

USER MANUAL

View Management System (AntarVis2.0)

Version: 1.0

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I. Product Overview

1. Overview

AntarVis2.0, our Video Management System, is a professional software for central management of the front-end network monitoring devices, including NVR, DVR, IPC, MDI, SDI, etc. It is to mainly fulfill functions such as real-time preview, video playback, E-map, alarm linkage, decoding on the wall, supporting WEB access and mobile phone client access.

The installation package of AntarVis2.0 is an independent executable file, which is easy to set up and contains various fundamental functions you may need. It can be generally used for small-sized projects.

AntarVis2.0 currently supports four protocols including active ZKTeco, ONVIF ,ZKTeco-P and P2P.

2. System Requirements

2.1 Hardware Requirements

CPU: Intel(R) Core(TM) i5 6500 @2.6GHZ or above

RAM: 4GB or higher

GPU: Intel HD 630 above integrated graphics or NVIDIA GTX750 above discrete graphics.

Network card: Gigabit Ethernet or above

CD-ROM drive: DVR-R

Hard disk: 250G or more, with 20G available space

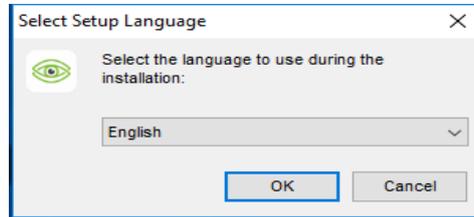
Switch: Gigabit switch or above

2.2 Software Requirements

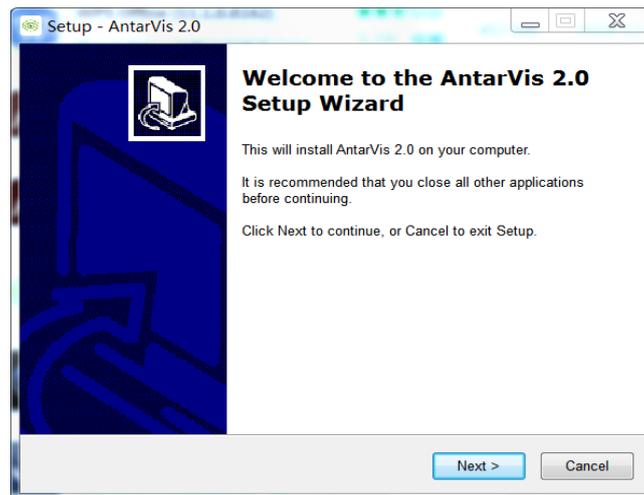
- 1) Server 2003, Server 2008, Windows XP, Windows 7, Windows 8, Windows 10
- 2) Microsoft Visual C++2010 X86 Redistributable Setup
- 3) Microsoft Visual C++2015 X86 Redistributable Setup

II. Program Overview

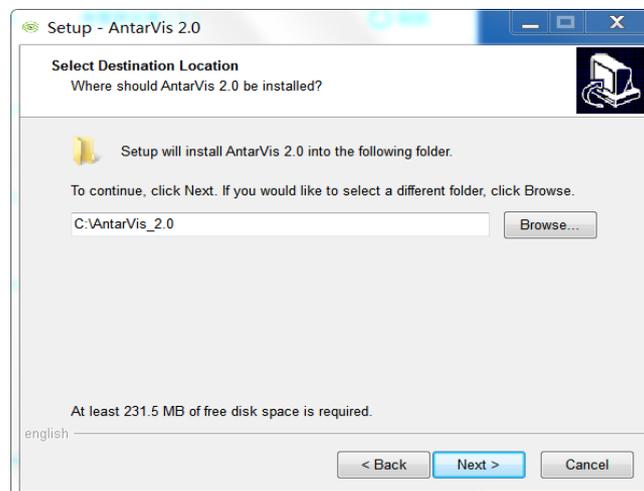
Setup overview, double click to run setup program to open setup wizard:



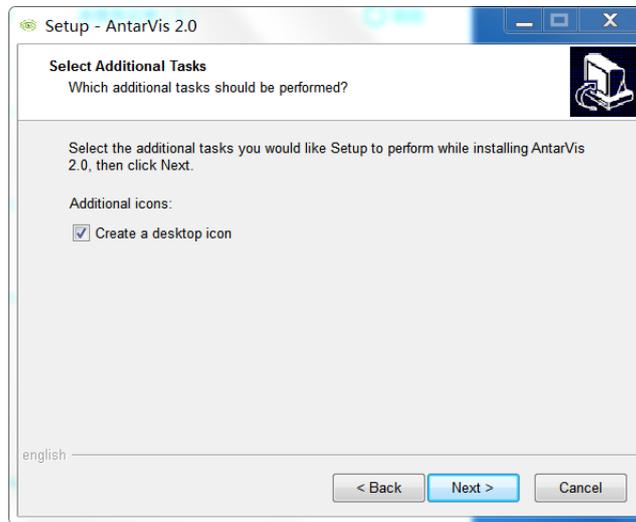
Select setup language, then the program automatically recognizes the system language as default option; if other languages required setup, please select from the drop-down list. The initial program supports simplified Chinese and English. If you need other languages, please contact the distributor for translation; click on “OK” to confirm the setup language selected. Take simplified English as an example:



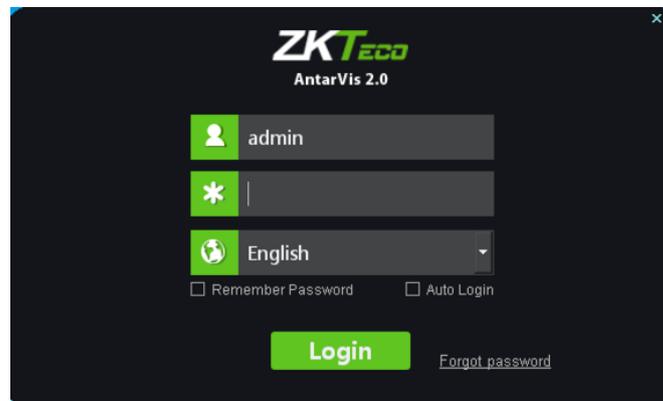
Click on “Next”, then select the setup path:



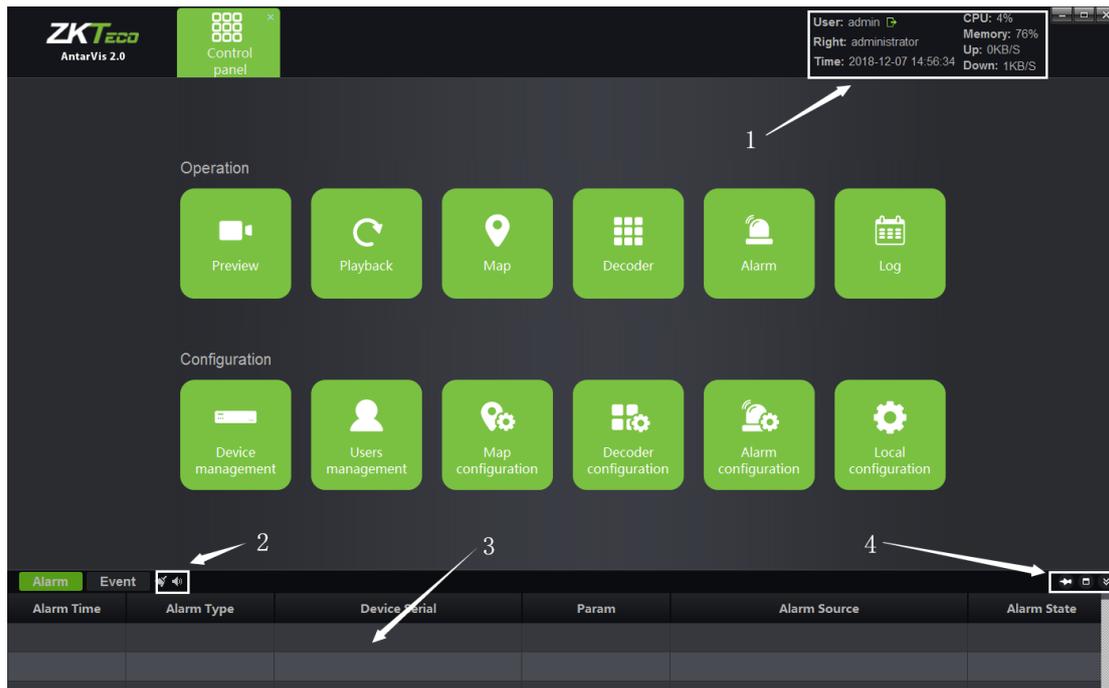
System's default path is C:\AntarVis_2.0. Users may modify the path as needed. Click on "Next" to continue:



Click "Next" to confirm to create desktop shortcut, continue to complete setup (Ⓜnote: computer already setup antivirus program may pop-up prompt; please select "allow" with no exception for the normal setup start of the program), the program runs as the setup completed, as shown in figure:



Users may manually switch between languages. The initial user name is **admin**, and the initial password is **123456**. Enter the password, click on "Login"; if you have selected "Remember password", you do not have to enter the password and the program automatically logs in as "Auto login". The function of automatic login can be canceled in local configuration. When you forget the password, click on "Forgot password" to get a temporary key for the supplier to help you get a temporary password. Below is the main interface of the program:



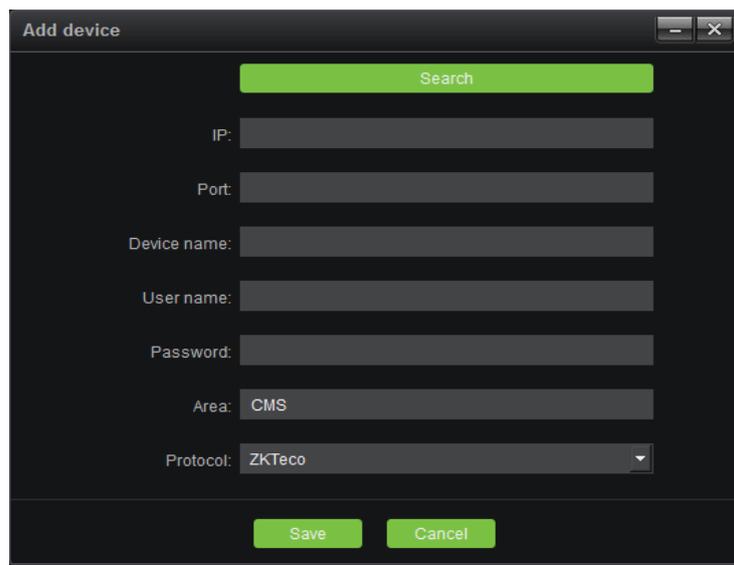
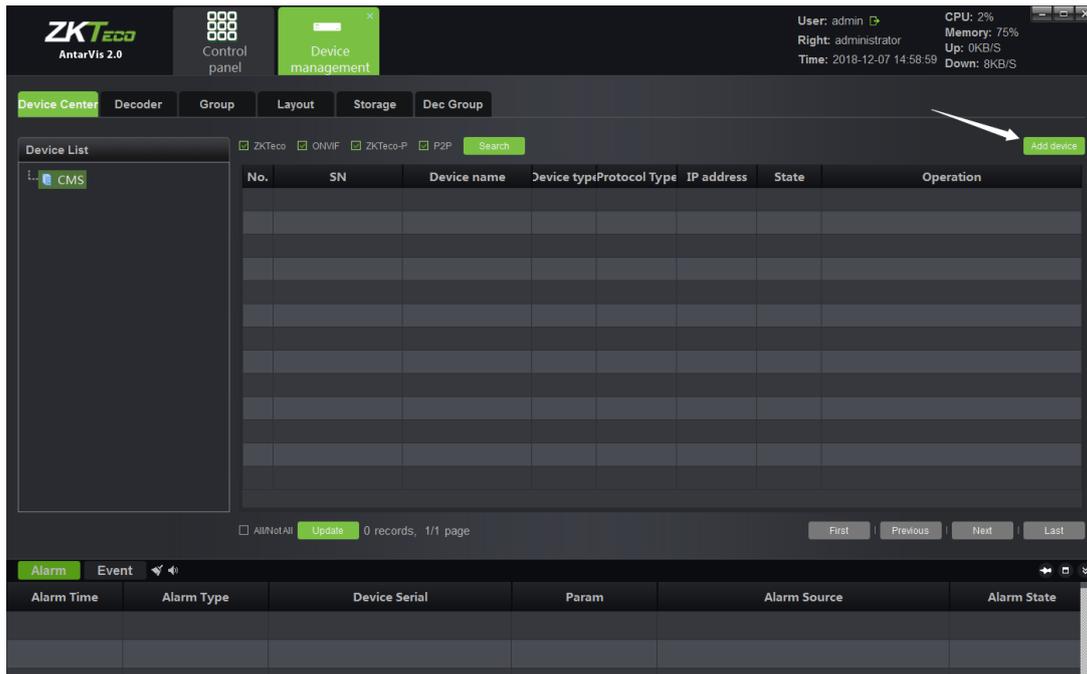
- 1) Display current user, user rights, current time, consumption of CPU memory and real-time network data flow; click on  to log out.
- 2) Display real-time alarm messages and event messages; double-click on the alarm message to open the preview of the current alarm channel for users to view alarm in real-time manner.
- 3) The functions in the toolbar  , from left to right, are: clear alarm/event message, close sound/open sound.
- 4) The functions in the toolbar  , from left to right, are: stay window, window max, hide window.

1. Device Management

1.1 Add a Device

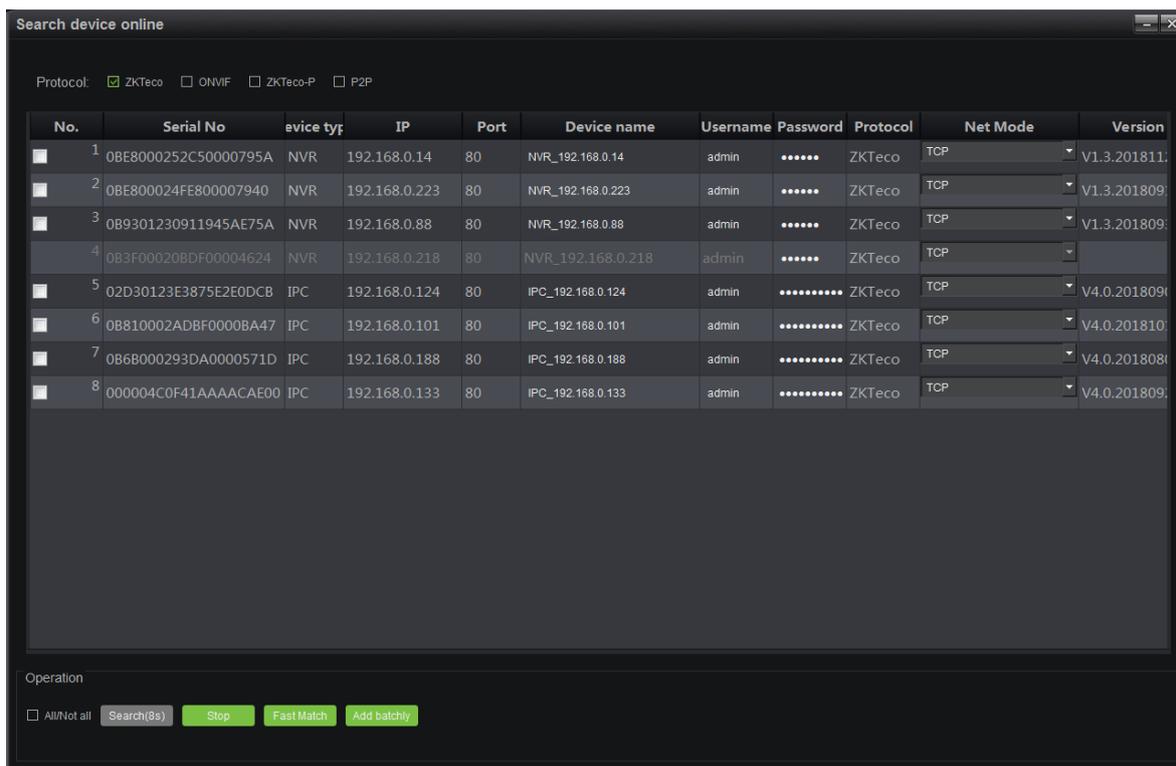
Click on "Device management" on the main interface.

This interface displays relevant information of all devices added to VMS, including device type, protocol type and online and offline status; click on "Add device" at the top right corner, the "add device" interface will then pop up:



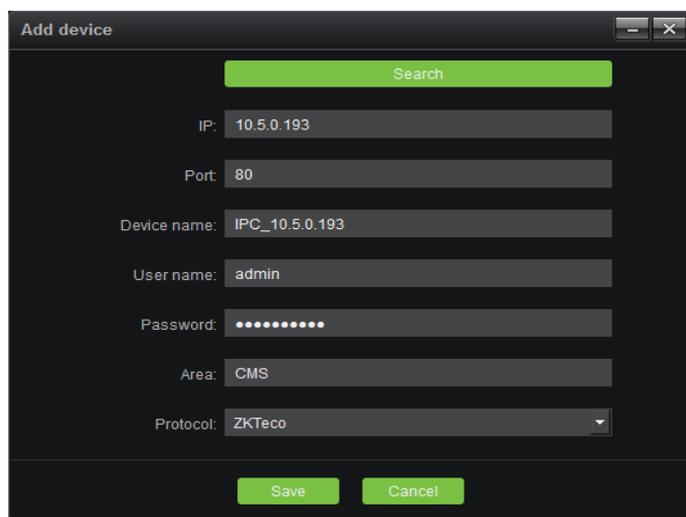
Select a protocol. ZKTeco protocol is an independently developed protocol of our company. Front-end devices should support ZKTeco protocol. ZKTeco's front-end devices currently used for shipping basically supports this protocol. The ZKTeco-P protocol is the protocol used by PTZ domes. ONVIF protocol is the joint ownership protocol for access to third-party devices that support this protocol.

