

View Management System (VMS2.0)

User Manual

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I. Product Overview

1. Overview

View management system (VMS 2.0, hereinafter “VMS 2.0”) is the professional software for the central management of the front end network monitoring devices, including NVR, DVR, IPC, MDI, SDI and etc. It is to mainly fulfill the functions as real-time preview, video playback, E-map, alarm linkage, decoding on the wall, support the WEB access and mobile phone client access.

VMS2.0 program adopts independent setup package, which is easy for setup and contains the various basic functions for demand. It can be generally used for the small-sized project. Since VMS access data directly from device, the connection of one device with several clients has not been recommended for it intensifies tolerance capacity of device.

VMS2.0 currently supports five protocols including active registration, I8H, I8, ONVIF and GB28181, among which, active registration, I8H and I8 are the proprietary protocol of the company, thus there is no restriction on the amount of authorization path and time of use of them and they are free of charge. ONVIF and GB28181 protocol have 100 free authorizations with the term of one month, commencing on the date of setup. Upon the expiration of authorization, the device can't access normally. Please contact the distributor for the permanent authorization.

2. System Requirements

2.1 Hardware Requirements

CPU: Intel(R) Celeron(R) CPU E3400 @2.6GHZ or above

RAM: 4G or higher

Video card: AMD Radeon HD 6450 or more integrated graphics or discrete graphics

Network card: Gigabit Ethernet or above

CD-ROM drive: DVR-R

Hard disk: 250G or more

Switch: Gigabit switch or above

2.2 Software Requirements

1) server2003、server2008、windows xp、windows 7、windows 8、windows 10

2) Microsoft .Net Framework 3.5

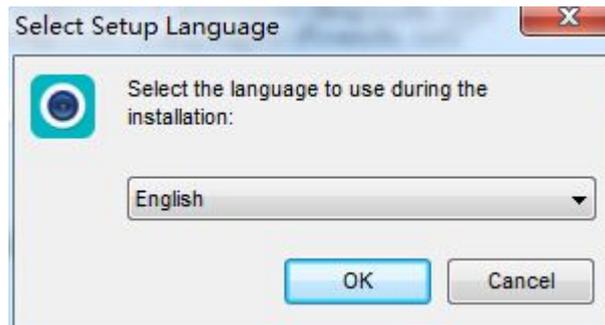
3) Microsoft Visual C++2010 X86 Redistributable Setup

2.3 System Environment

System Environment: program operation requires occupancy of database, 5050 port and 6666 port. Since a PC can only run one database, please make sure no other database runs and two data ports have not been occupied, otherwise, the program may not run normally.

II. Program Overview

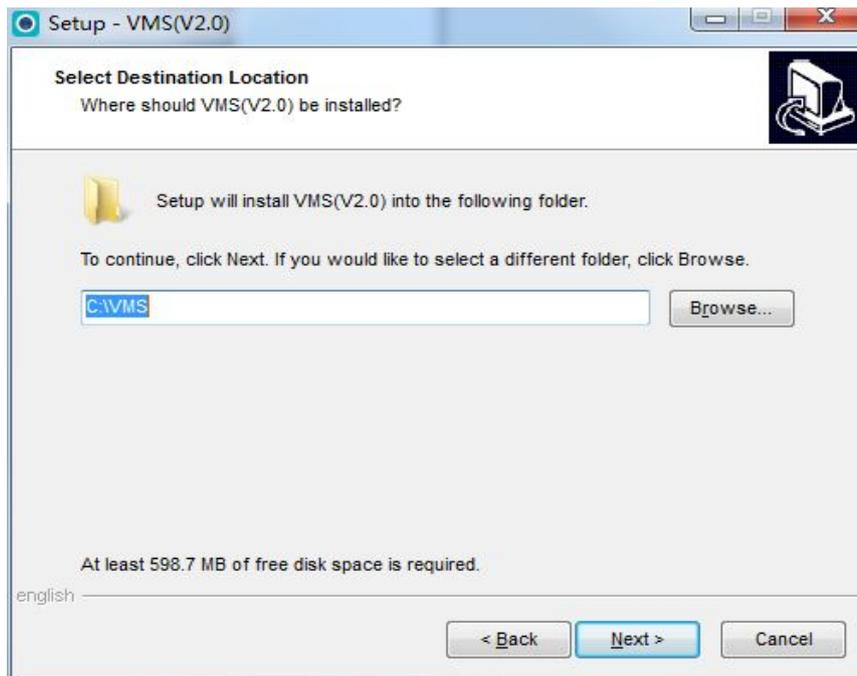
Setup overview, double click to run setup program to open setup wizard:



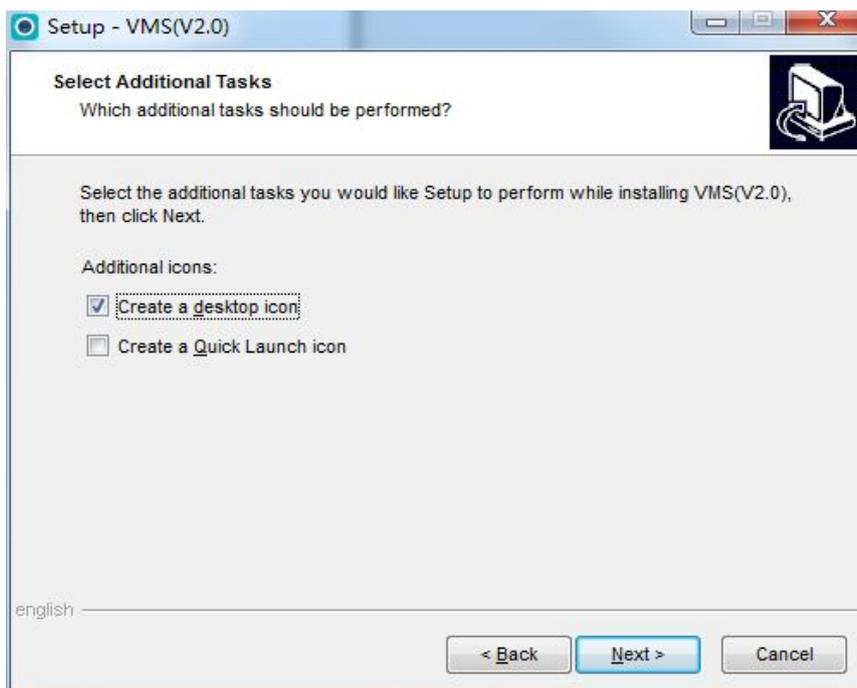
Select setup language, the program automatically recognizes the system language as default option; if other language required for setup, please select in the drop-down box. The initial program supports simplified Chinese and English. If other languages needed, please contact the distributor for translation; click “OK” to confirm as the setup language selected (take simplified Chinese as example):



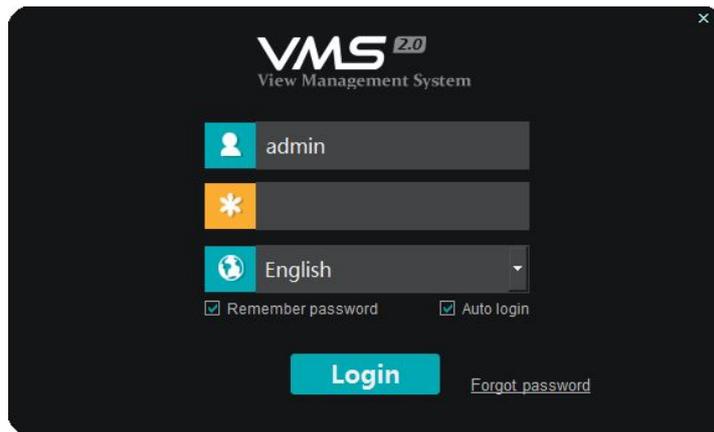
Click next, select setup path:



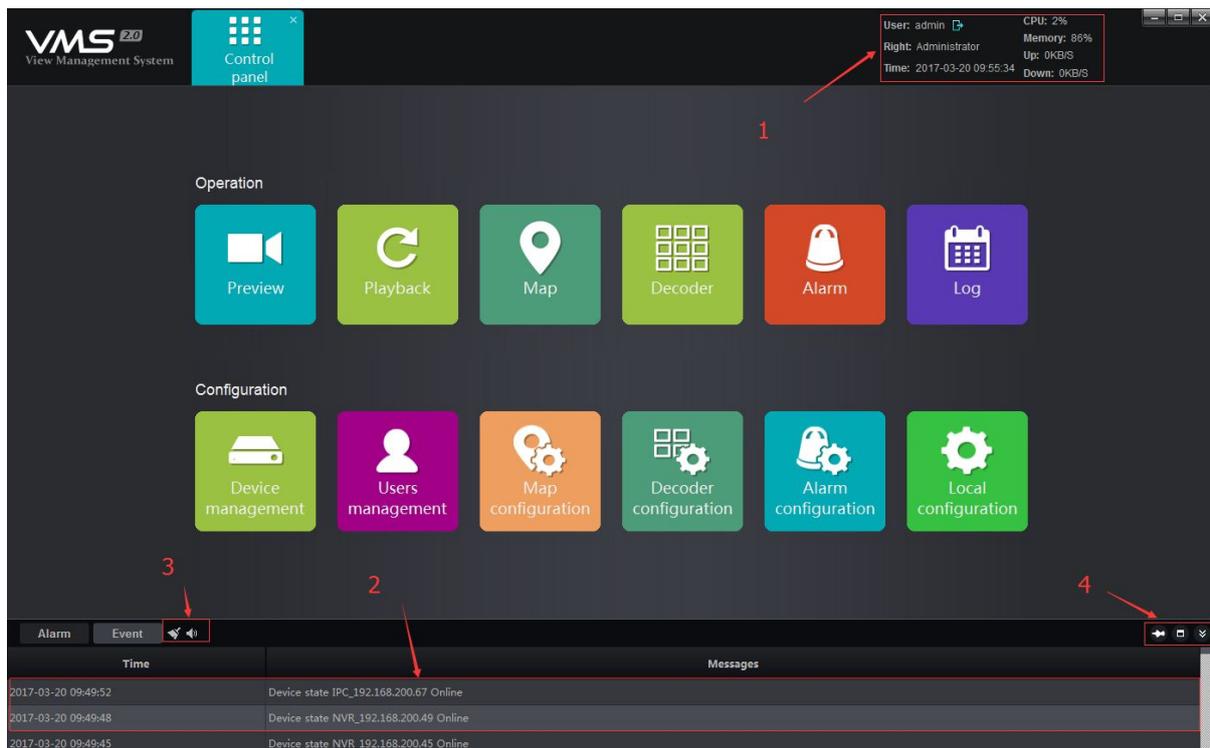
System default path C:\VMS, user can modify as the actual demand, and click “Next” to continue:



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:



User may manually switch language, initial user name is admin, and initial password is 123456. Enter the password, click “Login”, the password may not need to be entered as “Remember password” selected; the program automatically logs in as “Auto login”; the function of automatic login can be canceled in the local configuration. When you forget password of admin, click the "Forgot password" to get the temporary key to the supplier for getting temporary password. Enter program main interface, as shown in figure:



- 1) Display current user, user right, current time, system CPU memory consumption and real-time network data flow, click  to log out current login.
- 2) Display real-time alarm message and event message, double click on the alarm message to open the preview of the current alarm channel for user to view alarm in real-time manner.

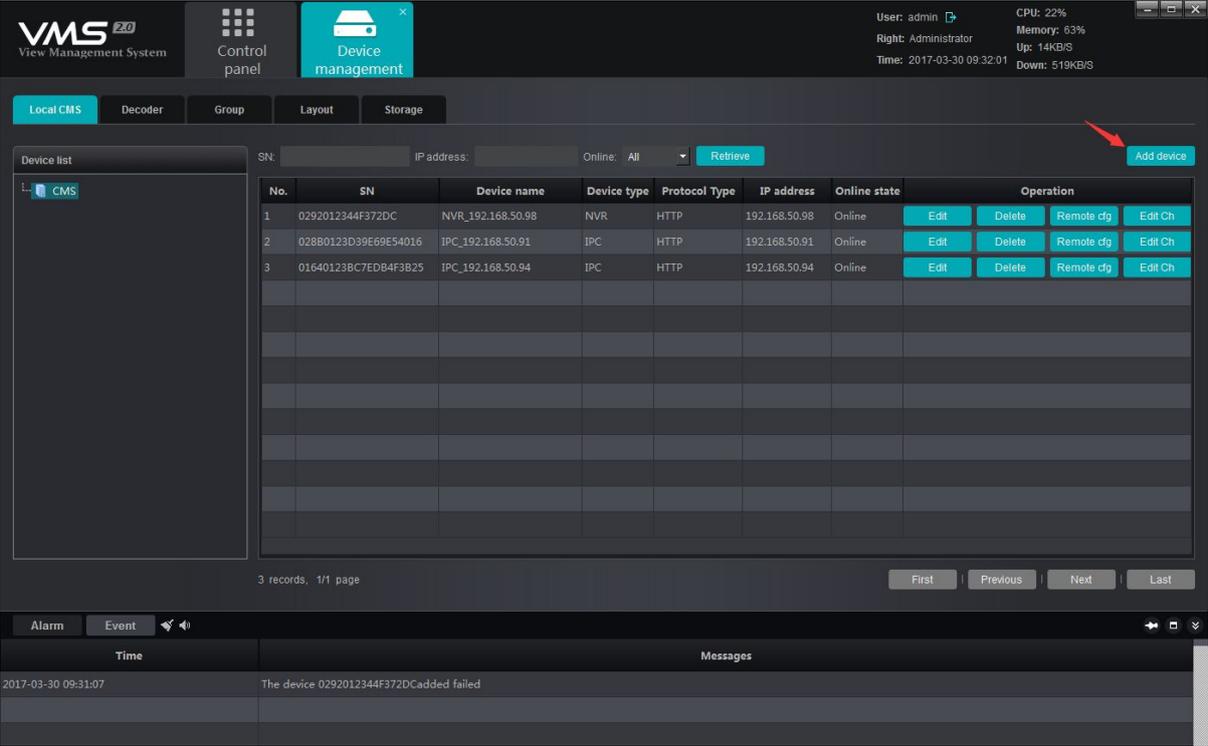
3) The functions in the toolbar , from left to right, are: clear alarm/event message, close alarm sound/open alarm sound.

4) The functions in the toolbar , from left to right, are: stick window, window full-screen, hide window.

1. Device Management

1.1 Add Device

Click main interface “Device management”, enter the main interface of device management.



No.	SN	Device name	Device type	Protocol Type	IP address	Online state	Operation
1	0292012344F372DC	NVR_192.168.50.98	NVR	HTTP	192.168.50.98	Online	Edit Delete Remote cfg Edit Ch
2	028B0123D39E69E54016	IPC_192.168.50.91	IPC	HTTP	192.168.50.91	Online	Edit Delete Remote cfg Edit Ch
3	01640123BC7EDB4F3B25	IPC_192.168.50.94	IPC	HTTP	192.168.50.94	Online	Edit Delete Remote cfg Edit Ch

Device management interface displays relevant information of all devices added to VMS, including device type, protocol type and online and offline status; click “Add device” at the top right corner, the add device interface pops up:

The image shows a software dialog box titled "Add device". At the top left, the title "Add device" is displayed. To the right of the title are standard window control buttons (minimize, maximize, close). The main area of the dialog contains several input fields and buttons. The first field is a dropdown menu labeled "Protocol:" with "I8H" selected. To its right is a blue button labeled "Search". Below this are five text input fields: "IP:", "Port:", "Device name:", "User name:", and "Password:". At the bottom of the input fields is another dropdown menu labeled "Area:" with "CMS" selected. At the very bottom of the dialog are two blue buttons: "Save" and "Cancel".

Select protocol, among which, Register Protocol is active registration protocol, which is an independently developed protocol of the company; the device can be added via this protocol if the front end device supports this protocol; I8H protocol, an independently developed protocol of the company, requires support of front end device, and the front device currently used for shipping generally supports this protocol; I8 protocol is an independently developed protocol of the company for the device of older version, and the device that doesn't support I8H protocol accesses via this protocol; ONVIF protocol is the joint ownership protocol for the access of the third party device that supports this protocol; GB28181 is the national standard protocol for access of third party device which supports this protocol. Among them, active registration, I8H and I8 doesn't require purchase of authorization and can be accessed at will; while ONVIF and GB 28181 has free trial in the trial period, and upon the expiration of which, it can be only normally used after the purchase of the authorization.

As the protocol selected, it is to click "Search" to search all online devices in the LAN (take I8H protocol as example):

No.	Serial No	Device type	IP	Port	Device name	User name	Password
<input type="checkbox"/>	1	0292012327E652819D65	NVR	192.168.50.113	80	NVR_192.168.50.113	admin
<input type="checkbox"/>	2	019A0123B86EF3C4C0DC9	NVR	192.168.50.108	80	NVR_192.168.50.108	admin
<input type="checkbox"/>	3	02940123A80261E14E14	NVR	192.168.44.69	80	NVR_192.168.44.69	admin
<input type="checkbox"/>	4	028B0123D39E69E5D039	IPC	192.168.44.66	80	IPC_192.168.44.66	admin
<input type="checkbox"/>	5	028B0123EA4C1EEAC45C	IPC	192.168.44.70	80	IPC_192.168.44.70	admin
<input type="checkbox"/>	6	02840123EA4C1EEBBD7B	IPC	192.168.50.28	80	IPC_192.168.50.28	admin
<input type="checkbox"/>	7	0261012315A162A2A00F	IPC	192.168.50.99	80	IPC_192.168.50.99	admin
<input type="checkbox"/>	8	02810123D39E69E54117	IPC	192.168.50.200	80	IPC_192.168.50.200	admin
<input type="checkbox"/>	9	028B0123D39E69E54016	IPC	192.168.50.91	80	IPC_192.168.50.91	admin
<input type="checkbox"/>	10	026B0123A579BCD90863	IPC	192.168.50.87	80	IPC_192.168.50.87	admin
<input type="checkbox"/>	11	026B012320617E17750E	IPC	192.168.44.89	80	IPC_192.168.44.89	admin
<input type="checkbox"/>	12	026B012327E652817B65	IPC	192.168.44.90	80	IPC_192.168.44.90	admin
<input type="checkbox"/>	13	0261012327E652822544	IPC	192.168.50.65	80	IPC_192.168.50.65	admin
<input type="checkbox"/>	14	028B0123DFF3B0E3B414	IPC	192.168.50.234	80	IPC_192.168.50.234	admin
<input type="checkbox"/>	15	023F01236095F6742A7F	NVR	192.168.50.98	80	NVR_192.168.50.98	admin
<input type="checkbox"/>	16	028B01235F1CFA669561	IPC	192.168.44.67	80	IPC_192.168.44.67	admin

Select all

(Note: devices displayed in gray are those devices that have been added to the device list; click on the “IP address” can sort them on the basis of the device IP)

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

Add device - X

Protocol: 18H

IP: 192.168.50.200

Port: 80

Device name: IPC_192.168.50.200

User name: admin

Password:

