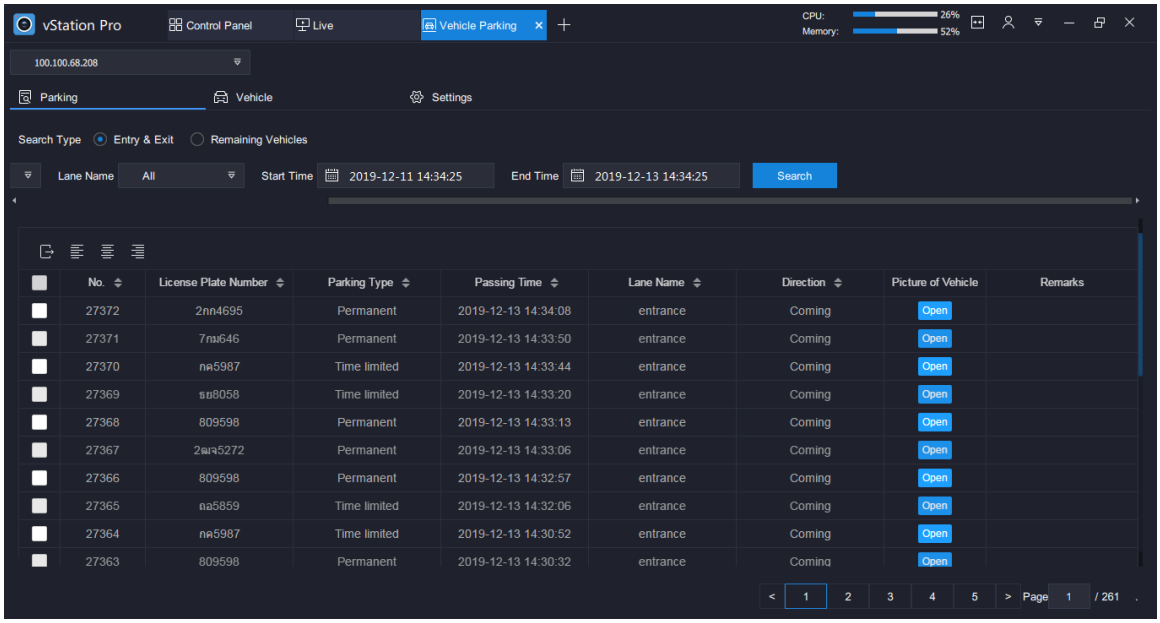
1. Under **Vehicle Parking**, select **Parking**.
2. Select the AI NVR responsible for the parking lot from the drop-down list.
3. Set **Search Type** to **Entry&Exit**.
4. Specify the search criteria.



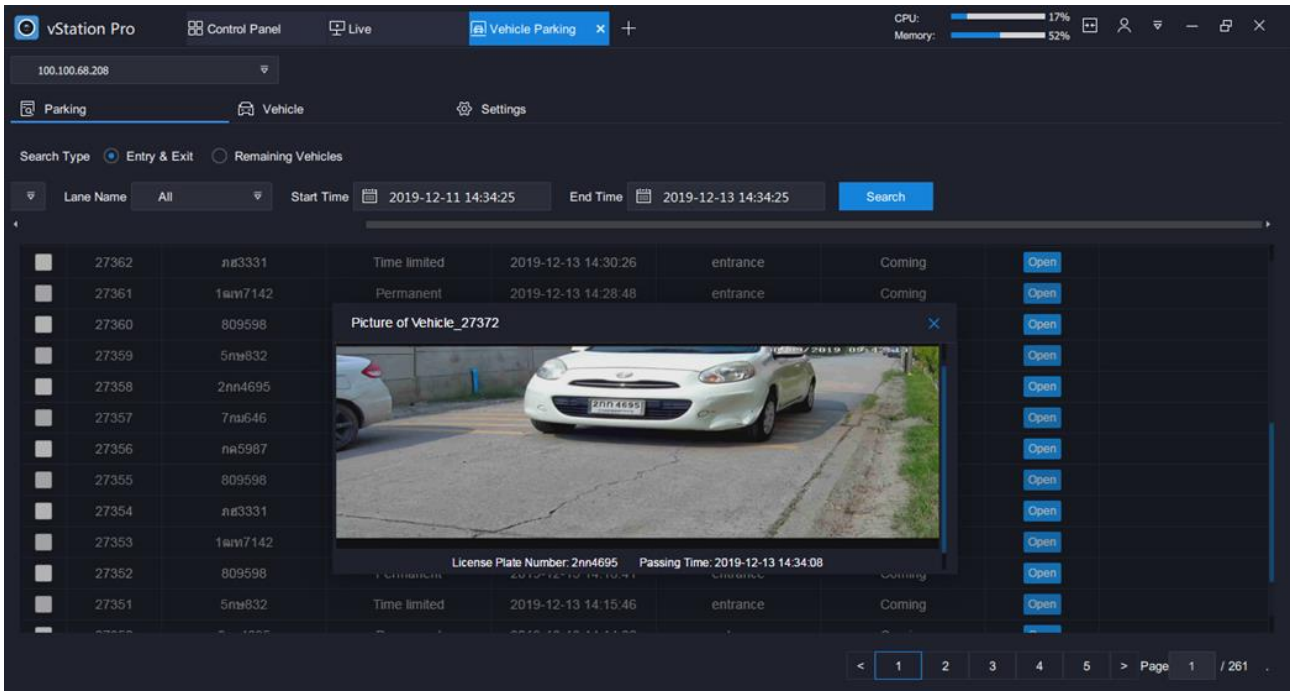
5. Click **Search**.



The following is an example of a search result.

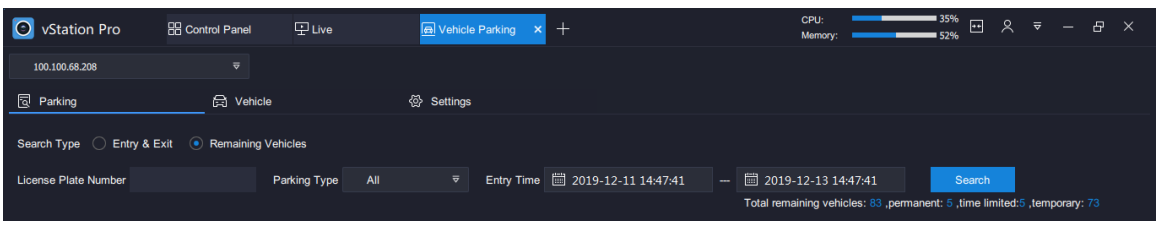


Clicking **Open** will show you a vehicle capture. The following is an example.



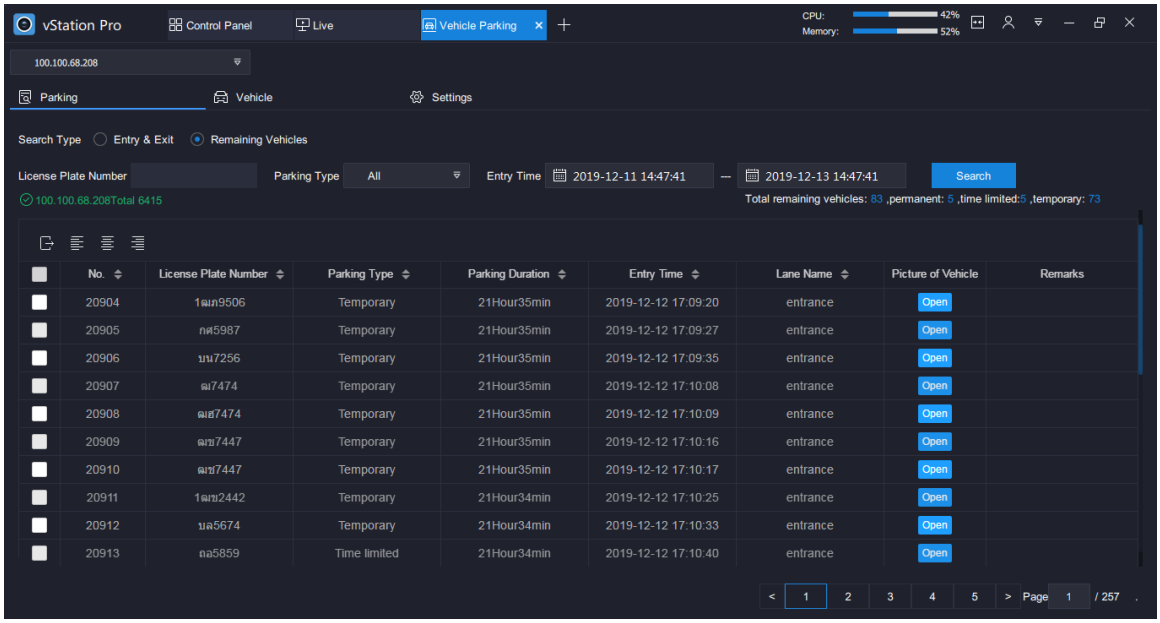
To query the remaining vehicles in a parking lot:

1. Under **Vehicle Parking**, select **Parking**.
2. Select the AI NVR responsible for the parking lot from the drop-down list.
3. Set **Search Type** to **Remaining Vehicles**.
4. Specify the search criteria.

