

User's Manual



64-Channel Windows-based Network Video Recorder

▶ NVR-E6480



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Federal Communication Commission Interference Statement

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

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

FCC Caution

To assure continued compliance, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Regulation



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Energy Saving Note of the Device

This power required device does not support Stand by mode operation.

For energy saving, please remove the AC-plug to disconnect the device from the power circuit.

Without remove the AC-plug or switch off the device, the devices will still consuming power from the power circuit. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to switch off or remove the DC-plug for the device if this device is not intended to be active.

Revision

User's Manual of PLANET 64-ch Network Video Recorder

Model: NVR-E6480

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Chapter 1. Product Description

PLANET NVR-E6480, a high-definition IP surveillance solution, is designed to work with PLANET E-series cameras or ONVIF cameras for traffic surveillance, public and other security monitoring applications. The NVR-E6480 is the Windows-based 64-channel NVR that can connect up to 64 IP cameras and supports 8 hard disks. The unit employs RAID 0/1 to optimize the process of securing data easily and quickly.



The NVR-E6480 features Gigabit Ethernet ports, eMap, video motion detection, automatic camera registration, and mobile apps for smart phone and tablet connectivity. The NVR-E6480, capable of recording 300Mbps of video bandwidth, supports a wide range of resolutions in H.264, MPEG-4 and M-JPEG formats. In addition, the NVR is able to work with extended software such as ALPR (Automatic License Plate Recognition) and IVS (Intelligent Video Surveillance). Through these value-added applications, the NVR is definitely a necessity to keep track of those critical moments saved as evidences when in need.

Instant Playback

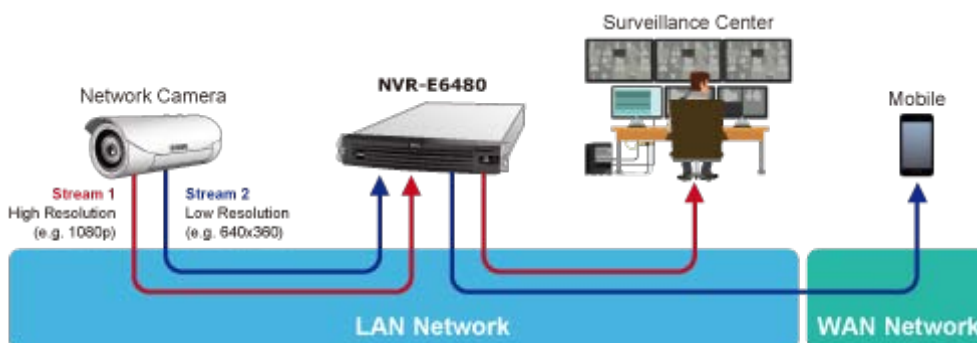
On the Live View page of the NVR-E6480's management interface, whenever you want to look back to check suspicious events of a camera channel you just missed, just hit the 'Instant Playback' button to bring up the window to review recent feeds. While you don't have to switch to the Playback page to do so, you can still have full live views of other channels simultaneously.



Instant Playback in Live View

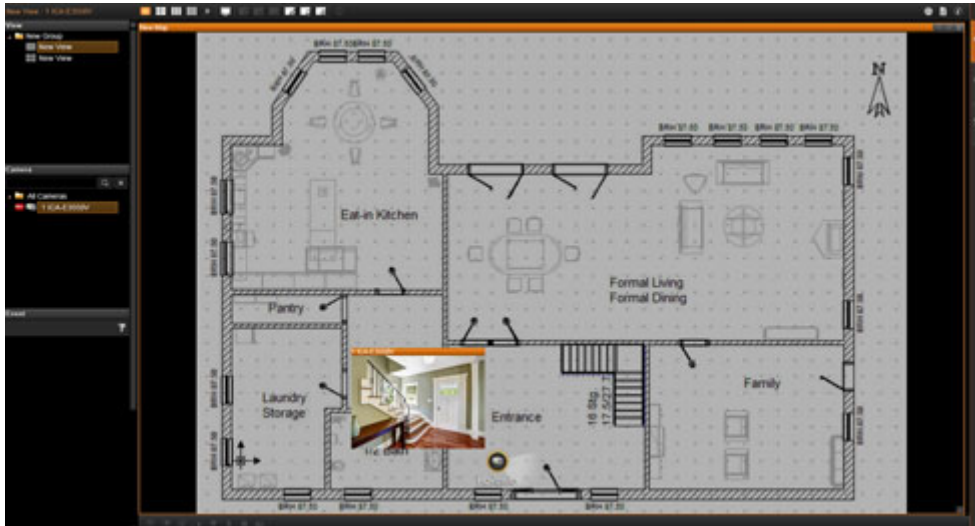
Dual Stream Management

The NVR provides dual stream management in live view and recording functions. User is able to monitor or record stream 1 or stream 2 of dual stream devices. This design is able to reduce the CPU and memory loading of the NVR that handles a large number of channels.



Location Management with eMap

The eMap function helps visualize the layout of IP cameras in the surveillance network enabling you to quickly identify the location of each IP camera, especially when an alarm occurs. Just upload the pictures of the monitoring locations, and drag and drop the IP camera icons to the right place on the eMap. Once an alarm event happens, the camera icons will flash to indicate the event type for you to be alerted immediately and take necessary actions.



Remote Access via Mobile App, Web Browser or CMS

The NVR-E6480 provides central surveillance management capability with the adoption of its bundled Central Management Software (CMS). With the CMS, the NVR system is expandable for multi-sites management of up to 64 surveillance channels simultaneously. Besides, users are able to monitor the NVR via mobile app viewer or the Web browser anytime, anywhere.



Large Storage Capacity

The NVR-E6480 is suitable for various network environments. Besides applications in retail stores and SMBs, the NVR-E6480 offers 8 SATA HDDs supporting RAID 0/1 function and is able to be applied in large scale surveillance facilities, such as banks, enterprises,

transportations, campuses, etc.