Area: CMS

Device Name: define by the user as the actual demand

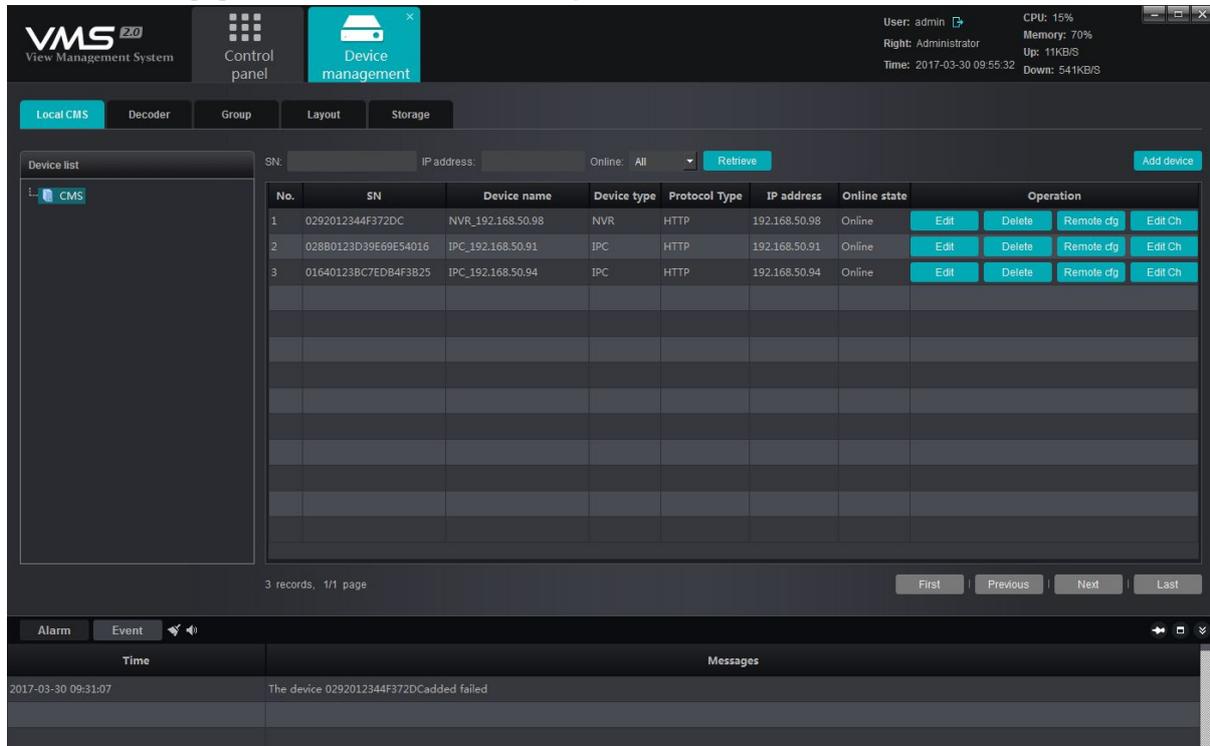
User Name: device user name

Password: device password

Enter correct user name, password can add the device into the device list, also, can batchly add the device without password (note: for safety consideration, the password can't be retrieved and the device

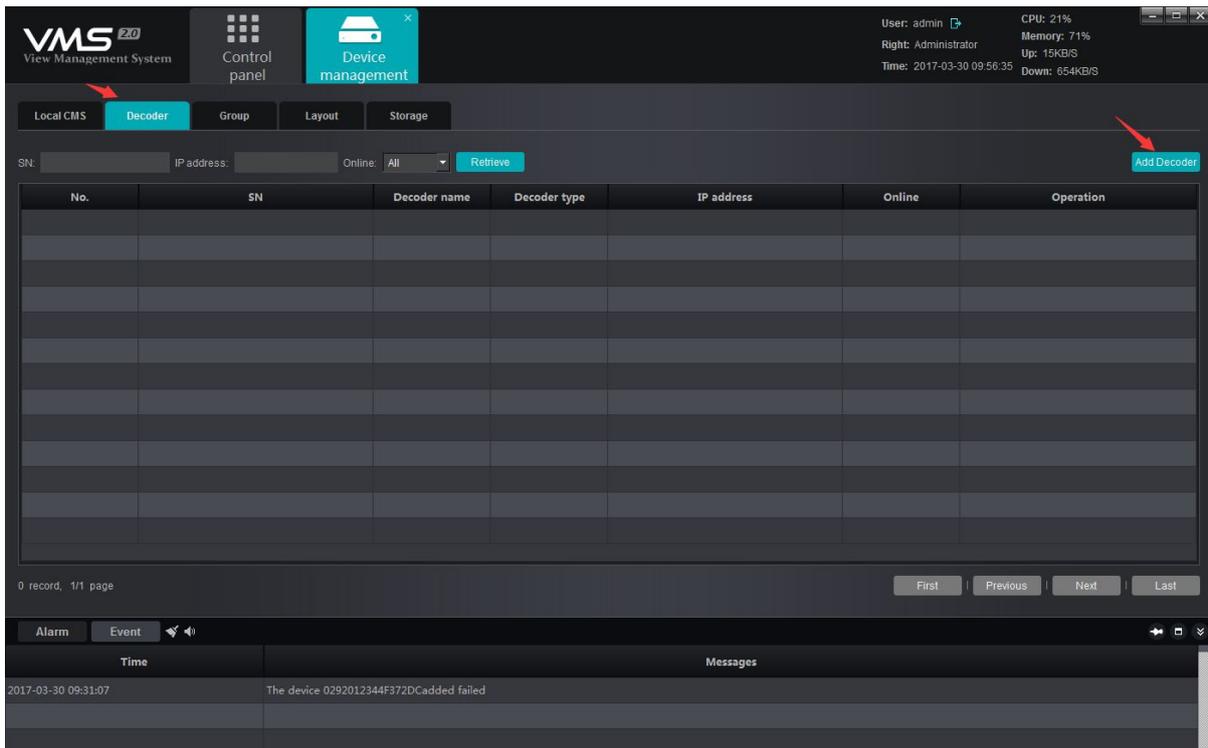
with password need to be filled in manually; no password filled in or wrong password leads to add failure.)

After the equipment added,as shown in the figure:



We can edit&delete the equipment,call remote configuration and modify the channel name.The remote configuration is only supported by 18H protocol,calling the remote configuration can view or modify related parameters of the front-end equipment .Changing the channel name is only supported by 18H and 18 protocol,after calling it can be quickly and conveniently to modify channel name of the front-end equipment .

1.2 Add Decoder



Switch to decoder interface, this interface, similar to add device, displays all decoders added to the server at present and the online and offline status of the decoder; the added decoders can be edited and deleted; in case of new decoder to be added, click the **Add Decoder** button in the top right corner:

Search

IP: _____

Port: _____

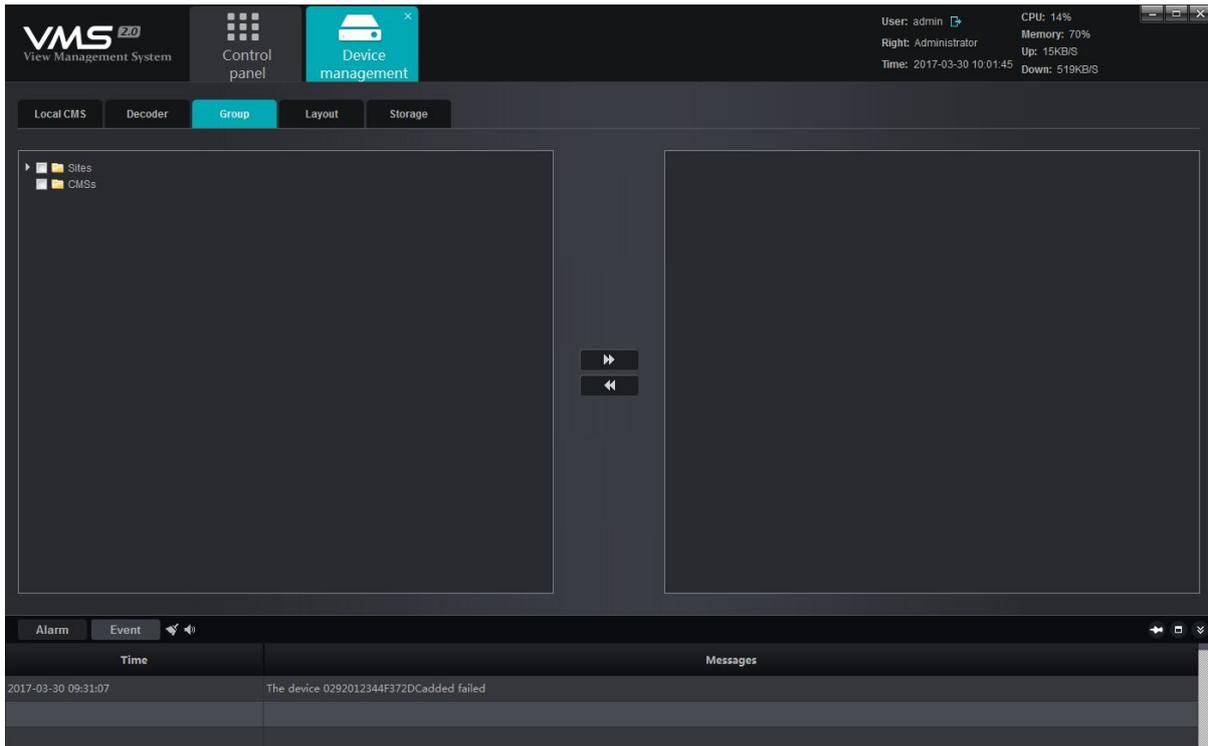
Decoder name: _____

User name: _____

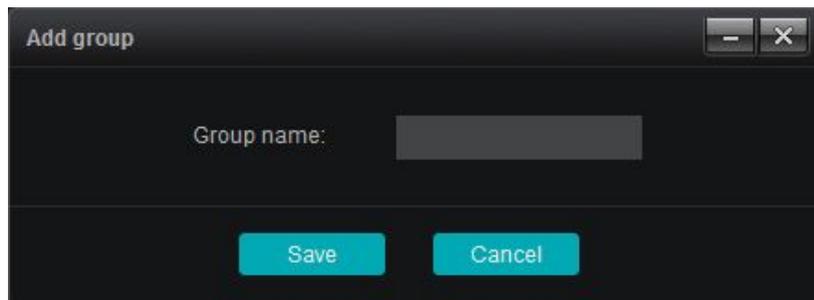
Password: _____

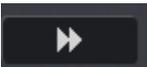
Save Cancel

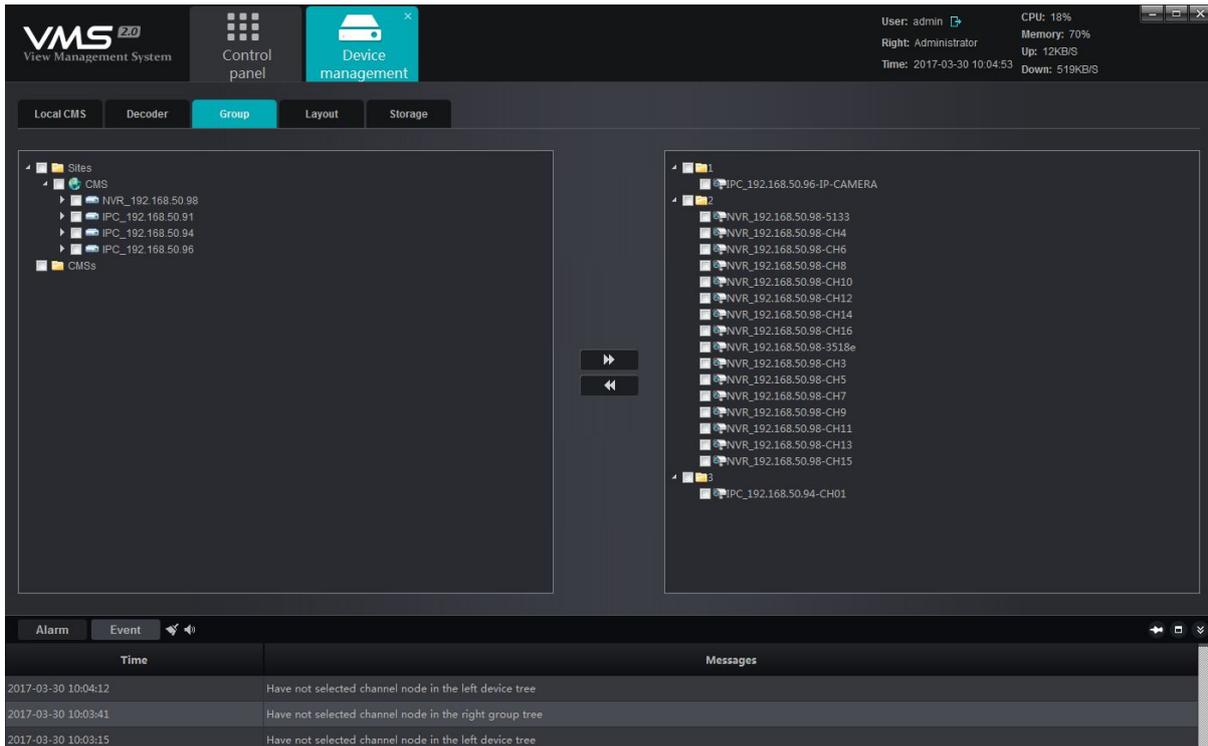
Click “Search” can search all the online decoders in the LAN, similarly, the decoder added to the decoder list displays in grey and it can’t be added repeatedly:



Right-click in the blank area on the right side, select to add group:



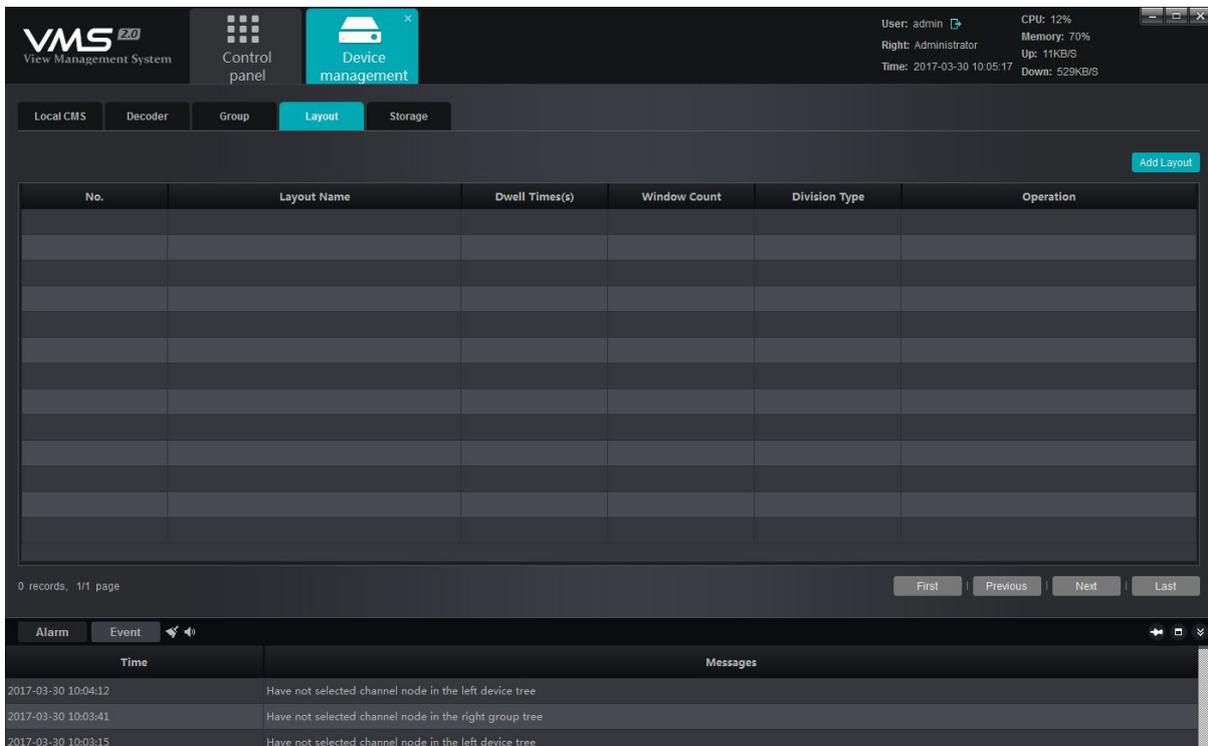
Fill in the group name, click “Save”, create the group; when succeed, select the left side device channel, then select group, click  button to add the relevant channels to the corresponding group; the actual application of grouping will be described in the preview module. When adding has been done, the effect as shown in figure:



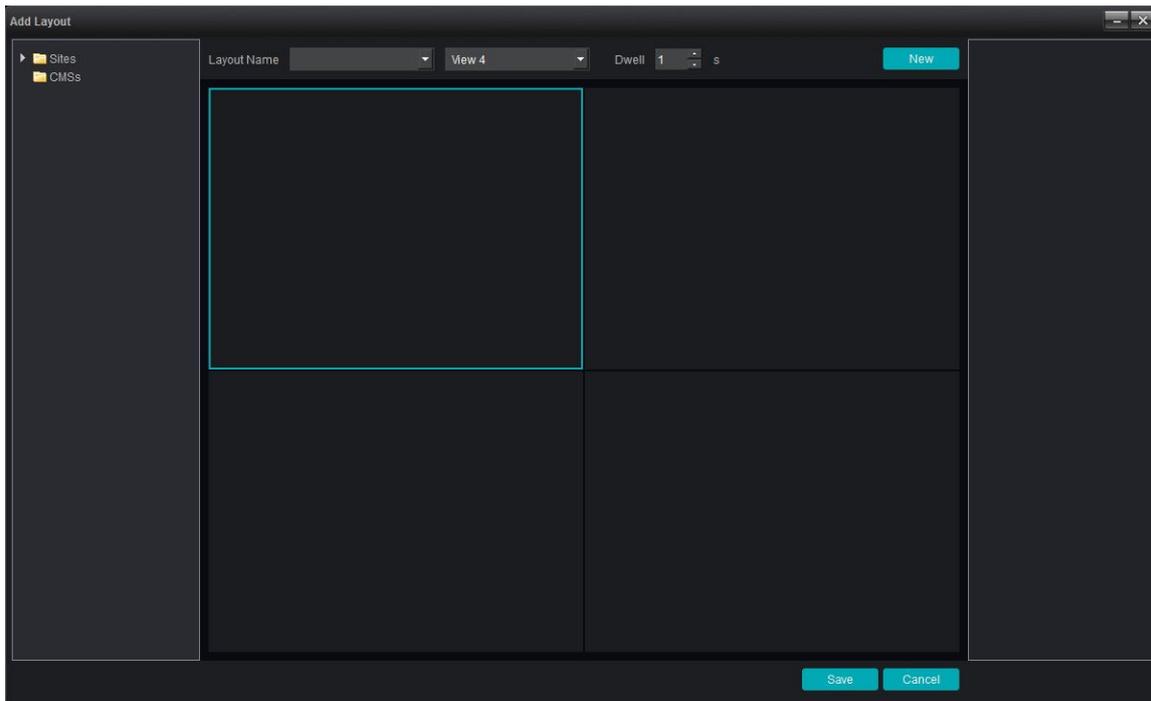
Similarly, select the channel in the group, click  can delete channel from group.