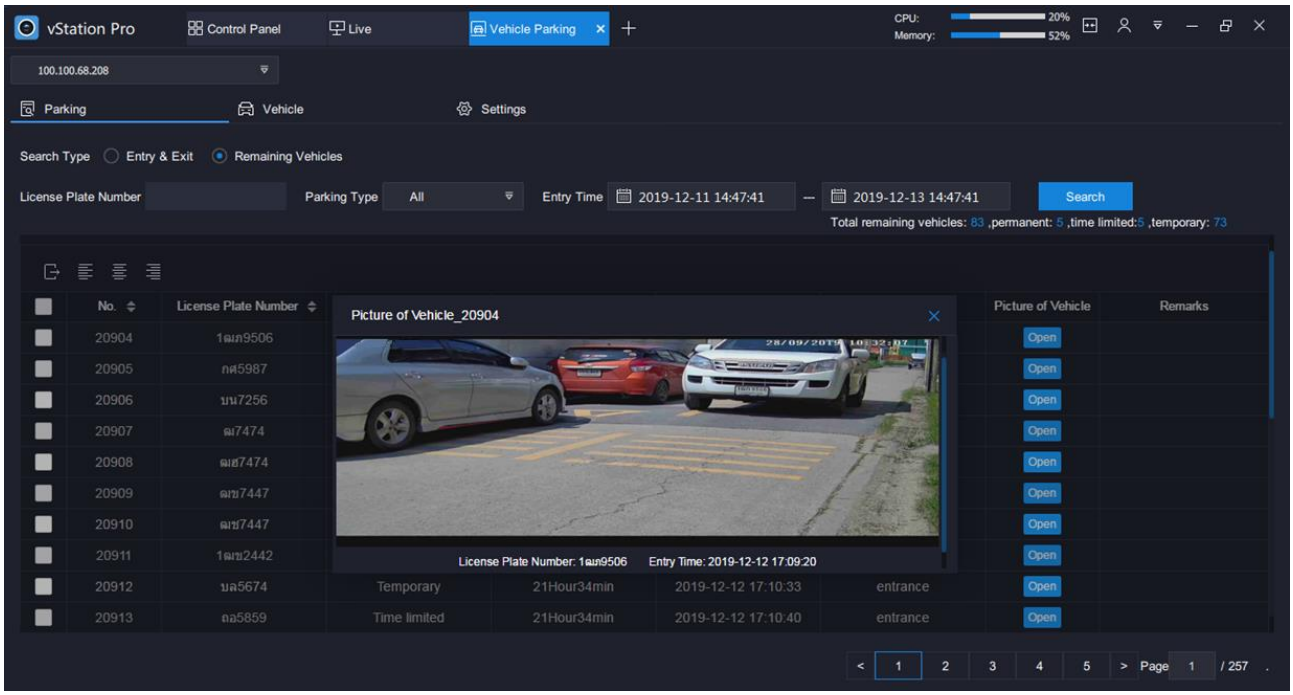


5. Click **Search**.

The following is an example of a search result.



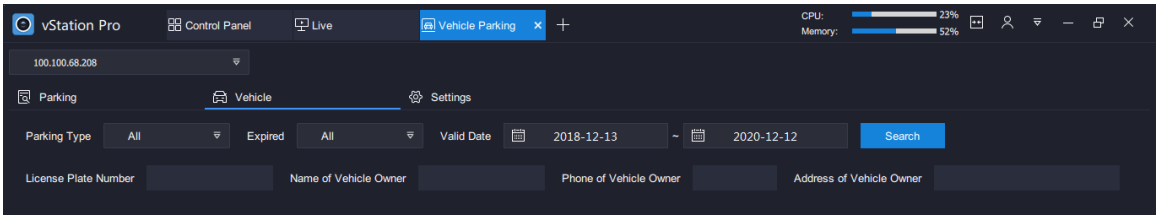
Clicking **Open** will show you a vehicle capture. The following is an example.



Querying Information About Registered Vehicles

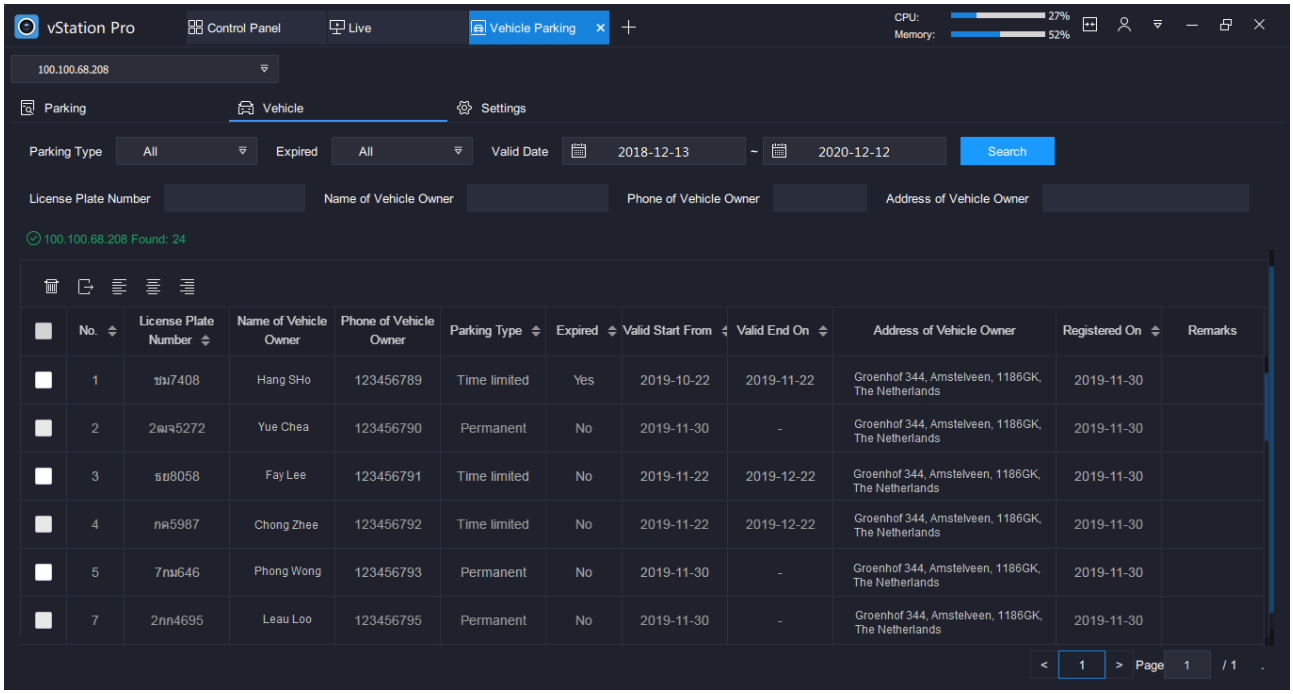
To query information about registered vehicles whose parking type is either time limited or permanent:

1. Under **Vehicle Parking**, select **Vehicle**.
2. Select the target AI NVR from the drop-down list.
3. Specify the search criteria.



4. Click **Search**.

The following is an example of a search result.



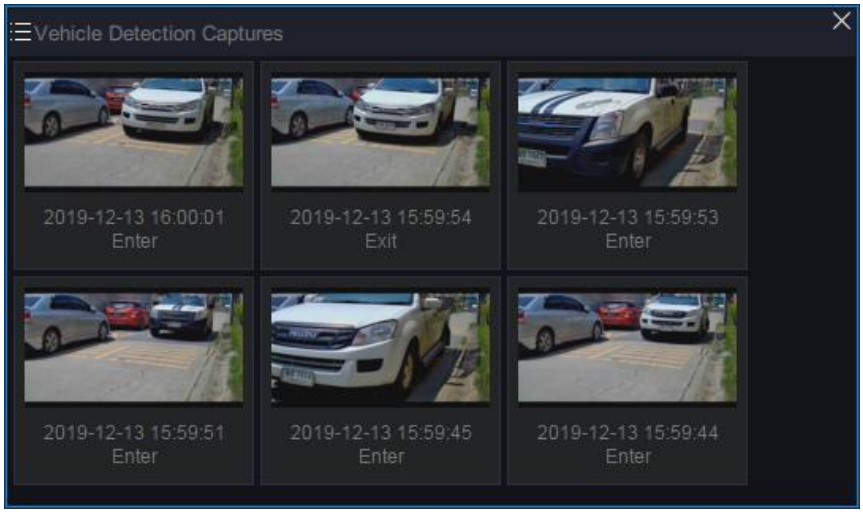
Querying Vehicle Detection Captures

To query vehicle detection captures on an AI NVR:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).

   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page and select an idle viewing window and choose **Vehicle Detection Captures**.

The following is an example.



Querying Vehicle Detection Panorama Captures

To query vehicle detection captures on an AI NVR:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".
2. Go to the **Live** page and select an idle viewing window and choose **Vehicle Detection Panorama Captures**.

The following is an example.

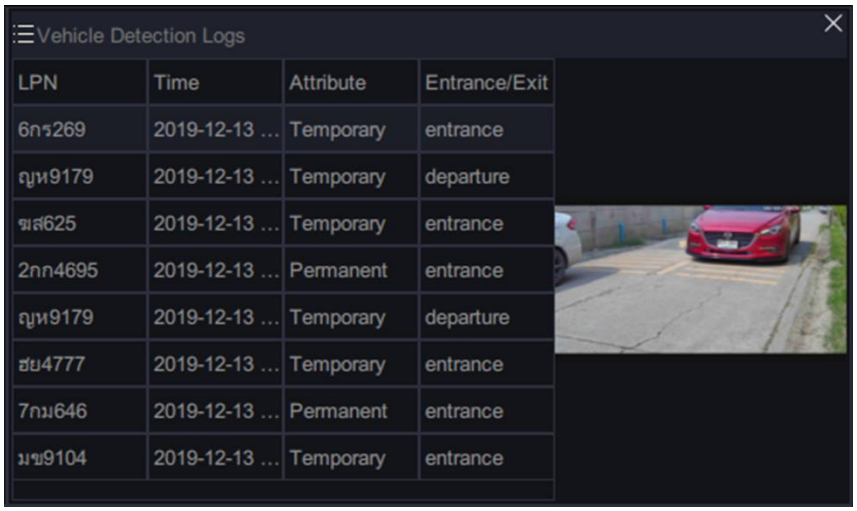
Querying Vehicle Detection Logs

To query vehicle detection captures on an AI NVR:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).
   For details, see step 9 of section "Arming AI Cameras".