1.1 Product Features

Hardware

- Windows-based standalone NVR
- 2U rack-mount design
- Dual Gigabit Ethernet ports
- E-SATA, VGA and USB interface supported
- Audio line-in, line-out and mic-in jacks

Video & Audio

- Simultaneous recording and live video streaming
- Supports M-JPEG, MPEG-4 and H.264 compressions
- 64-channel IP camera input
- Video resolution up to 10 mega-pixel
- 2-way audio support

Video Recording & Backup

- Manual, event or scheduled recording of 64 IP cameras simultaneously
- Supports recording frame rate up to 1920fps
- Instant playback in live view
- Supports 8 SATA hard disks (RAID 0/1) for storage, up to 6TB per HDD
- Exports recorded video file in AVI or RAW format

Network Service

- 2 x RJ45, 10/100/1000BASE-T
- IPv4, IPv6, TCP/IP, UDP, HTTP, DHCP, RTP, RTSP, DNS, NTP (SNTP), ICMP, ARP, SMTP, FTP, UPnP, LDAP, ONVIF

Easy Installation & Management

- ONVIF compliant for interoperability
- Supports multiple languages
- Dual stream management
- Location-based management with eMap
- Up to max. 64 channels with the central management software
- Supports USB keyboard and mouse
- Remote access via mobile app viewer and Web browser
- Cam Viewer E-series software supported – CV7-VA, CV7-LP

1.2 Remote Access

The following are the minimum PC system requirements for remote access:

Operating System	Windows 7, Windows 8, Windows 10, Windows Server 2008 and Windows Server 2012
Browser	Internet Explorer 10, 11
CPU	Intel® Core i7-920 2.67 GHz
RAM	4 GB of RAM
Network	Gigabit Ethernet is recommended
Hard Disk Space	1TB
Display Resolution	1024 x 768

1.3 Packet Contents

- 1 x NVR
- 1 x Power Cord
- 1 x Quick Installation Guide
- 1 x Universal Converter
- 1 x Front Cover
- 2 sets x HDD Tray Keys
- 1 set x Screws

1.4 Product Specifications

Product	NVR-E6480
Hardware	
CPU	Intel Processor
RAM	2GB
Operating System	Windows 7 Standard Embedded
Ethernet	2 x RJ45, 10/100/1000BASE-T
USB Interface	6 x USB 2.0 for backup device and firmware upgrade
Video Interface	VGA video interface
Audio Interface	Mic-in, line-in and line-out
Storage Device	8 x 3.5" SATA II hard disk connectors; up to 6TB per HDD
External Storage Interface	1 x eSATA
LED	Power
Button	Power
Weight	11.4 kg (with 1 system HDD and front cover)
Dimensions (W x D x H)	482 x 560 x 88 mm
Power	100-240V AC, 4-2A, 50-60Hz
Consumption	200W
Camera	
Max. Channels	64-channel IP cameras
Function	Manual, auto or ONVIF search
Video	
Compression	H.264, MPEG-4, M-JPEG
Resolution	10MP, 5MP, 4MP, 3MP, 2MP, 1.3MP, 1MP, VGA
Max. Live Video Frame Rate (Local Display)	6fps@10MP (1-ch), 15fps@5MP (1-ch), 8fps@4MP (1-ch), 15fps@3MP (1-ch), 30fps@2MP (1-ch), 30fps@1.3MP (1-ch), 30fps@1MP (1-ch), 30fps@VGA (1-ch) <i>*The above performance was tested with the following parameters: H.264 compression and 3Mbps bitrate</i>

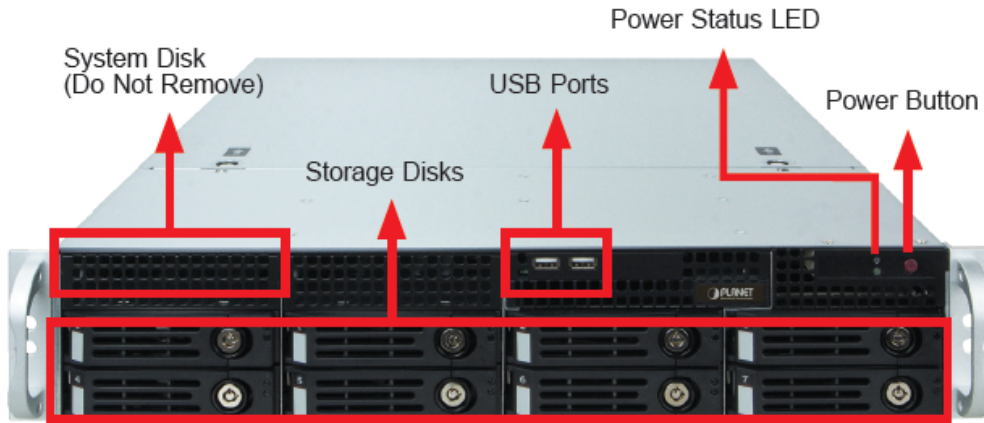
Audio	
Audio Type	2-way
Live View	
Display Layout Mode	Local: 1, 4, 5, 6, 8, 9, 10, 12, 16 Remote: 1, 4, 5, 6, 8, 9, 10, 12, 16, 18, 24, 25, 35, 36, 48, 49, 64
Digital Zoom	Zoom in/out digitally by PiP (Picture-in-Picture)
Manual Recording/ Snapshot	Instant recording upon mouse click/Instant snapshot upon mouse click or hot key
Dual Stream Management	Live view of stream 1 or stream 2 of dual stream devices
Event Panel	Displays event status upon alarm or upon connection loss or recovery
Instant Playback	Instant playback in live view window
E-map	Area maps with camera icons and small live view windows hyperlinks
Playback	
Video Search	Time/Event based
Playback Control	Continuous forward and backward playback with speeds 1x, 2x, 4x, 8x or frame-by-frame; pause; stop
Manual Snapshot	Instant snapshot from playback upon mouse click
Digital Zoom	Zoom in/out digitally by PiP (Picture-in-Picture)
Synchronized Playback	Up to 9 channels for local display; up to 64 channels for remote client
Video Export	Export video clips in AVI or RAW format
Recording	
Recording Throughput	Maximum total bitrate 300Mbps
Schedule Recording	Record video with user defined schedule
Event Recording	Record video when the alarm event is triggered, including the pre-event buffered video clip
Frame Rate Setting	Different recording frame rate settings for non-event and triggered event
Manual Recording	Instant recording upon mouse click
Dual Stream Management	Recording of stream 1 or stream 2 of dual stream devices
Recording Frame Rate	Max. 1920fps in total; max. 30fps per camera