Select the protocols as needed, it is to click on "Search" to search for online devices in the LAN. Take ZKTeco protocol as an example:



☺**Note:** devices displayed in gray are those devices that have been added to the device list; click on “IP address” to sort them according to the IP address of the devices.

Select the device to be added, click on the “Select” button, as shown below:



Device Name: define by the user as needed.

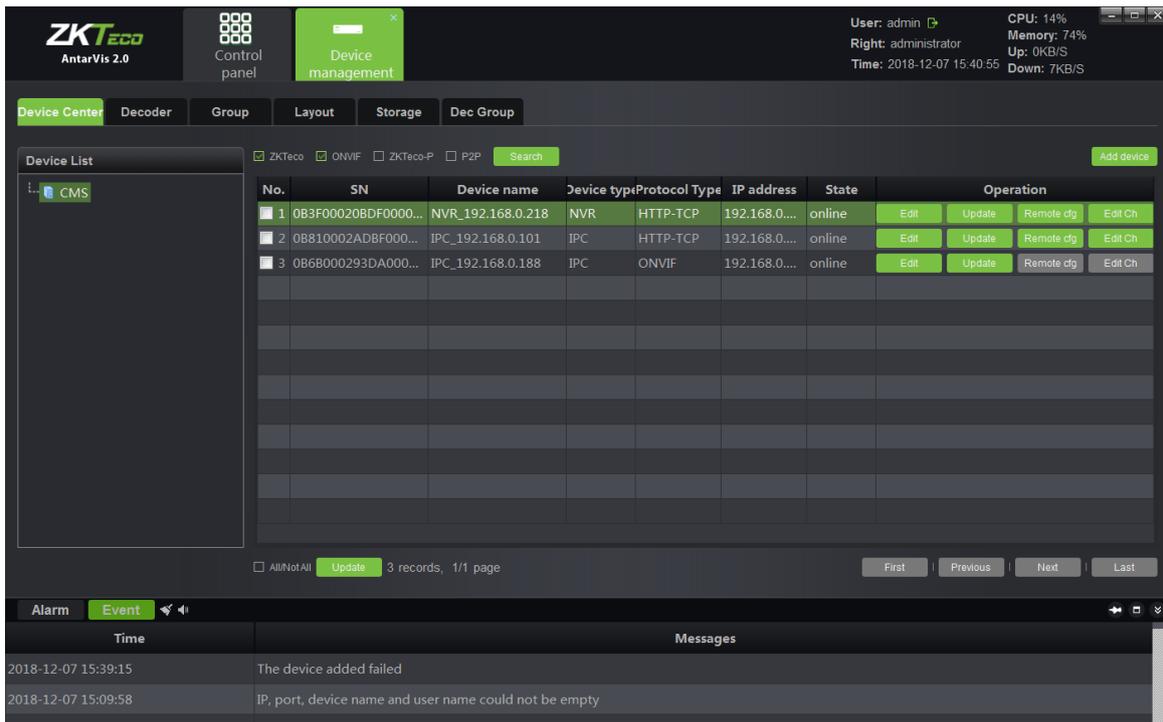
User Name: user name of the device.

Password: password of the device.

Enter correct user name and password to add the corresponding device into the device list. Also, the front end using the ZKTeco protocol does not require a password. (☺**Note:** for safety consideration,

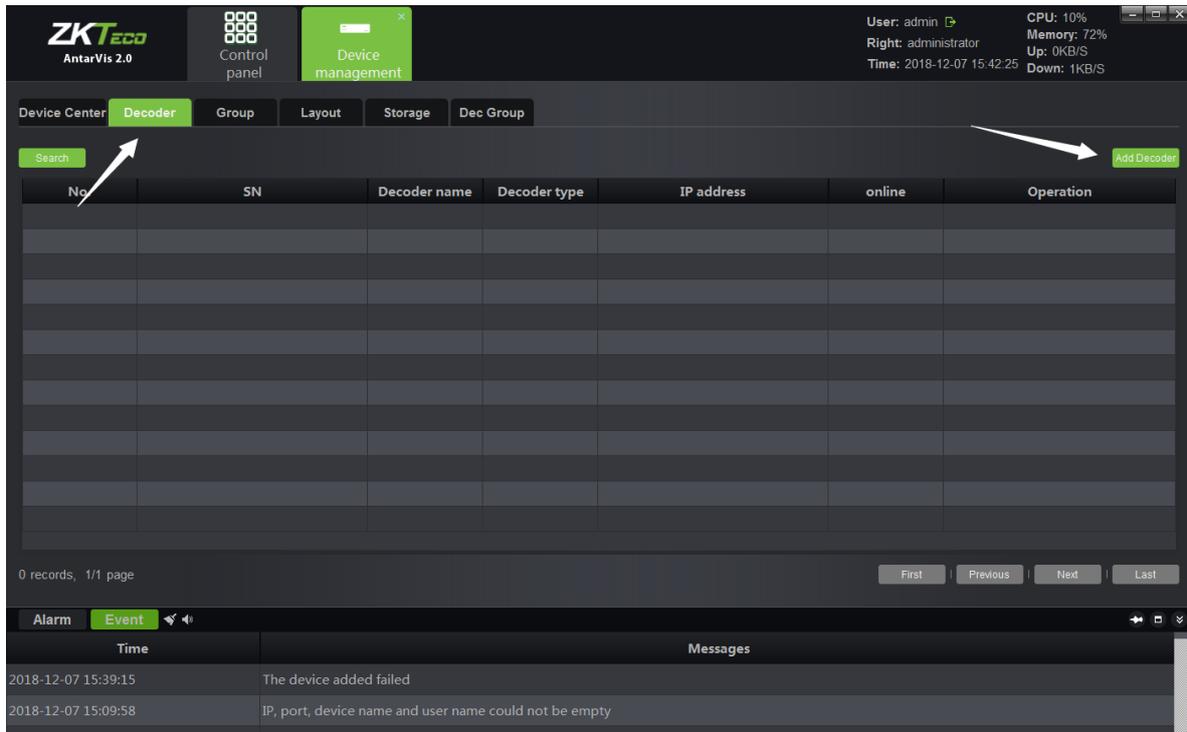
Devices using the ONVIF protocol, the password can't be retrieved and the password of the device needs to be manually filled in; no password filled in or wrong password will lead to add log-in failure.) Fast match function means when there are multiple devices with the same username and password, choose fast match, then you just need to input the username and password for one time.

After adding the equipment, the interface is as shown below:



We can edit and delete devices, call remote configuration and modify channel names here. The remote configuration is only supported by ZKTeco protocol; calling the remote configuration can view or modify related parameters of the front-end device. Modifying the channel name is only supported by ZKTeco protocol; It is quick and convenient to modify channel name of the front-end device .

1.2 Add a Decoder



Switch to decoder interface. This interface, which is similar to that to add a device, displays all decoders added to the server at present and the online and offline status of the decoders. The added decoders can be edited and deleted; in case of adding a new decode, click on the **Add Decoder** button in the top right corner:

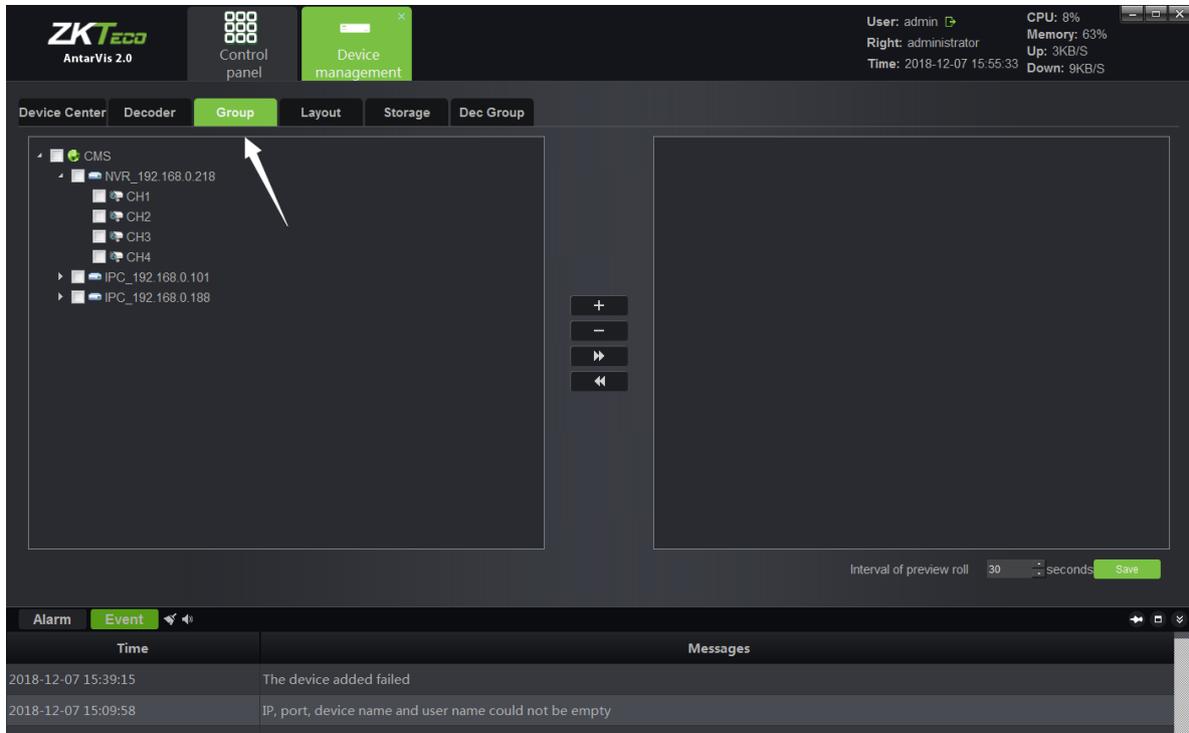
The 'Add Decoder' dialog box contains the following fields and buttons:

- Search button (green)
- IP:
- Port:
- Decoder name:
- User name:
- Password:
- Save button (green)
- Cancel button (green)

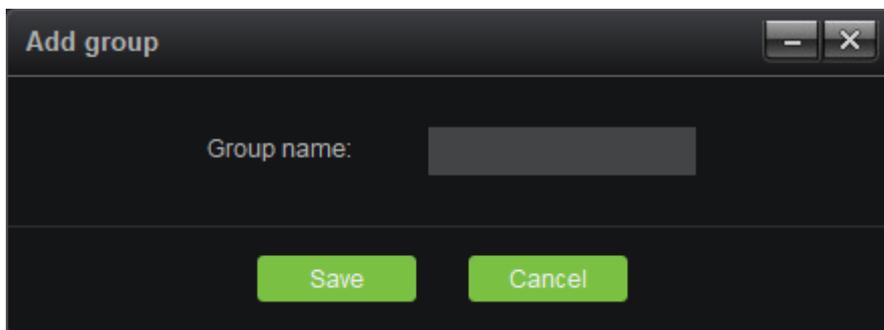
Click on "Search" to search for all online decoders in the LAN; similarly, the decoder added to the

1.3 Channel Group

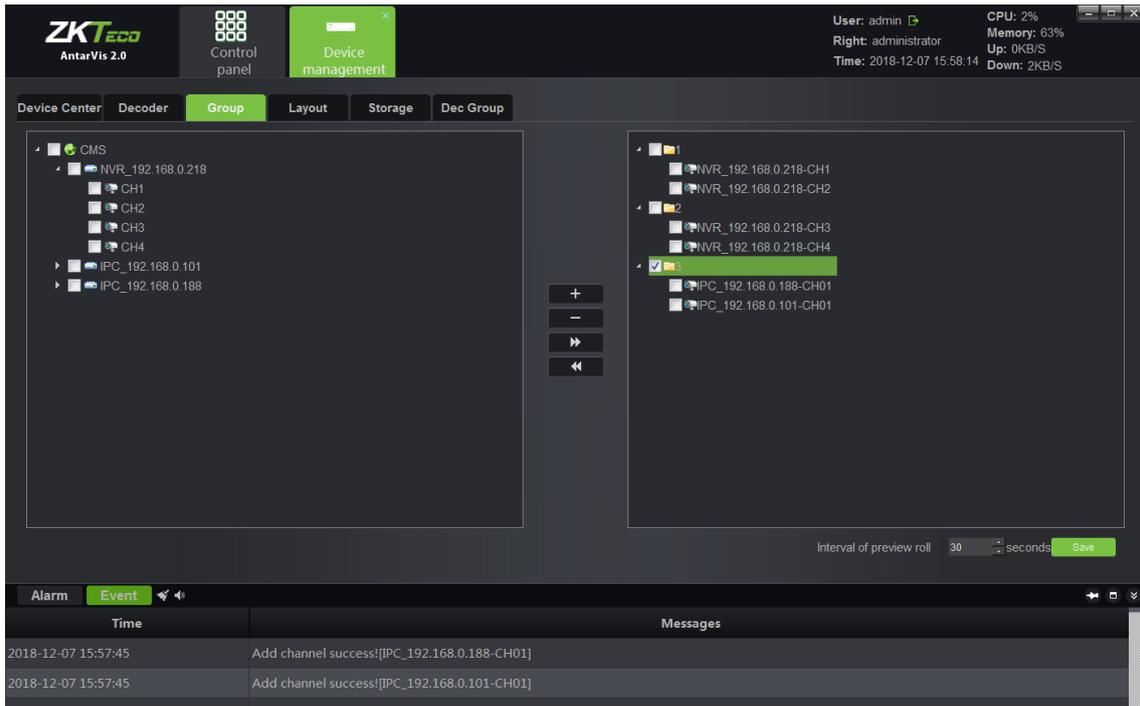
Switch to the page of "Group" in the device management module, as shown in the figure below:

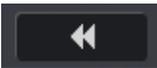


Click on "+" button to add group.



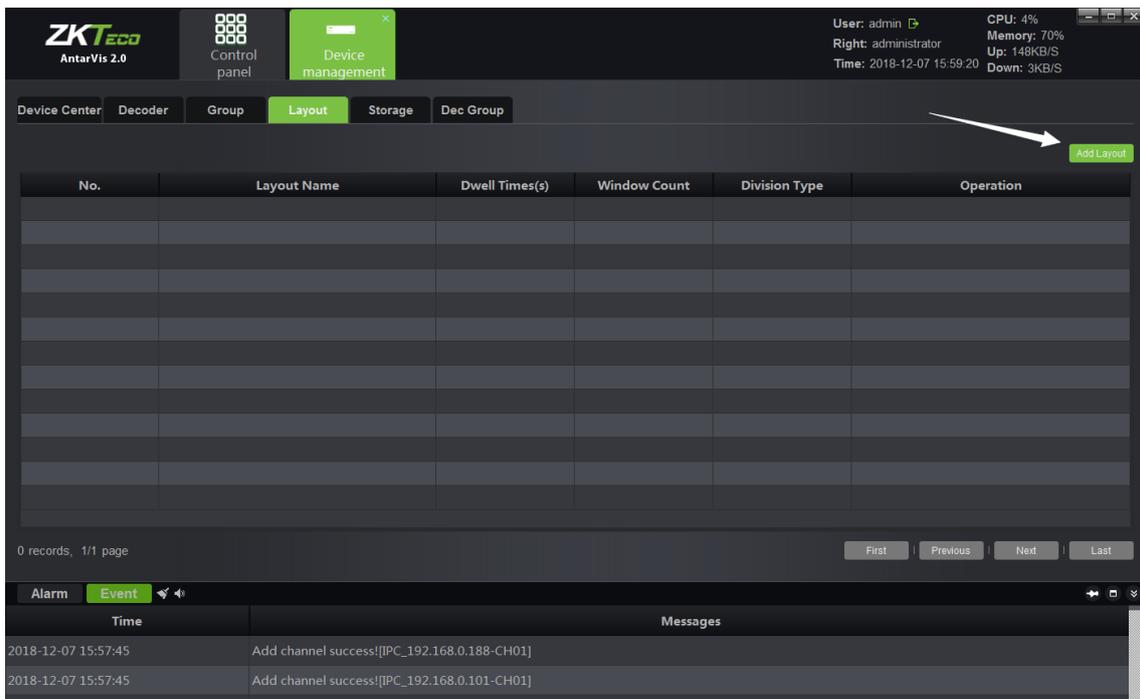
Fill in the group name, click on "Save" to create the group; when it is succeeded, select the device channel on the left, then select a group on the right, click on the  button to add the relevant channels to the corresponding group; the actual application of grouping will be described in the preview module. When adding is completed, the interface will look like below:



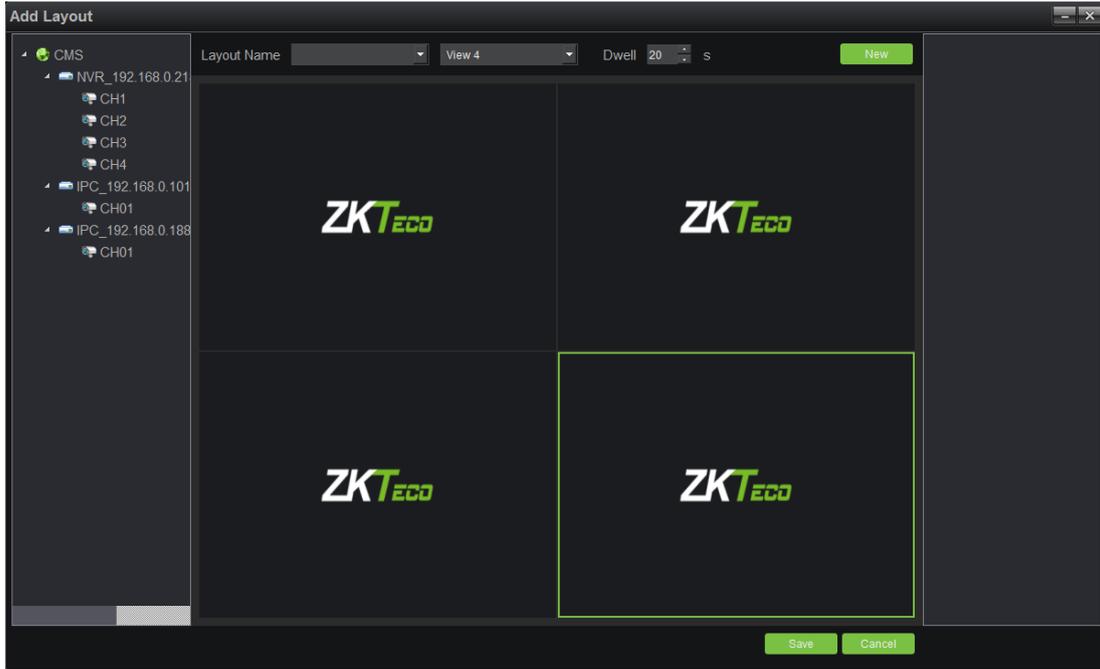
Similarly, check the channel in the group and click on  to remove the channel from the group.