2. Go to the **Live** page and select an idle viewing window and choose **Vehicle Detection Logs**.

The following is an example.



Querying Vehicle Capture Statistics

To query vehicle detection captures on an AI NVR:

1. Choose **Control Panel** > **AI** > **vStation Pro Server**, and add servers to which you want the AI NVR to push AI notifications (face/figure/vehicle detection captures, face detection alarms, and related data).

   For details, see step 9 of section "Arming AI Cameras".

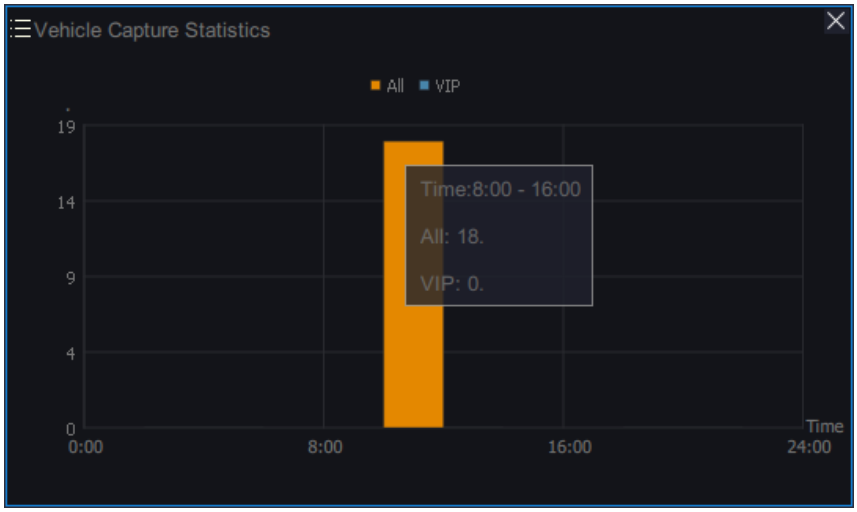
2. Go to the **Live** page and select an idle viewing window and choose **Vehicle Capture Statistics**.

The following is an example.

NOTE:

The **VIP** label is reserved for future use.

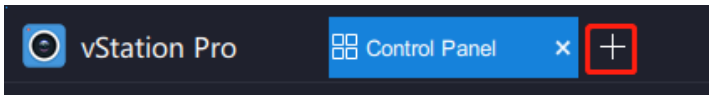
If you click a period, you can find the following.



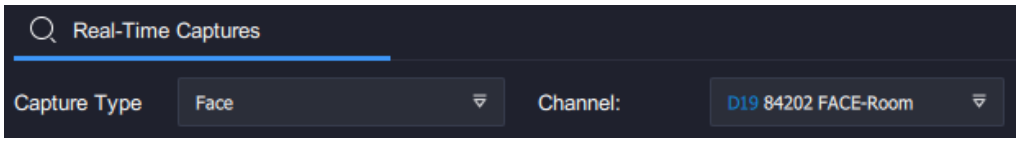
Searching History Face/Figure/Vehicle Captures

To search history face/figure/vehicle captures on an AI NVR:

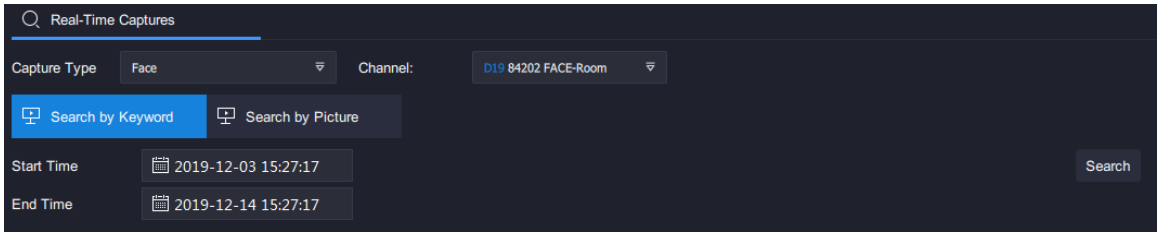
1. Click **+** and select **Real-Time Captures**.



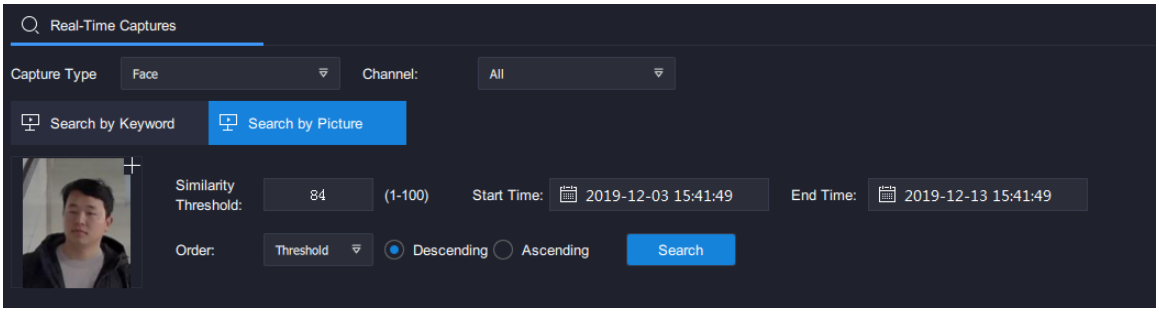
2. In the displayed interface, select the AI NVR from the device list on the left panel.
3. Specify a capture type and a channel/camera (or you can select all channels or cameras).
   The following is an example.



4. Select **Search by Keyword** or **Search by Picture**.
   If you select **Search by Keyword**, you need to specify a start time and an end time.



   If you select **Search by Picture**, you need to upload a reference picture and specify the following.
   The following is an example.

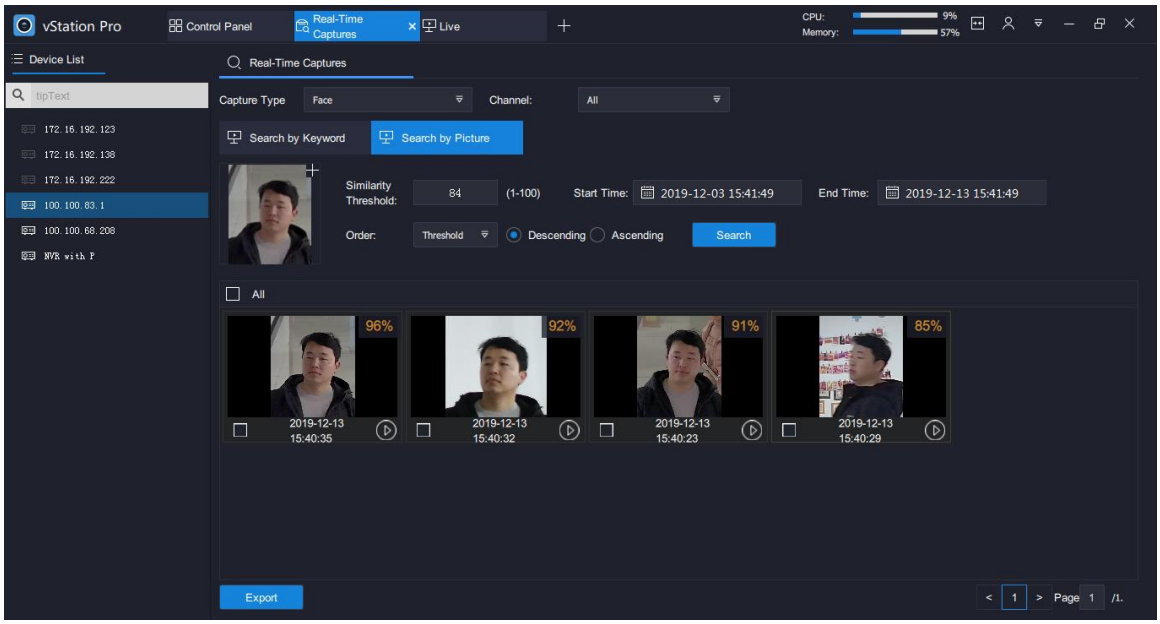


In this step:

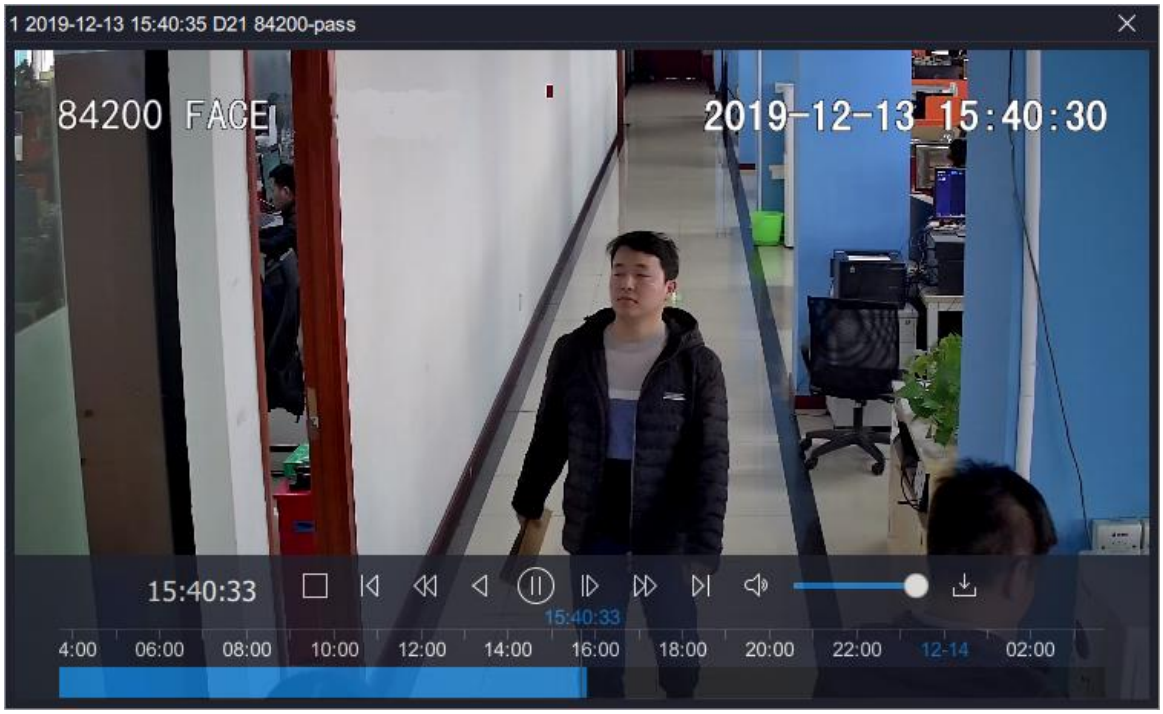
- When you set **Order** to **Threshold**, the search results will be displayed in descending or ascending order of the similarity between the reference picture and captures.
- When you set **Order** to **Time**, the search results will be displayed in descending or ascending order of the capturing time.