Monitor	
Max. Local Display Resolution	1920 x 1200
Network and Configuration	
Network Service	IPv4, IPv6, TCP/IP, UDP, HTTP, DHCP, RTP, RTSP, DNS, NTP (SNTP), ICMP, ARP, SMTP, FTP, UPnP, LDAP, ONVIF
Triggers and Event	
Event Type	Video motion detection, passive IR sensor, external device through digital input, video loss and recovery, network loss and recovery, server loss and recovery, disk full, disk not found
Event Action	Record video, pop-up window with live video, switch to hotspot window, play beep sound, activate external device through digital output, upload snapshot to FTP server, execute system command to activate other programs, eMail notification with snapshots, command a PTZ device to go to a preset point
Manual Event	Manually activate external devices through digital output via live view monitor
Scheduler	Define the schedule of event manager
Management	
Max. Number of Clients	1 local, 3 remote
Privileges	Live, Playback, Setup, Global
User Interface	<ul style="list-style-type: none"> ● Graphic local user interface (Operated by mouse, keyboard) ● Web browser (Internet Explorer 7 or above) ● CMS utility ● App viewer
Multiple Languages Support	Arabic, Czech, Danish, German, Estonian, English, Spanish, Finnish, French, Hebrew, Hungarian, Indonesian, Italian, Japanese, Dutch, Polish, Portuguese, Romanian, Russian, Swedish, Thai, Turkish, Vietnamese, Simplified Chinese, Traditional Chinese
Log Type	User Operation, Setup Device, Setup System, Setup Users, Setup Schedule, Setup Event, System Status, Request Log
Environment	
Operating Temperature	0~40 degrees C
Humidity	10~85% RH

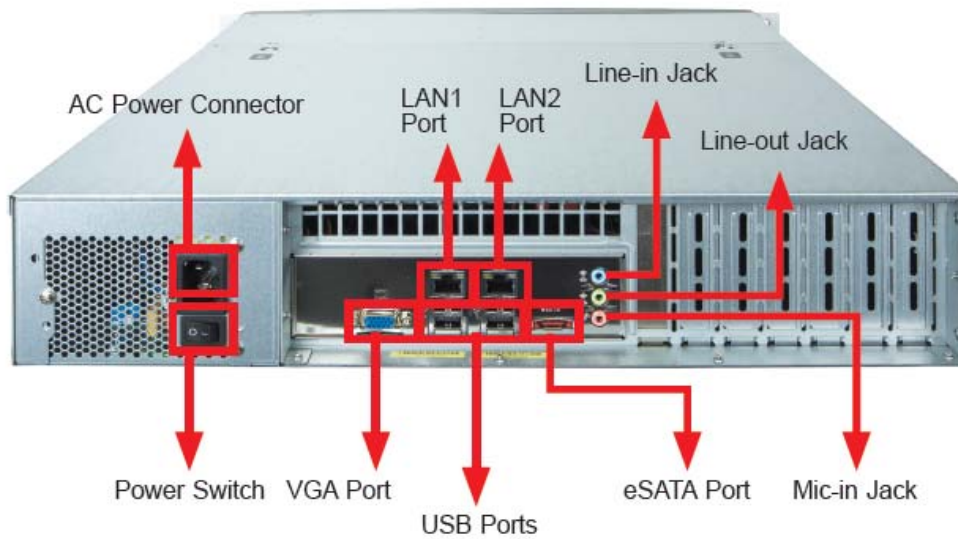
* Hard disks for storage are not included in the packet.

1.5 Physical Specifications

Front Panel



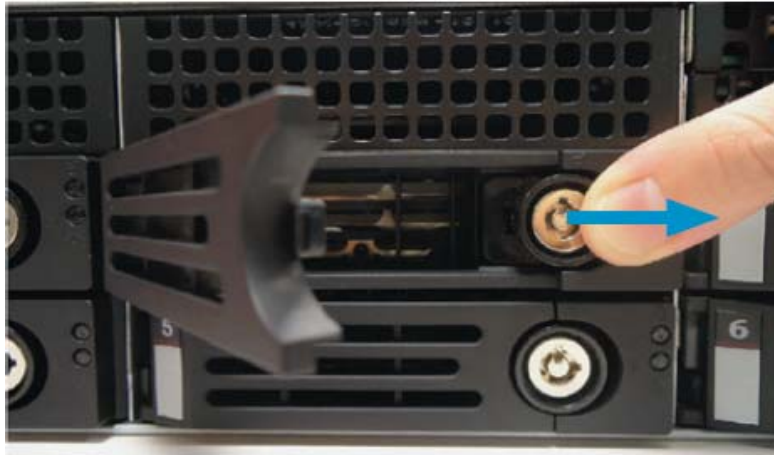
Rear Panel



Chapter 2. Hardware Installation

Make sure this unit is turned off, and insert the hard disks into the disk bays following the sequence of tray numbers.

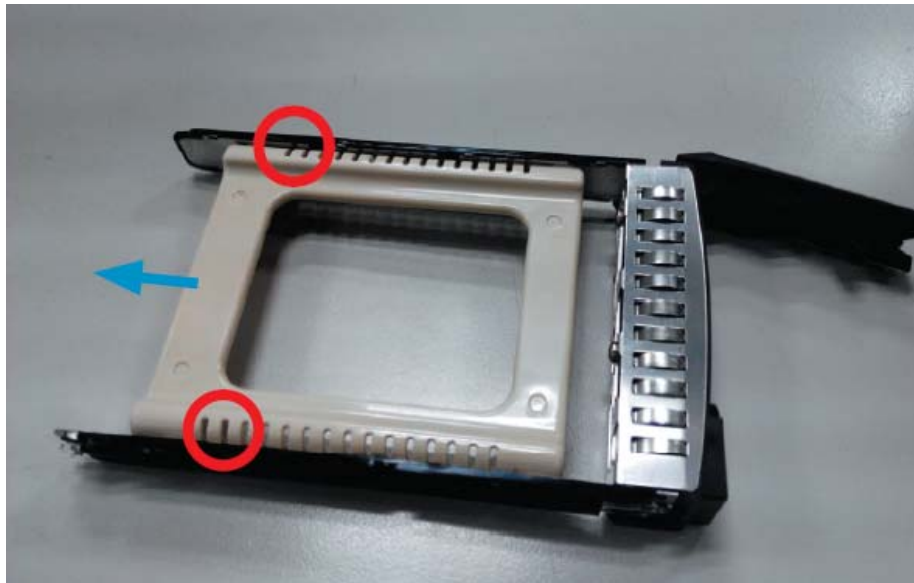
1. Slide the lock tab aside, and the hinge tab will pop out by itself.