1.4 Layout

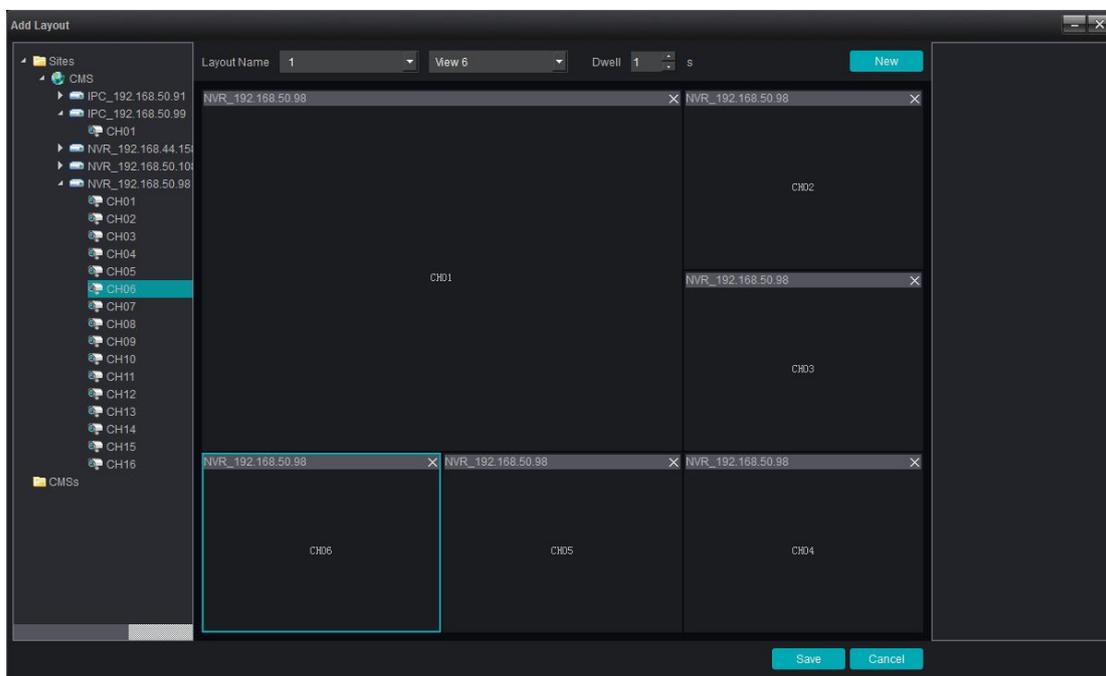
Switch to the page of “Layout” in the device management module, as shown in figure:



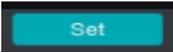
Click the button of “Add layout”, pop up the window:

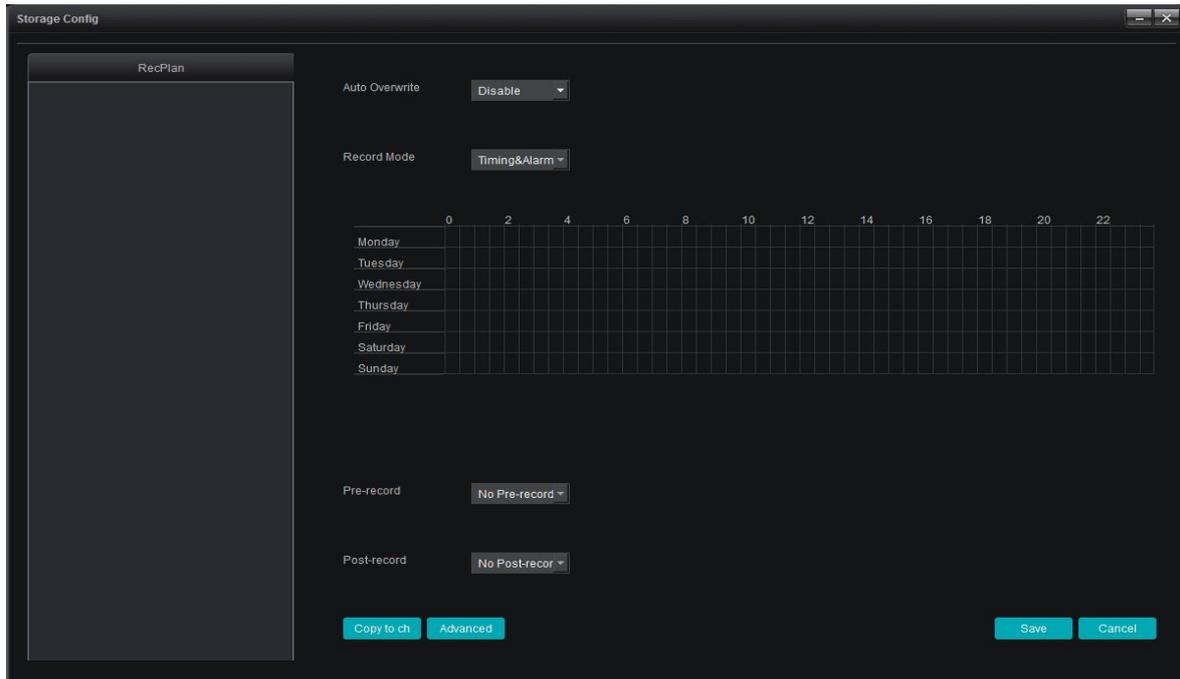


Fill in the name of layout, select the number of split screens as the actual situation m ; split screen include standard split and wide-screen split, in which, ordinary split screen picture displays in 16:9 and the wide-screen picture displays in 1:1; select the duration of stay and then drag the channel for layout, exemplifies with 6 split screens:

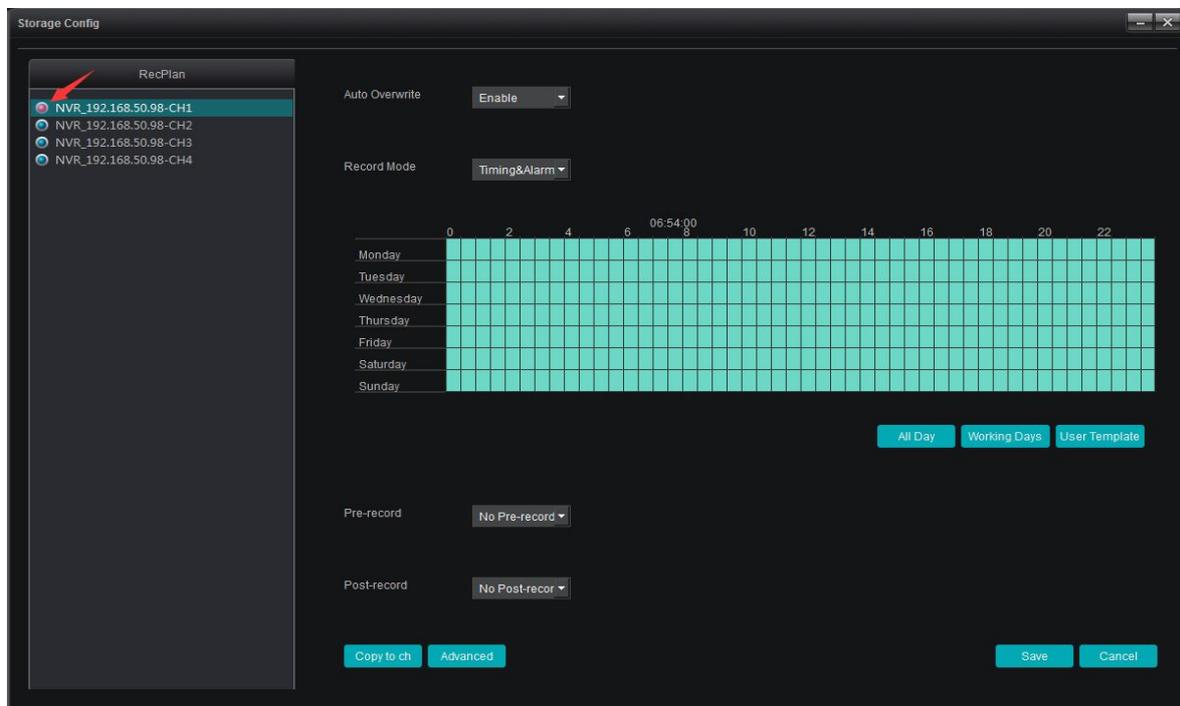


Click “New” or click “Save” as layout completed and the saved layout information shall be displayed on the right side:

used space of disk, click  to set storage server, as shown in figure:



Right click the blank area of the RecPlan on the left side, add channel to the storage server; when done, and select the channel to set the RecPlan



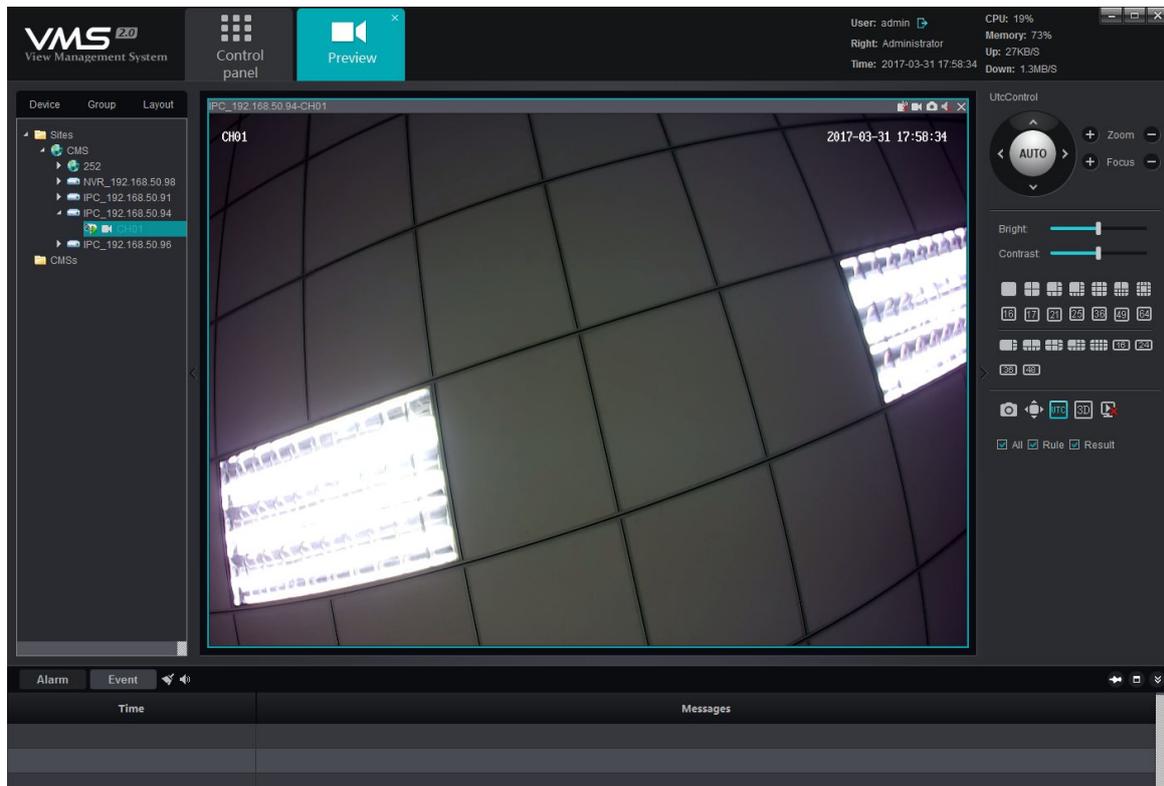
RecPlan has default whole day template and working day template; in case the user need other RecPlan template, click “User Template” to add; start to record as the RecPlan set, the red arrow indicated place in the figure shows the recording status of the channel; red means the channel is working, blue means otherwise.

Automatic overwriting included Enable and Disable Status. When enabled, the earlier record file will be automatically overwritten as the disk is full; if disabled, the recording shall suspend when the disk is full; recording mode includes four kinds of 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 alarm has been triggered; timing recording refers to only timing record; alarm recording means record as alarm triggered, stop recording means no recording. Pre-record and time delay function only specialized in the two modes of timing & alarm recording and alarm recording, particularly the alarm triggered 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 partition of disk for recording while some others not; the default is other disks can be used for recording besides system disk. Click “Save” to effect as the configuration completed.

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

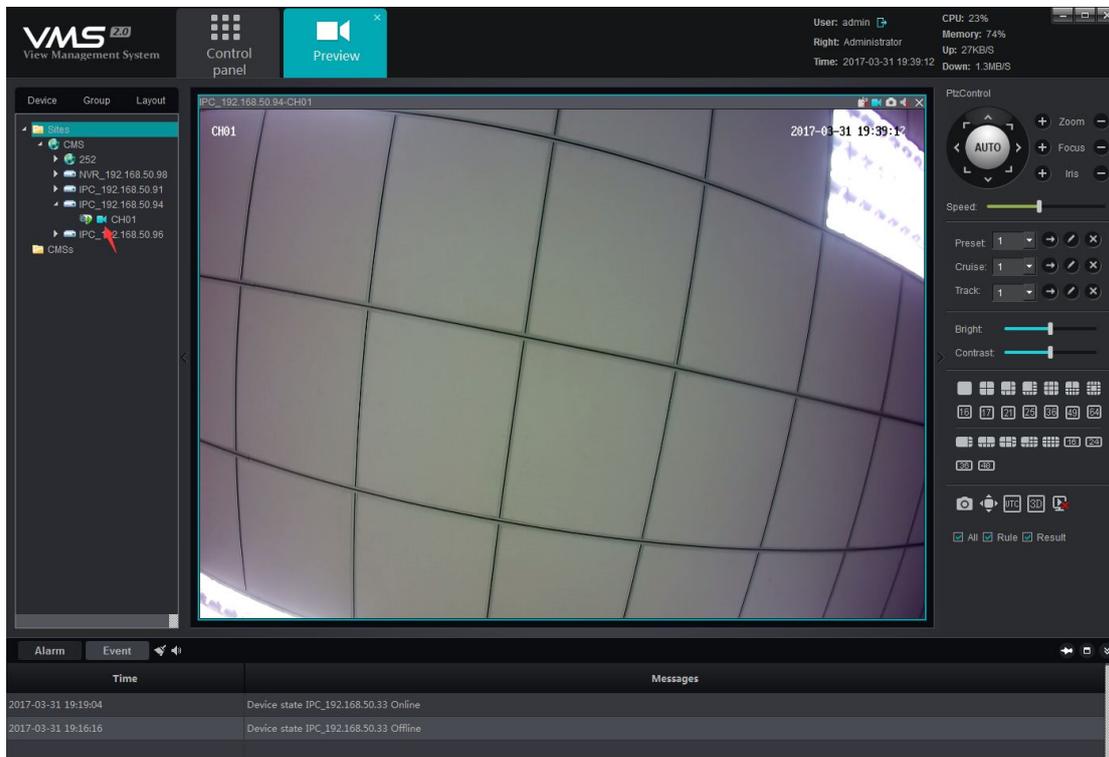
2.Preview

Click “Preview” in the main interface to enter into Preview module:



As shown in figure, 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 can manually switch the number of split screens according to the actual demand. Split screen mode includes standard split and wide-screen split, corresponding to different window scale. The differences between them have been elaborated in the layout module, thus no separate introduction now. Besides the regular kinds of split screens, there are several special-shaped splits for customers to select corresponding numbers as the actual situation.

Double click in the device list on the left side or drag the channel to window opens the preview of the device channel (channel opened preview indicates a triangle image, showing this channel is in preview):



Note: the green triangle on the channel shows this channel is in preview in figure 1; the image in figure 2 shows the local recording status of this channel, white  shows this channel doesn't turn on local recording, blue  shows this channel turns on local recording and is working; right click on the channel can Open/Close local recording.

2.1 Device/Right Click Function of Channel

1) Open all main streams

Open device main stream with one key, maximum 16 channels main stream can be opened with one operation;

2) Open all sub streams

Open device sub stream with one key, maximum 16 channels sub stream can be opened with one operation;

3) Close all previews

Close all previews that this device opens with one key;

4) Open recording

Open the local recording of all channels of the device with one key;

5) Open/close intercom

Open the intercom of PC and device

6) Open/close recording

Open/close the local recording of this channel;

7) Main stream (the option works only in the mode of non-automatic stream)

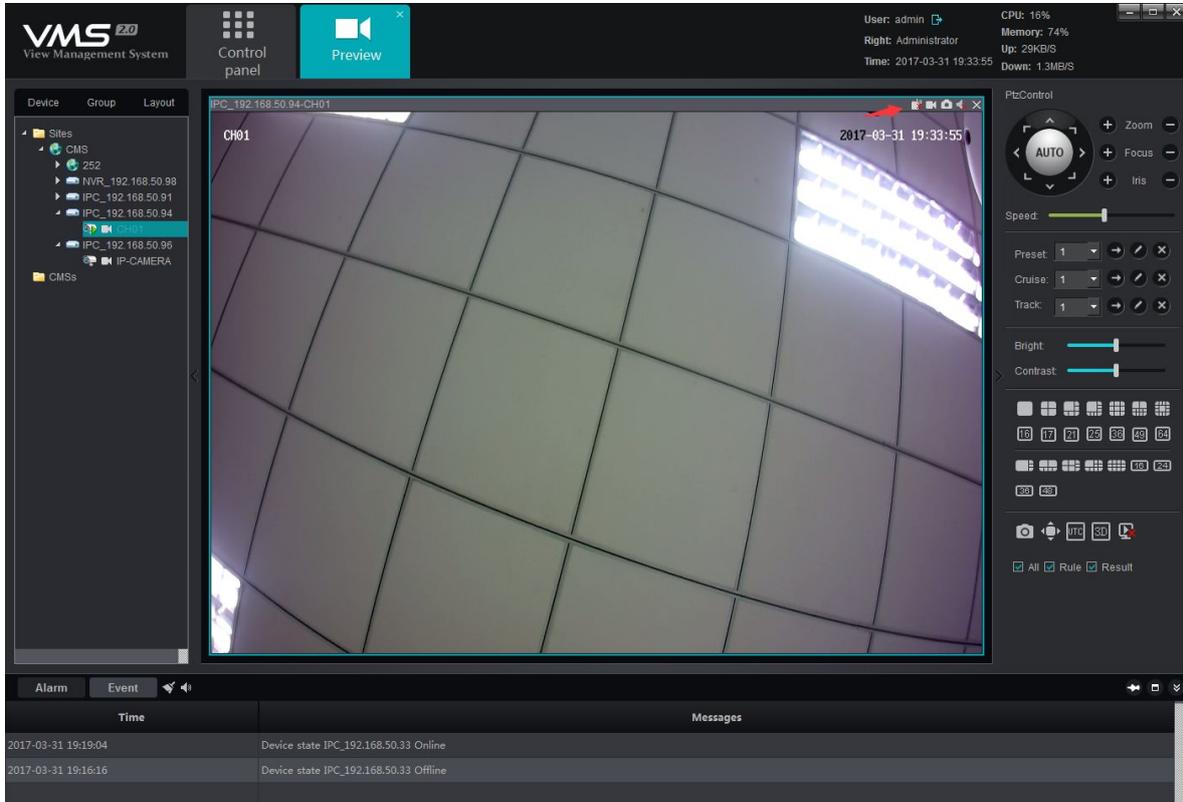
Manually switch the stream to main stream for the channel;

8) Sub stream (the option works only in the mode of non-automatic stream)

Manually switch the stream to sub stream for the channel.

2.2 Preview Window Toolbar

Open preview, there is a row of shortcut toolbar above the preview, as indicated in the figure:



- 1)  channel intercom switch, click on it can Open/Close intercom of PC and this channel;
- 2)  device recording switch, click on it can Open/Close the local recording of this channel, and blue  shows it is in the on-state, while white  shows it is in the off-state;
- 3)  capture button, click on it can capture the current picture of this channel;
- 4)  audio preview switch, click on it can Open/Close the audio of this channel, and  shows it is in the off-state,  shows it is in the on-state;
- 5)  preview close button,click on it to close the current preview of this channel.

2.3 Preview Interface Right Click Function Button Overview

There is a row of function buttons on the right lower side of the preview interface, , among which:

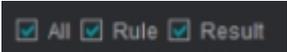
1)  the capture button, select preview window, click on this button to capture the picture in the selected window;

2)  fullscreen button, click on it can switch the selected window into fullscreen;

3)  Open/Close button for UTC function button,click to open the UTC function,need the front-end equipment support;

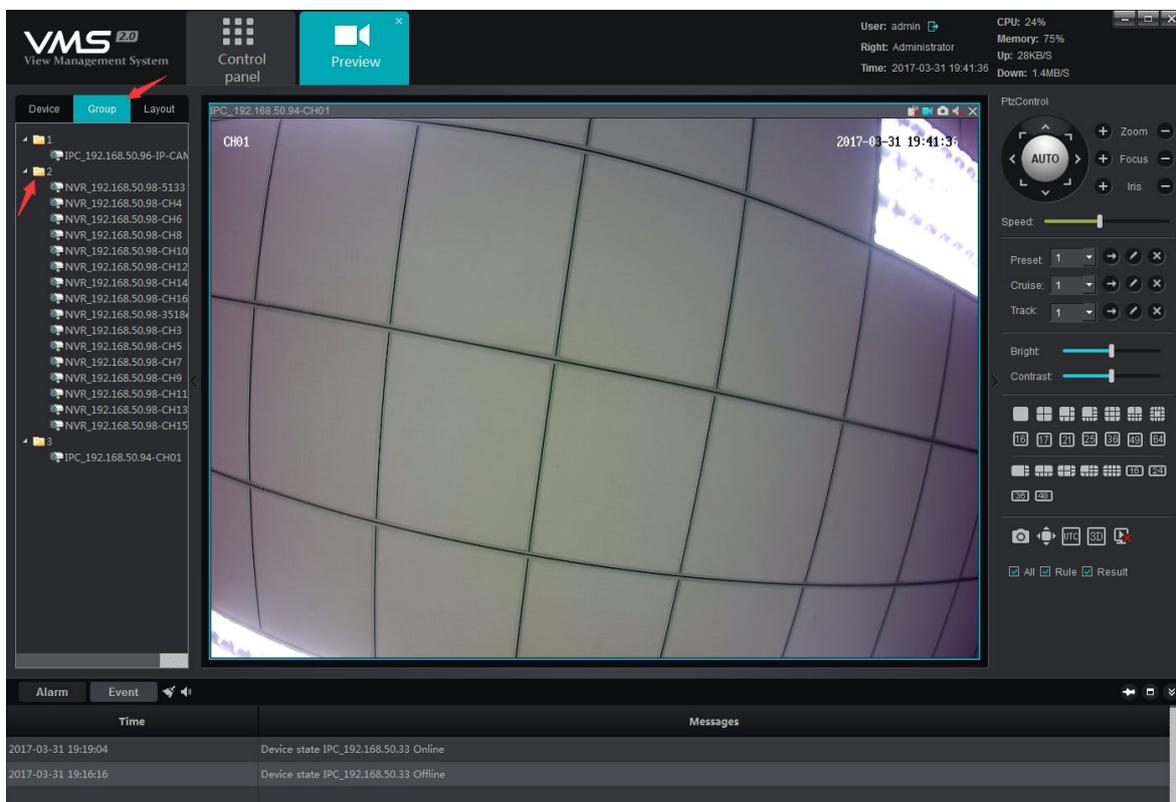
4)  Open/Close button for 3D positioning function button, click to open 3D positioning function, need the front-end equipment support and access through I8H protocol;

5)  close all current preview button, click on it can close all preview opened at present.