5. Click **Search**.

The following is an example of a search result.



Clicking  will start a playback, which starts around 10 seconds before the time when the face capture is made. For example, if the face capture is made at 14:01:35, the playback will start at 14:01:25.



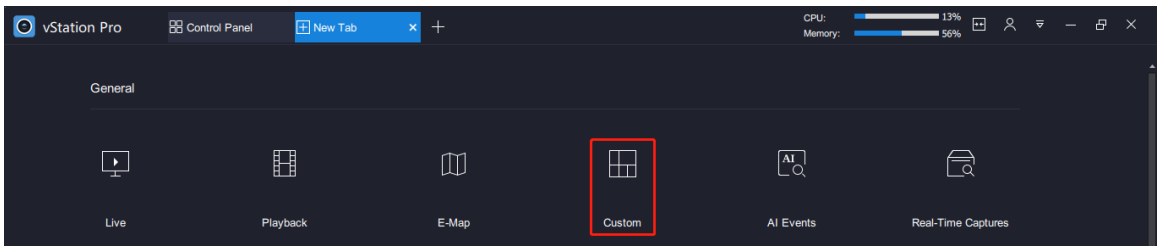
You can click **Export** to export search results.

Adding a Custom Tab Page

You can add a custom tab page to show interested information.

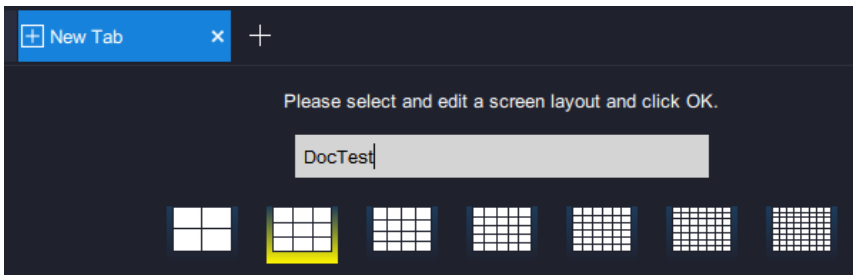
To add a custom tab page:

1. Click **+** and select **Custom**.



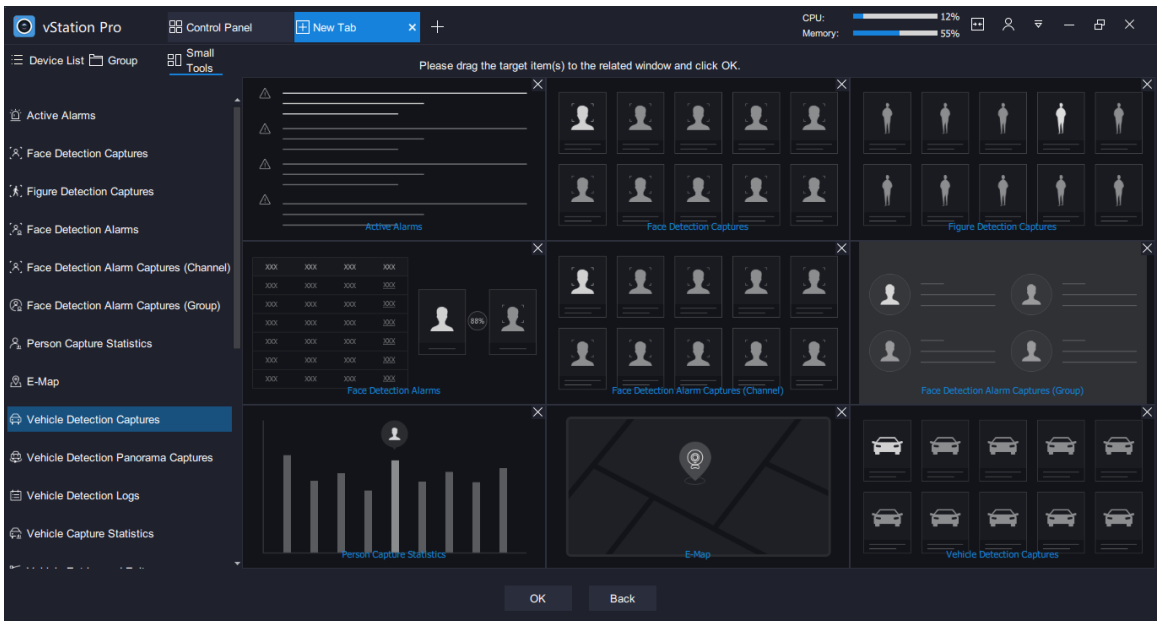
2. Enter a name for the custom tab page.

   The following is an example.



3. Select a screen layout.
4. Click **OK**.
5. Drag items (NVRs, camera groups, or notifications) on the left panel to viewing windows.

   The following is an example.



6. Click **OK**.

After preceding steps are performed, you can find the following.

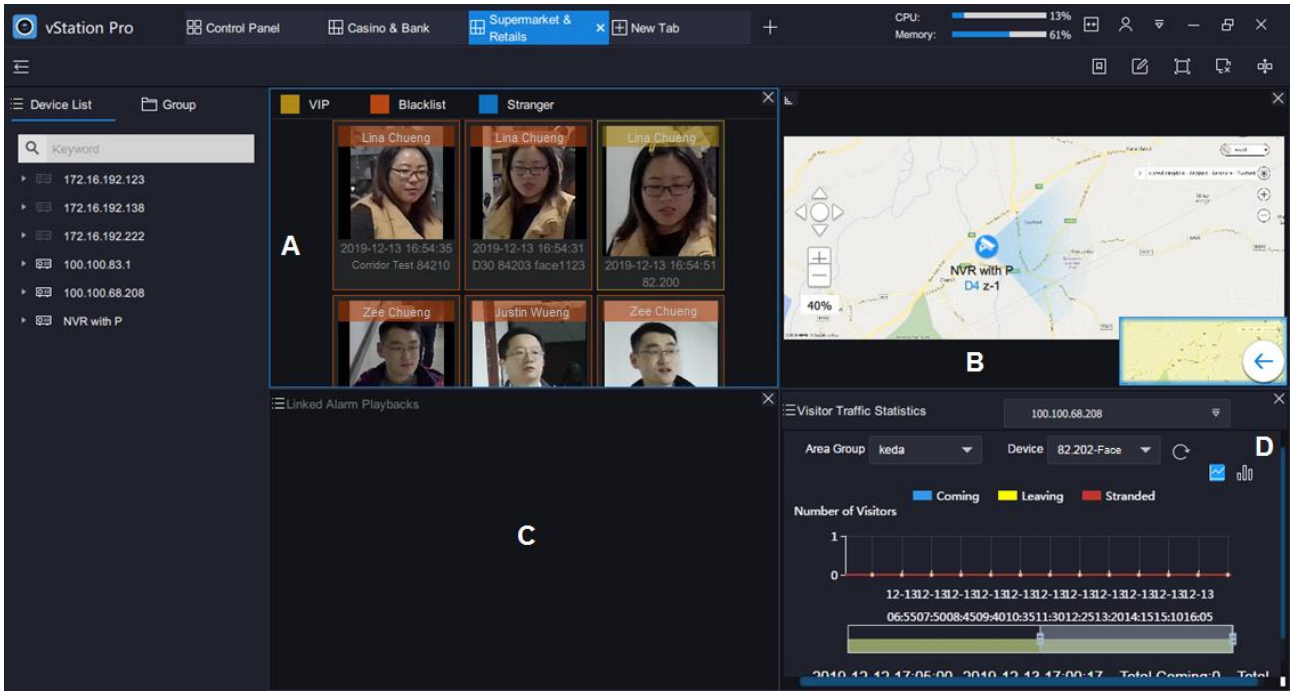

Device List
Group
Keyword
172.16.192.123
172.16.192.138
172.16.192.222
100.100.83.1
100.100.68.208
NVR with P
Active Alarms
14 2019-12-13 15:35:43 Motion Detection
Source100.100.68.208
Channel ID for Motion Detection2
13 2019-12-13 15:35:43 Motion Detection
Source100.100.68.208
Channel ID for Motion Detection3
12 2019-12-13 16:09:17 Motion Detection
Source100.100.68.208
Channel ID for Motion Detection4
2019-12-13 16:08:39
84204-Face
Male Adult
2019-12-13 16:09:18
84211-FACE
Male Adult
2019-12-13 16:08:34
84205-Figure
Generated On
Operation
2019-12-13 16:08:39 Details Playback
2019-12-13 16:09:17 Details Playback
2019-12-13 16:09:17 Details Playback
2019-12-13 16:08:35 Details Playback
2019-12-13 16:08:12 Details Playback
2019-12-13 16:08:09 Details Playback
VIP
Blacklist
Stranger
Young Shaw
Ray Chang
2019-12-13 16:08:39
84204-Face
2019-12-13 16:09:17
68.215-Face
Young Shaw
831-KEDA-ALL
2019-12-13 16:08:39
Person Capture Statistics
All VIP
Time
0:00
8:00
16:00
24:00
NVR with P
D4 z-1
25%
Vehicle Detection Captures
2019-12-13 16:08:39
Exit
2019-12-13 16:08:32
Exit

Default Custom Tab Pages

Supermarket and Retails

Clicking 

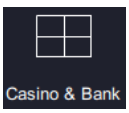
will show you the following.