1.4 Layout

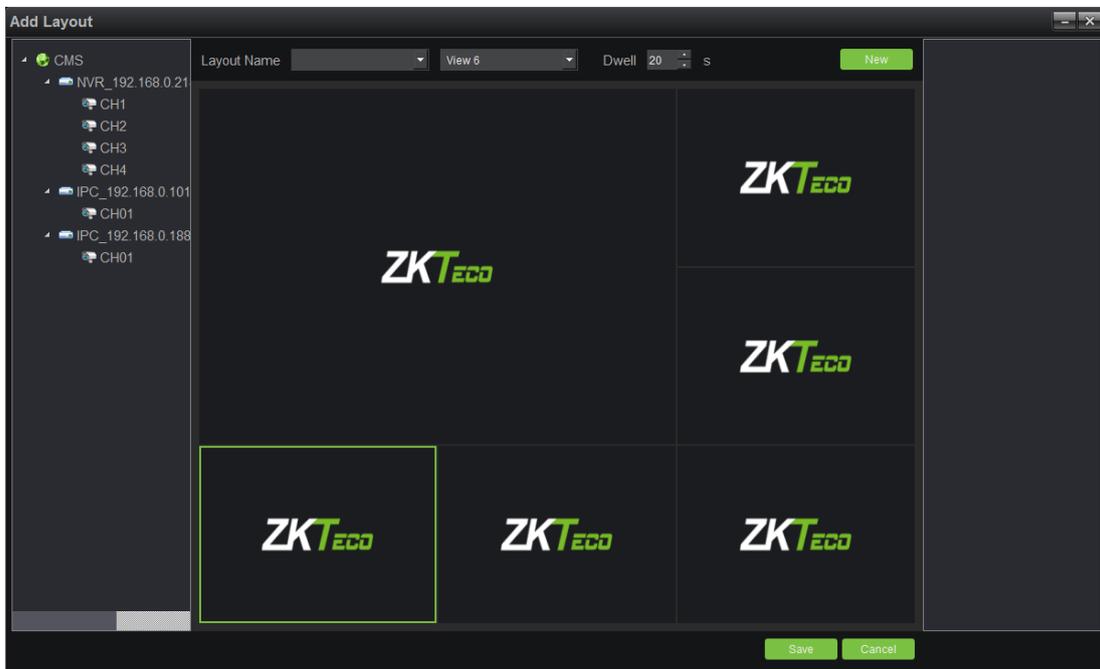
Switch to the page of "Layout" in the device management module, as shown below:



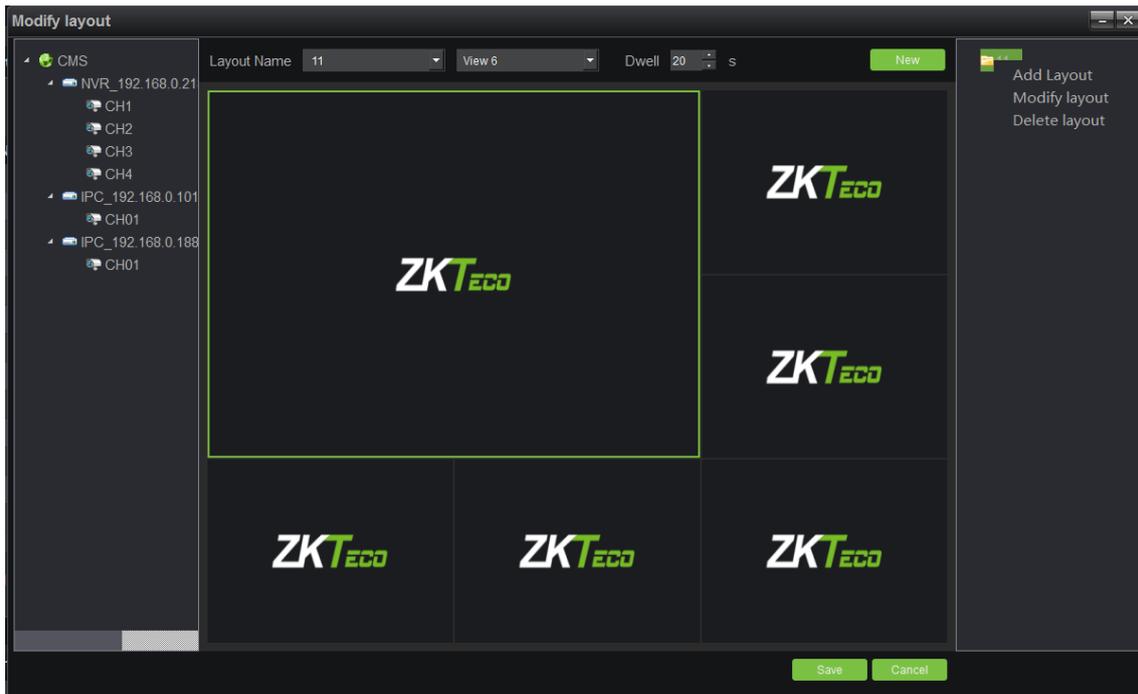
Click on the button "Add layout", then the system will pop up this window:



Fill in the name of a layout, select the number of split screens as needed. Types of split screen include standard split and wide-screen split, among which, pictures under ordinary split screen and wide-screen are displayed in 16:9 and 1:1, respectively; select the duration of stay from Dwell option. and then drag the channel for layout. Take 6 split screens as an example:



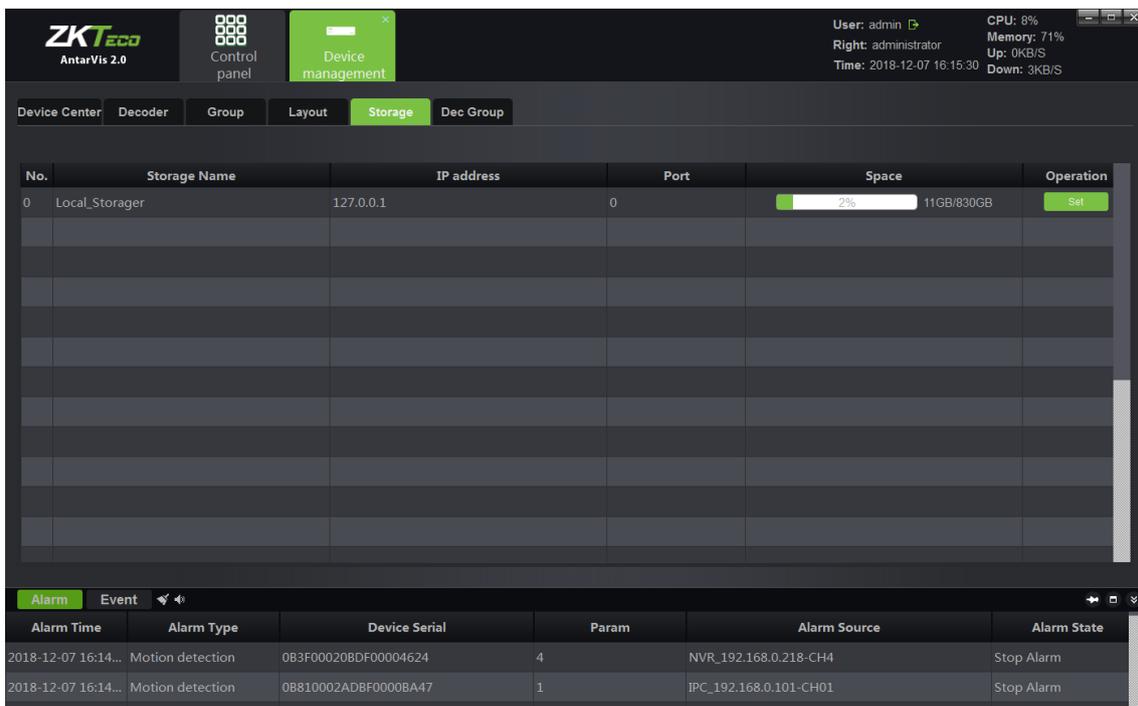
Click on “New” or “Save” to complete layout settings. Then, the saved layout information shall be displayed on the right side:



Right-click on the existing layout to edit the layout. Applications of the layout function are further elaborated in the preview module.

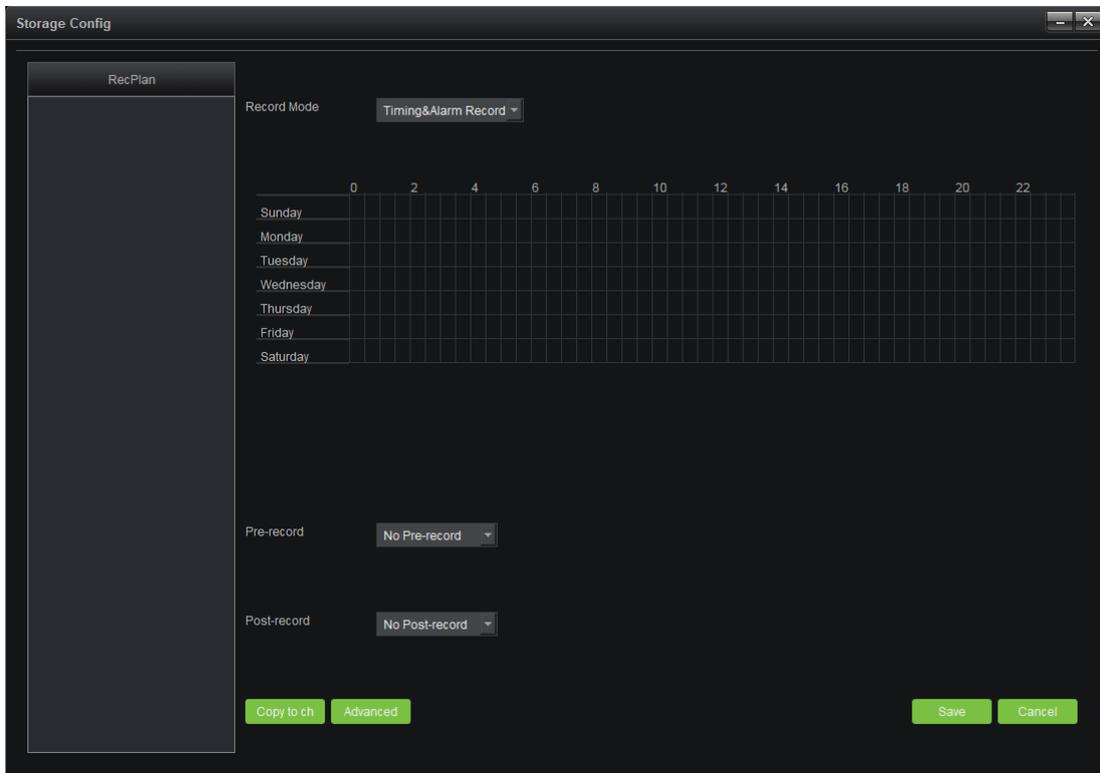
1.5 Storage Server

Switch to the page of "Storage" in the device management module, as shown below:

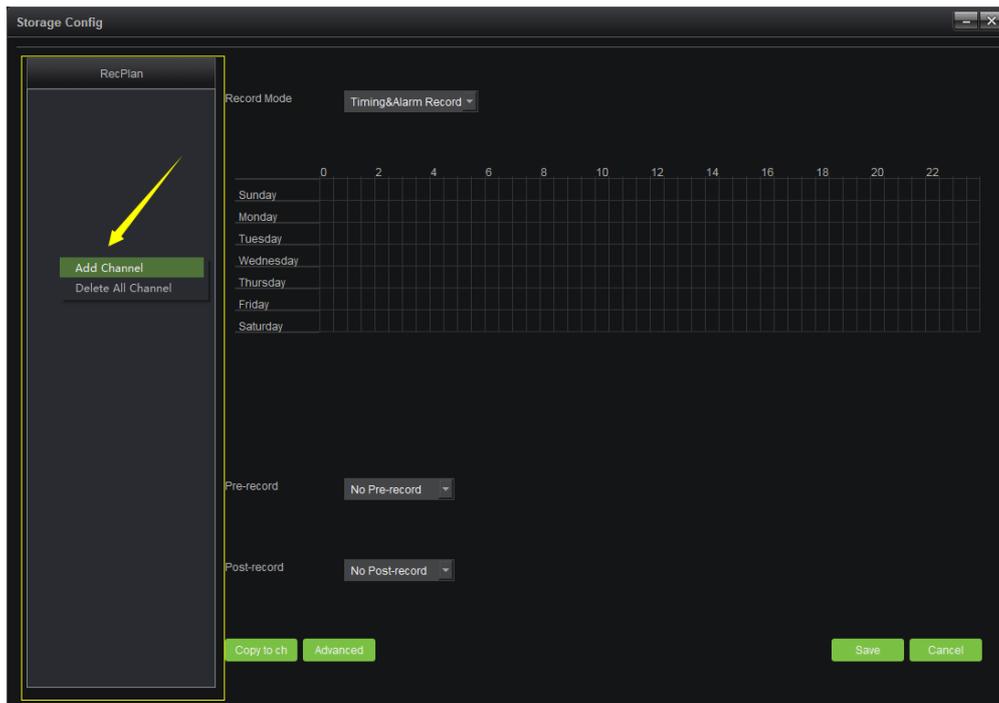


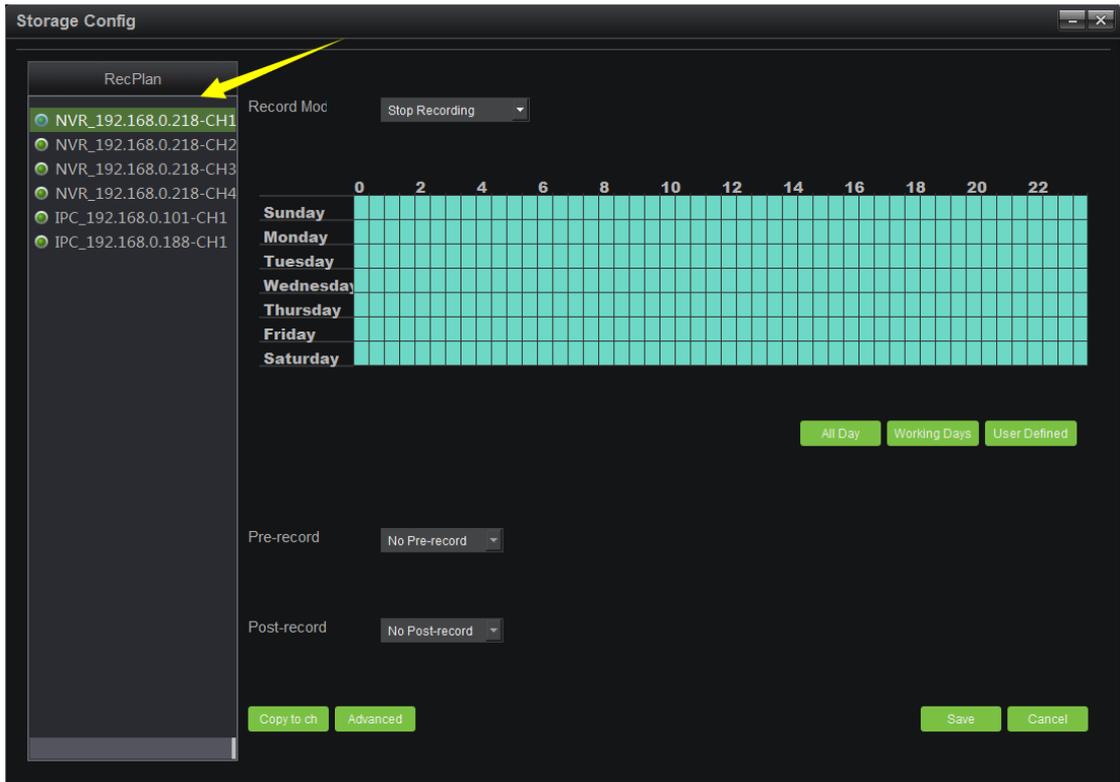
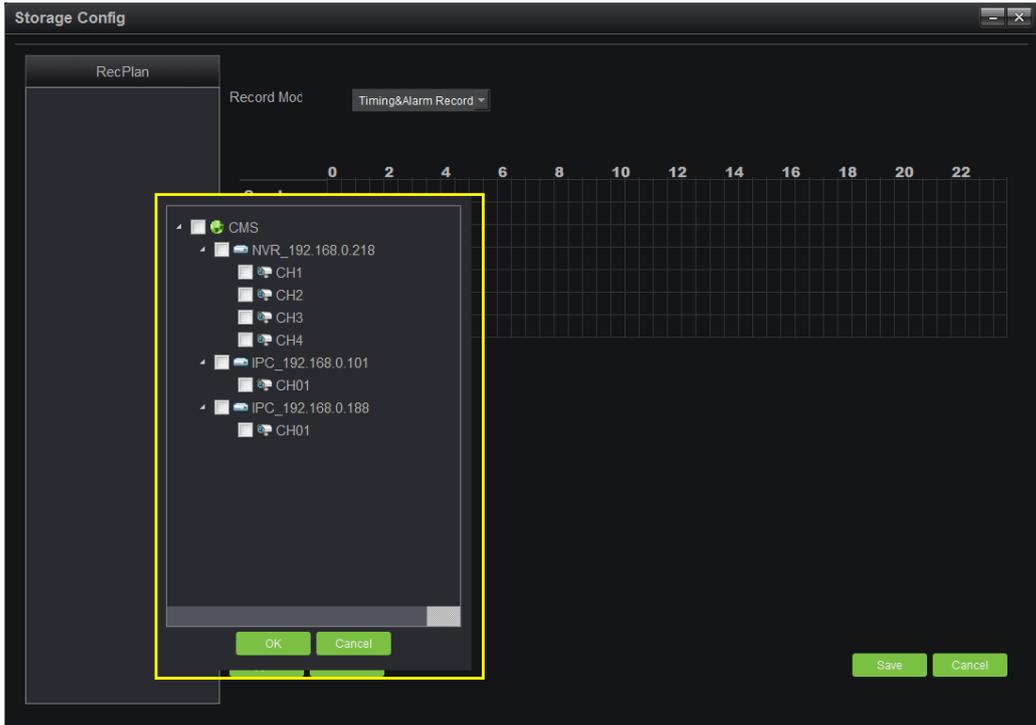
This page displays relevant information of the storage server, including the server name, server

address and used space of the hard disk drive. Click on  to set a storage server, as shown in the figure below:



Right-click on the blank area of the RecPlan on the left side, then add a channel to the storage server; when it is done, select the channel to set the RecPlan.