Intelligent detection  , front end device supporting intelligent detection including NVR and IPC; as selected, the setup intelligent rule can be displayed in the preview screen; if target triggers the intelligent alarm, the target triggering the alarm can be displayed in the preview screen.

2.4 Device Grouping Polling

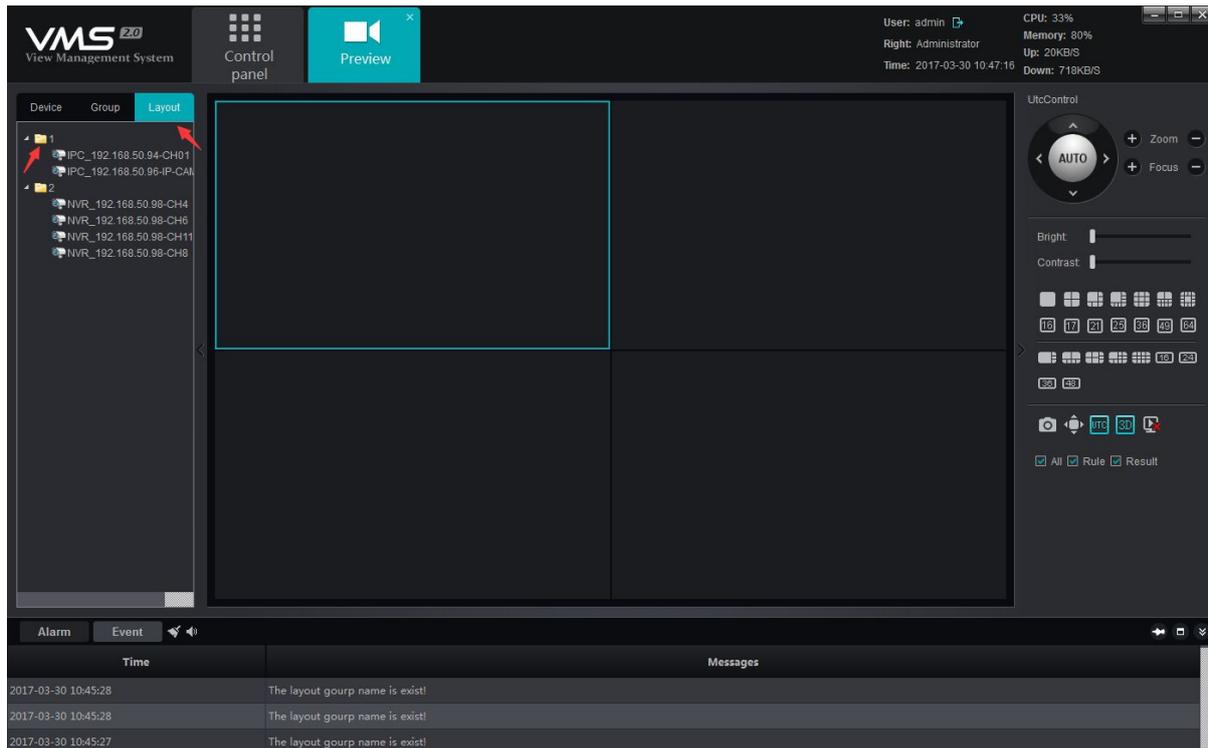
Add two or more groups (see device management—grouping for specific operation), as group created, switch to group page in the preview interface, as shown in figure:



Right click the selected group can operate on “Start polling ” and “Stop polling”, the interval between polling can be set up in the local configuration module (elaborate later) and the default interval is 30 seconds.

2.5 Device Layout Polling

Add two or more layouts (refer to device management—layout for specific operation), as layout created, switch to layout page in the preview interface, as shown in figure:

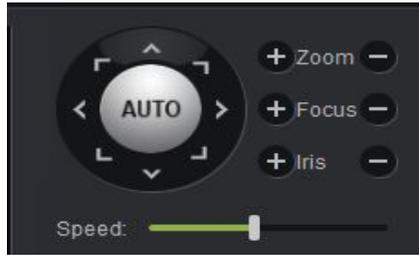


Right click the selected layout can open the preview of this layout with one key; select “Start polling” can start polling among several layouts and the interval between polling can be set up when the layout has been set up; click “Stop all” stops the polling or close current preview.

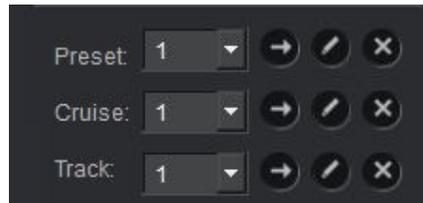
2.6 PTZ

2.6.1 PTZ Control

The camera has been controlled in 8 directions, including up, down, left, right, upper left, left lower, upper right and right lower; zoom can control the camera to zoom in or zoom out and adjust the visual angle; focus can 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; as shown in figure:



2.6.2 Preset, Cruise and Track



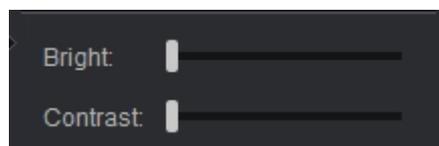
1) Preset: the rotation of the PTZ camera requires the setting of the direction of the preset, click  can set up the preset, maximum 255 presets can be set; in case the preset shall be adjusted, select the preset, click  to call; click on  to delete the preset.

2) Cruise: as the preset done, click on  to edit and set the Cruise path, maximum 255 Cruise paths can be set; click on  can call the Cruise path set; click on  to delete the Cruise path set.

3) Track: click on  to edit and set the track; click on  can call the track set; click on  to delete the track set.

2.7 Picture Parameter

As the preview opened, the picture parameter can be adjusted; the adjustment here doesn't change the front end parameter of IPC but the display effect of the picture in the client end has been adjusted; as shown in figure:



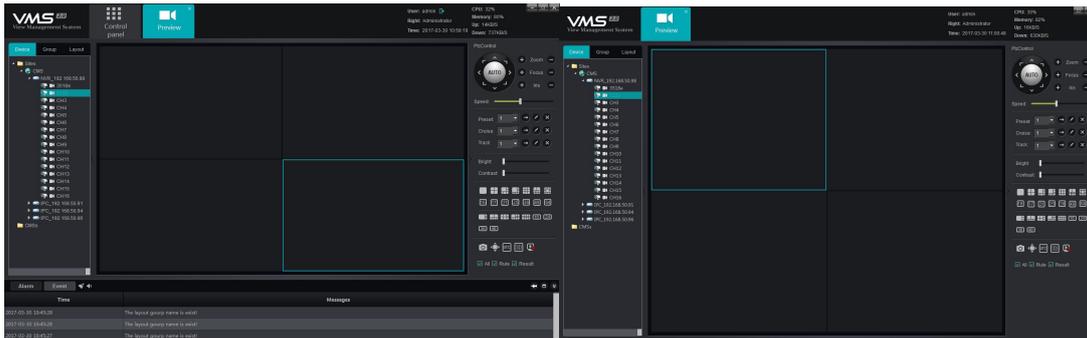
User can adjust the relevant parameters as bright, contrast according to the demand.

2.8 Preview Digital Zoom

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

2.9 Preview Multi-screen Display

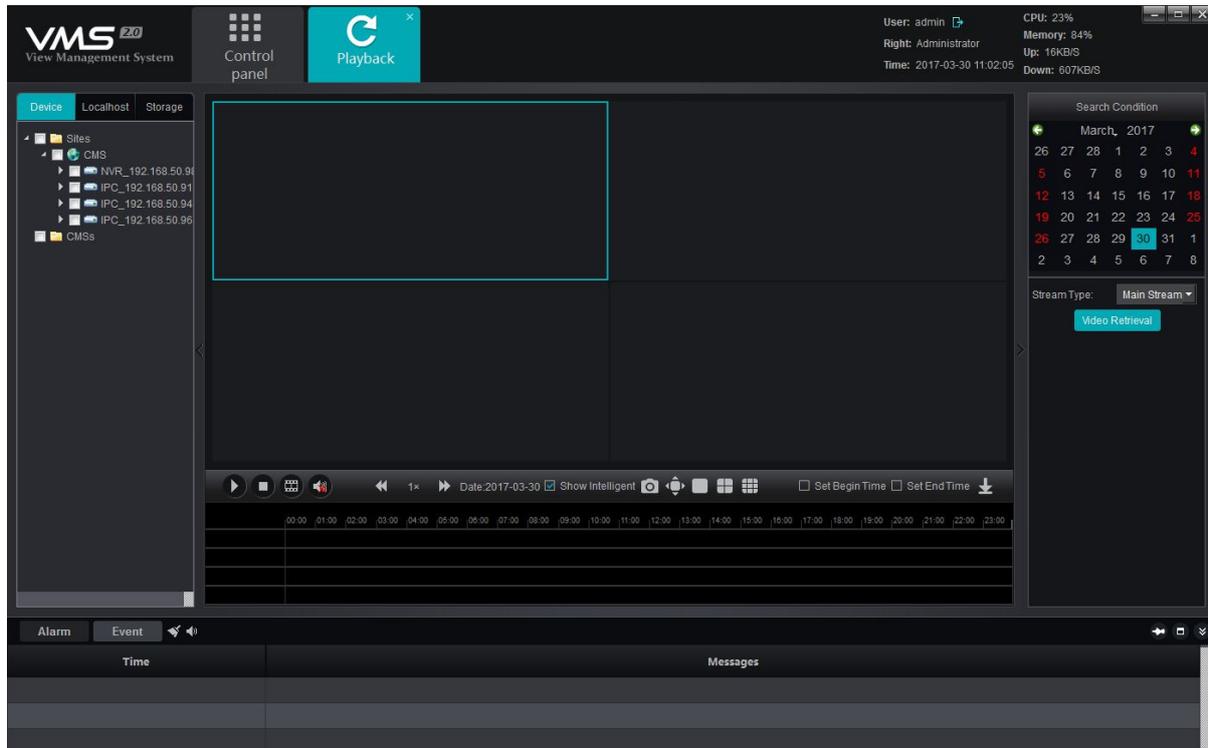
Preview module can open multiple modules and each of them is active and independent. If user VGA card supports multi-monitor output, the demand of multi-screen display can be fulfilled. Considering the actual situation, the maximum preview module to be opened can be restricted to 5. For instance, two preview modules have been opened, drag one of them out (the same operation can drag the module back as it has been dragged out) to another monitor, the specific effect as shown in figure:



Among them, the one on the left side is the primary screen and right side is the complementary screen; the operation of preview between two screens doesn't influence each other, and the close of complementary screen will not influence the primary screen, however, the complementary screen will be closed if the primary screen closes. User can select the number of the preview screen to be opened according to the actual demand in the actual application, for instance, one screen can be selected to open Cruise and display independently in one monitor and the other screen to carry out the operations of temporary preview, monitoring and intercom.

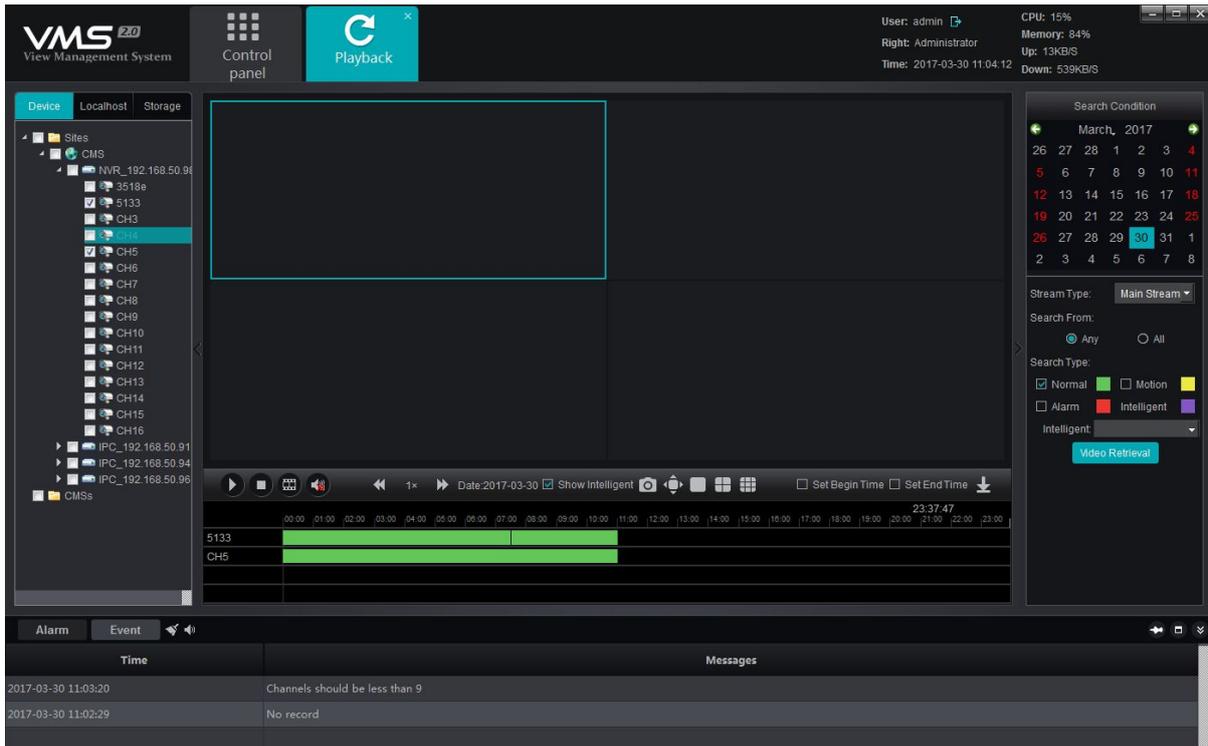
3. Video Playback

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



3.1 Video Search

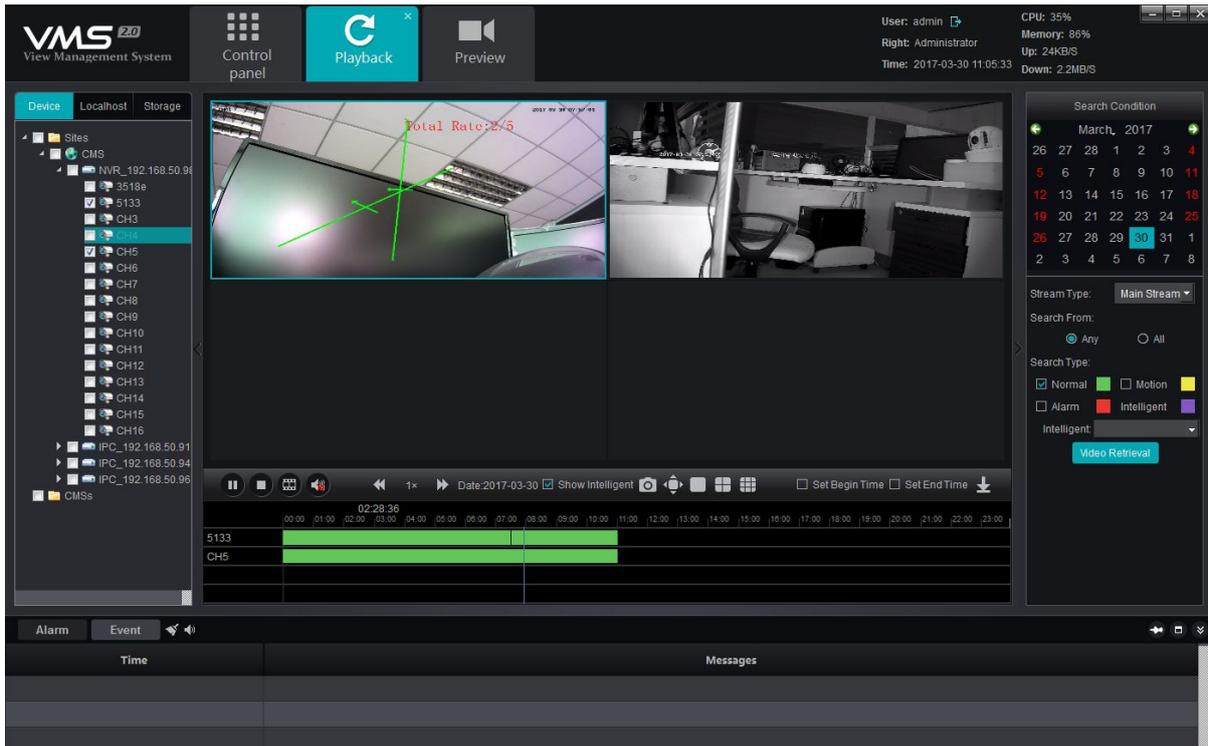
Select the device channel for the video to be playback in the device tree on the left side (**note: only the video in the same device or same storage server can be played simultaneously, and only 9 channels can be selected at most each time**), select the storage path of the video on the left side, then select the stream type of the video to be playback in the column of “stream type”, select the date on the calendar, click on “video search” and then the system starts to search the video and then the result will be displayed on the search result panel. Video path includes “device”, “local” and “storage”, among which, the device video refers to the video stores in the hard disk or the SD card of the front end device, local video refers to the video stores in the PC of the client and the storage video refers to the video stores in the storage server. The stream type includes main stream and sub stream. When customer opens dual stream in the course of recording, the relevant video can be searched according to the demand. The search result has been shown in the figure:



(Note: VMS2.0 differentiates NVR1.0 and NVR2.0; the search interface of NVR2.0 is slightly different. The illustration here takes NVR1.0 as example; see the IE or local interface of NVR2.0 for the search interface of NVR2.0)

3.2 Video Playback

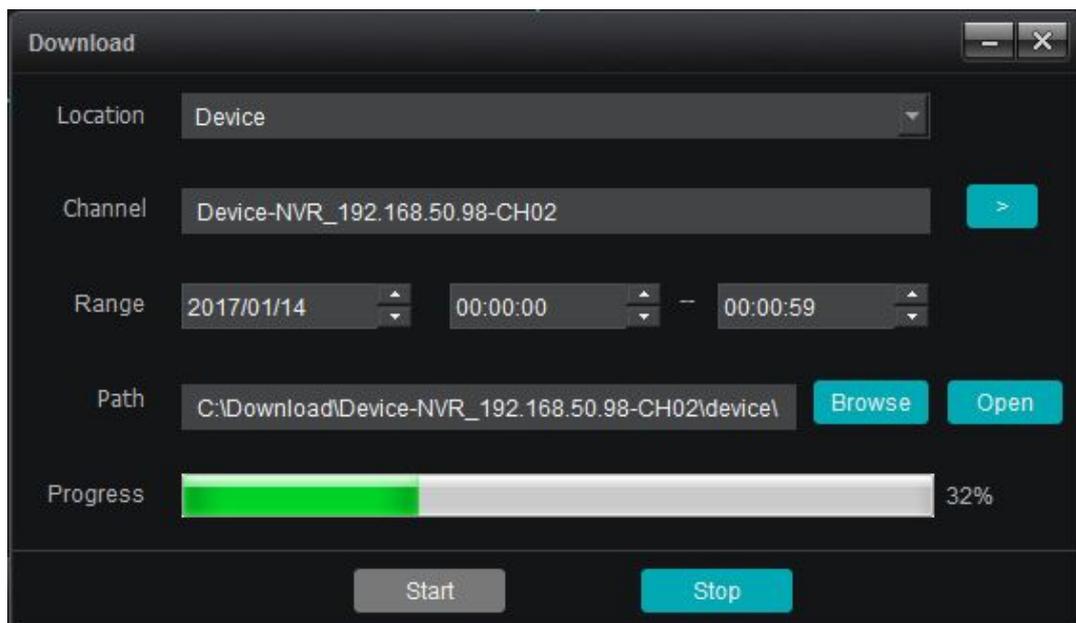
Click on  in the interface can start/pause play,  stops play, place the mouse on the video bar and scroll the wheel can enlarge/reduce the scale of video bar; double click mouse left on the video bar, the play can be located, and double click in the course of playback can switch the locate, as shown in figure:



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

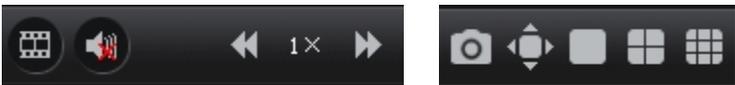
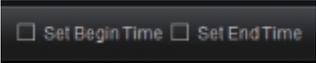
3.3 Video File Download

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



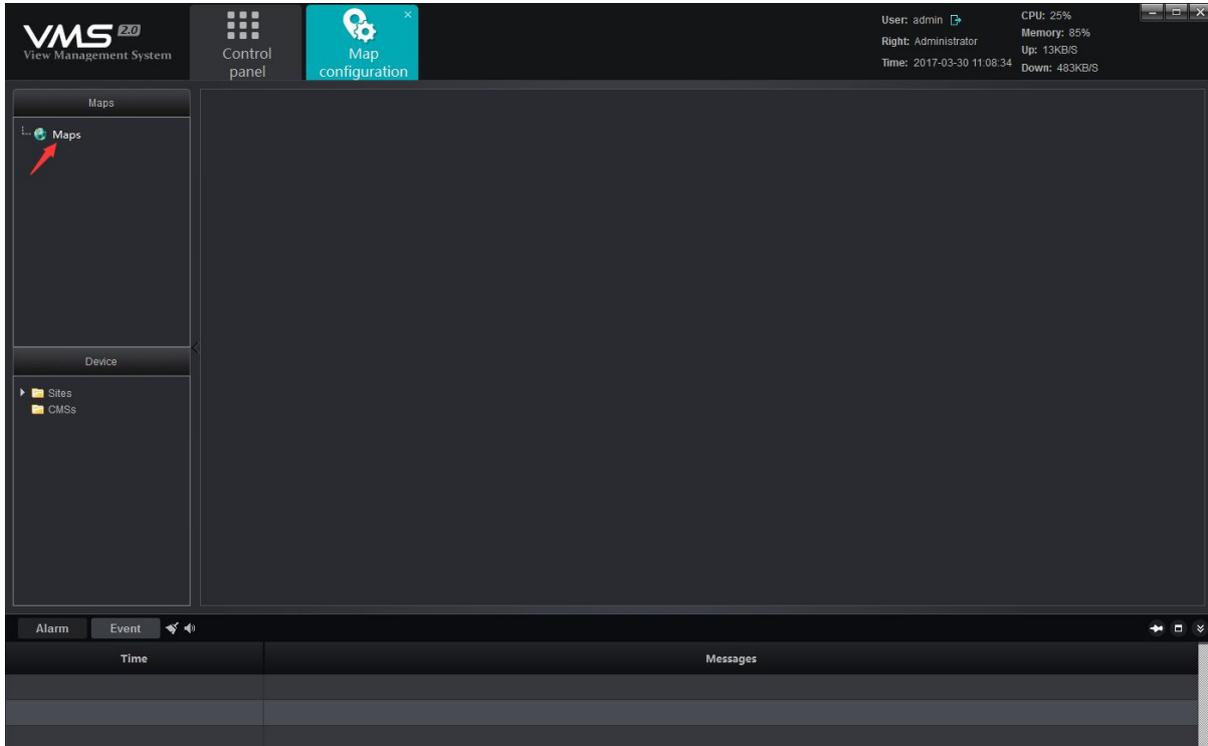
Select the video position (including device video and storage server video), channel, range (i.e. video download time range) file save path in proper order, click on “start” button to start download; as progress bar reaches 100%, the download completed.

3.4 Toolbar Overview

The functional buttons  in the interface, among which,  is frame play, click on the button, the playback will be played in manner of frame; one frame will be played for each click;  is audio switch, which can turn on/turn off the audio of playback;  play speed adjustment button, with which, user can adjust the play speed between 1/16 and 16;  capture button, the picture can be captured in the course of playback;  fullscreen button, click to switch to fullscreen (under the fullscreen mode, right click can exit);  split screen switch button, user can manually switch to 1 split screen, 4 split screen and 9 split screen as demanded;  begin time and end time, locate to certain play point, select the begin time adds a sign on the video bar, similarly, the end time will be the same. When the begin time and end time selected, click on “Download” to rapidly download the video between two tags to facilitate the operation of user.

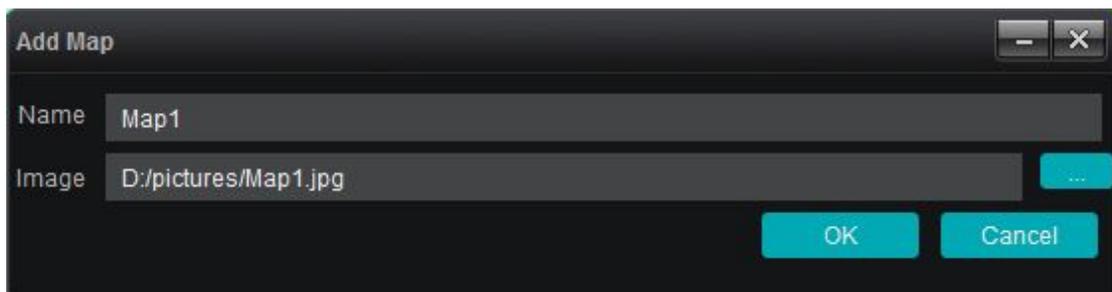
4. Map Configuration

Click on “Map configuration” button in the main interface to enter map configuration module, as shown in figure:

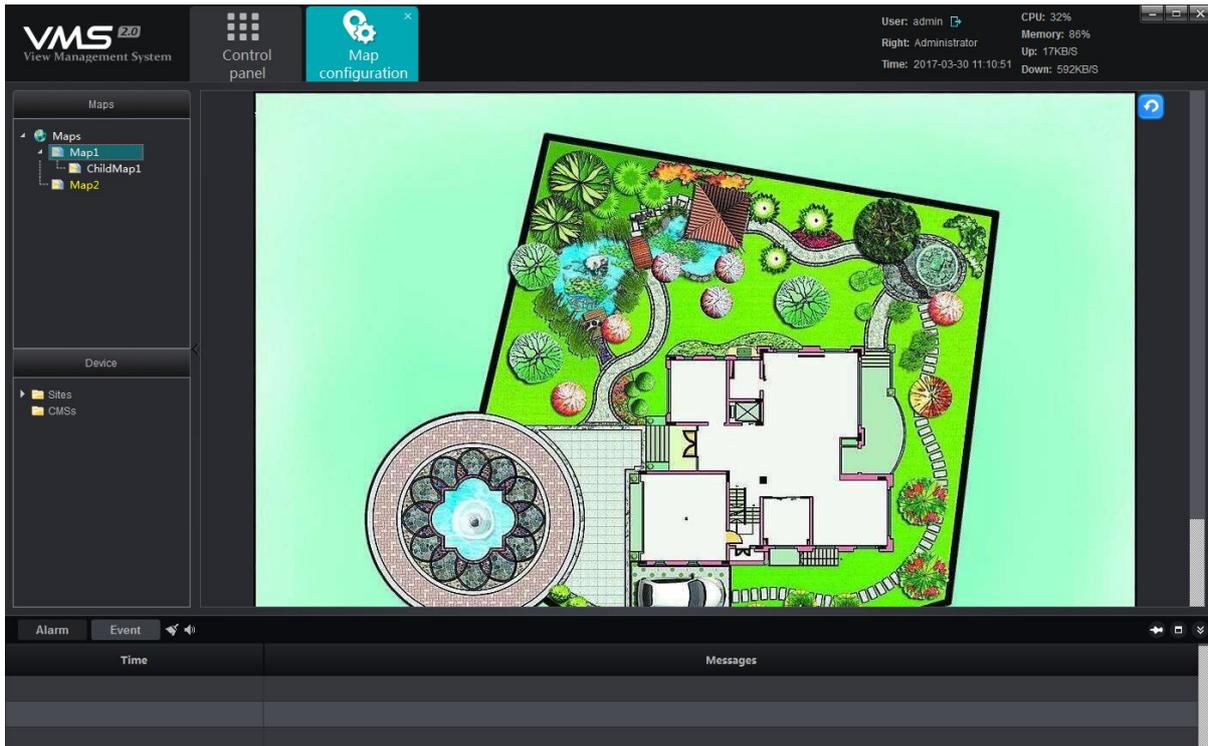


4.1 Add Map

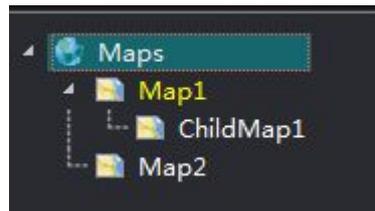
Right click on the signed place in the figure, select “Add map”, pop up the add box:



Fill in the name, select picture, click “OK” to add map, several maps can be added; meanwhile, child map can be added under the map, add completed, as shown in figure:



Among them, the map opened will be indicated with yellow for differentiation



4.2 Map Tree Right Click Function

1) Add map: add new map

2) Delete map: delete the current map selected

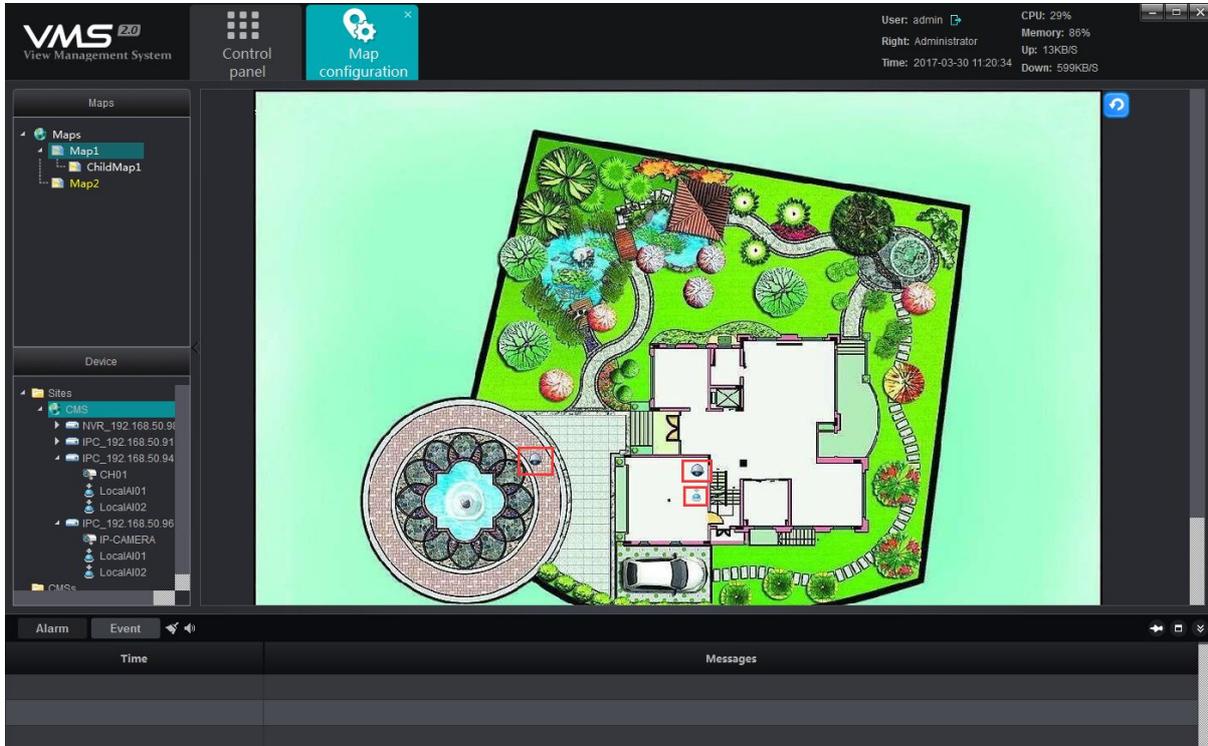
3) Add child map: add child map under the current map list; one map can add several or multi-level of child map; as child map added, drag the child map to the main map to complete association and the

child map shall be displayed in the main map as the icon , double click of the icon in the main map

can switch to the corresponding child map; and click on the  button in the child map can return to main map.

4.3 Map Deployment

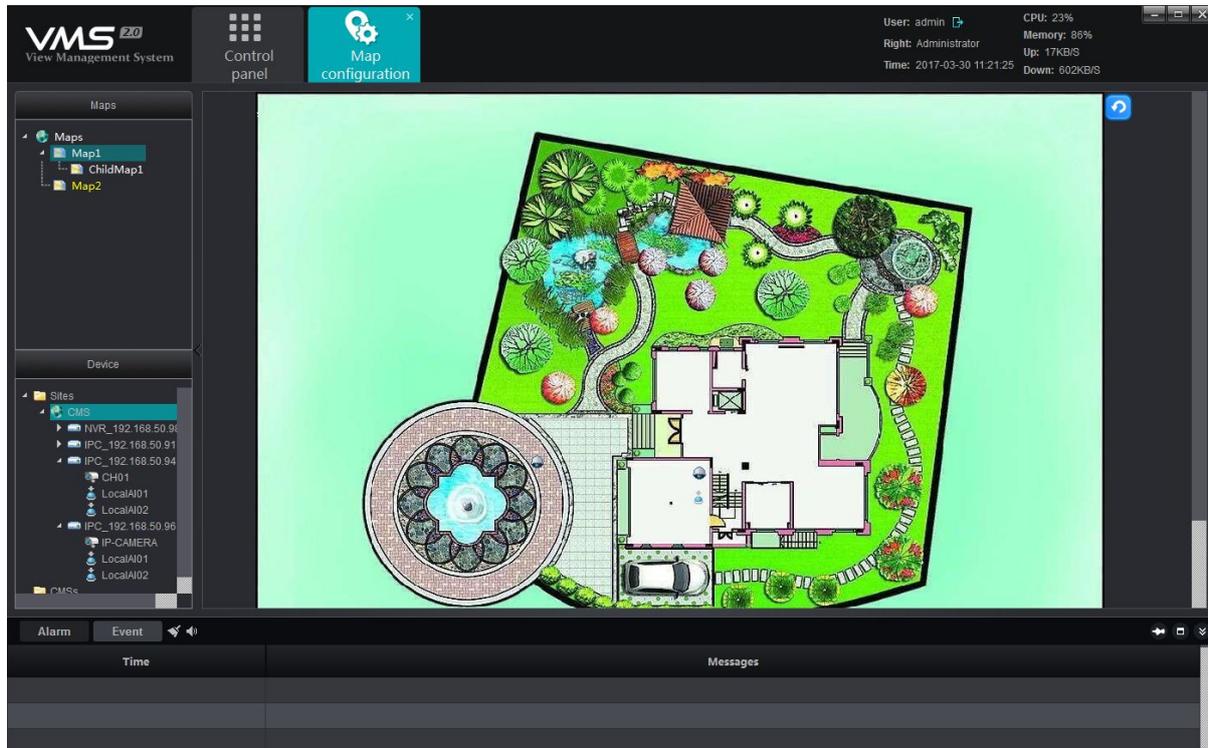
Drag the device channel or alarm input on the left lower side to the map, then the deployment completes, as shown in figure:



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, it shall be deleted. Place the mouse on the map, scroll the wheel can zoom in/zoom out the map. The channel deployed to the map shall not be dragged repeatedly, and place the mouse on the deployed channel, the channel information shows.

5 Map Management

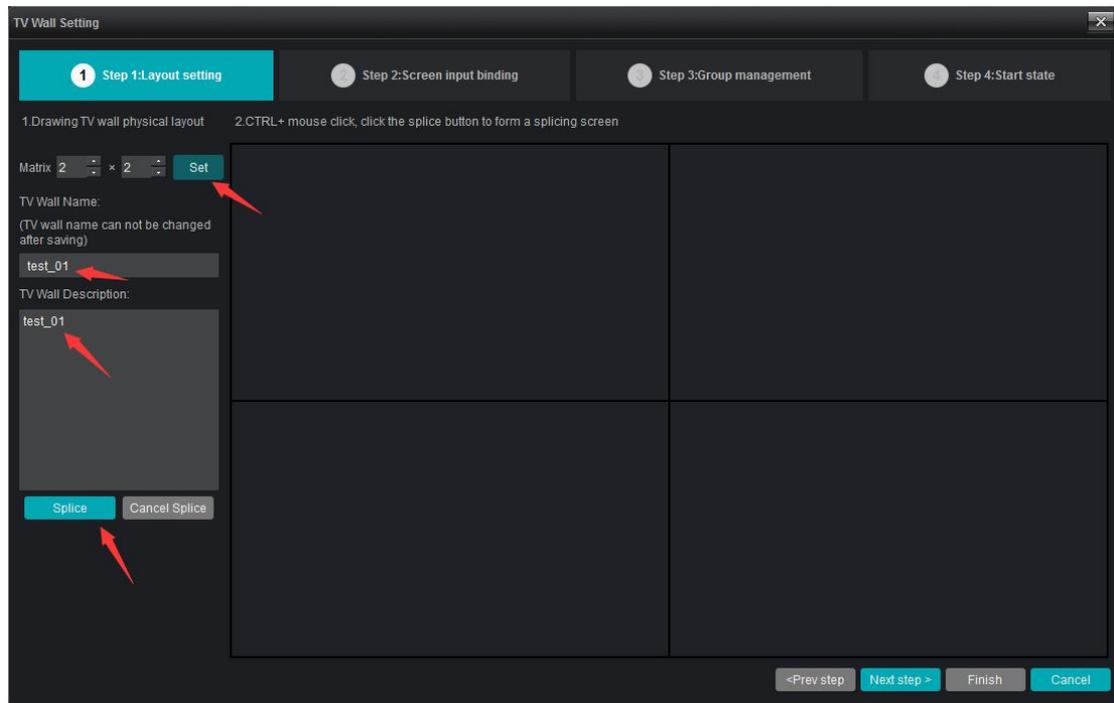
Click “Map” button in the main interface to enter map management module, as shown in figure:



Double click on the map shows the map configured and deployment channel; the module is operation module, on which, the relevant configuration and modification can't be executed on the map; right click on the channel deployed on the map opens the preview and playback of the corresponding channel. User, in the actual application, can swiftly call the preview and playback of the corresponding channel according to the map, which makes the operation clearer and easier. When alarm triggered, and the associated channel deployed on the map, the channel icon on the map turns into red; when alarm input alert has been triggered and the alarm input has been deployed on the map, the corresponding alarm input icon turns into red as well. In addition, in terms of the device added in I8H protocol, the alarm input switch can be manually controlled on the map (the function can only work under I8H protocol).

6.1 Layout Setting

Set TV wall layout, fill in the relevant information:



1) Matrix layout setting: user can set the matrix layout as actually demanded, maximally support 8x8 layout; when layout selected, click “set” to effect.

2) Fill in the name of TV wall scheme, user can customize the name of TV wall scheme as demanded (note: the name will not be modified as defined, please pay attention).