2. Hold the tab lever and pull out the tray.



3. Loosen the two screws on the tray to remove the dummy disk. Secure the hard disk on the tray with the provided disk screws. Make sure the disk connector faces towards the SATA contacts inside the unit.



4. Place your thumb on the lock to push the tray into position in the chassis.



5. Press the hinge tab until it clicks into place.



6. Align the left end hooks to the holes on the unit's left handle.



7. Press the latch and push the right end towards the unit's right handle until it clicks into place.



8. The NVR with front cover is shown below.



2.1 Rack Mounting

This unit is designed to be mounted on a standard server rack, which occupies 2U (3.5") of vertical space.

Step 1: Allow a minimum of 5 cm clearance at the front and the rear for front-to-back airflow of the unit.

Step 2: Prepare a rack shelf rated for the unit's weight or purchase the rail kit from PLANET, and install that to support the entire unit.

Step 3: Secure the unit onto the rack.

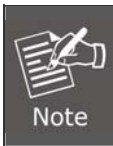
2.2 Start Up

Step 1: On the unit's rear panel, press down the **Power Switch** to the side with "I" mark.



Step 2: On the unit's front panel, press down **Power Button** to turn on the unit.

Step 3: As this unit starts up, you will enter Windows logon screen, and input the password "admin" to log in as administrator.



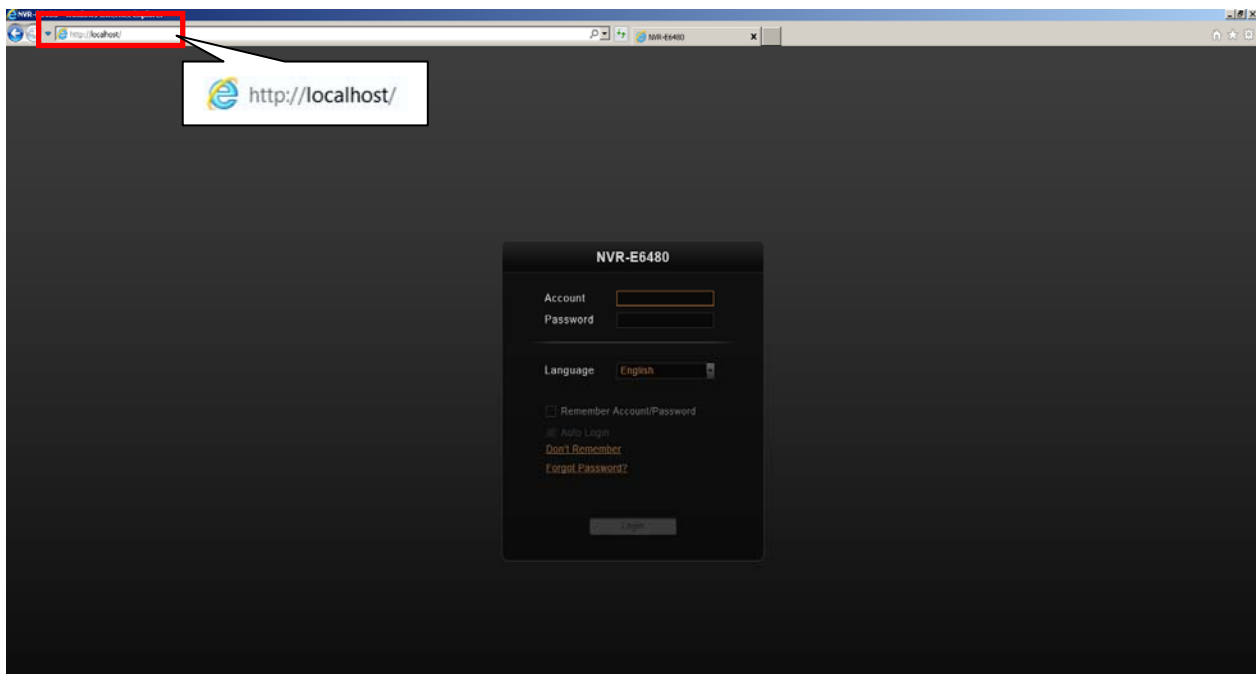
The NVR-E6480 is strongly recommended to have it installed on the intranet in consideration of network security. It still could be attacked by hackers or malware although the NVR is equipped with built-in firewall.

Chapter 3. Log in to the System

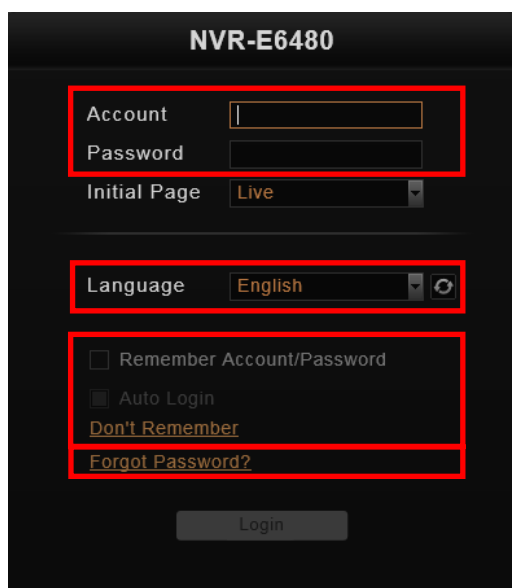
3.1 Access via Internet Explorer Browser


The computer where NVR server is installed is called **Server Computer**. You may access the server directly via Internet Explorer or the NVR-E6480 workstation on any other client computer.

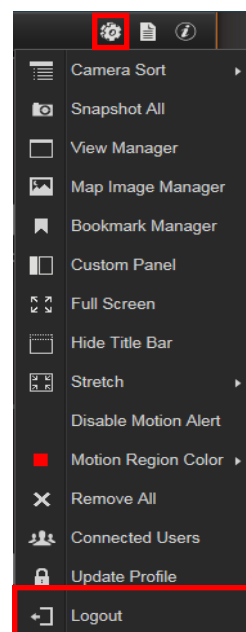
Please open your browser, in URL box, type [http://server ip address:port number](http://server_ip_address:port_number), e.g. <http://220.228.146.22:8888> (generally, the port number is 80 and can be ignored in the URL). If your computer is exactly where NVR server is installed, you may simply type [http://localhost:port number](http://localhost:port_number).