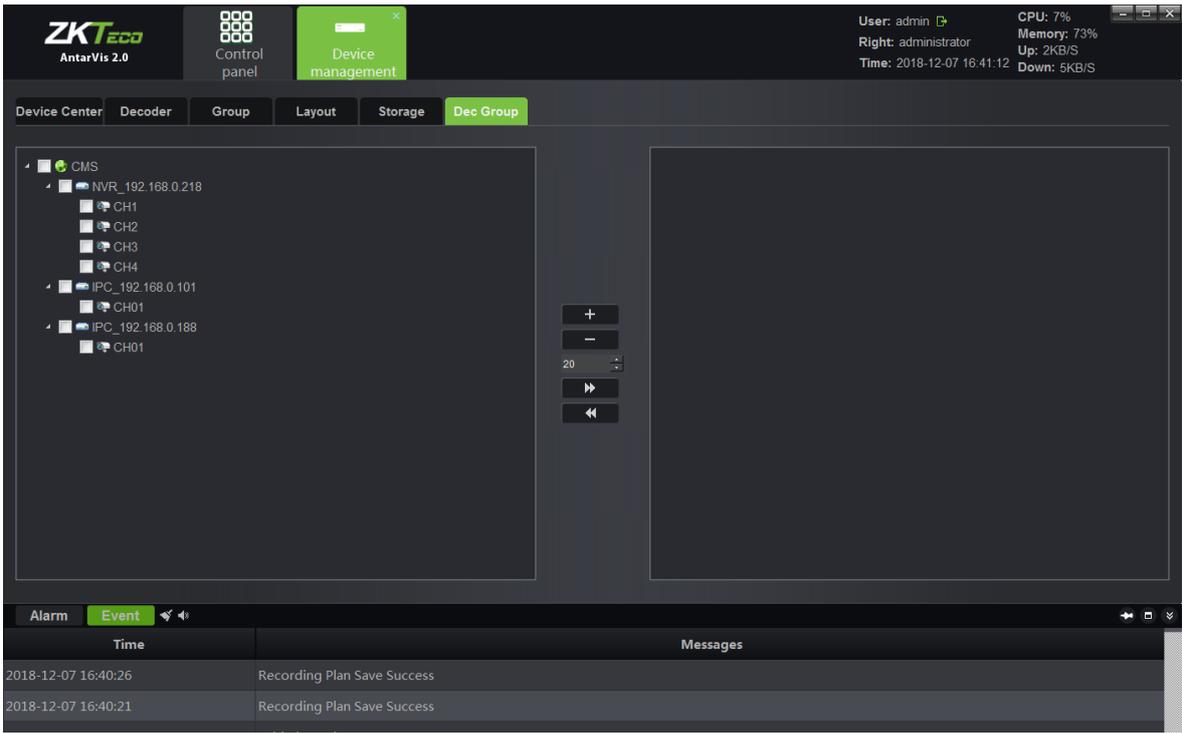
RecPlan has a default whole-day template and a working day template. In case of the need of other RecPlan templates, click on "User Template" to add those you need; start to record as the RecPlan set. Yellow arrow in the figure shows the recording status of the channel. Red means the channel is working; blue means the otherwise.

There are four kinds of recording modes, including timing & alarm recording, timing recording, alarm recording and stop recording, among which, timing & alarm recording refers to the timing plus alarm recording, i.e. timing recording runs if no alarm recording has been triggered, while alarm recording runs as an alarm has been triggered; timing recording refers to only time stamps you set; alarm recording means record starts when an alarm is triggered; and stop recording means do not record at all. Pre-record and time delay function are only available in two modes: timing & alarm recording and alarm recording, particularly the alarm recording; copy to channel refers to copy the RecPlan of certain channel to other channel that already added to the storage server; advanced setting can set up different partitions of disk for recording while some others do not; the default setting is that other disks can be used for recording besides the system disk. Click on “Save” to make the settings effective as the configuration completed.

In case the channel added to the storage server shall be modified, right-click on the channel added to add a channel, delete single channel and delete all channels; click on “Save” when the configuration completed and recording starts.

1.6 Decoding Group

Switch to the “Dec Group” interface in the device management module, as shown below:



The operation configuration method of this group is similar to the preview group mentioned above, except that this group is used for intra-group patrol on the decoder. For details, please refer to the introduction of the decoding management module in the following section.

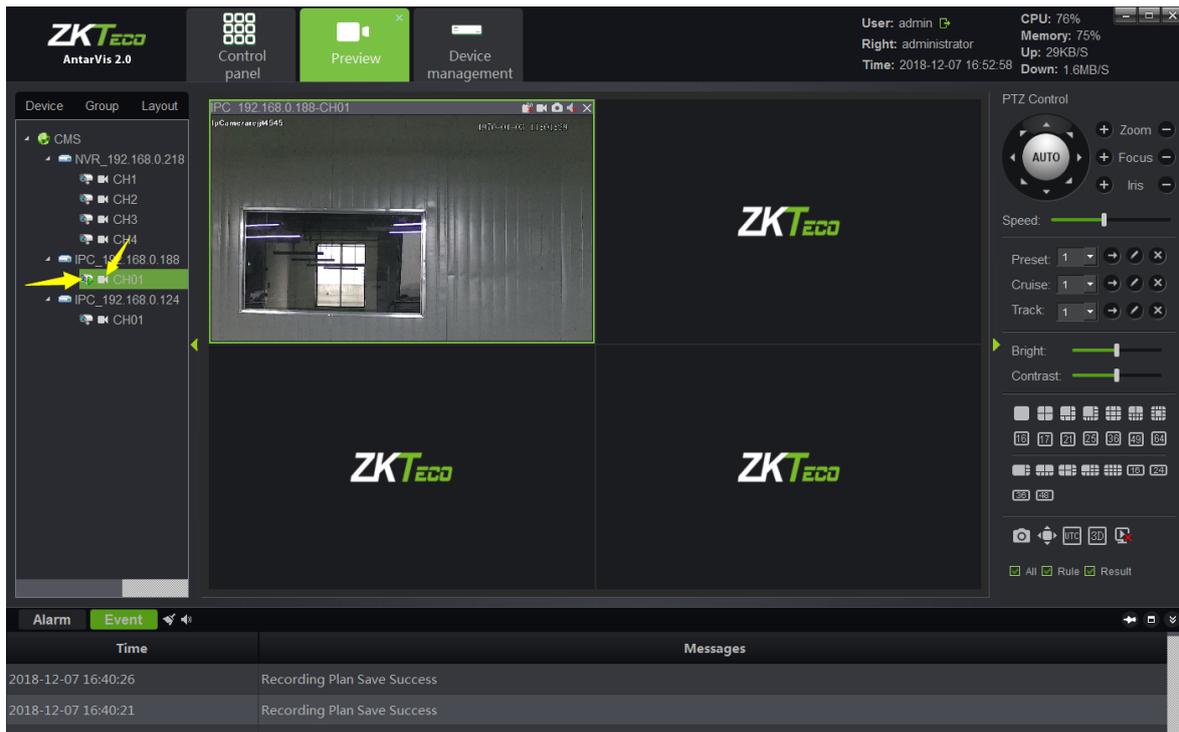
2. Preview

Click “Preview” on the main interface to enter the preview module:



As shown in the figure, the device list is on the left side, displaying all devices added currently and the online and offline status of device. PTZ control interface and video parameter control interface are on the right side. Below the video parameter control interface is the split screen switch button, with which, user may manually switch the number of split screens according to the actual demand. Split screen modes include standard split and wide-screen split, corresponding to different window scales. The differences between them have been elaborated in the layout module, thus no further introduction now. Besides the regular kinds of split screens, there are several special-shaped splits for customers to select corresponding numbers as needed.

Double-click on the device list on the left side or drag the channel to the window opens the preview window of the device channel. Opened channels video will play on the corresponding panels.



☺**Note:** the green triangle on the left-top of the picture above shows that this channel is in preview; the buttons yellow arrows point to shows the local recording status of channels. White  shows that this channel is turned off.

As for local recording, blue  indicates that local recording is turned on in this channel and is working. Right-click on the channel to turn local recording on or off.

2.1 Device/Right-Click Function of Channel

- 1) Open all stream

Open devices' stream with one key. You may open stream of a maximum of 64 channels each time.

- 2) Close all preview

Close all previews that the current device has activated with one key.

- 3) Open record

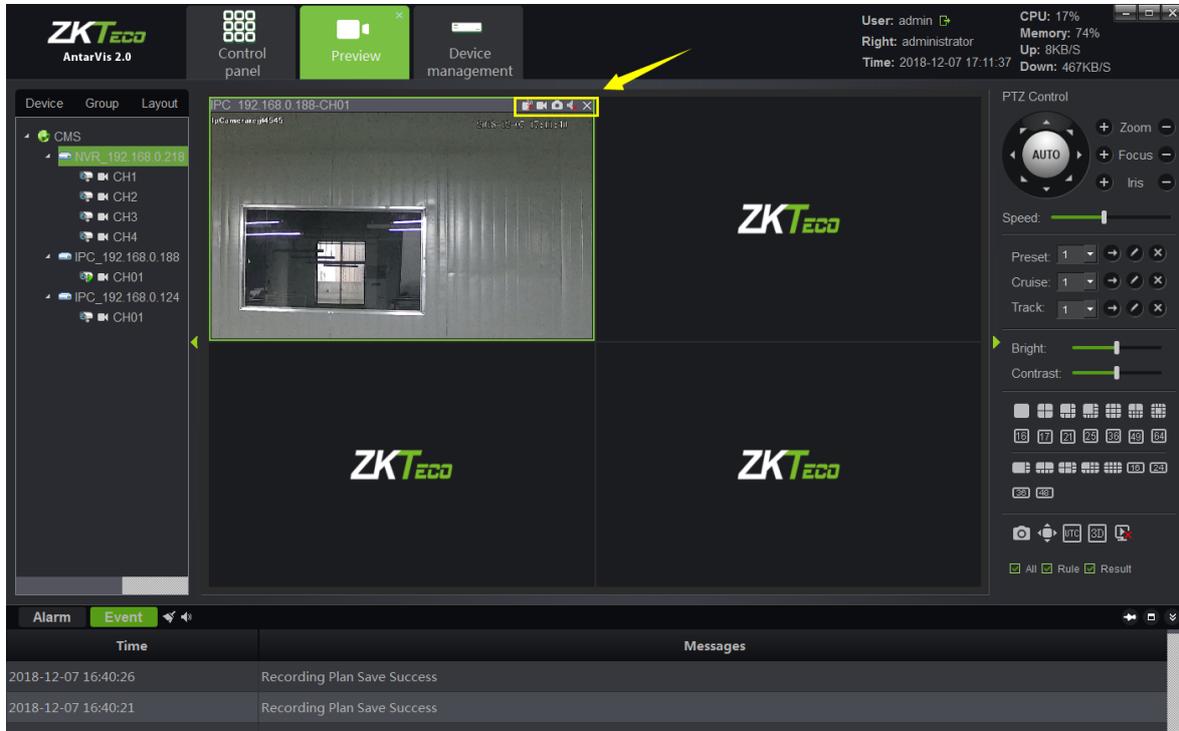
Open local recording of this channel.

- 4) Open intercom

Open intercom of PC and the device.

2.2 Preview Window Toolbar

On Preview panels, there is a row of shortcuts above the preview window as indicated in the figure:



- 1)  represents the channel intercom switch; click on it to enable or disable intercom of PC and this channel.
- 2)  represents the device recording switch; click on it to enable or disable local recording of this channel; blue icon  indicates that the feature is activated, while white icon  indicates that the feature is not activated.
- 3)  represents the capture button; click on it to take a snapshot of the current display of this channel.
- 4)  represents the audio preview switch; click on it to turn the audio on or off.  indicates it is off;  indicates it is on.
- 5)  represents the button to quit preview; click on it to close the current preview of this channel.

2.3 Preview Function Button

There is a toolbar  on the lower right side of the preview interface, among which:

- 1)  represents the capture button; select a preview window, then click on this button to take a snapshot of the display;
- 2)  represents the full-screen button, click on it to switch between the selected window and the full-screen mode;
- 3)  represents the on/off button for UTC function; click to enable the UTC function. Please note that this feature requires a front-end equipment to operate;
- 4)  represents the on/off button for 3D positioning; click to enable the 3D positioning function. Please note that this feature requires a front-end equipment and 18H protocol to operate;
- 5) Click on  to close all preview windows opened at present.

 check boxes are for Intelligent detection, intelligent detection supported by front-end devices includes NVR and IPC. When it is used, the setup intelligent rule will be displayed in the preview screen. If a target triggers the intelligent alarm, the target triggering the alarm will be displayed in the preview screen.

2.4 Device Grouping Patrol

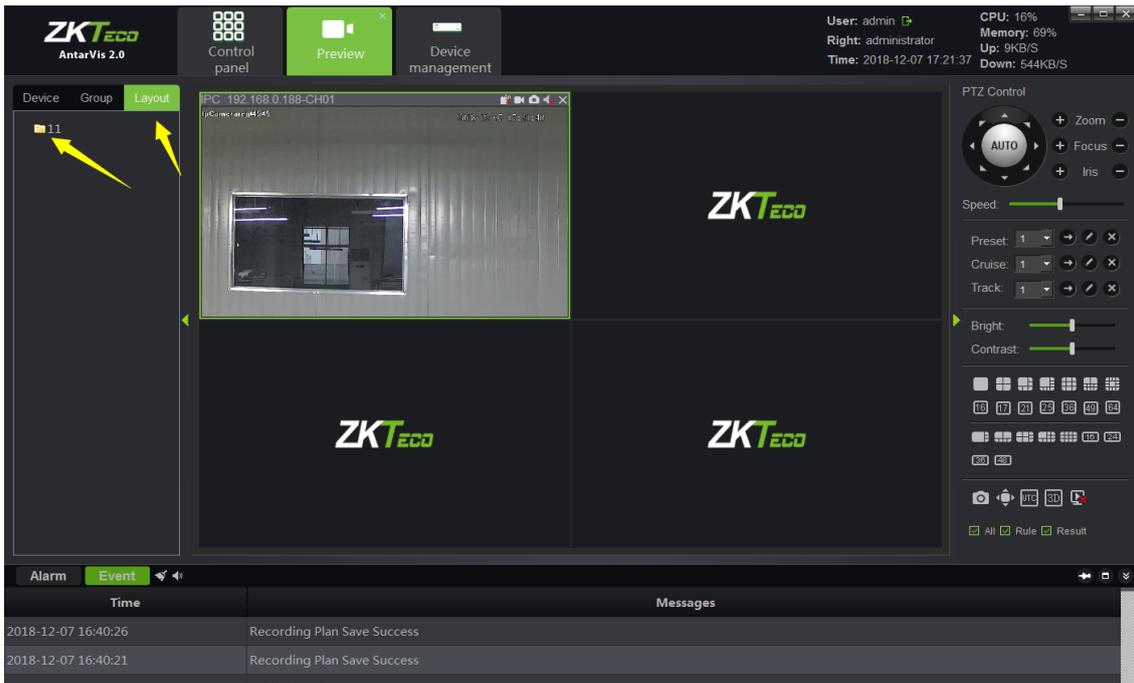
To add two or more groups. For details, please see "Group" for specific operation under the section "Device Management". When a group is created, you may switch to the group page on the preview interface, as shown in the figure below:



Right-click on the selected group to operate “Start Patrol” and “Stop Patrol” functions. Time intervals between patrols can be set up in the local configuration module, which will be illustrated below. The default interval is 30 seconds.

2.5 Device Layout Patrol

To add two or more layouts. For details, please refer to the paragraph “Layout” under the section “Device Management”. When a layout is created, you may switch to the layout page on the preview interface, as shown in the figure below:



Right-click on the selected layout to open the preview of this layout with one key. Select “Start Patrol” to start the patrol function among several layouts. The interval between patrols can be set up when the layout is set up. Click on “Stop all” to stop the patrol function or close the current preview.