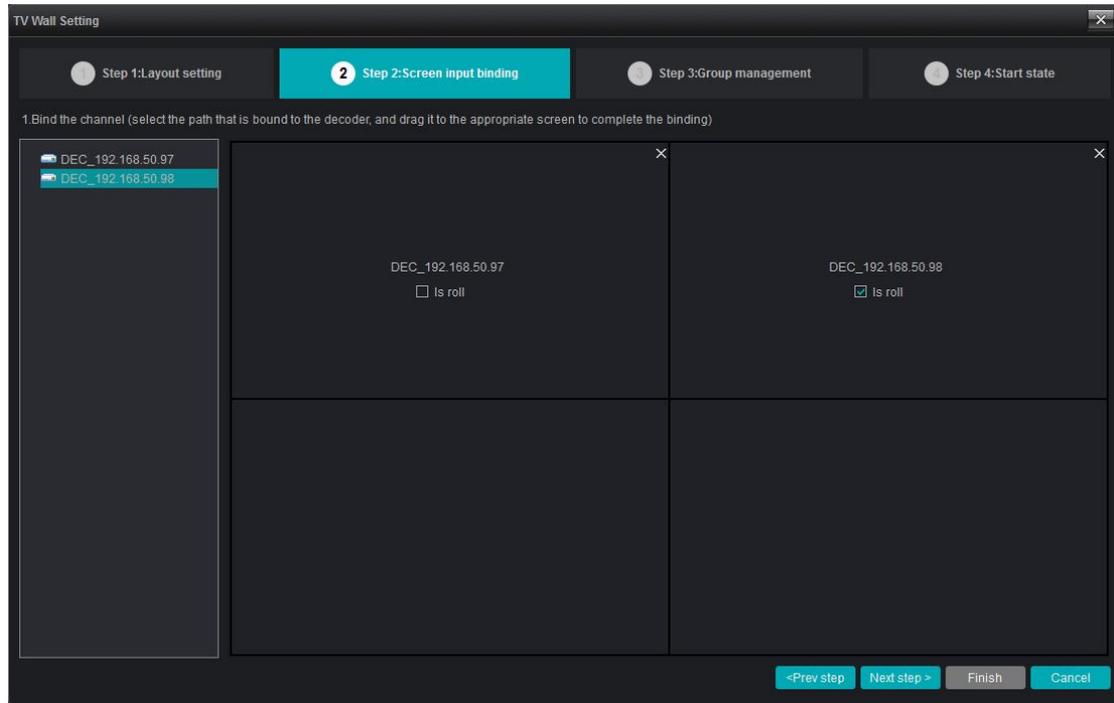
3) TV wall scheme description: user describes the scheme for differentiation, optional.

4) TV wall splice: user can set the TV wall as splice or non-splice.

As completed, click “Next step”.

6.2 Screen Input Binding

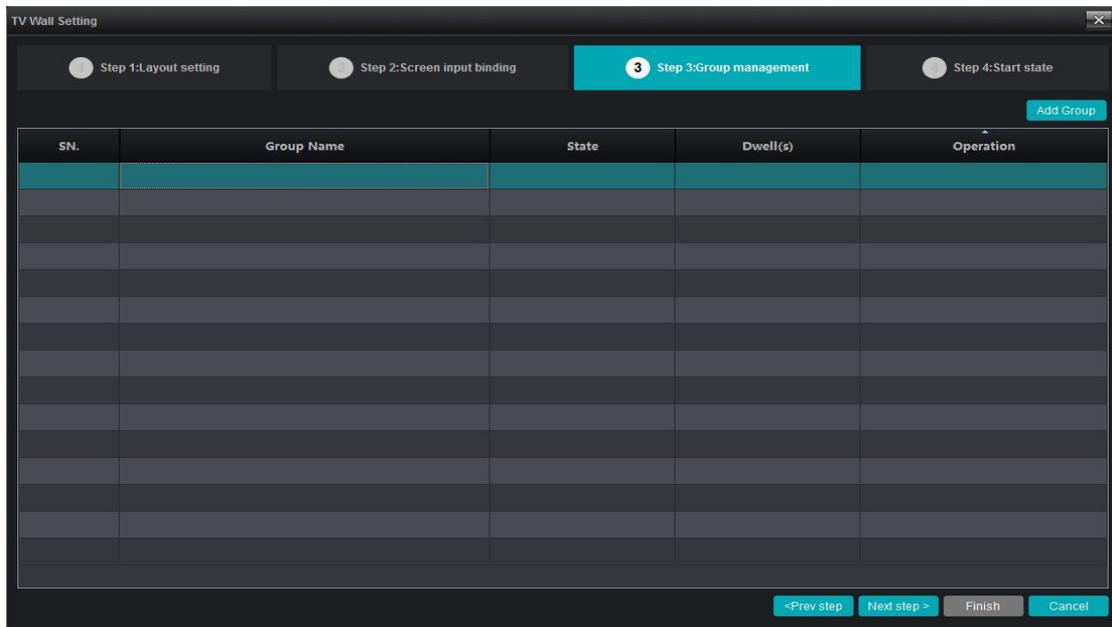
Drag the decoder added to the layout set, as shown in figure:



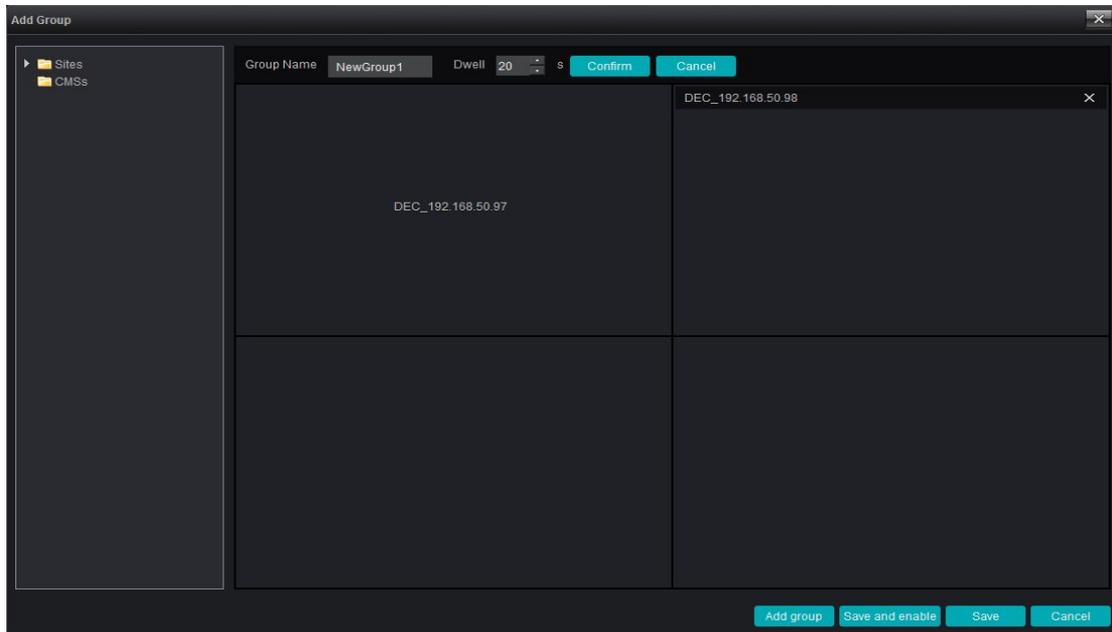
In this interface, user can set layout as the situation, associate the decoder to the TV wall matrix layout; if the screen has been planned as roll screen, please select “Is roll”; the setting completed, click “Next step” (note: if set as roll screen, the roll has to be enabled and the channel decoding can’t be dragged to wall manually; in addition, to avoid chaos, a same decoder can only be allowed to exist in one TV wall rule).

6.3 Group Management

Enter group management, as shown in figure:

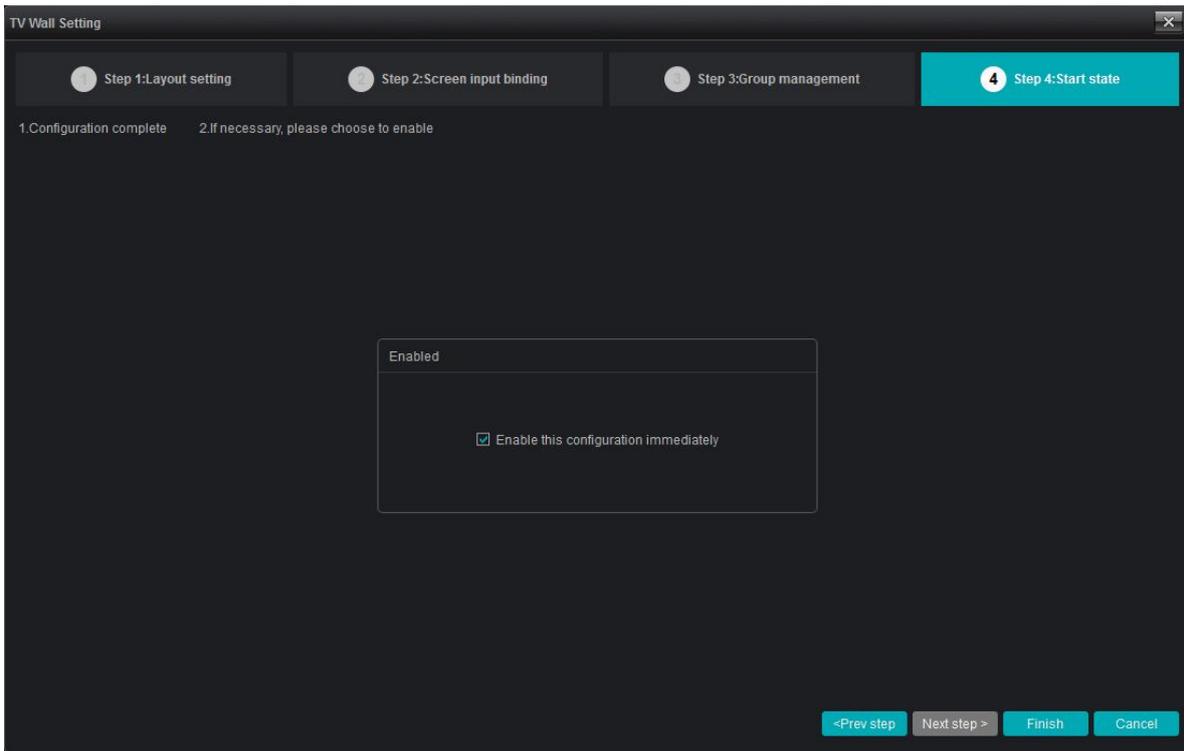


Click to add group (note: only roll screen can add group; if there is no roll screen, directly click “Next step” to skip this page):



The screen 2 in the figure is roll screen, group can be set; first of all, set the group name and the stay time of this group, user can define the group name as the actual situation; group stay time can be selected by user between the range of 20 to 6,000 seconds. Click “Confirm” as setting completed, then drag the device channel to split screen 2, complete the layout of the first group, as shown in figure:

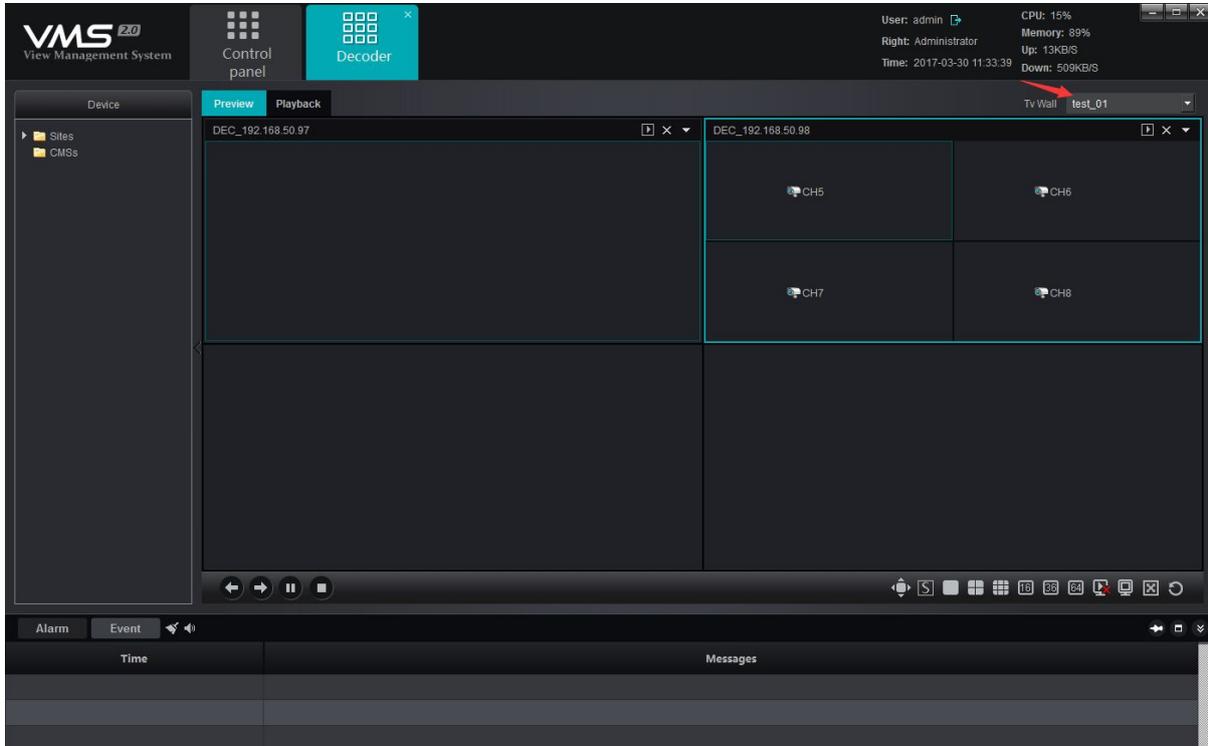
6.4 Enable Status



If the configuration shall be enabled as the setting completed, select “Enable this configuration immediately” and then click the “Finish” button below. If it doesn’t need to be enabled, directly click on “Finish” to exit the interface. As the setting completed, this configuration scheme shows in the Decoder Configuration list.

7. Decoder Management

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

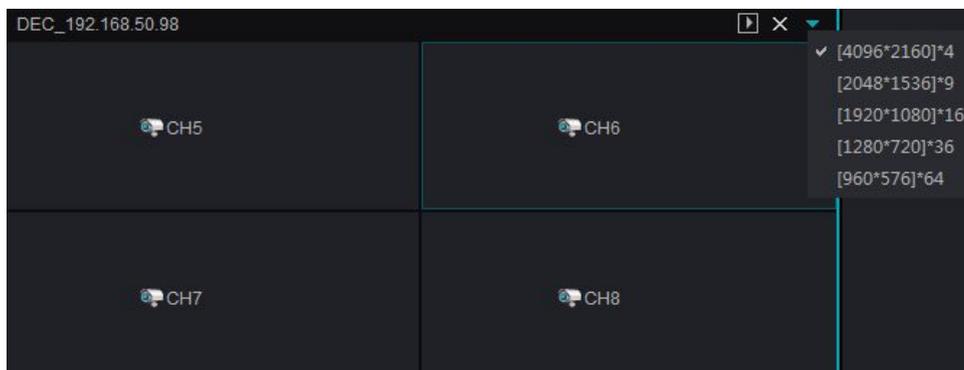


Firstly, drop-down the check box in the signed place of the figure to select TV wall, all rules set and enabled shows in this check box, select one scheme.

7.1 Decoding Mode Selection

As the scheme selected, please set the decoding mode of the decoder to ensure the normal decoding; the decoding mode is relevant to the decoder, the corresponding decoding mode differs for 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 in figure:

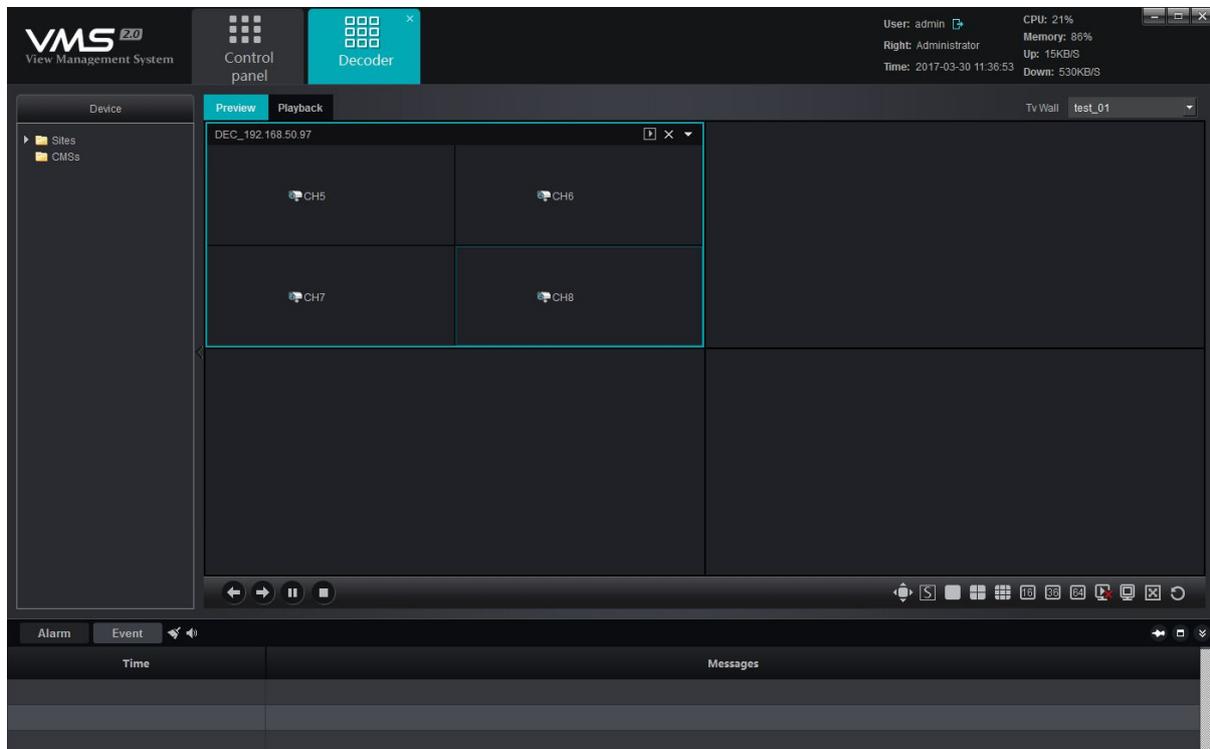


Decoding mode represents the current decoding capability of the decoder; the decoder listed in the

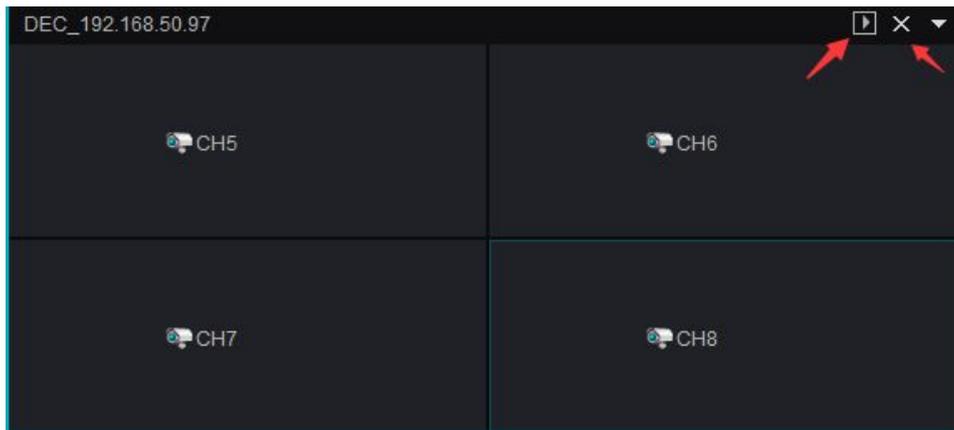
figure supports 3 decoding modes, i.e. 16 channels 720 x576, 9 channels 1280 x960 and 4 channels 2048 x1536 (note: the subsequent number represent the maximum resolution of decoding, e.g. under the 9 channels mode, the maximum resolution of decoding is 1280x960; the decoding mode of different decoder differs as well). It shall be normally decoded and displayed as the resolution of the front end IPC has been guaranteed to not exceed the resolution restriction of the current decoder mode.

7.2 Decoding on the wall

As the scheme selected, select the channel for decoding on the wall in the device list on the left side, drag the relevant decoder to the corresponding decoding screen to complete decoding on the wall(note: the screen set as roll screen fails to drag the channel manually for decoding, it shall only be used for roll):



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 open the decoding module preview button, after clicking will open preview on the current page, which is convenient for customer to view the picture on the wall.
- 2)  is delete the channel button, after clicking will delete the decoding channel of the current split screen.