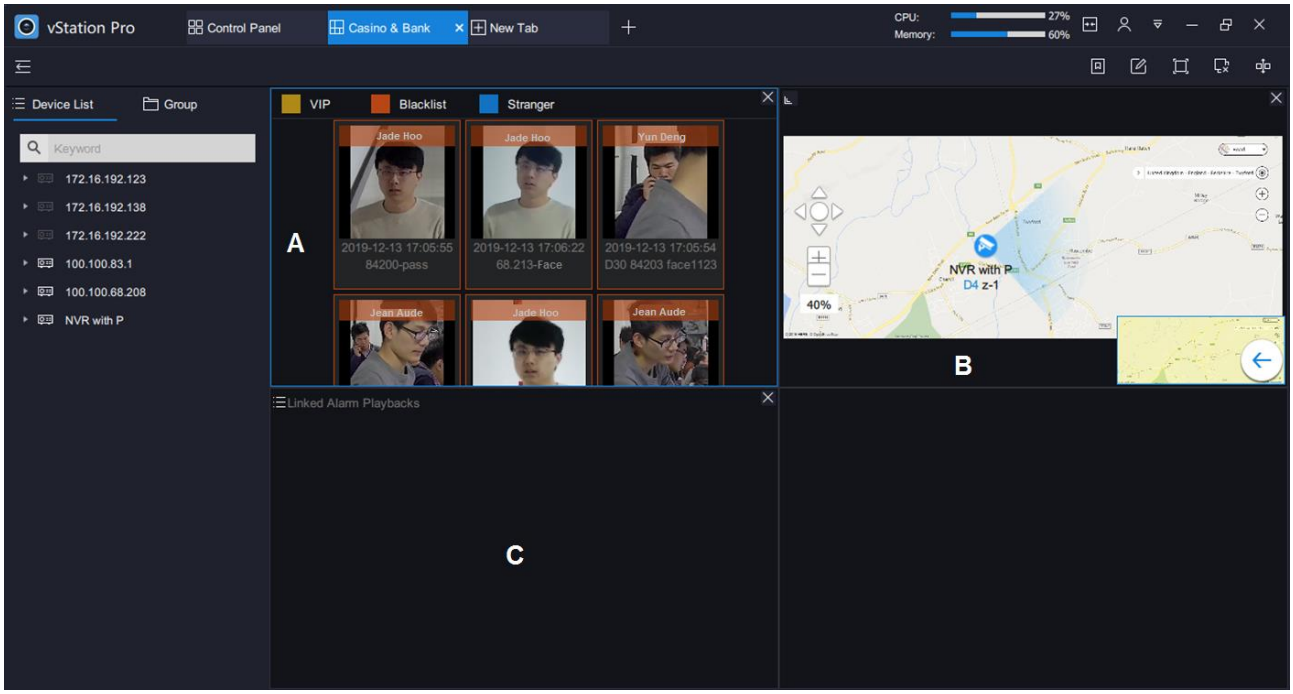
The following table provides the options used by this tab page and their descriptions.

Area	Option	Description
A	Face Detection Alarm Captures (Channel)	For details, see sub-section "Querying the Function Effect" of section "Face Detection".
B	E-Map	For details, see sub-section "Querying the Function Effect" of section "Configuring E-Map".
C	Linked Alarm Playbacks	For details, see section "Showing Linked Alarms".
D	Visitor Traffic Statistics	For details, see sub-section "Querying the Function Effect" of section "Visitor Traffic Statistics".

Casino and Bank

Clicking 

will show you the following.



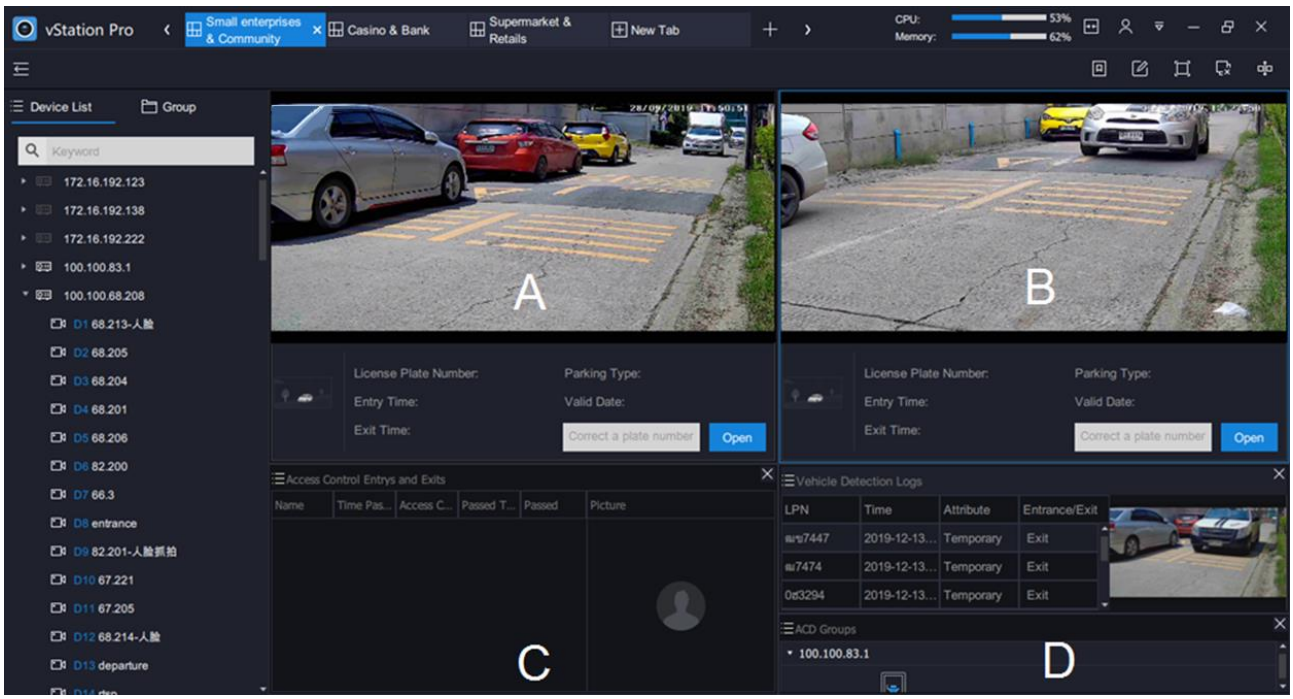
The following table provides the options used by this tab page and their descriptions.

Area	Option	Description
A	Face Detection Alarm Captures (Channel)	For details, see sub-section "Querying the Function Effect" of section "Face Detection".
B	E-Map	For details, see sub-section "Querying the Function Effect" of section "Configuring E-Map".
C	Linked Alarm Playbacks	For details, see section "Showing Linked Alarms".

Small enterprises and Community

Clicking 

will show you the following.



The following table provides the options used by this tab page and their descriptions.

Area	Option	Description
A B	Vehicle Entries and Exits	For details, see sub-section "Querying the Function Effect" of section "Vehicle Parking".
C	Access Control Entries and Exits	For details, see sub-section "Querying the Function Effect" of section "Access Control".
D	Vehicle Detection Logs	For details, see sub-section "Querying the Function Effect" of section "Vehicle Parking".

Video Wall

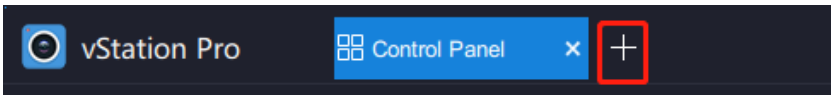
You can monitor areas on a video wall but you must get at least one decoder ready. If no decoders are configured, you cannot monitor areas on the video wall.

NOTE:

The Video Wall function does not support RTSP streams from NVRs of V5.

To configure the video wall:

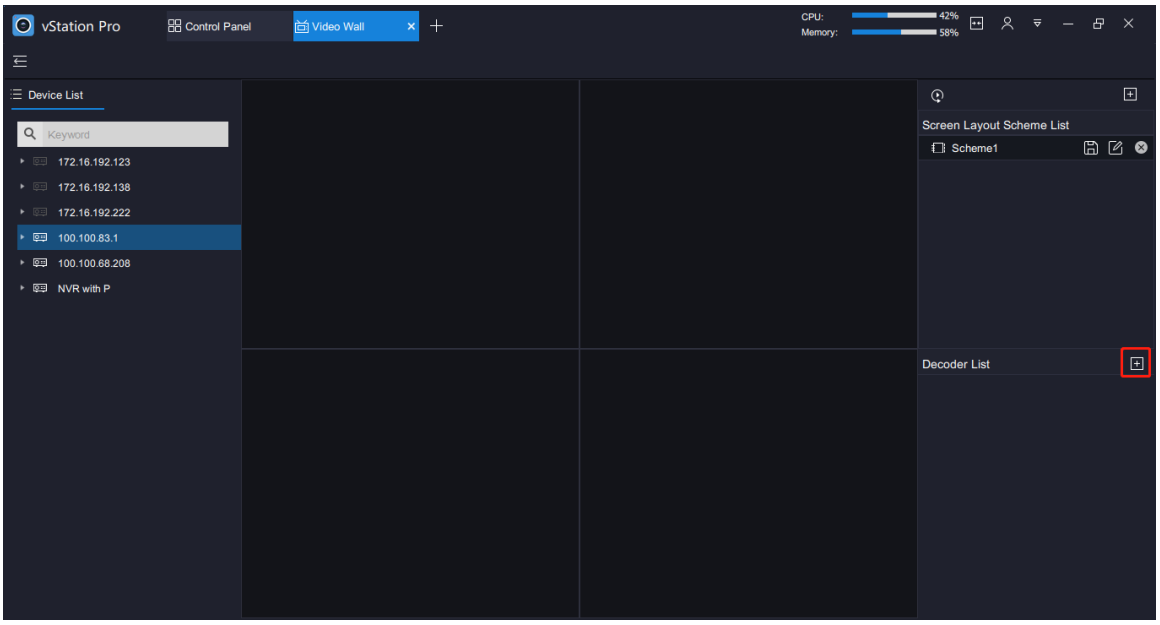
1. Click + and select **Video Wall**.