Login




A.	Enter Account & Password	Please obtain the Account & Password information from system administrator who has previously set up your User account in NVR-E6480 system. The default account and password are “ admin ”.
B.	Change UI Language	To change UI language, select the desired language from the “ Language ” dropdown list.
C.	Remember Account/Password	<p>To have the server remember your Login Account and Password for the future, check “Remember Account/Password”. Click “Don't Remember” will clear your input text and reset to default.</p> <p>To directly enter the main page every time you log in from this PC in the future, check “Remember Account/Password” and then “Auto Login” to skip the Login page. If your computer may be accessed by someone without proper authority, please DO NOT use either of these functions.</p> <p>To cancel auto-login, on the title bar, click  → “Logout” to return to login page, and this function is cancelled.</p>
D.	Retrieve the User Password	Once you forget the password, you may first contact the system administrator or try helping yourself with this procedure. NVR can send your password to the email address you saved in NVR server, and it is strongly recommended that you update your personal

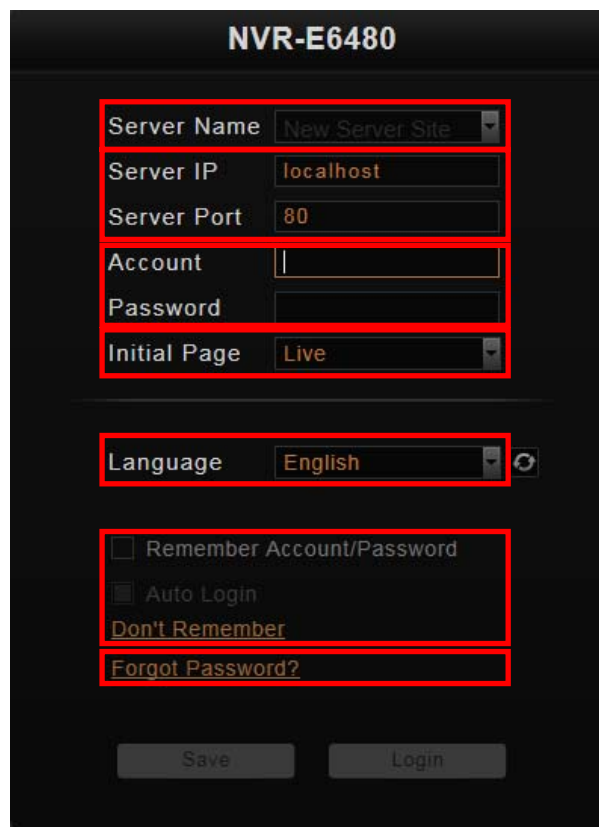


		<p>information after your first login Please note that this procedure is only available when NVR server has accessed to SMTP service.</p> <div data-bbox="528 309 1126 517" style="background-color: black; color: white; padding: 10px;"> <p>Forgot Password _____</p> <p>Email <input style="border: 2px dashed red;" type="text"/></p> <p><i>*Please enter the email address that you configured for the system.</i></p> </div> <p>The email address input in Forgot Password window should match the one under your User account saved in NVR server.</p>
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3.2 Access via NVR-E6480 Workstation

The NVR-E6480 workstation includes a set of programs that provide the interface between users and NVR server. It may be installed in NVR server, or in the remote client computer that connects to NVR server via network. For the local client of NVR server, the NVR-E6480 workstation will start automatically after you login to Windows; for the remote client, please


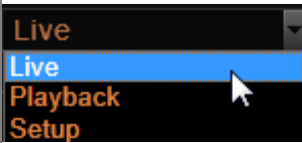

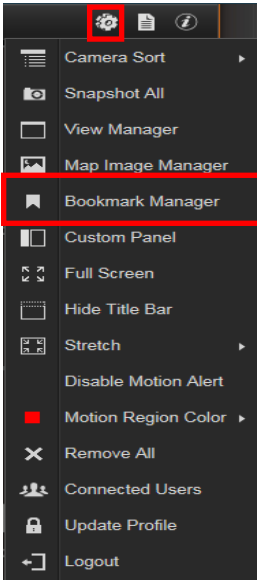
double-click the shortcut icon  on your desktop to execute this workstation application.



Login


Fill in the following fields and then click “**Login**” to log in to the system. The login process of Workstation is very much the same as that of Web browser.