7.3 Decoding rolling

In case Decoding rolling to be fulfilled in certain decoder, the decoder must be selected for Cruise in the course of TV wall scheme setting (elaborated in 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, click 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 Preview Operation Interface Function Button Overview

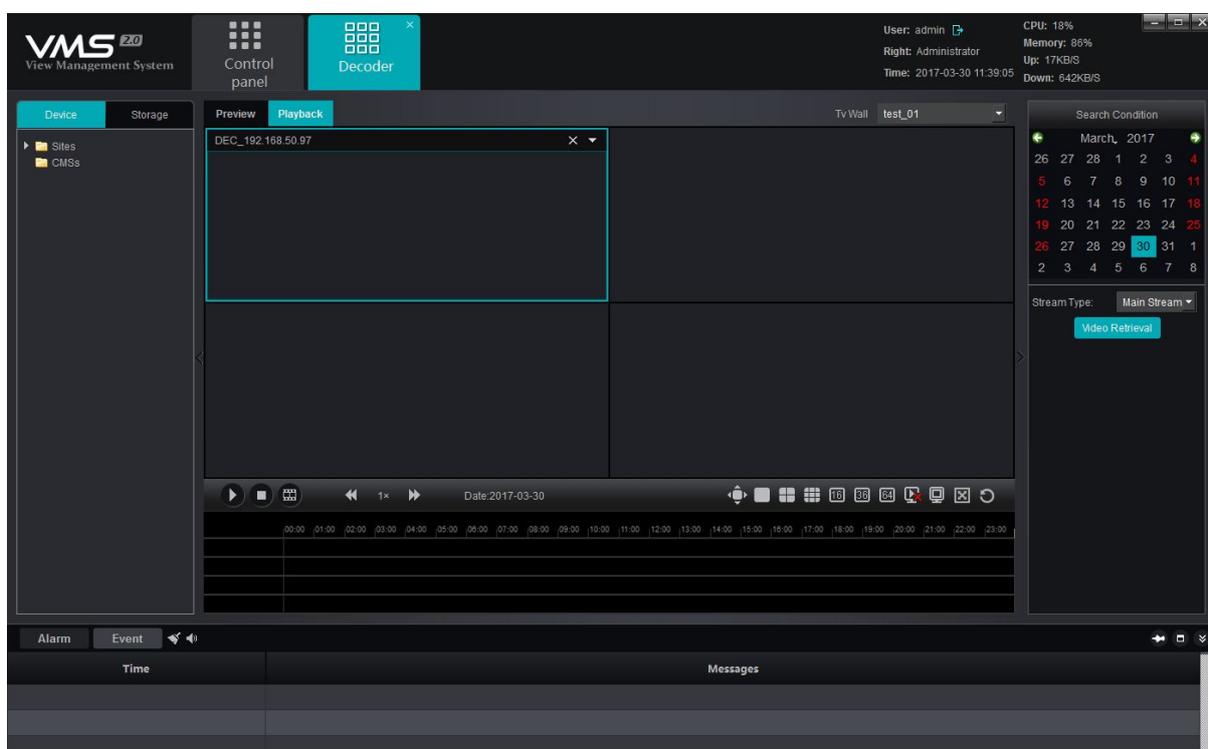
In the preview operation interface, there is a row of function buttons  below, among them,  are roll control buttons,  is manually switch to previous group button;  is manually switch to next group button;  is Open/pause roll button;  is stop roll button.

 is split screen switch control button; as user selected the decoding screen,  the button here can be used to switch the number of split screens in order of 1, 4, 9, 16, 36, 64;  is full screen control button, to open full screen mode, click the right mouse button can exit full screen mode;

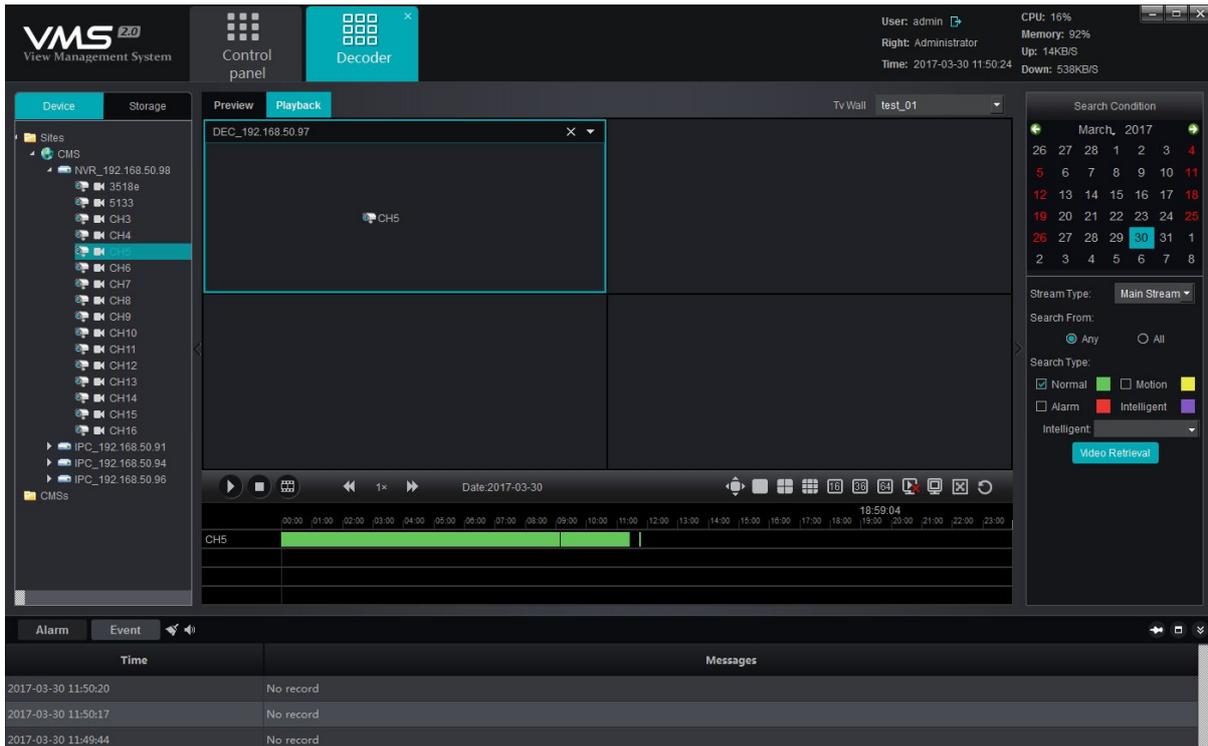
 is sub-main code flow switch button, to switch the code flow type of the wall;  is decoder offset control button, to control decoder offset, only splice decoder can support offset settings;  is splice control button, user can open/close decoder splice;  is the channel clear button,  used to clear all decoding channels in certain decoder with one key,  used to clear all decoding channels in all decoders with one key.

7.5 Decoder Playback

Switch to playback operation page, as shown in figure:



Drag the channel to be playback into the decoder, then select the search condition (date and video path), click on the “video retrieve” button below to search the video file of the corresponding channel; the operation here is similar to the operation of the video playback module operation; all the playback channels must be in the same device, and maximum 9 channels of playbacks simultaneously. As the video search completed, click the  button below or operate the mouse to double click to locate and start to play, double click of mouse can relocate in the course of play, as shown in figure:



7.6 Playback Operation Interface Function Button Overview

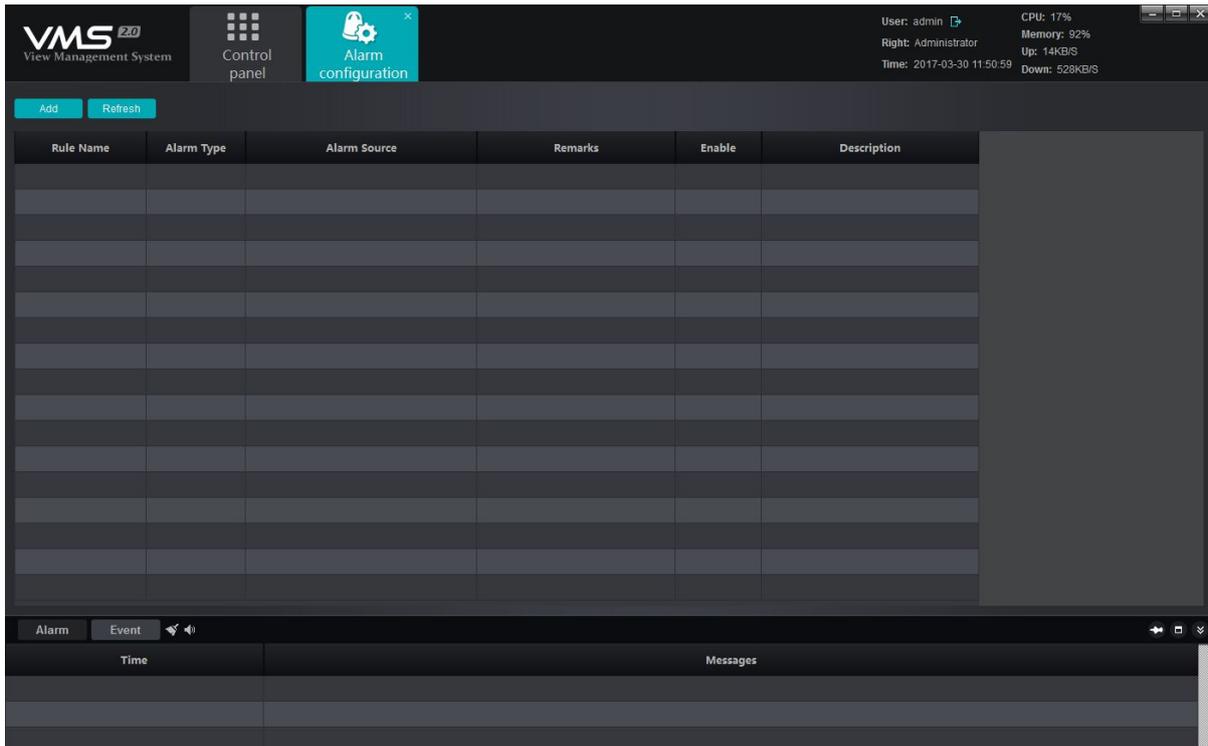
The function buttons in the lower part of playback operation interface



since it has been elaborated before, it shall no longer be introduced in detail. Its functions are successively: play/pause, stop, frame play, playback speed adjustment, full screen, split number adjustment button, decoder CLS, splice offset settings, splice open/close, TV wall CLS.

8. Alarm Configuration

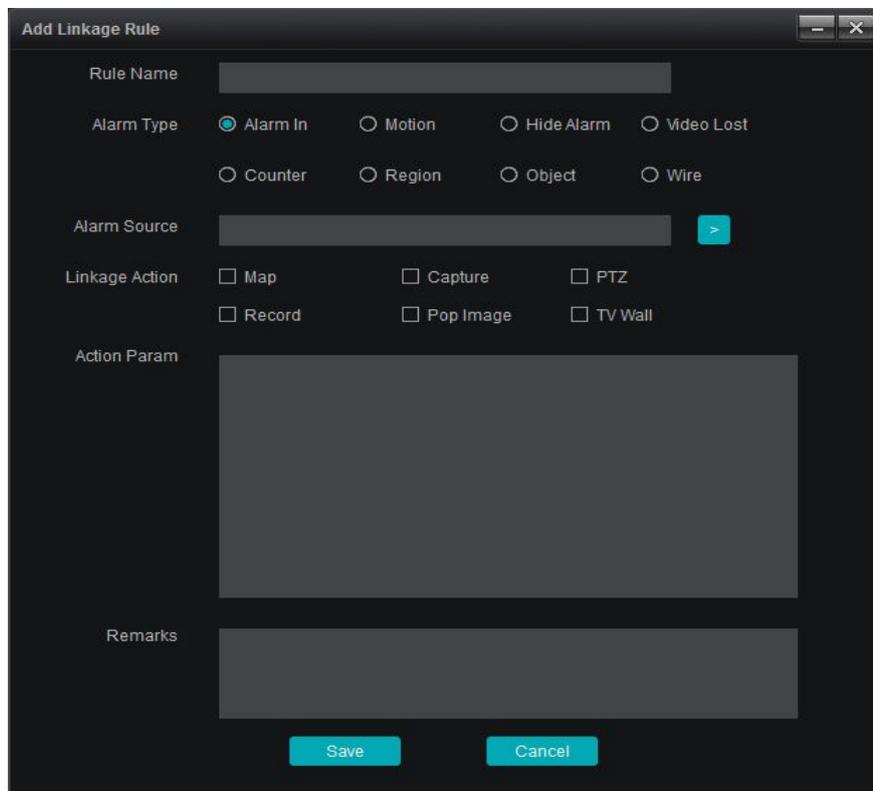
Click “Alarm configuration” button in the main interface to enter alarm configuration interface; alarm configuration is the alarm rule setting module; if user wants to fulfill alarm linkage in the client end, the alarm linkage rule must be set first, as shown in figure:



Alarm configuration interface shows the currently set linkage rule and the enabled state of the rule;

8.1 Add Linkage Rule

Add alarm linkage rule; please click on “Add” on the left upper corner, as shown in figure:



1) Rule name: alarm linkage rule name is user-defined.

2) Alarm type: currently support 8 alarm types, including alarm input, motion detection, video tampering alarm, video loss, target count detection, area detection, object detection and line crossing detection, among which, the latter four kinds are specialized to the device the intelligent detection. Regarding the definition of the 8 alarm types, please see NVR specification.

3) Alarm source: which means alarm source, click on the check box, all the channels of all devices added to VMS currently can be selected.

4) Linkage action: including map, capture, PTZ, video, popup picture and TV wall, which have been respectively defined as below.

Map: displays alarm in map interface; for the linkage of map alarm, the channel to be linked shall be deployed on the map; as the alarm has been triggered, the icon of the channel turns into red on the map;

Capture: capture the picture of the linkage channel;

PTZ: PTZ controlling the linkage channel, it can select to call certain preset, call certain cruise or certain track; only the front device supporting PTZ control can be linked to PTZ;

Record: as alarm has been triggered, the channel linked to record starts local and storage server recording (storage server shall configure the RecPlan), the record can be reviewed via searching in playback module;

Pop image : as alarm has been triggered, the preview window pops up from the main interface displaying the real-time preview of linkage channel;

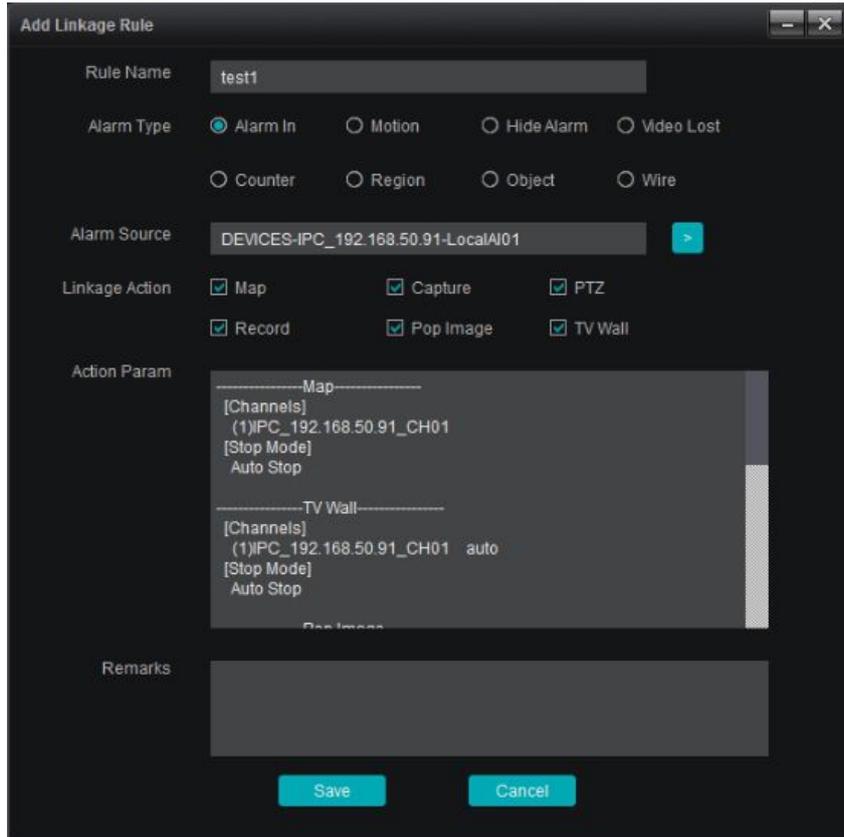
TV Wall: select the channel and TV Wall for wall-run, as alarm has been triggered, the real-time preview picture of this channel will be upload to the TV Wall.

Note: As the linkage action has been set as map, video, popup image and TV Wall, the end mode shall be selected; it shall be auto-end or timing end; auto end means that there is no linkage action upon the completion of alarm while timing end means the linkage action end at the agreed time, which can be selected between 1second. to 36,000 seconds

5) Action parameter: the linkage action set can be displayed in this column.

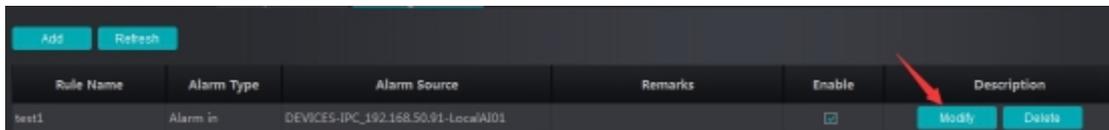
6) Remark: for indicating of the relevant information of this linkage rule; in case of user customization, optional

Upon completion, the effect as shown in figure:



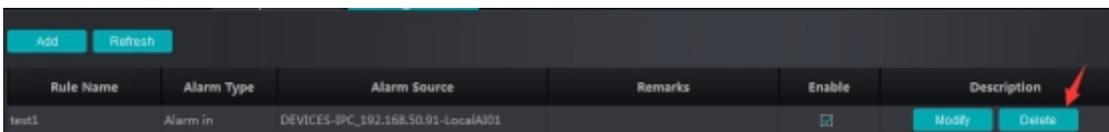
Click on the “Save” button below, the setting completed.

8.2 Modify Alarm Rule



Upon the completion of the addition of alarm rule, user can click “Modify” indicated in the figure to edit the existing rule.

8.3 Delete Alarm Rule



To delete the existing rule, click on the “Delete” button in the figure; in case of disable for the moment, take out the “check” button in the figure.