2. Add a decoder.

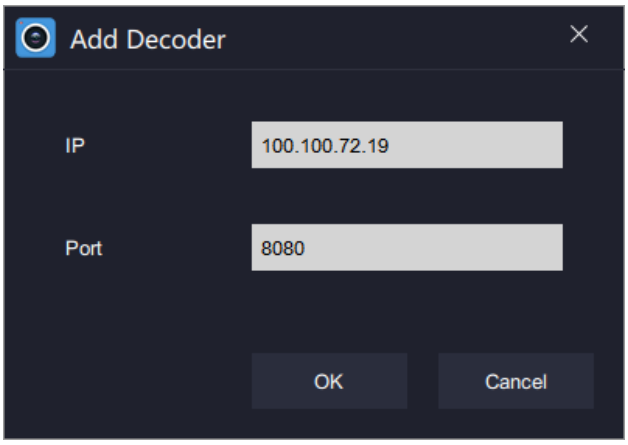
   Ensure that the decoder can reach the target NVR. You are advised to set the decoder to be located on the same LAN as the target NVR.

   1) Click ⊞.



   2) Specify parameters displayed.

   The following is an example.

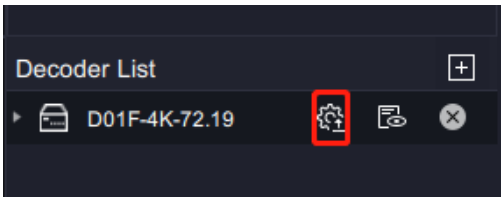


In this step, set **Port** to **8080**.

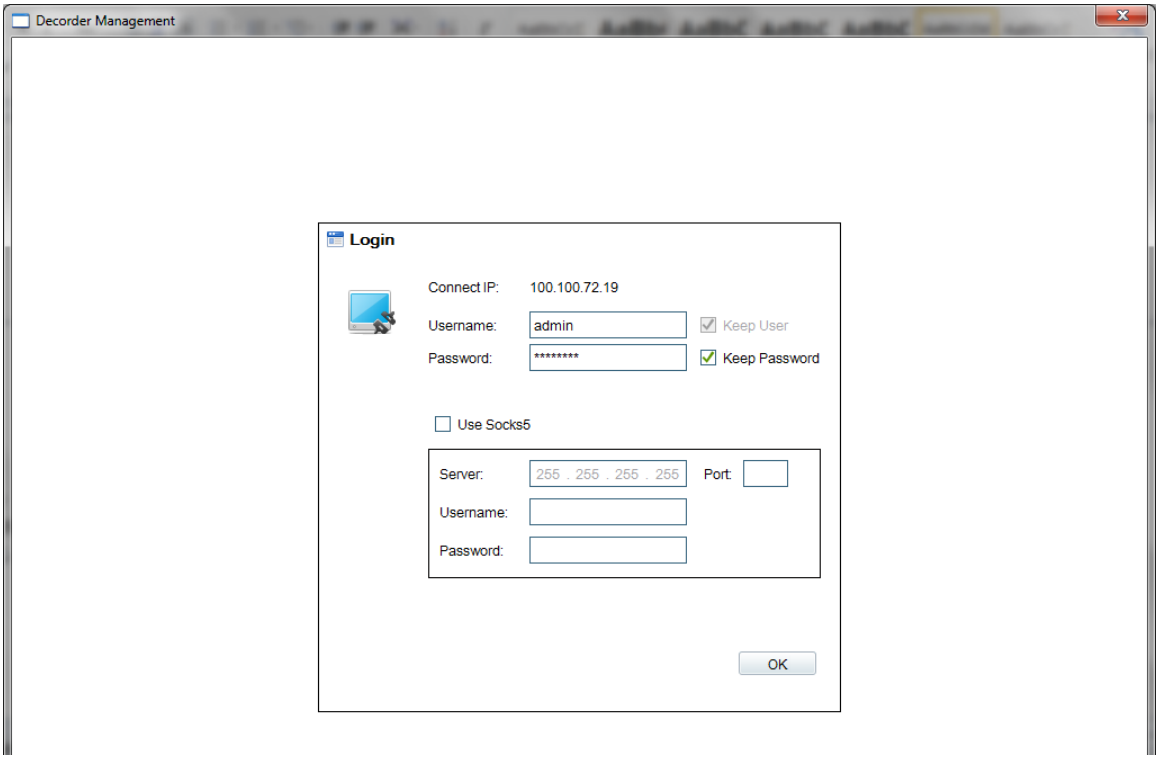
3) Click **OK**.

3. Configure the decoder through the Decoder Management tool.

1) Click  .

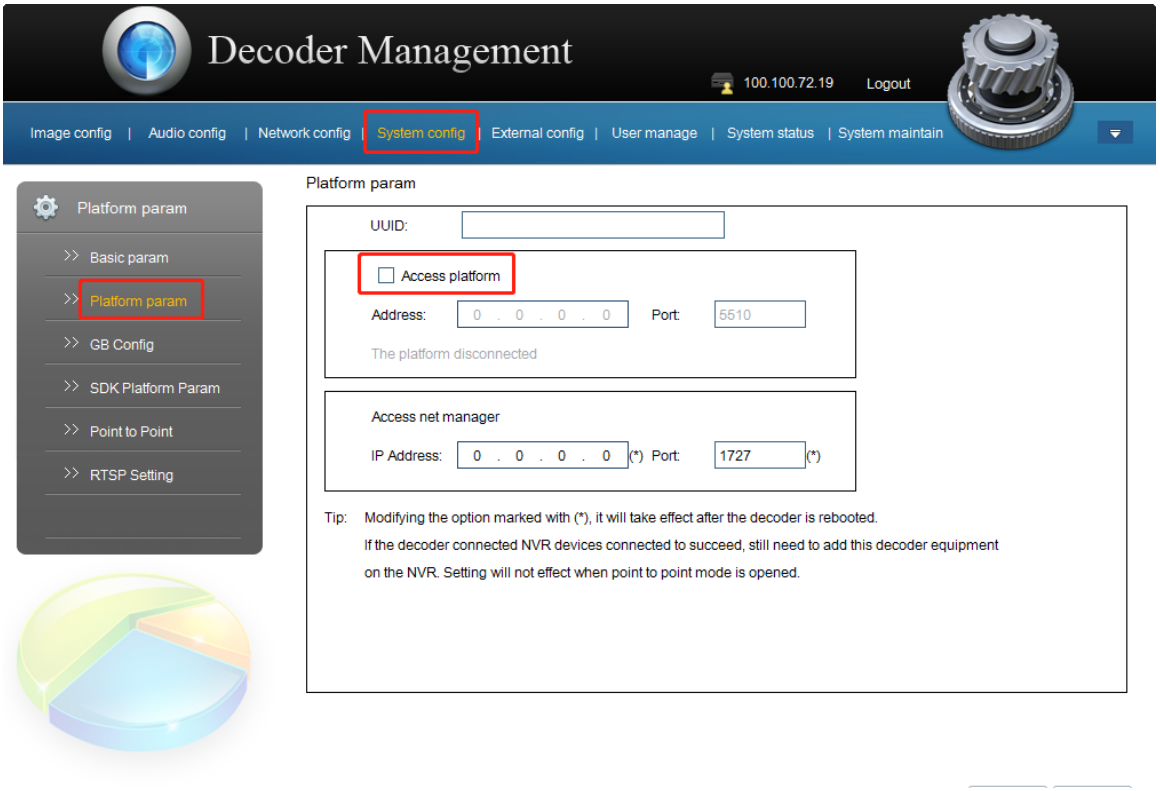


2) Enter a username and a password.