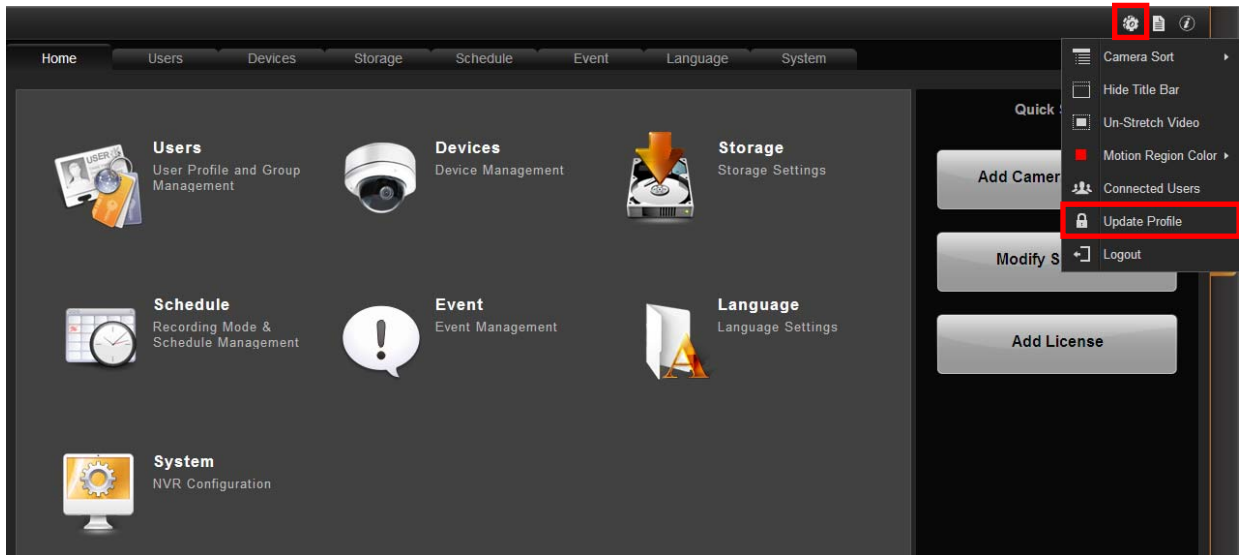
A.	Choose a Server	The NVR-E6480 workstation can remember multiple server sites and their login settings. Click on the arrow next to Server Name , and select a site from the dropdown list to log in.
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B.	Server IP & Server Port	<ul style="list-style-type: none"> ● In server IP field, key-in localhost or 127.0.0.1 if the NVR-E6480 workstation is on the same computer with NVR server. If you are connecting from another computer, please input the IP address of server computer, for example, 220.228.146.21. ● In server port field, key-in the server port number, default is 80.
C.	Enter Account & Password	<p>Please obtain the account & password information from system administrator who has previously set up your User account in the NVR-E6480 system. The default account and password are “admin”.</p>
D.	Choose the Initial Screen	 <p>The NVR-E6480 user interface consists of three main module screens: Live View, Playback and Setup; you may choose one where you would like to enter after logging in. Default is Live View screen.</p>
E.	Language	<p>Choose a UI language from the dropdown list.</p>
F.	Remember Login Information	<p>To have the NVR-E6480 workstation remember the Account and Password, choose Initial Page and UI Language, and simply check “Remember login info”. Click “Don’t Remember” will clear your input text and reset to default.</p> <p>To directly enter the desired page every time you log in from this PC, check “Remember login info” and then “Auto Login” to skip the Login page. If your computer may be accessed by someone else, you might consider not to use either of these functions.</p> <p>To cancel auto-login, on the title bar, click  → “Logout” to return to login page, and this function is cancelled.</p> 
G.	Retrieve the User Password	<p>Please refer to D. Retrieve the User Password on page 18.</p>

3.3 Change User Profile

You can maintain your own account information on NVR interface without system administrator's help.

On NVR screen, click  → "Update Profile". You may change the email address or password and then click "Apply" to save the settings to NVR server.

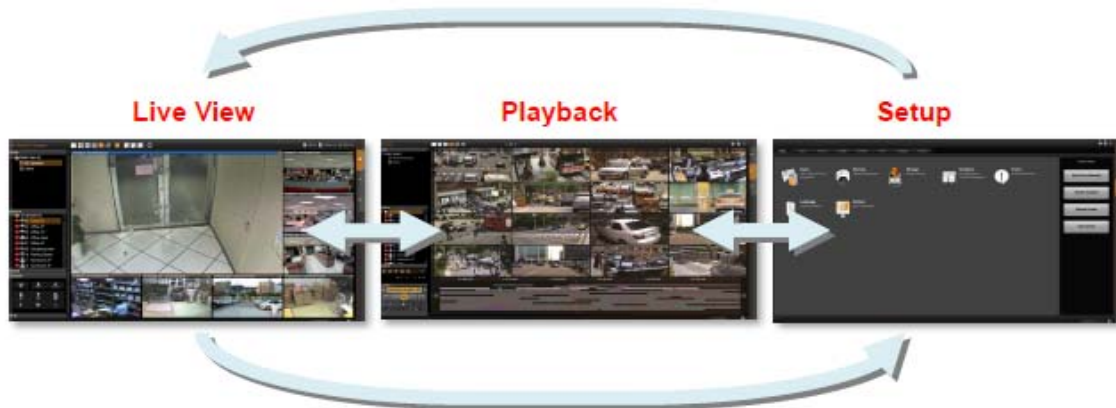


Update Profile

Name	<input type="text" value="Admin"/>
Email	<input type="text" value="simony@planet.com"/>
<input checked="" type="checkbox"/> Change Password	
Current Password	<input type="password" value="•••••"/>
New Password	<input type="password" value="•••••"/>
Confirm Password	<input type="password" value="•••••"/>

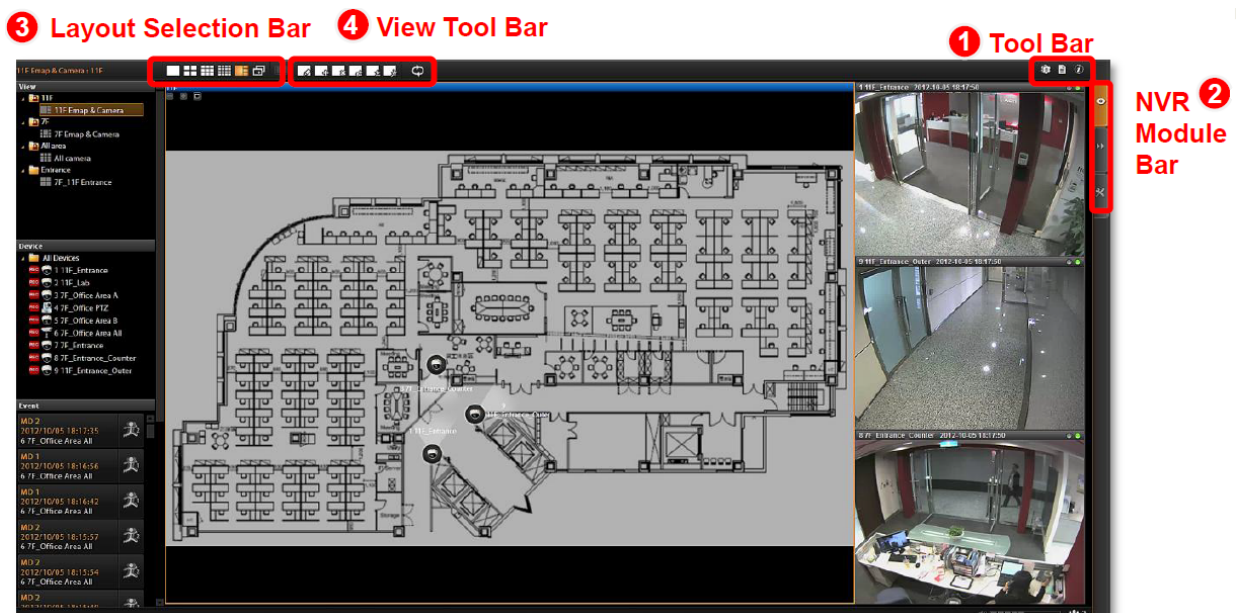
Chapter 4. NVR User Interface Overview

Unlike some NVR system products on the market, whose tree-like structure may easily confuse the user. The NVR-E6480's easy user interface structure saves you a lot of time and hassle going from one page to another. Once you log in to the system, you may switch to any of the main function modules: **Live View**, **Playback** and **Setup** on any screen.