9. Alarm Management

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

User: admin CPU: 3%
 Right: Administrator Memory: 87%
 Time: 2017-03-20 15:18:37 Up: 0KB/S
 Down: 0KB/S

ALARM SOURCES	ALARM TYPE	START TIME	END TIME
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:17:56	2017-03-20 15:18:13
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:17:09	2017-03-20 15:18:30
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:16:17	2017-03-20 15:16:34
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:15:39	2017-03-20 15:16:37
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:14:39	2017-03-20 15:15:05
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:13:42	2017-03-20 15:15:07
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:13:00	2017-03-20 15:13:18
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:12:12	2017-03-20 15:12:30
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:11:21	2017-03-20 15:11:48
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:09:43	2017-03-20 15:10:01
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:08:05	2017-03-20 15:08:23
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:07:39	2017-03-20 15:07:58
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:06:26	2017-03-20 15:06:44
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:04:47	2017-03-20 15:05:14
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:04:16	2017-03-20 15:13:42
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:03:09	2017-03-20 15:03:27
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 15:01:30	2017-03-20 15:02:04
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 14:59:52	2017-03-20 15:00:09
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 14:58:12	2017-03-20 14:58:30
NVR_192.168.200.45-CH16	Motion detection	2017-03-20 14:57:23	2017-03-20 14:57:41

399alarm logs, 1/20pages

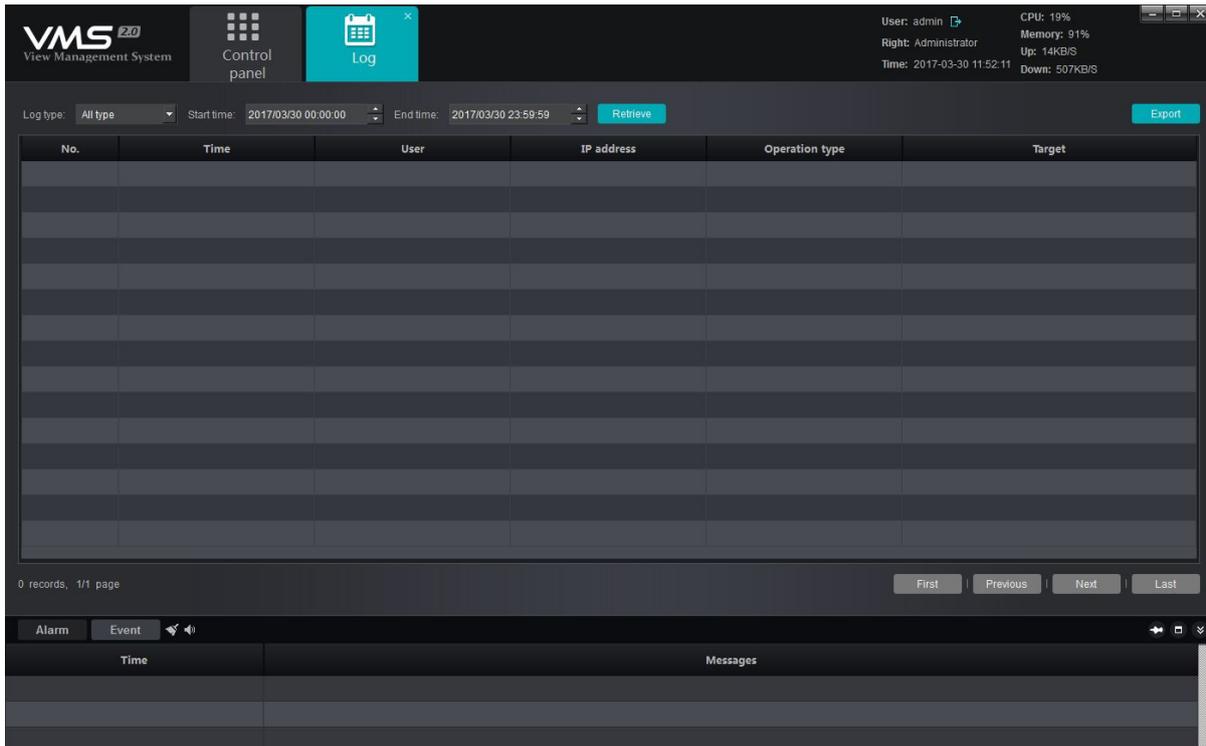
Alarm Event

Time	Messages
2017-03-20 12:26:36	The decoder [01420123c3f2d16f2d3d] has been applied to other wall
2017-03-20 12:24:47	The device 192.168.200.54 added failed
2017-03-20 12:12:19	Select a image file

Alarm management interface can display all alarm information upload to VMS; select search time range and alarm type, click on “Search” button, then the relevant alarm information can be searched as required. The alarm type includes the 8 classifications of alarm input, motion detection, video tampering alarm, video loss, target count detection, area detection, object detection and line crossing detection.

10. Log Management

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



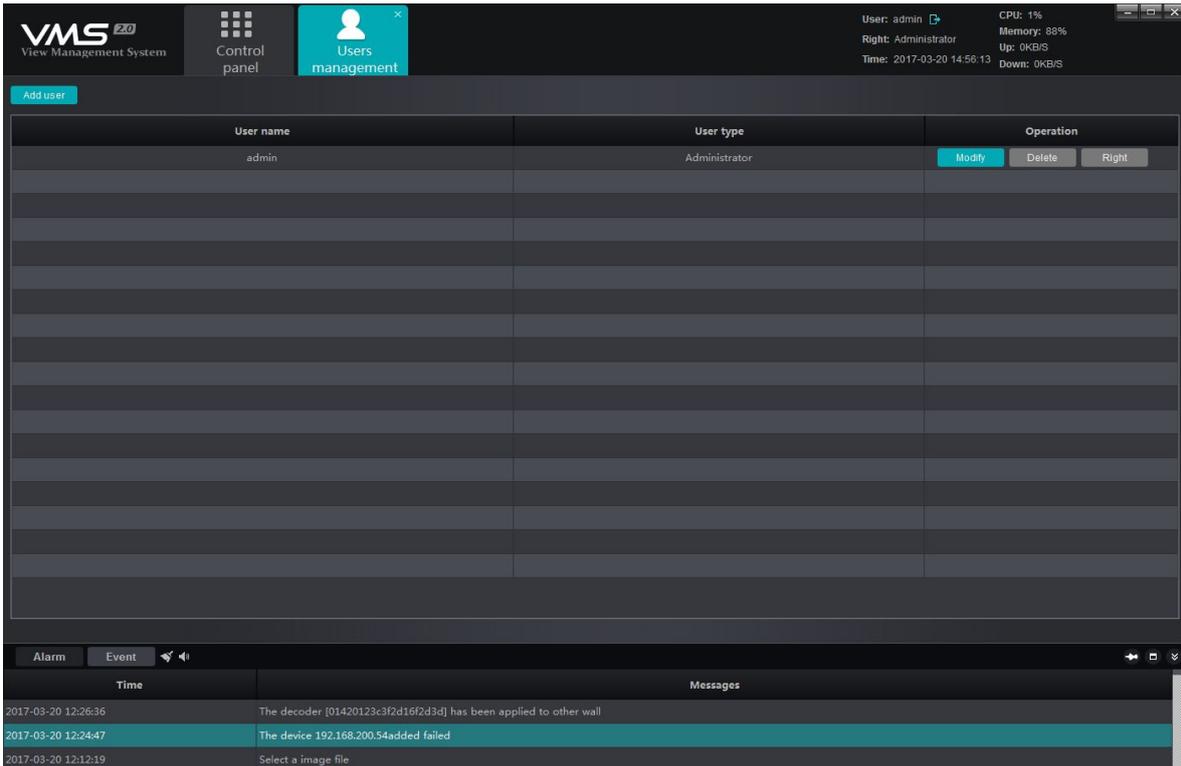
Log management interface displays all important operation records of user; select log type and time, click “Retrieve” to search. The log type includes login/logout, device management, start/stop rec, linkage management and remote configuration.

- 1) login/logout: The user login/logout record.
- 2) Device management: record of user addition, modification and deletion of device.
- 3) Start/stop rec: The user start/stop local video record
- 4) Linkage management: record of user operation of addition, modification and deletion of linkage rule.
- 5) Remote configuration: record of user operation of remote configuration, modification of front end device parameter

The log records in detail the operation time, operation user, operation IP address, operation type and target address of the relevant important operations, facilitating the administrator to figure out the problems.

11. User Management

Click “User management” button in the main interface to enter the user management interface:



User administrator of the user management interface sets the right of sub-user and user; the setup of the software automatically creates super user “admin”, which can’t be deleted and has top right, click on “Modify” can modify the password of super user.

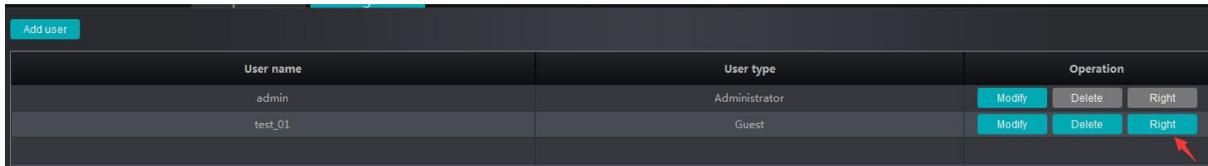
11.1 Add Sub-user

Click on “Add user” on the left upper corner to add new user:

User type is Guest, which means it is not administrative user; the user type can’t be modified; successively fill in user name, password, password confirmation and then click on “OK” to add new user;

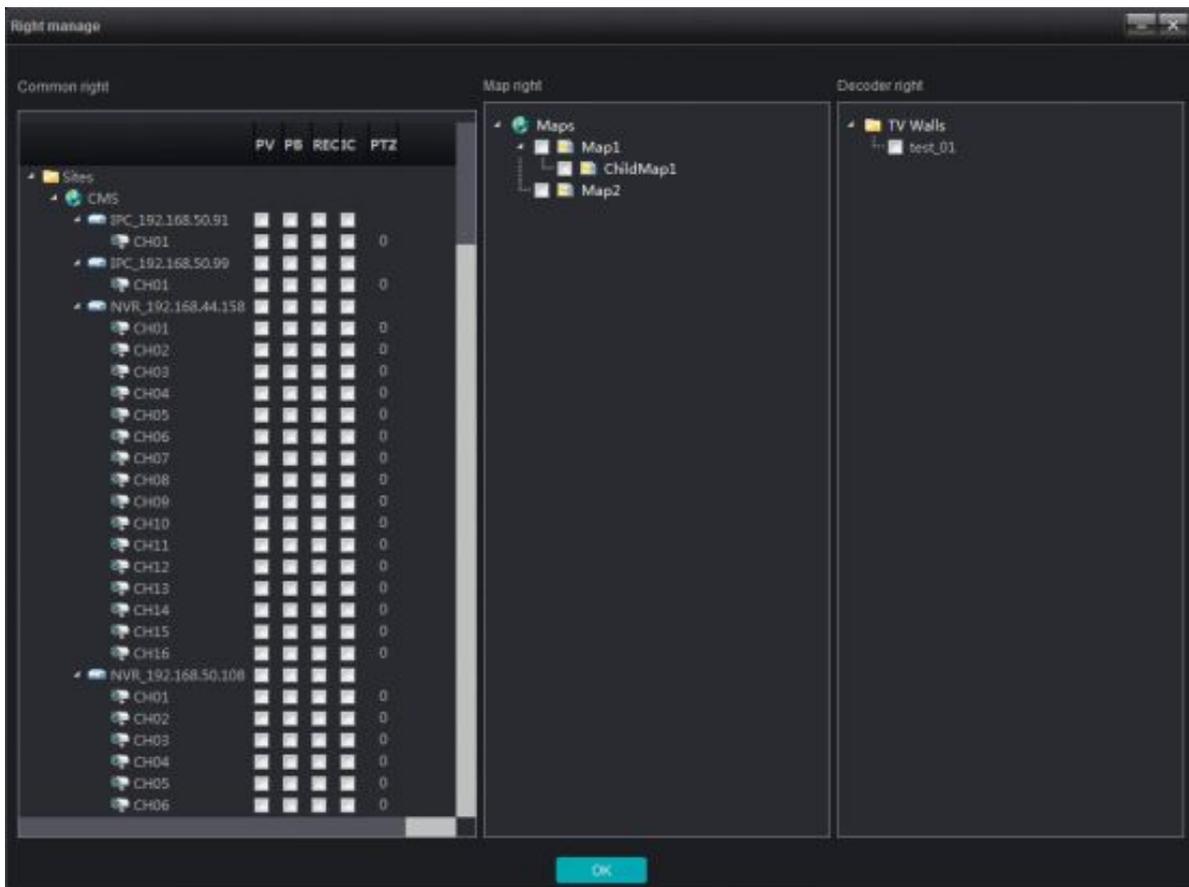
please make sure the consistency of the password and password confirmation in the course of filling in.

11.2 Sub-user Access Distribution



User name	User type	Operation		
admin	Administrator	Modify	Delete	Right
test_01	Guest	Modify	Delete	Right

To distribute access for the sub-user added, click on the “Right” button indicated in the figure to distribute the access:



Access includes common access, map access and decoder access.

1) Common access: the common access includes preview, playback, video, intercom and PTZ control, specifying to channel; the administrator can distribute the relevant channel to the corresponding sub-user. The number corresponding to PTZ represents the control priority of PTZ; double click to edit, select among 0 to 10, 0 means no PTZ control access, 1-10 means the PTZ control access, the larger of the number means the higher authority, i.e. 10 means top priority of PTZ control while 1 means the lowest priority.

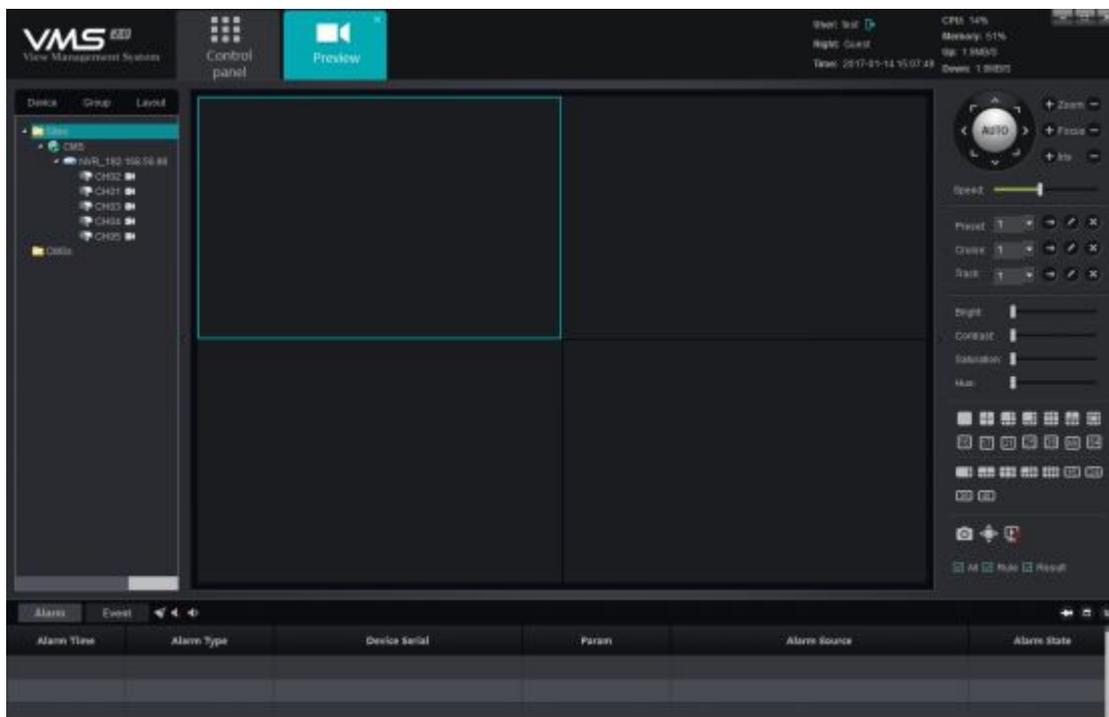
The channel that has no preview access distributed will be hidden when sub-user logs in (similarly the accesses of playback, video and intercom, the channels without access can't apply the corresponding functions), for instance, preview access of only 5 channels has been distributed to test sub-user, as shown in figure:

Right manage

Common right

	PV	PB	REC	IC	PTZ
<ul style="list-style-type: none"> Sites <ul style="list-style-type: none"> CMS <ul style="list-style-type: none"> IPC_192.168.50.91 <ul style="list-style-type: none"> CH01 NVR_192.168.50.98 <ul style="list-style-type: none"> CH01 CH02 CH03 CH04 CH05 CH06 CH07 CH08 					
					0
	<input checked="" type="checkbox"/>				0
	<input checked="" type="checkbox"/>				0
	<input checked="" type="checkbox"/>				0
	<input checked="" type="checkbox"/>				0
	<input checked="" type="checkbox"/>				0
					0
					0
					0
					0

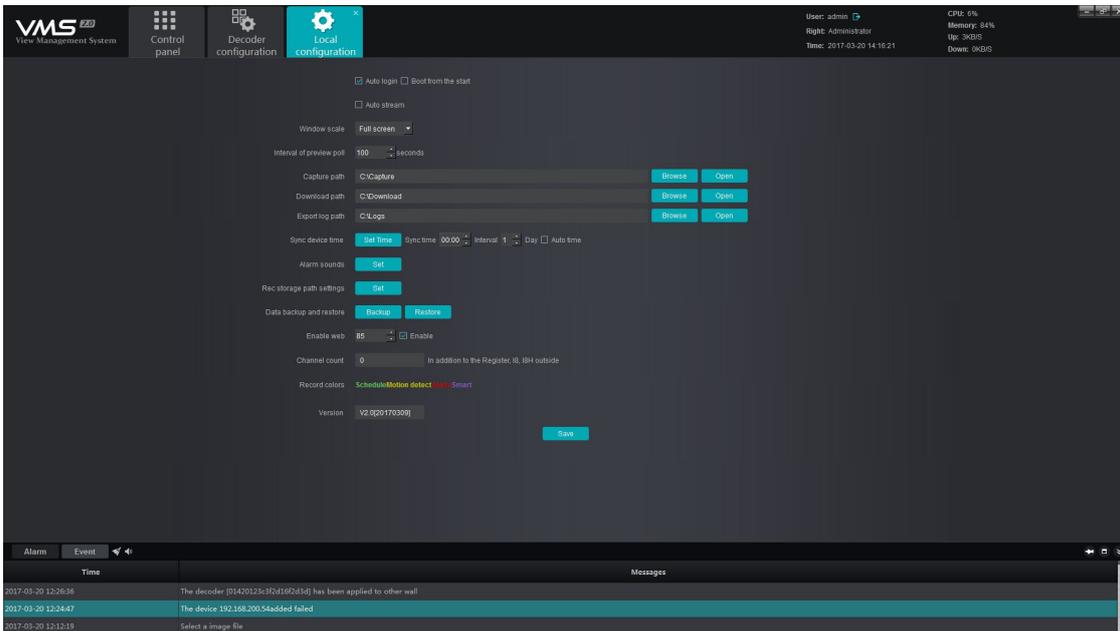
Login with sub-user test can only see five channels, as shown in figure:



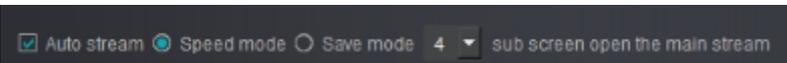
Note: super user admin has top priority access and it can't be modified.

12. Local Configuration

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



- 1) Auto login: when VMS software opens, it will be automatically login.
- 2) Boot from the start :as selected, the client end program will run automatically when started up.
- 3)Auto stream, when selected, as shown in figure, including speed mode and save

mode:  among which, open of preview will open main stream and sub stream under the speed mode, however, only one of them will be displayed, thus it will be rather faster for switching and also saves the bandwidth; Save mode means only one stream shall be opened at the same time; the current stream shall be closed to open another for switch; it is rather slower and saves the bandwidth as well; user can select the relevant mode as the actual situation may be. 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 are optional.

- 4) Window scale: window scale for preview or playback, full screen, 4:3, 16:9 are optional.
- 5) Interval of preview poll: the default interval of preview poll is 30s, and it can be selected between 30-600 s.
- 6) Capture path: capture picture save path, including preview capture, playback capture and alarm linkage capture.
- 7) Download path: video file download save path.
- 8) Export log path: export log file save path.

- 9) Sync device time: manual or automatic synchronization time of access devices
 - 10) Alarm sounds: selection of alarm sound, used for alarm linkage sound, customization optional.
 - 11) Rec. storage path setting: set local record storage path.
 - 12) Data backup and restore: user can apply backup and restore of database to prevent data loss.
 - 13) Enable Web: enable web service and login with IE. Following it is port, which can be modified as needed.
 - 14) Channel Count: display the authorized channel count of other protocols in addition to current Register, i8, i8H protocol; the initial setup will have 100 free authorizations, the total count of channel displayed here will become 0 as the trial period expired.
 - 15) Record colors: display different types of record color.
 - 16) Version: version number of the current program (non-modifiable).
- As the relevant parameter modified, click on "Save" button below to save.

III. Performance and storage introduction

VMS2.0 performance, for current structure, need only one host, which is used to install program. One has no limit on the management of equipments currently, but the suggested number is within 450. The number of the stored equipment channel by one host, which is restricted by network and disk-writing, etc. The maximum write speed is 200Mb/s at present, that is the video camera of code stream 4Mb, it supports storage 50CH at most. Time of storing video is restricted by the disk space, for example, code stream 4Mb video camera, the video storage file size $= (4 \times 3600) / 8 \text{MB} = 1800 \text{MB}$, namely video file size is about 1800MB of a code stream video camera 4Mb in one hour, that is to say 1.8GB. Video file size of one day $= 1.8 \text{G} \times 24 = 43.2 \text{GB}$, Video file size of one month $= 3.2 \text{GB} \times 30 = 1296 \text{GB} = 1.296 \text{TB}$. So on, through the formula, we can calculate the video storage time according to accessing disk space and video camera's routes & code streams in the project.

Resolution	Bit rate	The 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