2.6 PTZ

2.6.1 PTZ Control

Users may adjust rotation of the camera in 8 directions, including up, down, left, right, upper left, lower left, upper right and lower right. “Zoom” means that users may zoom in or out and adjust the visual angle; “Focus” helps adjust the focal length of the camera to ensure the clearness of the picture; the enlargement and narrowing of the aperture ensures the brightness and depth of field of the picture; the setting of the PTZ control speed can adjust the rotation speed of the speed dome camera. Click on “AUTO”, the speed dome camera automatically starts scanning. Please see the following figure:



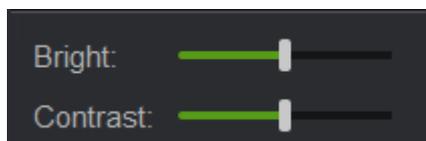
2.6.2 Preset, Cruise and Track



- 1) Preset: the rotation of the PTZ camera requires the setting of the direction of the preset. Click on  to set up the preset. A maximum of 255 presets can be set up. To adjust the presets, select the preset to be adjusted, click on  to call or click on  to delete the preset.
- 2) Cruise: as the preset settings are done, click on  to edit and set the cruise path. A maximum of 255 cruise paths can be set; click on  to call or click on  to delete the selected cruise path.
- 3) Track: click on  to edit and set the track; click on  to call or click on  to delete the track set.

2.7 Picture Parameters

As the preview opened, parameters of the pictures can be adjusted; the adjustment here will not affect the front-end parameters of IPC but the display effect of the picture in the client-end. Please see the following figure:



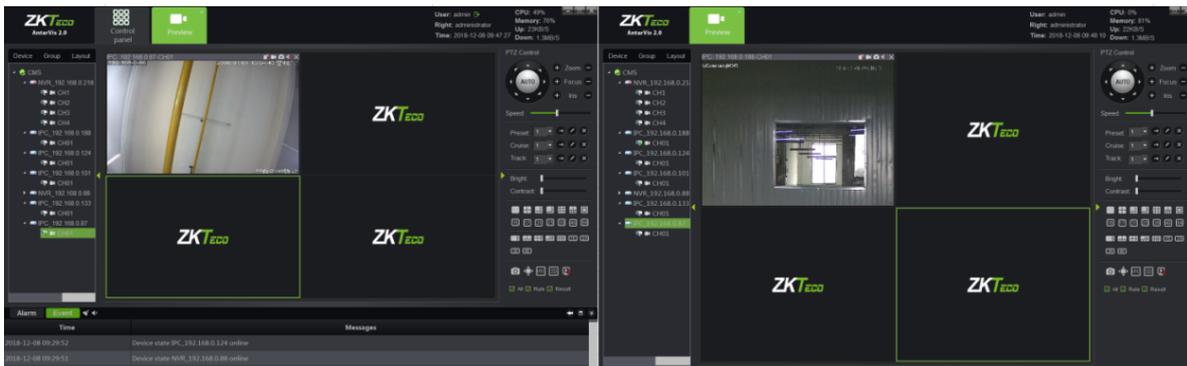
Users may adjust the relevant parameters, namely brightness and contrast, as needed.

2.8 Preview Digital Zoom

As the preview interface opened, select a corresponding window and then scroll the mouse wheel to adjust digital zoom-in and zoom-out of the current picture.

2.9 Preview Multi-screen Display

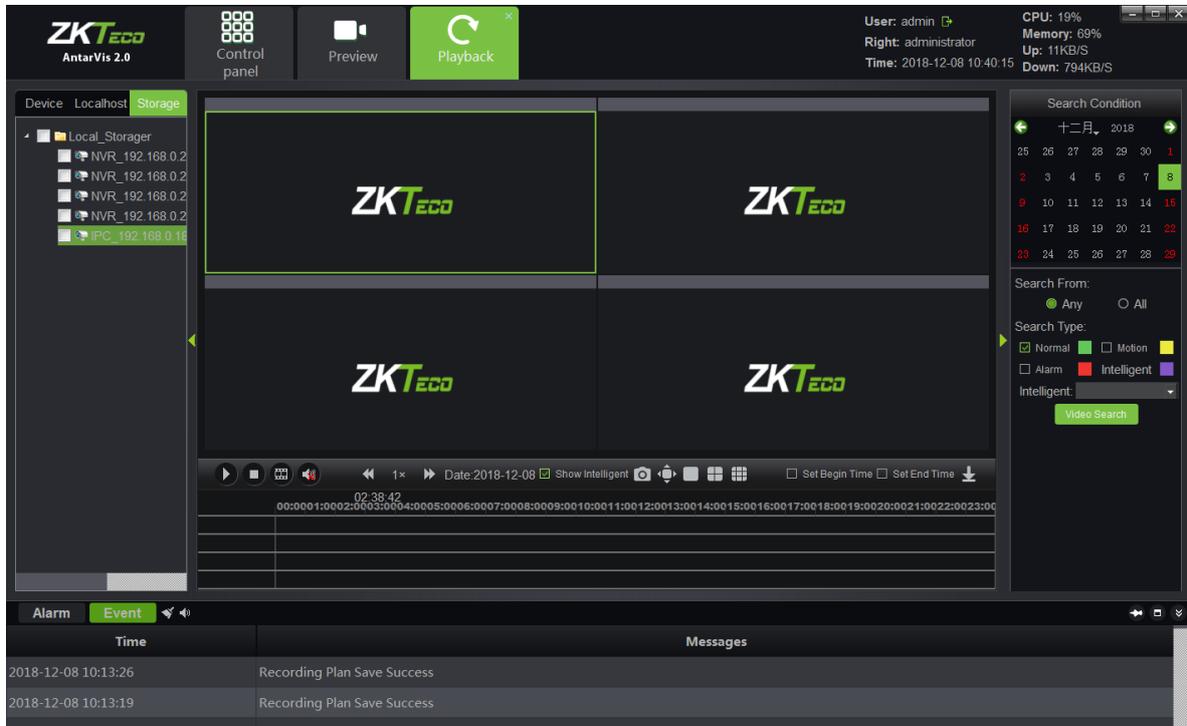
You may access multiple modules in the preview module. Each of them is independent. If the user's monitor supports multi-screen mode output, you may use the multi-screen display feature. Considering the actual situation, the maximum preview module to be opened can be restricted to 5. For instance, when you have opened two preview modules, you may drag one of them out with the same operations as dragging the module to another monitoring screen, as shown below:



The monitoring screen on the left is the primary screen; while that on the right is the complementary screen. The operations of preview between two screens doesn't influence each other; closing the complementary screen will not affect the primary screen, however, the complementary screen will be closed if the primary screen is closed. Users may select the number of preview screens to be opened as needed. For instance, one screen can be selected to open Cruise and display independently in one monitor, meanwhile, another screen can carry out the operations of temporary preview, monitoring and intercom.

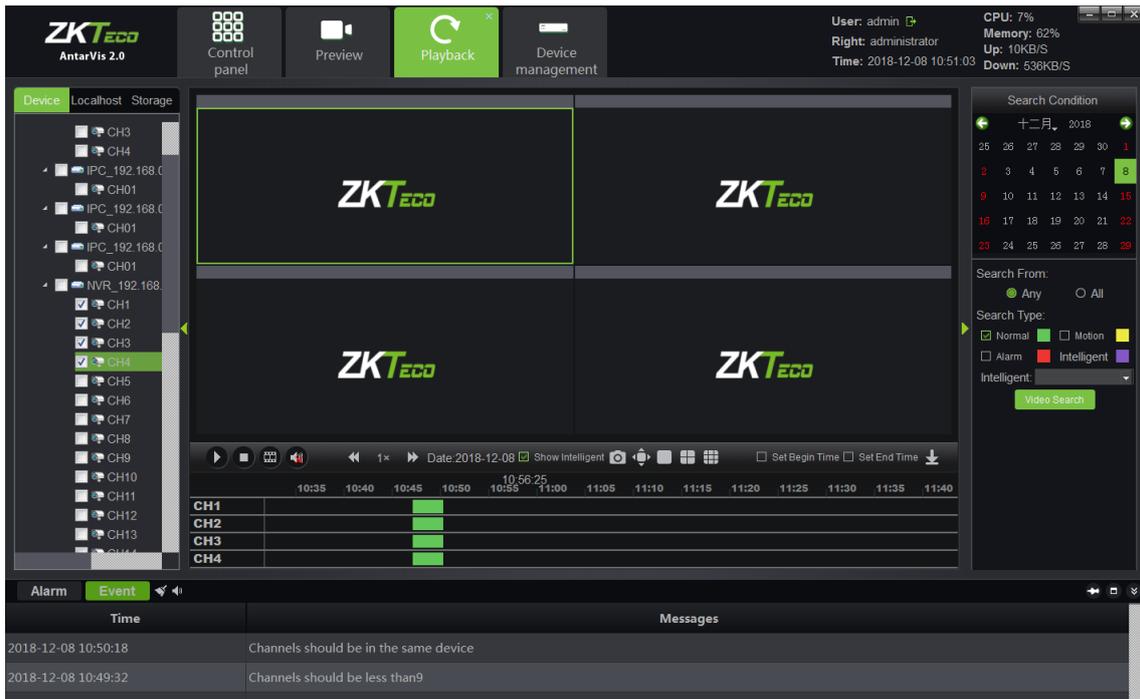
3. Video Playback

Click on the "Playback" button on the main interface to enter the video playback module:



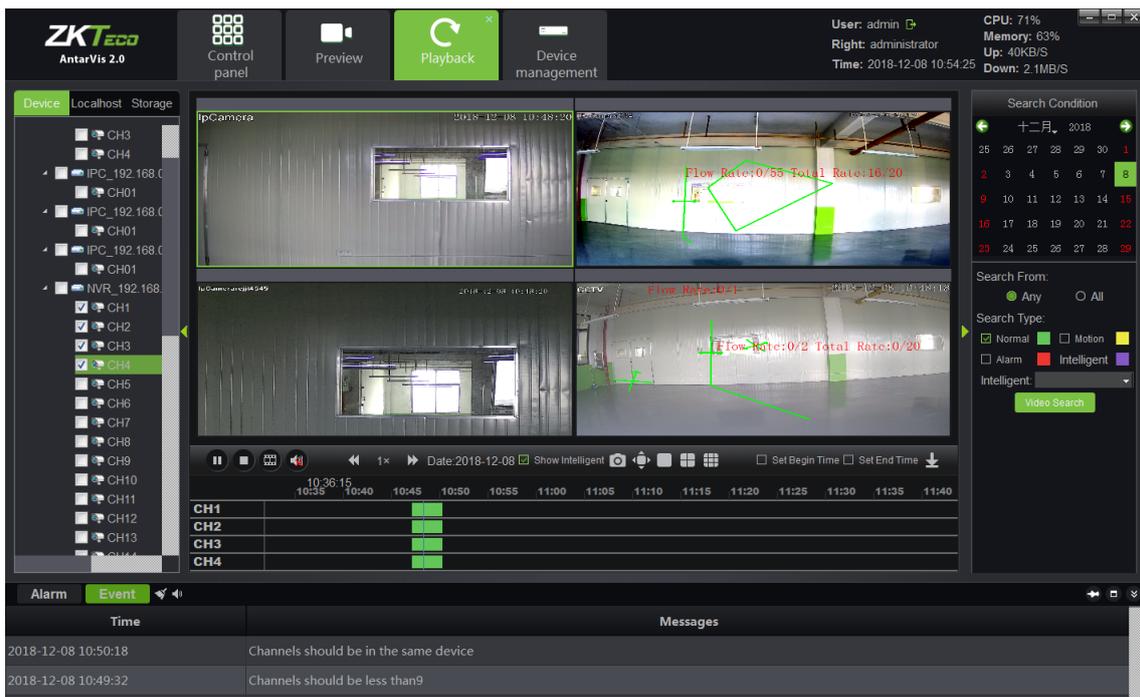
3.1 Video Search

Select a device channel where the video to be played from the device tree on the left. Please note that only videos in the same device or same storage server can be played simultaneously, and at most 9 channels can be selected each time. Select the storage path of the video on the left, select the stream type of the video to be played in the column of "stream type", and select the date on the calendar, click on "video search", then the system will start to search for the relevant video(s) and display the search results on the search result panel. Video path includes "device", "local" and "storage", among which, the device video refers to the video stored in the hard disk or the SD card of the front-end device, local video refers to the video stored in the PC of the client server and the storage video refers to the video stores in the storage server. The stream type includes main stream and sub stream. When a customer opens dual stream in the course of recording, relevant videos can be searched for as needed. The search result will be shown as below:



3.2 Video Playback

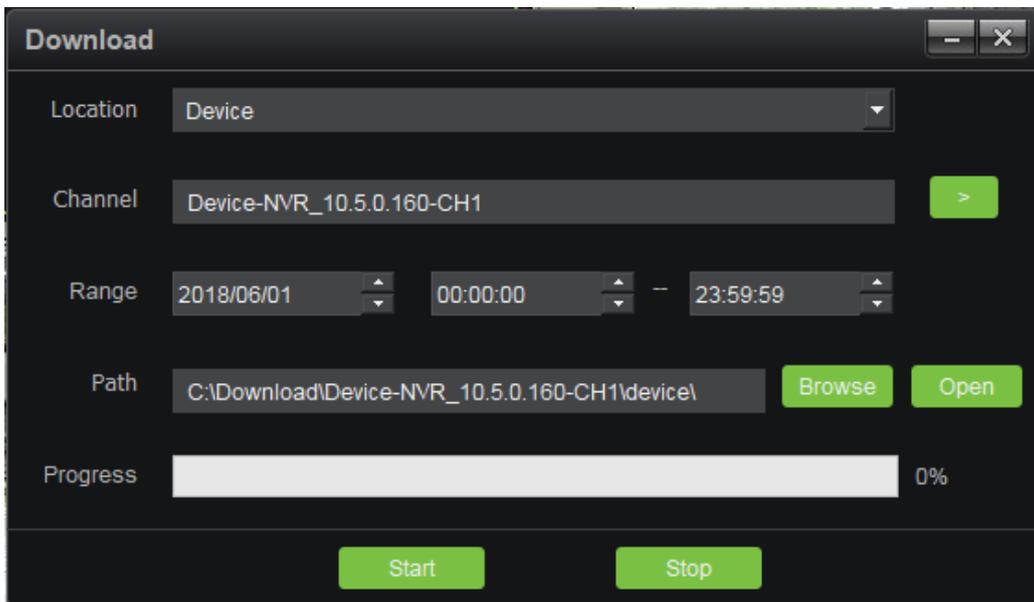
Click on  on the interface to start playing or pause; click on  to stop playing. Place the cursor on the video bar and scroll the mouse wheel to enlarge or reduce the scale of the video bar. Double-click on the video bar to play, and double-click in the timeline of playback to switch the time stamps for playback, as shown in the figure below:



During playback in several channels, select certain windows, double left-click to switch the window into full screen; place the mouse on certain window, scroll the mouse wheel to operate digital enlargement of this window.

3.3 Video File Download

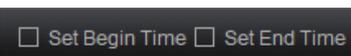
Click on the  button on the interface to enter the download interface of the video file, as shown below:



Select the video location(including device videos and storage server videos), channel, range of recording time file save path in proper order, click on the "Start" button to start downloading. When the progress reaches 100%, download is completed.

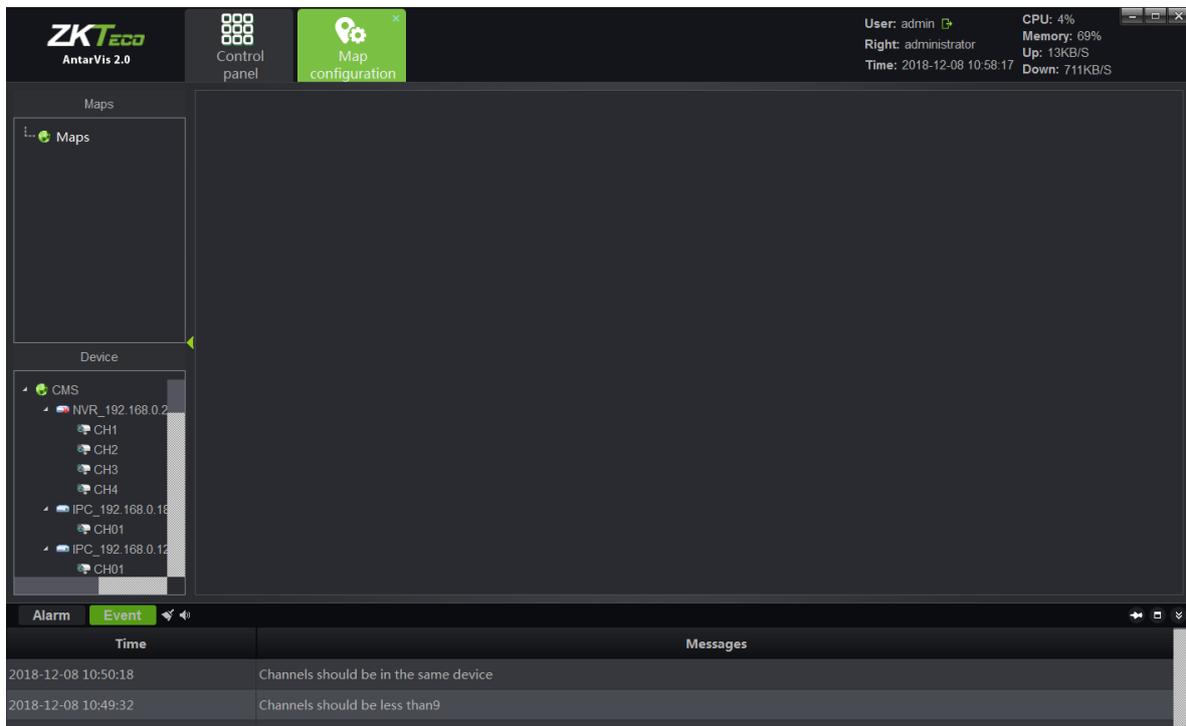
3.4 Toolbar Overview

Among the functional buttons         on the interface,  represents frame play; click on the button to play the selected video frame by frame, and one frame will be played for each click.  represents audio switch, which can turn on/ off the audio of playback.  represents play speed adjustment buttons, with which, users may

adjust the play speed between 1/16X and 16X.  represents the capture button; click on this button to take a snapshot during playback.  represents the full-screen button; click to switch to full-screen (right-click to exit the full-screen mode).  represents window-split buttons; users may manually switch the display to single screen, 4 screens and 9 screens as needed.  represents the starting time and ending time; As for certain play point, select the starting or ending time to add a sign on the video bar. When the starting or ending time is selected, click on "Download" to rapidly download the video between the two tags to facilitate further operations.