4.1 NVR Resident Tool Bars

These resident tool bars are important functions or links that you often need through all the operations in NVR system.



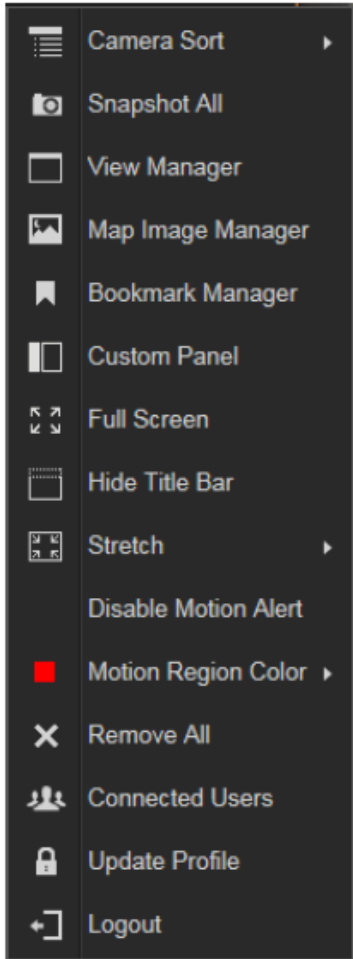
1 Tool Bar:

To the right of the title bar reside three links to most-used functions throughout all screens:

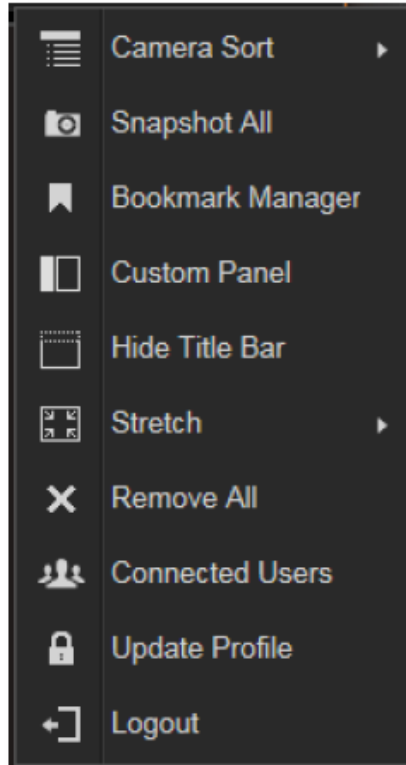


Options are certain useful functions you mostly need. The provided functions vary on different screens.

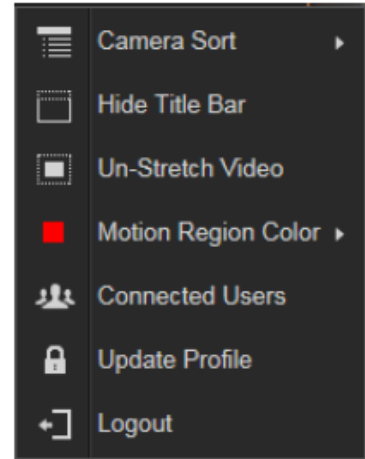
Live view Screen




Playback Screen



Setup Screen




 **System Log** provides the search module for you to review the records of user's behavior on this server. This is only available when your User right has permission to access it.


System Log


Search Time: 2016/02/05 13 : 29

Category: Select Log Category Account: Select All Device: Select All [Search] [Export]

Date Time ^	Category ^	Account ^	Device ^
2016/02/05 13:29:32	Request Log	admin	
2016/02/05 13:29:33	Request Log	admin	
2016/02/05 13:29:33	Request Log		
2016/02/05 13:29:33	Request Log	admin	
2016/02/05 13:29:33	Request Log	admin	
2016/02/05 13:29:33	Request Log		
2016/02/05 13:29:33	Request Log	admin	
2016/02/05 13:29:33	Request Log	admin	
2016/02/05 13:29:33	User Operation	admin	1 ICA-5350V
2016/02/05 13:29:33	User Operation	admin	2 ICA-W3250V
2016/02/05 13:29:33	User Operation	admin	3 ICA-8350
2016/02/05 13:29:33	User Operation	admin	4 ICA-5250
2016/02/05 13:29:33	User Operation	admin	5 ICA-HM312
2016/02/05 13:29:33	User Operation	admin	6 ICA-3250V

 **About Us** displays the software version number and required ActiveX Control version number.

 **NVR Module Bar** includes three main module screens: **Live View**, **Playback** and **Setup**. You can click the button to enter the function page directly

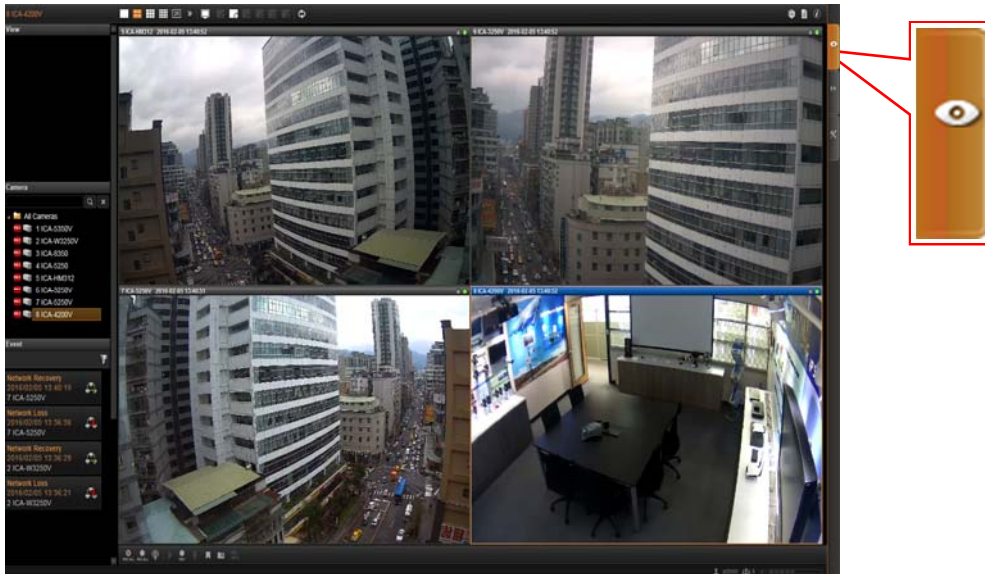
 **Layout Selection Bar** provides different layout styles for **Live View** and **Playback** screen.