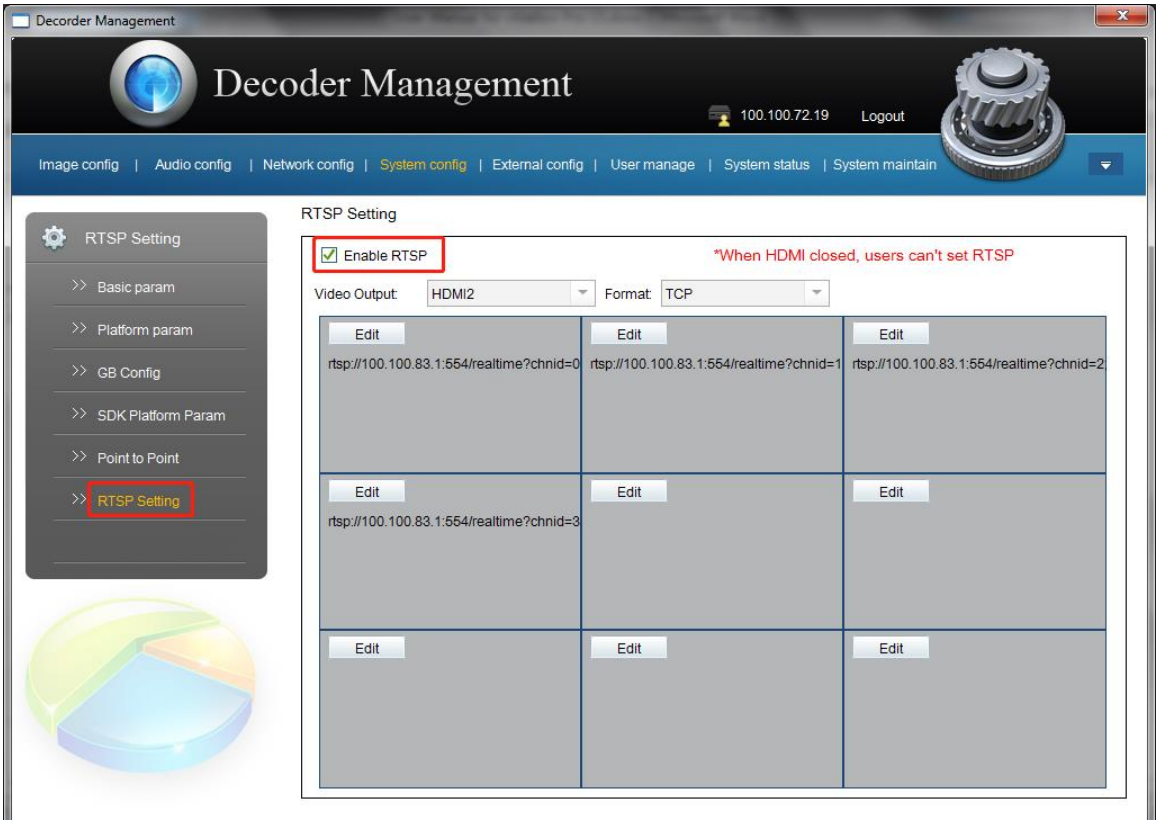


3) Click **OK**.

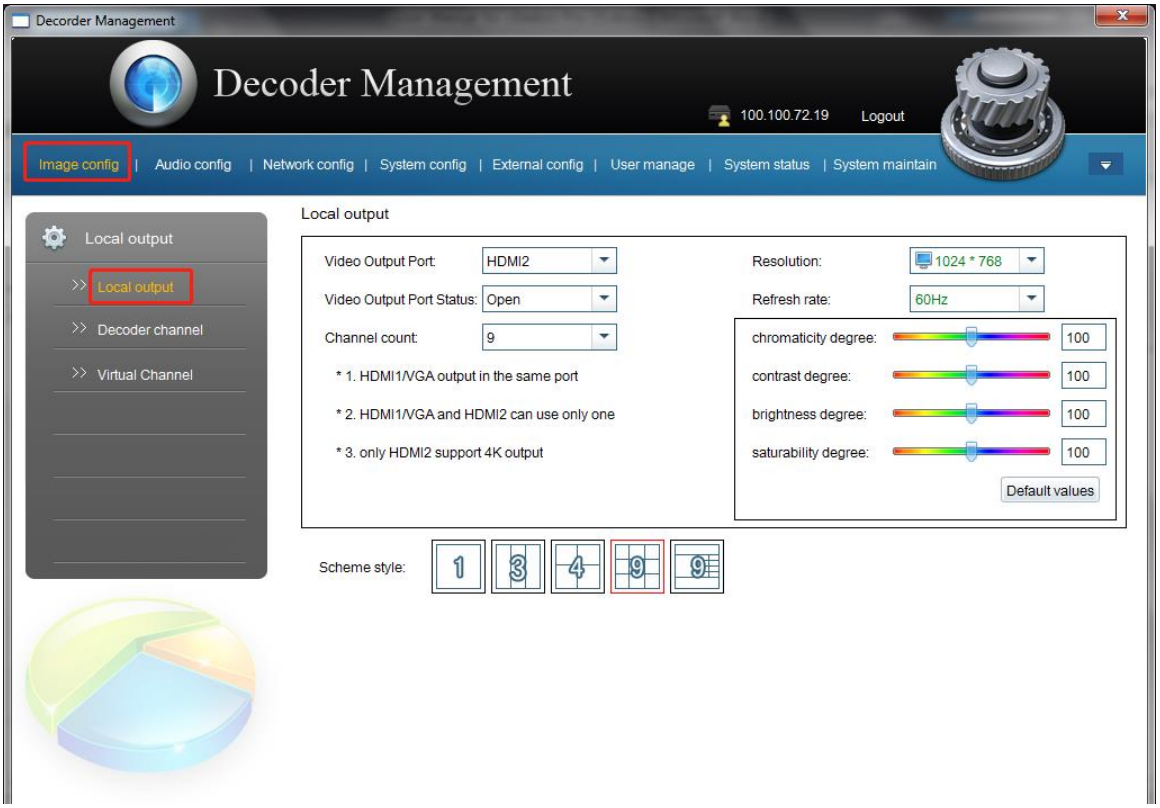
4) Choose **System config** > **Platform param**, and **UNCHECK** **Access platform**.



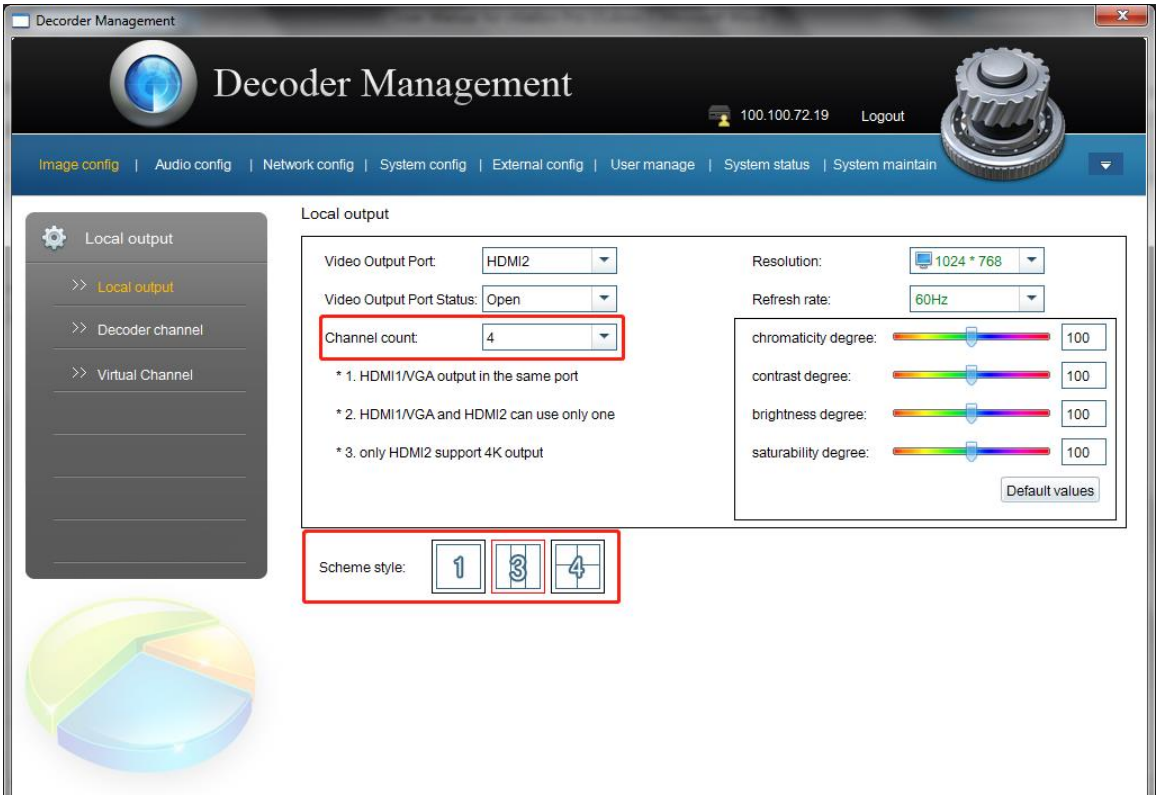
5) Click **Save**.
6) Click **RTSP Setting** and check **Enable RTSP**.



7) Click **Save**.
8) Choose **Image config** > **Local output**, specify **Video Output Port**, set **Video Output Port Status** to **Open**, and configure the **Channel count** parameter according to your needs.

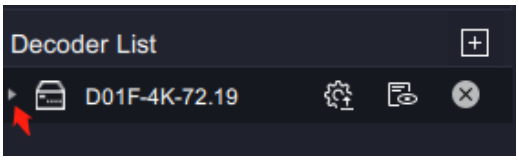


The **Scheme style** options vary according to the value for **Channel count**. For example, if the value for **Channel count** is **4**, you can find the following scheme styles.