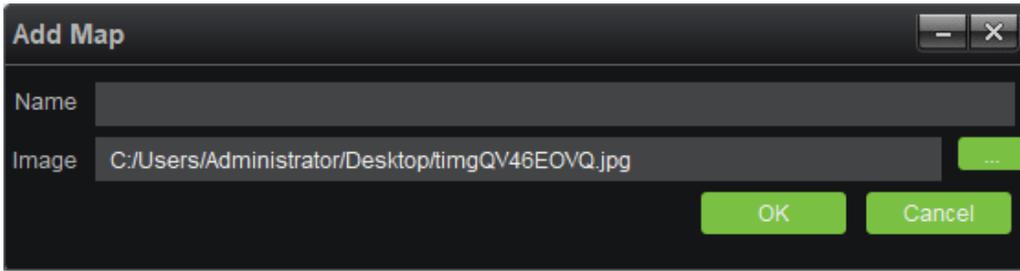
4. Map Configuration

Click on "Map configuration" on the main interface to enter the map configuration module, as shown below:

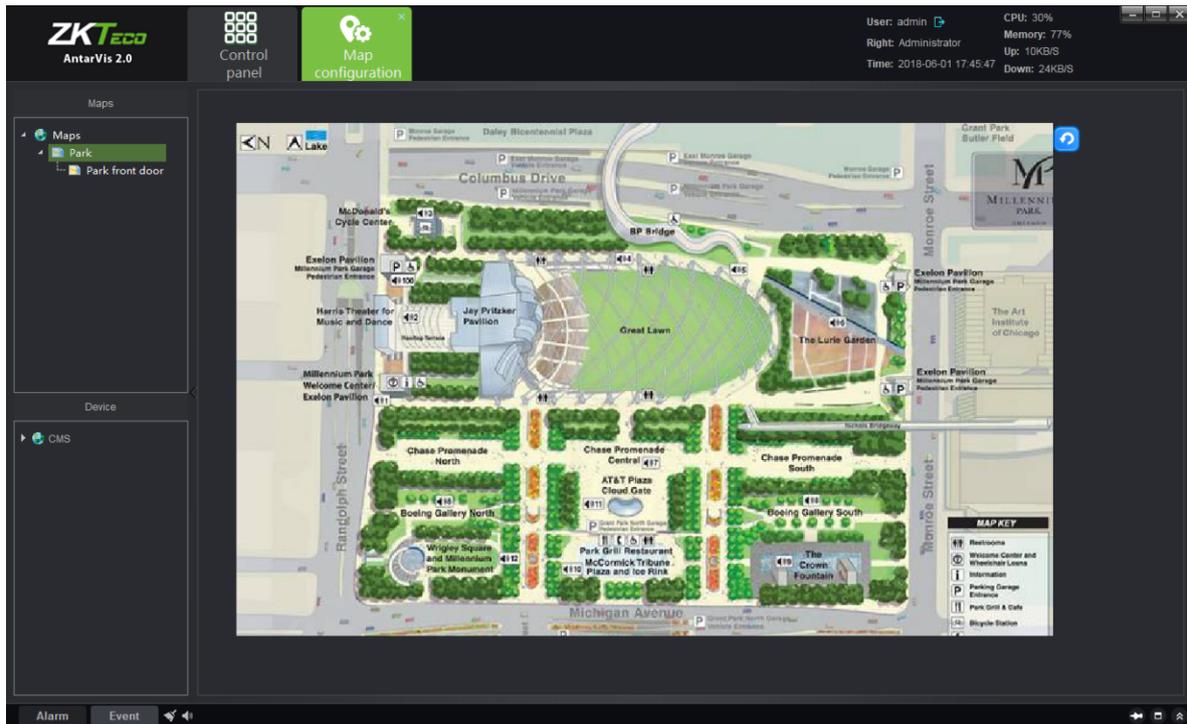


4.1 Add a Map

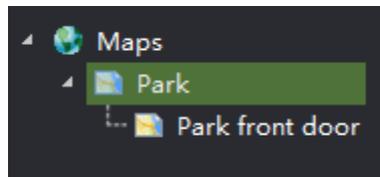
Right-click on the signed place in the figure, select "Add map", pop up the window:



Fill in the name, select a picture, click on "OK" to add a map, then several maps is added; meanwhile, sub-map can be added under the map has been added, as shown in figure:



The map opened will be indicated in yellow for differentiation:



4.2 Right-Click on Map Tree

- 1) Add map: add a new map.
- 2) Delete map: delete the selected map.
- 3) Add child map: add a child map under the current map list. You may add several or multi-level

sub-maps for each map. When a sub-map is added, drag the sub-map to the main map to complete association and the sub-map shall be displayed in the main map as the icon . Double-click on the icon in the main map to switch to the corresponding sub-map; and click on the  button in the sub-map to return to the main map.

4.3 Map Deployment

Drag the device channel or alarm input from the lower-left to the map, then the deployment will be completed:

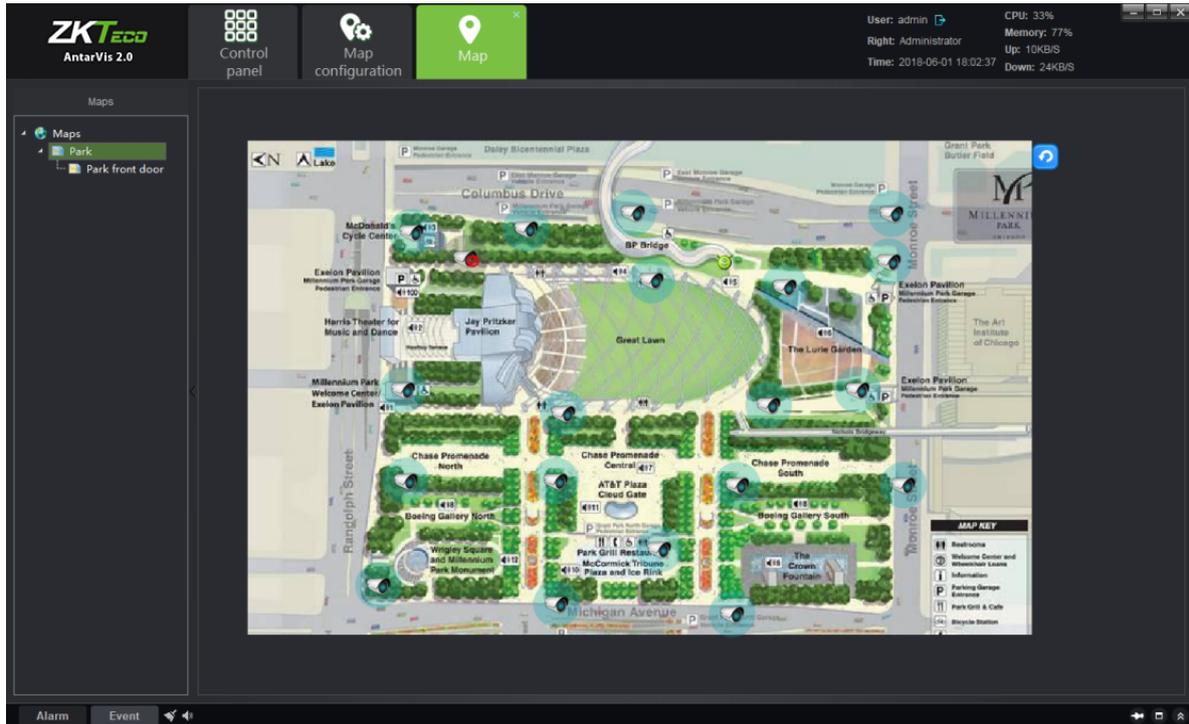


Note: as the channel has been dragged to the map, the position shall be adjusted by dragging it again; right-click on the deployed channel to select or delete an icon (bullet/ dome/ PTZ). Place the cursor on the map, scroll the mouse wheel to zoom in/out the map. The channel deployed to the map shall not be dragged repeatedly. Place the mouse on the deployed channel to view the channel information.

5. Map Management

Click on the “Map” button on the main interface to enter the map management module as shown

below:



Double-click on the map to view the map configured and deployed channel. The relevant configuration and modification cannot be executed on the map. Right-click on the channel deployed on the map to allow preview and playback of the corresponding channel. Users, in the actual applications, may swiftly call the preview and playback of the corresponding channel according to the map, which makes the operation clearer and easier. When an alarm is triggered and the associated channel is deployed on the map, the channel icon on the map will turn into red.

6. Decoder Configuration

Click on the “Decoder configuration” button on the main interface to enter the decoder configuration module:

6.1 Layout Setting

Set a TV wall layout, fill in the relevant information here:

The screenshot shows a software window titled "TV Wall Setting" with two tabs: "Step 1: Layout setting" (active) and "Step 2: Screen input binding". Below the tabs, there are two instructions: "1. Drawing TV wall physical layout" and "2. CTRL+ mouse click, click the stitching button to form a mosaic screen". The main area features a 4x4 grid of TV screens. On the left side, there are input fields: "Matrix" with a dropdown set to "4" and a "Set" button; "TV Wall Name:" with a text input field containing "1" and a note "(TV wall name can not be changed after saving)"; and "TV Wall Description:" with a text input field containing "1". At the bottom right, there are four buttons: "<Prev step", "Next step >", "Finish", and "Cancel".

- 1) Matrix layout setting: user can set the matrix layout as actually needed, maximally support 8x8 layout; when a layout is selected, click on "Set" to make the changes effective.
- 2) Fill in the name of TV wall scheme; users may customize the name of the TV wall scheme as needed (☺**Note:** the name will not be modified as defined).
- 3) TV wall scheme description: users may describe the scheme for differentiation, optional.
- 4) TV wall splice: users may set the TV wall as splice mode or non-splice mode.

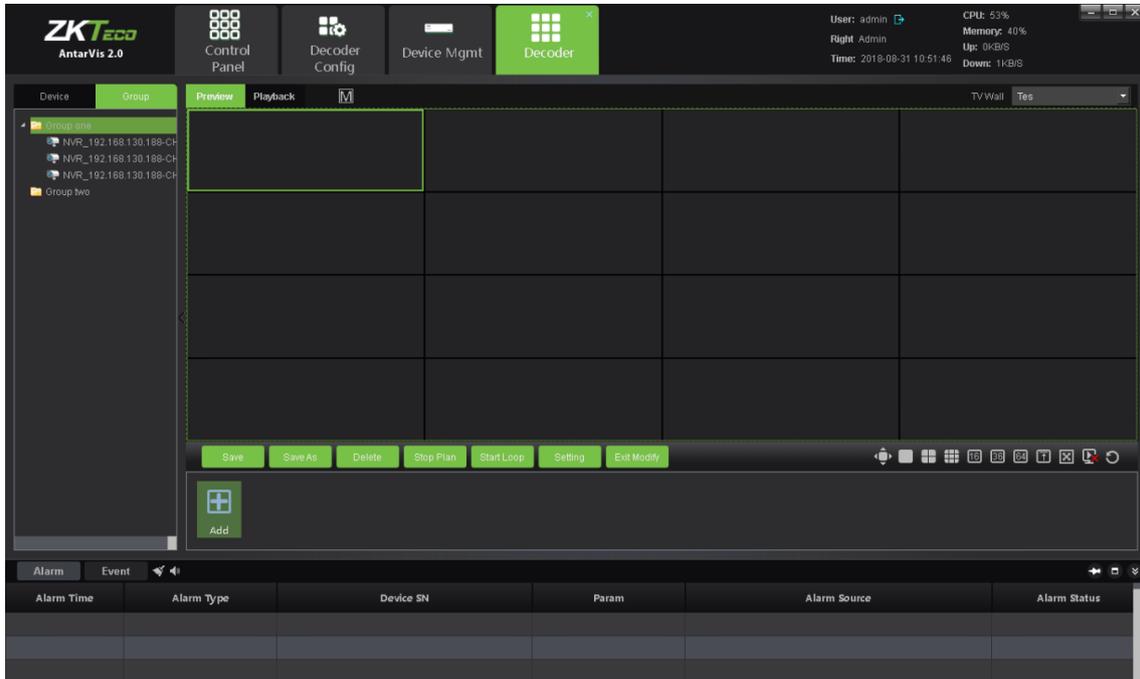
As completed, click on "Next step".

6.2 Screen Input Binding

Drag the decoder added to the layout set, as shown below:

7. Decoder Management

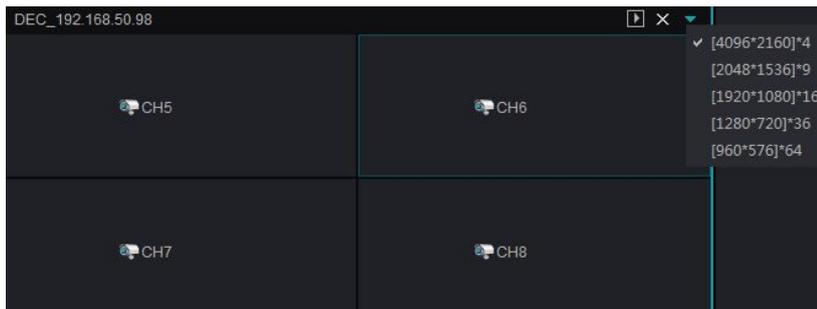
Click on the “Decoder” button on the main interface to enter the decoder management module, as shown below:



Firstly, drop-down the check box in the signed place of the figure to select TV wall. All rules set and enabled will be shown in this box. Select a scheme.

7.1 Decoding Mode Selection

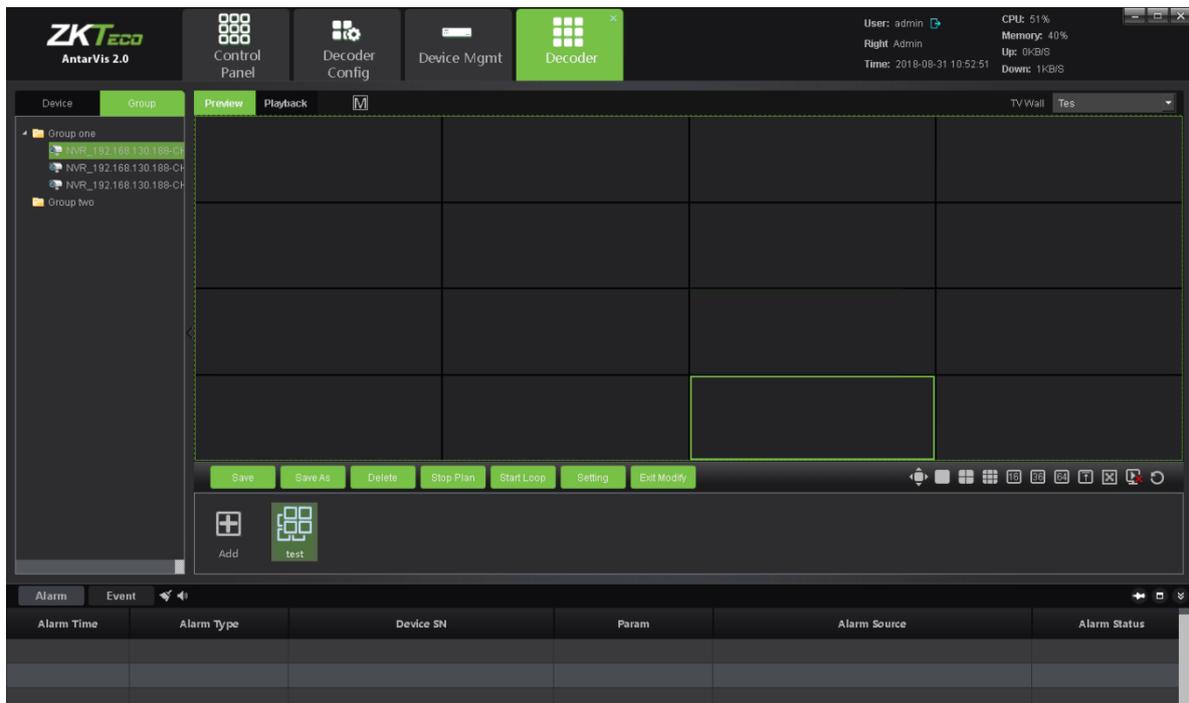
When you have selected a scheme, please set the decoding mode of the decoder to ensure normal decoding. The decoding mode is relevant to the decoder and varies according to different decoders, and the decoding mode is the expression of the decoding capability of the decoder. Click on the  button in the figure, as shown below:



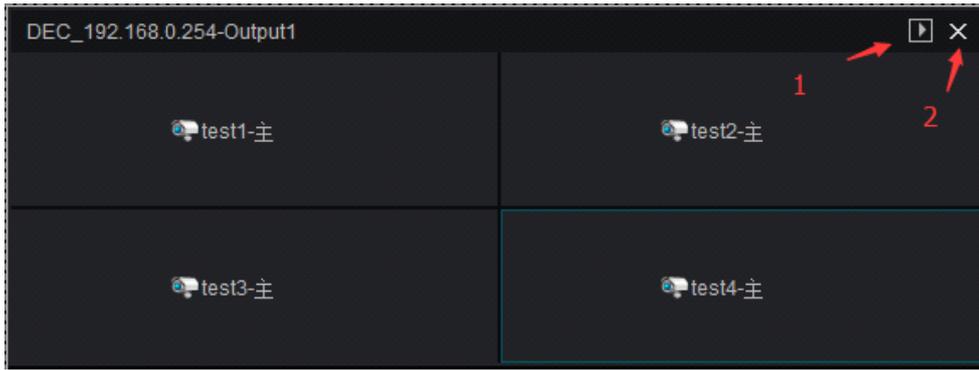
Decoding mode represents the current decoding capability of the decoder, which is listed in the figure and supports 3 decoding modes, i.e. 16 channels 720 x576, 9 channels 1280 x960 and 4 channels 2048 x1536. Please note that the subsequent number represents the maximum resolution of decoding, for example, under the 9-channel mode, the maximum resolution of decoding is 1280x960; the decoding mode of different decoders varies as well. It shall be normally decoded and displayed as the resolution of the front-end IPC has been guaranteed not to exceed the resolution restriction of the current decoder mode.

7.2 Decoding on the wall

When you have selected a scheme, select the channel for decoding on the wall in the device list on the left, then drag the relevant decoder to the corresponding decoding screen to complete decoding on the wall. Use the  button to change the stream type of decoding on the wall before dragging. Select main stream or sub-stream on the wall.



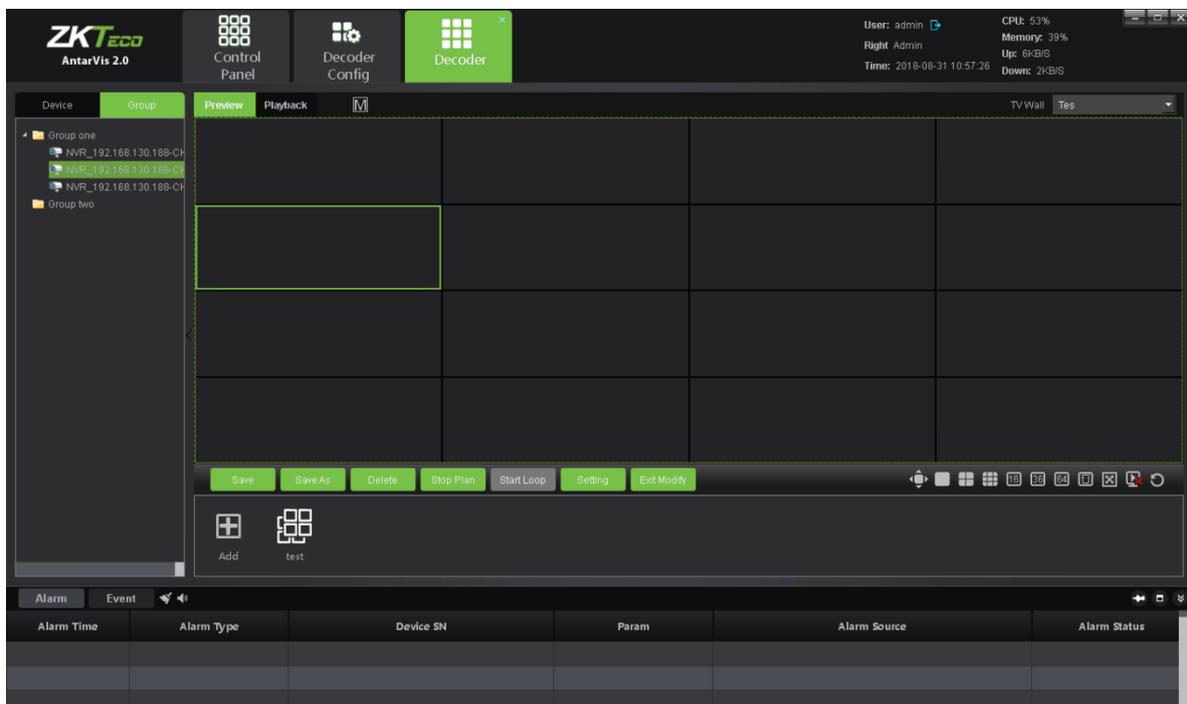
If the channel dragged to the channel of the decoding screen shall be changed to other channels, the other channels shall be directly dragged to the corresponding window.



- 1)  is used to open the decoding module preview window. Click on it to access a preview window on the current page, which is convenient for customers to view pictures on the wall.
- 2)  is used to delete the current channel. Click on it to delete the decoding channel of the current split screen.

7.2.1 Decoding group Patrol

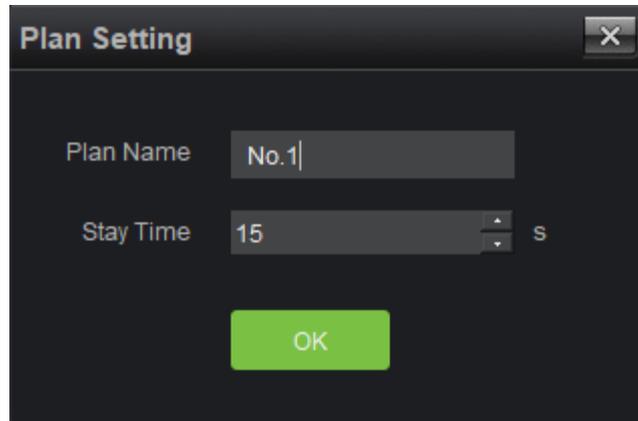
The decoding management group has been mentioned in the device management module discussed above. After setting up the decoding group, users may drag the group to the TV wall in the decoding group module, as follows:



The group dragged to the TV wall output can automatically open the patrol within group. The patrol interval can be set at the time of configuring the decoding group. The default value is 2 seconds.

7.2.2 Decoding Pre-plan Patrol

Click on the “ADD” button to add a pre-plan:



Set a “Plan Name” and “Stay Time” for the pre-plan patrol. The default value of “Stay Time” is 15 seconds; the minimum value is 10 seconds. After completion of settings, please click on “OK” to enter the pre-plan edit mode:



Configure the Pre-plan. Select the decoder split screen, decoding stream type and channel to edit the pre-plan settings. When you have completed settings, please click on “Save Pre-plan” to complete the editing.

Click on “Pre-plan” to make this group of Pre-plan to TV Wall directly with no necessary manual

operation, which is much convenient for users. Users may delete the saved pre-plans and perform other operations. If you have set several pre-plans, click “Start Pre-plan Patrol” to allow the decoder to start cruise according to the configured pre-plan.

7.3 Decoding rolling

In case of Decoding rolling to be fulfilled in certain decoder, the decoder must be selected for Cruise during TV wall scheme setting (please see section 6.2), and the roll group has been determined in the course of scheme setting.

As the roll group and roll screen has been assured to be set in the scheme,  on the button below in the interface to start/pause the Cruise , click the  button in the process of roll to stop roll (note: roll control button is only effective to roll decoder but general decoder).

7.4 Introduction of Buttons on Preview Operation Interface

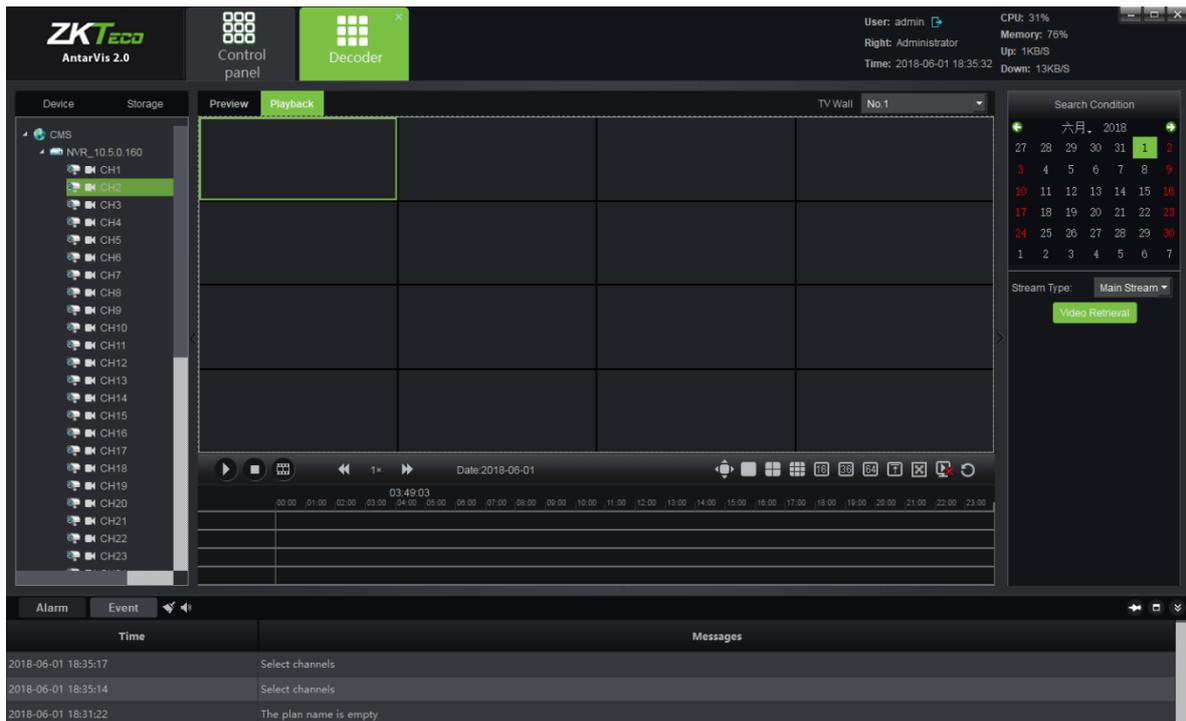
On the preview operation interface, there is a row of function buttons 



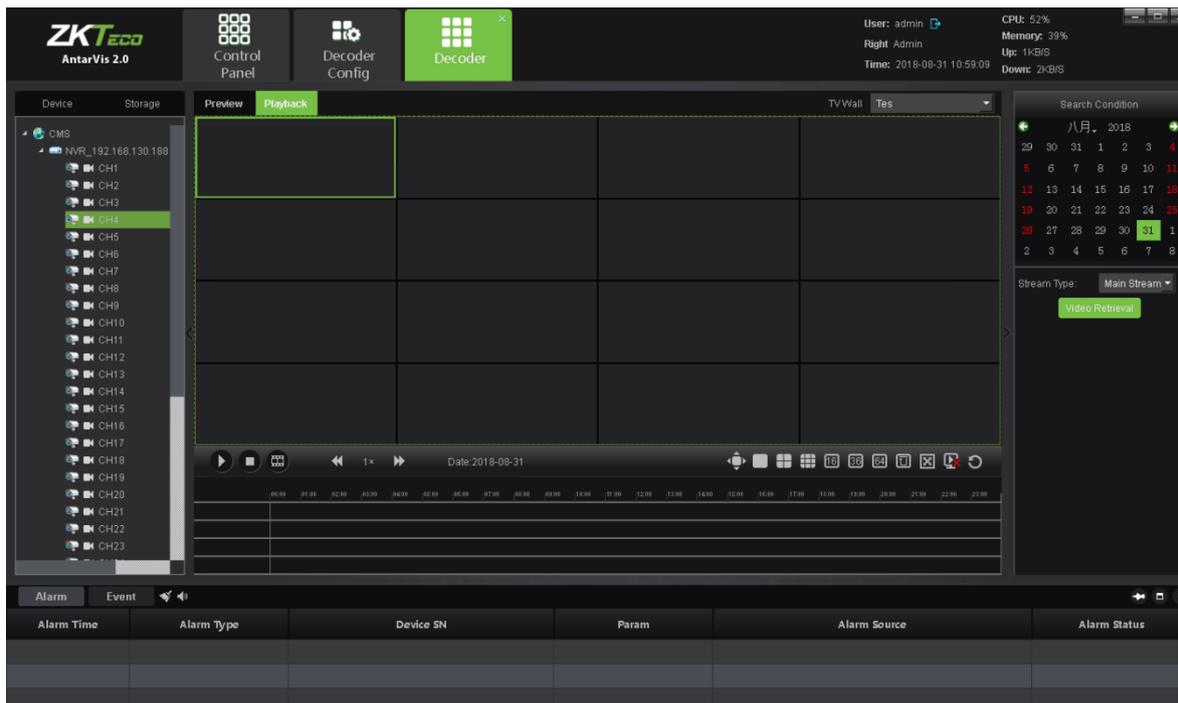
are split-screen switch control buttons. When a user selects the decoding screen, he/she may use the buttons here to switch the number of split screens between different modes, such as 1, 4, 9, 16, 36, 64.  is a full screen control; users may click on it to activate full screen mode, right-click to exit.  is a split control; users may open/close the decoder split.  is a channel-clear-control;  is used to clear all decoding channels in certain decoders with one key, while  is used to clear all decoding channels in all decoders with one key.

7.5 Decoder Playback

Access the playback operation interface as shown below:



Drag the channel to be played to the decoder, then select the criteria for searching, such as date and video path. Click on the “video retrieval” button to search for video files in the corresponding channel. Operation here is similar to that of video playback. All playback channels must be in the same device, and a maximum of 9 channels of playbacks simultaneously. When the video search is completed, click on the  button or double-click on timeline to start playing. Double-click to relocate time stamp during playing, as shown in the figure:



7.6 Introduction of Buttons on Playback Operation Interface

The function buttons in the lower part of playback operation interface are



For details about the functions of the buttons, please see the section above. Its functions includes: play/pause, stop, frame play, playback speed adjustment, full screen, split -screen number button, decoder CLS, splct offset settings, open/close the split, TV wall CLS.

8. Alarm Configuration

Click on the "Alarm configuration" button on the main interface to access the alarm configuration interface. "Alarm configuration" is an alarm rule setting module. If a user wants to fulfill alarm linkage in the client-end, the alarm linkage rule must be set in advance.

- 1) Rule name: alarm linkage rule name is user-defined.
- 2) Alarm type: currently support 8 types of alarm, including Alarm in, Motion detection, Tampering, Video Loss, Area alarm, Object alarm, Cross line alarm and Counting alarm. Among which, the last four kinds are specialized to the device about intelligent detection. Regarding the definitions of the 8 types of alarm, please see NVR's specifications.
- 3) Alarm source: Click on the check box to add all channels of all devices to VMS which can currently be selected.
- 4) Linkage action: includes capture, PTZ, Map, Record, pop Image and TV wall, which are defined respectively as below.

Capture: captures the picture of the linkage channel.

PTZ: controls the linkage channel. You may choose to call certain presets, call certain cruises or certain tracks. Only front devices which support PTZ control can be linked to PTZ.

Map: displays an alarm on map interface. For the linkage of map alarm, the channel to be linked shall be deployed on the map. When an alarm is triggered, the icon of the channel will be indicated in red on the map.

Record: when an alarm is triggered, the channel linked starts recording at local storage server, where you shall configure the RecPlan in advance. Records can be viewed by searching in the playback module.

Pop image: when an alarm is triggered, the preview window will pop up from the main interface displaying the real-time preview of the linked channel.

TV Wall: select a channel and TV Wall for wall-run. When an alarm is triggered, the real-time preview picture of this channel will be uploaded to the TV Wall.

Note: If the linkage action has been set as map, video, popup image and TV Wall, the front-end devices shall be selected. It shall be "auto-end" or "Schedule end"; "auto end" means that there is no linkage action upon the completion of alarm, while "timing end" means that the linkage action will end at the set time, which ranges from 1 second to 36,000 seconds.

- 5) Action param: the linkage action set can be displayed in this column.
- 6) Remarks: indicates relevant information of this linkage rule. It can be customized and omitted.

Upon completion, the window is as shown below:

Add Linkage Rule

Rule Name: _____

Alarm Type: Alarm In

Alarm Source: _____

Linkage Action: Capture PTZ Map
 Record Pop Image TV Wall

Action Param:
 -----Pop Image-----
 [Channels]
 (1)NVR_192.168.0.88_CH1
 [Stop Mode]
 Auto Stop
 -----Record-----
 [Channels]
 (1)NVR_192.168.0.88_CH1
 [Stop Mode]
 Auto Stop
 -----Capture-----

Remarks: _____

Save Cancel

Click on the “Save” button at the bottom to save and complete the settings.

8.2 Modify Alarm Rule

Rule Name	Alarm Type	Alarm Source	Remarks	Enable	Description
1	Alarm In	DEVICES-NVR_192.168.0.88-NetAI...		<input type="checkbox"/>	Modify Update

Upon completion of alarm rule adding, users may click on “Modify” indicated in the figure to edit the existing rule.

8.3 Delete Alarm Rule

Rule Name	Alarm Type	Alarm Source	Remarks	Enable	Description
1	Alarm In	DEVICES-NVR_192.168.0.88-NetAI...		<input type="checkbox"/>	Modify Update

To delete the existing rule, click on the “Delete” button in the figure; in case of disable of the feature at the moment, select the “check” button in the figure.

9. Alarm Management

Click on the “Alarm” button on the main interface to enter the alarm management interface:

The screenshot displays the Alarm Management interface. At the top, there is a navigation bar with the ZKTeco logo, 'Control panel', and an 'Alarm' button. The top right corner shows system status: User: admin, Right: administrator, Time: 2018-12-08 11:53:15, CPU: 21%, Memory: 76%, Up: 11KB/S, Down: 685KB/S.