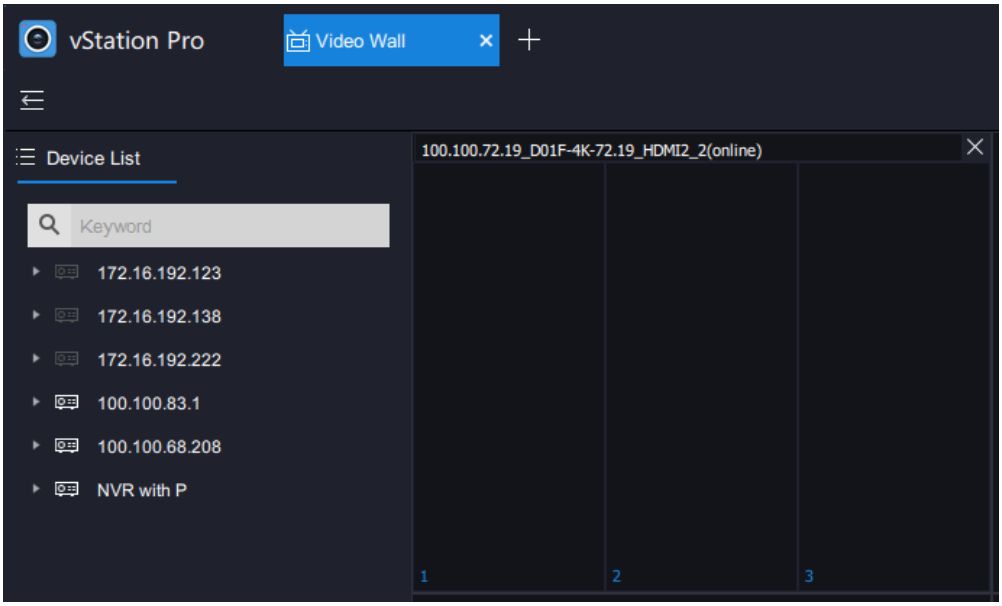


9) Select a scheme style and configure other parameters.
10) Click **Save**.

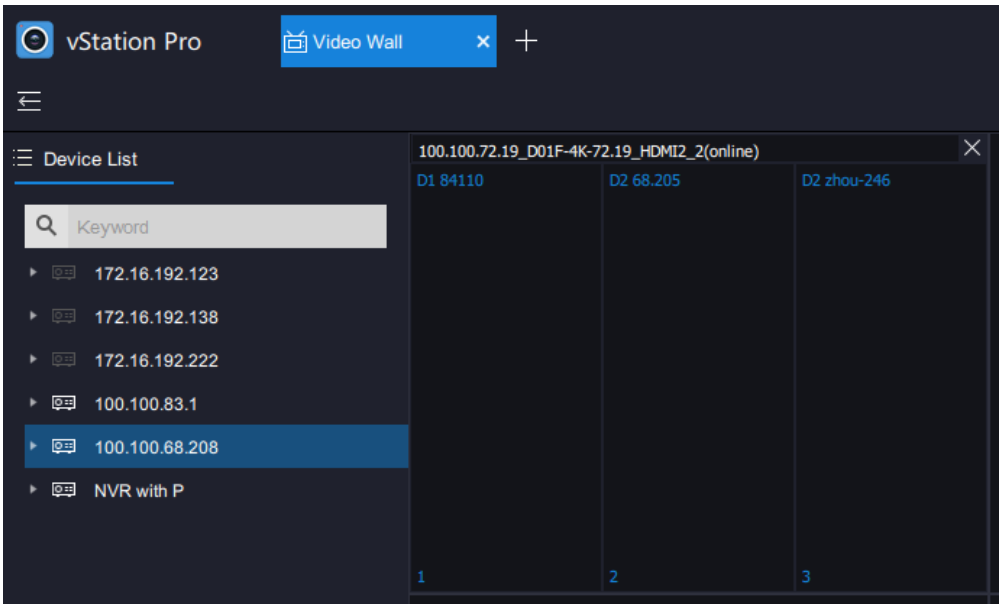
4. Click ▶ to expand the decoder.



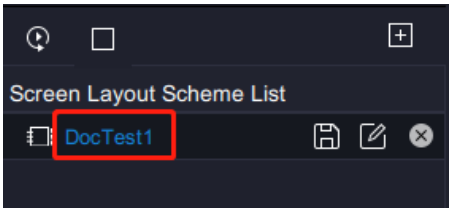
5. Drag the previously configured video output port to a video window.
   After this, you can find the following.



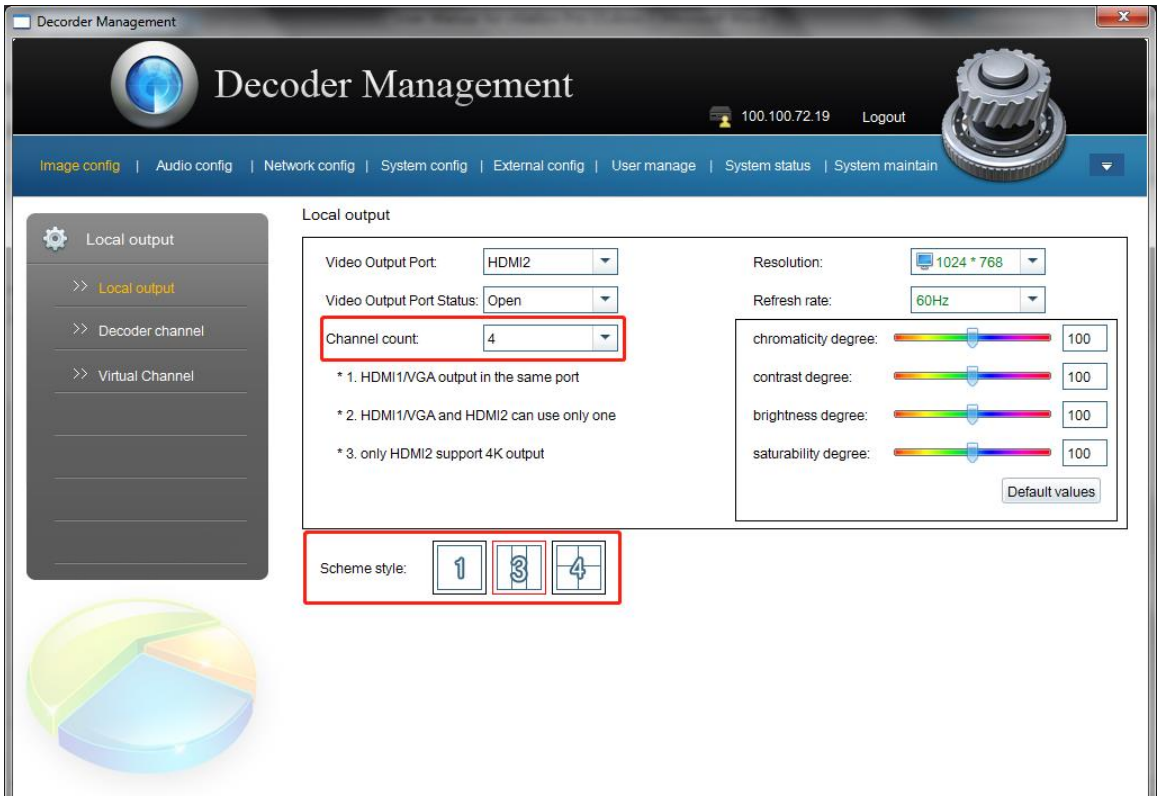
6. Drag cameras that can register with different NVRs to sub-windows of the video window.
   After this, you can find the following.



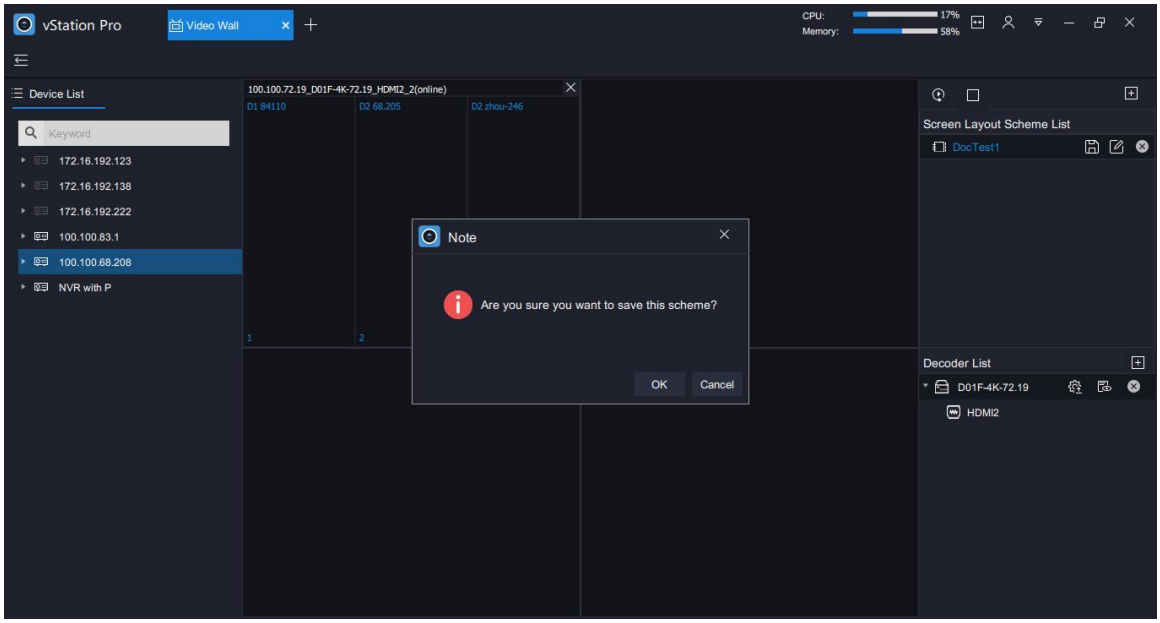
7. Enter a screen layout scheme name and click  .
   The following is an example.



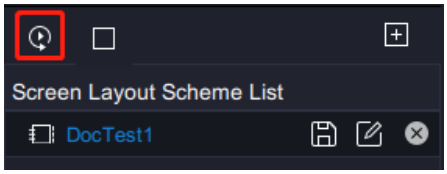
This screen layout scheme takes effect only on the vStaion Pro, not on the video wall. The screen style on the video wall is deteremined by the following.



8. Click **OK** to confirm your operation.



9. Click  to load the screen layout scheme.



10. (Optional) Click  to unload the screen layout scheme.

11. (Optional) Click  to add morme screen layout schemes.

Abbreviations and Acronyms

AI	Artificial Intelligence
NVR	Network Video Recorder
PC	personal computer