Below the navigation bar is a search area with 'BeginTime' (2018/12/08 00:00:00) and 'Type' (AllType) filters, and a 'Search' button. The main area contains a table of alarm logs:

ALARM SOURCES	Alarm Type	START TIME	END TIME
NVR_192.168.0.88-CH3	Motion detection	2018-12-08 11:50:51	2018-12-08 11:50:51
NVR_192.168.0.88-CH2	Motion detection	2018-12-08 11:50:44	2018-12-08 11:50:44
IPC_192.168.0.101-CH01	Motion detection	2018-12-08 11:50:43	2018-12-08 11:50:43
NVR_192.168.0.88-CH3	Motion detection	2018-12-08 11:49:31	2018-12-08 11:49:31
IPC_192.168.0.101-CH01	Motion detection	2018-12-08 11:49:25	2018-12-08 11:49:25
NVR_192.168.0.88-CH2	Motion detection	2018-12-08 11:49:25	2018-12-08 11:49:25
NVR_192.168.0.88-CH2	Motion detection	2018-12-08 11:48:46	2018-12-08 11:48:46
IPC_192.168.0.101-CH01	Motion detection	2018-12-08 11:48:46	2018-12-08 11:48:46
IPC_192.168.0.133-CH01	Counting alarm	2018-12-08 11:48:07	2018-12-08 11:48:07
NVR_192.168.0.88-CH3	Motion detection	2018-12-08 11:48:01	2018-12-08 11:48:01
NVR_192.168.0.88-CH2	Motion detection	2018-12-08 11:47:57	2018-12-08 11:47:57
IPC_192.168.0.101-CH01	Motion detection	2018-12-08 11:47:57	2018-12-08 11:47:57
IPC_192.168.0.188-CH01	Tampering	2018-12-08 11:28:49	2018-12-08 11:28:49
IPC_192.168.0.133-CH01	Cross line alarm	2018-12-08 11:11:05	2018-12-08 11:11:05
NVR_192.168.0.88-CH3	Motion detection	2018-12-08 11:11:05	2018-12-08 11:11:05
NVR_192.168.0.88-CH2	Motion detection	2018-12-08 11:11:04	2018-12-08 11:11:04

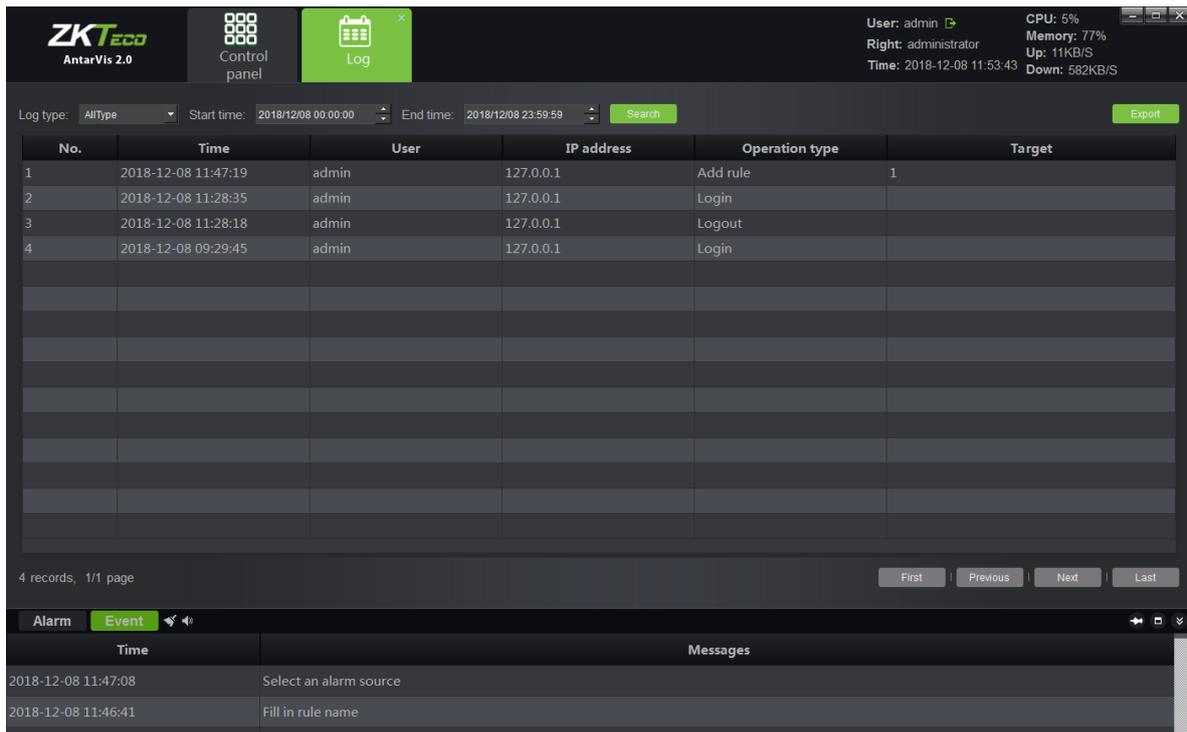
Below the table, there are navigation buttons: 'First', 'Prev', 'Next', and 'Last'. The bottom section shows a message log with columns 'Time' and 'Messages':

Time	Messages
2018-12-08 11:47:08	Select an alarm source
2018-12-08 11:46:41	Fill in rule name

Alarm management interface displays all alarm information upload to VMS. Select time range to search and an alarm type, click on the “Search” button, then the system will search for relevant alarm information. There are 8 types of alarms, including alarm input, motion detection, video tampering alarm, video loss, target count detection, area detection, object detection and line crossing detection.

10. Log Management

Click on the “Log” button on the main interface to enter the log management interface:



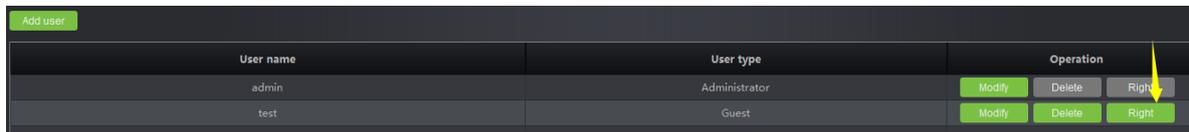
Log management interface displays all important operation records of a user. Select a log type and time range to search, click on "Retrieve" to start searching. Log types include login/logout, device management, start/stop rec, linkage management and remote configuration.

- 1) login/logout: users log in/out records.
- 2) Device management: management of records about user registration, modification and deletion of devices.
- 3) Start/stop recording: start/stop local video record.
- 4) Linkage management: management about records from user operations, such as addition, modification and deletion of a linkage rule.
- 5) Remote configuration: records of user operations in terms of remote configuration, and modification of parameters for front-end devices.

The log will record the operation time, the user performed such operations, IP address where the operation is conducted, types of operations and target address of relevant important operations in details, which help the administrator to find out any issues.

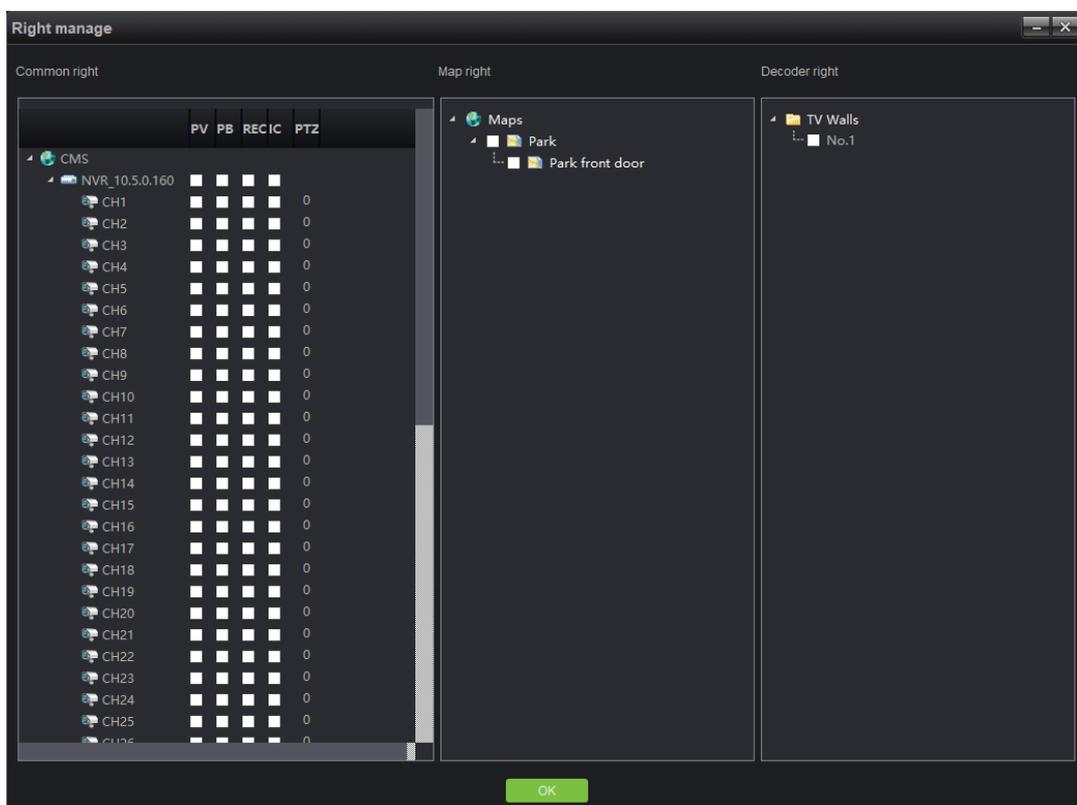
type cannot be modified. Fill in the user name, password, type the password again, then click on “OK” to add a new user. The password and that to input at the field “Confirm password” shall be the same.

11.2 Sub-user Access Distribution



User name	User type	Operation
admin	Administrator	Modify Delete Right
test	Guest	Modify Delete Right

To assign sub-users access rights, click on the “Right” button indicated in the figure to grant the users relevant access privileges:

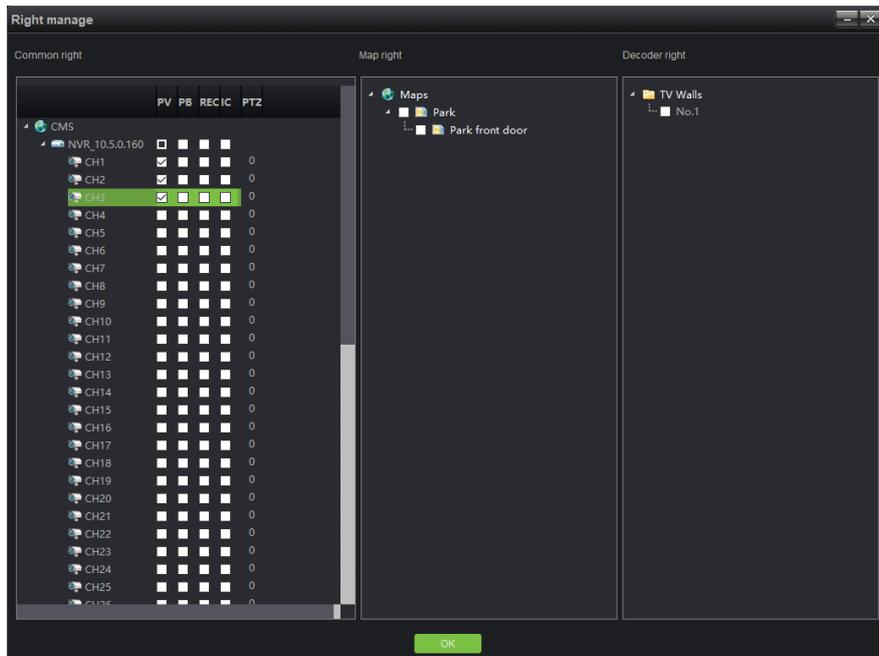


Types of access include common access, map access and decoder access.

Common access: includes preview, playback, video, intercom and PTZ control; depends on channels. The administrator may distribute relevant channels to the corresponding sub-users. The number corresponding to PTZ represents the control priority of PTZ. You may double-click to edit, and select a value from 0 to 10, among which, 0 indicates that there will be no PTZ control access, and 1-10 indicates the priority of PTZ control access. The larger the number, the higher the authority, i.e. 10

represents the top priority of PTZ control while 1 represents the lowest priority.

Channels without preview access distributed will be hidden if a sub-user logs in. Similarly, channels without relevant access rights cannot offer users access to playback, video and intercom. users can't apply the corresponding functions. For instance, there are only 3 channels have been distributed to test sub-user, as shown in the figure:



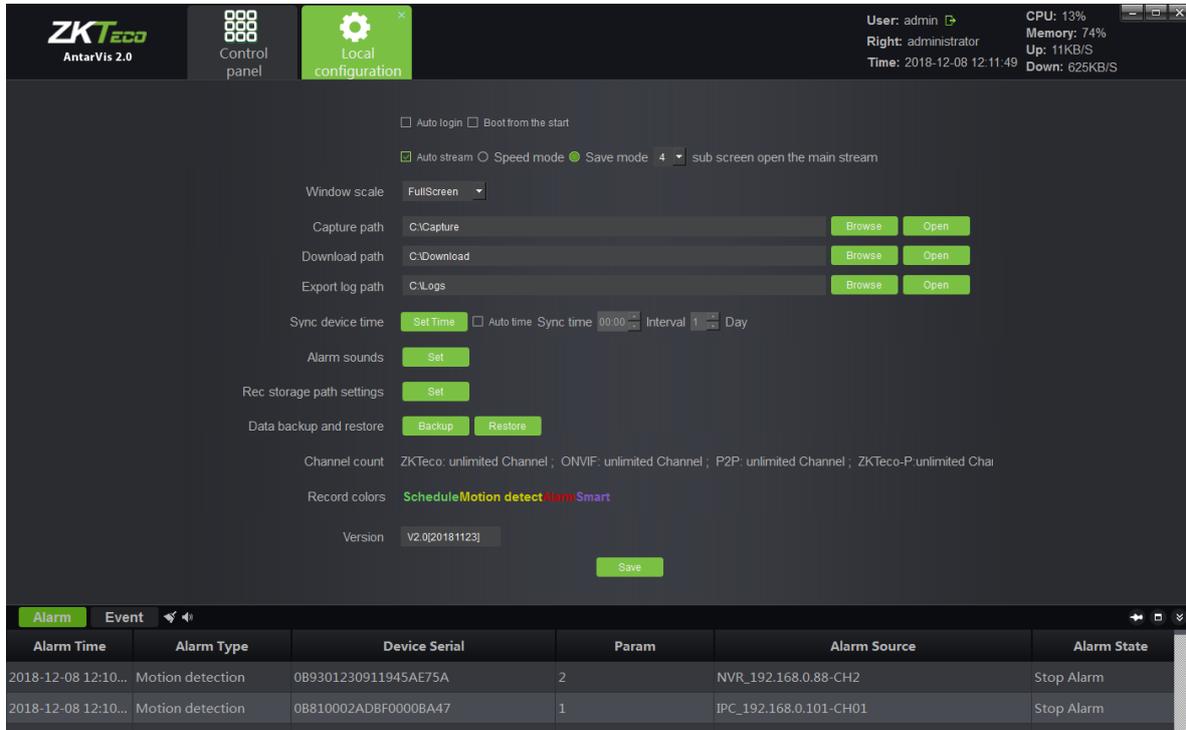
Login with sub-user can only view three channels, as shown in the figure below:



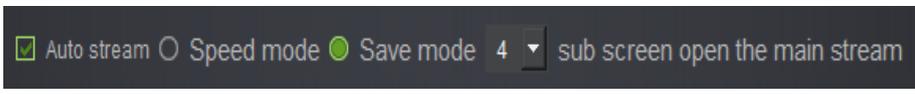
☺**Note:** the super user has top access priority which cannot be modified.

12. Local Configuration

Click on the “Local configuration” button on the main interface to enter the local configuration interface:



- 1) Auto login: when VMS software opens, it will automatically log in.
- 2) Boot from the start: when you select this feature, the client-end program will run automatically when the server which runs VMS boot up.
- 3) Auto stream: when speed mode and save mode are selected, as shown in the figure,

 among which,

open of preview will open main stream and sub stream under the speed mode, however, only one of them will be displayed, therefore, it will be faster for switching and also saves the bandwidth. “Save” mode means that only one stream shall be opened at the same time; the current stream shall be closed to open another. It is slower and saves the bandwidth as well. Users may select the mode as needed. In addition, it can be selected under certain number of split screens to automatically switch to main stream under the circumstance of auto stream, 1, 4 and 9 channels are optional.

- 4) Window scale: for preview or playback. You may choose from full screen, 4:3 and 16:9.
- 5) Capture path: the directory to save captured pictures, including preview captures, playback captures and alarm linkage captures.
- 6) Download path: the directory to down documents.
- 7) Export log path: the directory to export log documents.
- 8) Sync device time: manual or automatic synchronization of time of access devices.
- 9) Alarm sounds: selection of sound, which is used as alarm linkage sound. You may customize the sound.
- 10) Rec storage path setting: setting local directory to save recorded documents.
- 11) Data backup and restore: backing up and restoring database to prevent data loss.
- 12) Channel count: displaying the authorized total number of channels. ZKTeco: unlimited Channel; ONVIF: unlimited Channel; P2P: unlimited Channel; ZKTeco-P: unlimited Channel
- 13) Record colors: defining the color of indication of different types of videos.
- 14) Version: the version number of the current program (non-modifiable).

Upon completion of settings, click on "Save" to quit.

III. Performance and Storage Introduction

AntarVis2.0 performance, for current structure, needs only one host, which is used to install program. The host has no limit on the management of equipment currently, but the suggested number is within 200pcs. The number of channels which can be stored by one host is restricted by networking, disk-writing and so on. The maximum writing speed is 200Mb/s, which means the band-width of single video camera is 4Mb. It supports 50CH of storage at most. The time to store a video is restricted by disk space. For example, if the code steam of video camera is 4Mb, the video storage file size $= (4 \times 3600) / 8MB = 1800MB$, namely video file size is about 1800MB of a code steam video camera 4Mb in one hour, that is to say 1.8GB. Video file size of one day $= 1.8G \times 24 = 43.2GB$, Video file size of one month $= 3.2GB \times 30 = 1296GB = 1.296TB$. With the formula, we can calculate the time to take for video storage according to assessment of disk space and video camera's routes and code steams in the project.

Resolution	Bit rate	Required storage space				
		Hour	Day	Week	Month	Six months
2560x1920	10Mbps	4.4GB	105.5GB	738GB	3.09TB	18.54TB
2048x1536	8Mbps	3.5GB	84.4GB	591GB	2.47TB	14.82TB
2048x1536	7Mbps	3.1GB	73.8GB	516.6GB	2.16TB	12.6TB
1600x1200	6Mbps	2.6GB	63.3GB	443GB	1.85TB	11.10TB
1920x1080	5Mbps	2.2GB	52.7GB	369GB	1.54TB	9.27TB
1280x960	4Mbps	1.8GB	42.2GB	295.3GB	1.24TB	7.42TB
1280x720	3Mbps	1.3GB	31.6GB	221.5GB	949.2GB	5.56TB
1280x720	2Mbps	900MB	21.1GB	147.7GB	632.8GB	3.71TB
640x360	1Mbps	450MB	10.5GB	73.8GB	316.4GB	1.85TB