 **View Tool Bar** provides function keys for View editing on **Live View** screen.

4.2 NVR Main Screen

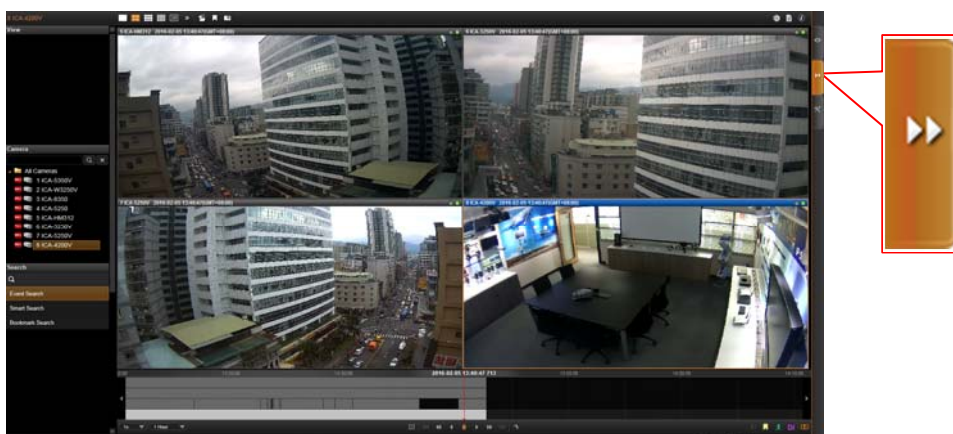
You will enter the live view screen after **Setup Wizard**. On the right are link buttons to three NVR major functions: (1) **Live**, (2) **Playback** and (3) **Setup**. You can click the orange button to enter the function page.

Live View



On Live screen, you can see live view from cameras, perform PTZ operations with mouse or joystick, view system log, receive alerts on the event panel, set up view layouts, perform manual recording or take a snapshot.

Playback



You may search and view playback of multiple channels synchronously. Snapshots or video segments can be taken from playback files. Recorded files can also be exported to AVI format here.

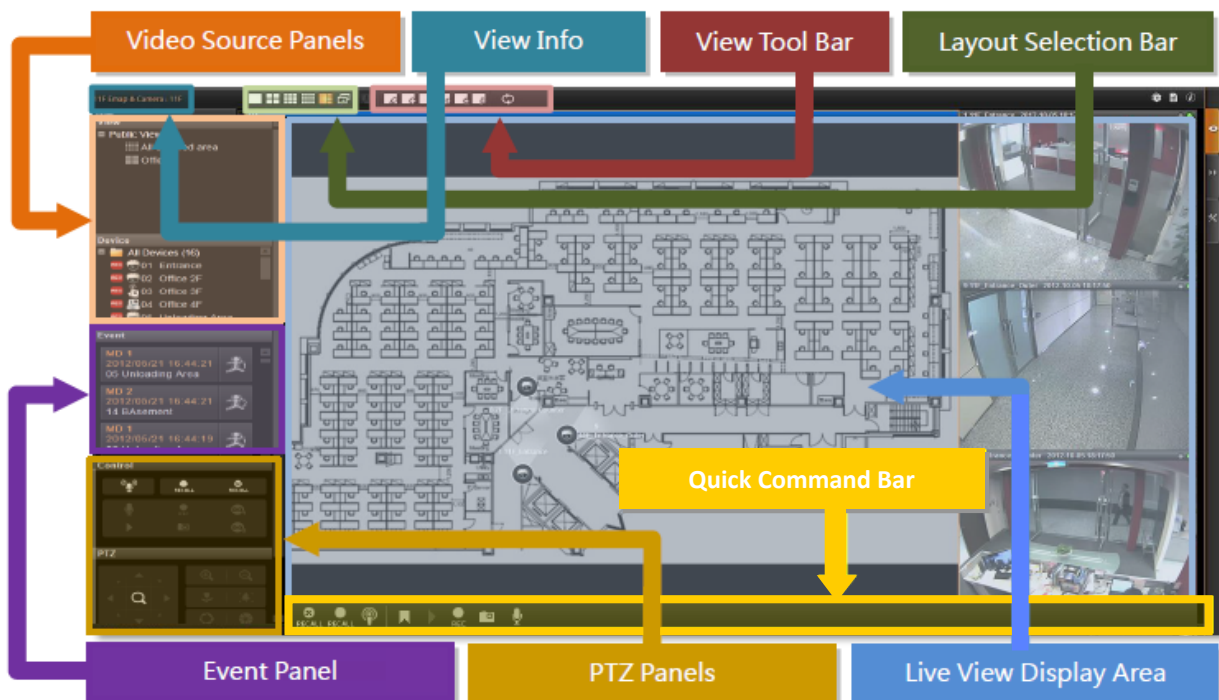
Setup



This screen allows you to perform user setup, device setup, event setup, schedule setup and system-wide settings.

Chapter 5. Live View


Live View is the interface where you see the live views from your cameras. It is where most of the security professionals access the surveillance system. Aside from keeping an eye on the video, you may also cycle through View layouts, drag and drop various cameras to the screen, review a log of events, take snapshots, control PTZ cameras, start or stop recording on a given channel, trigger Digital output and broadcast or talk to specific cameras. In this section, you will be given instructions on the said fundamental operations. To start, click Live View tab to enter live view screen.



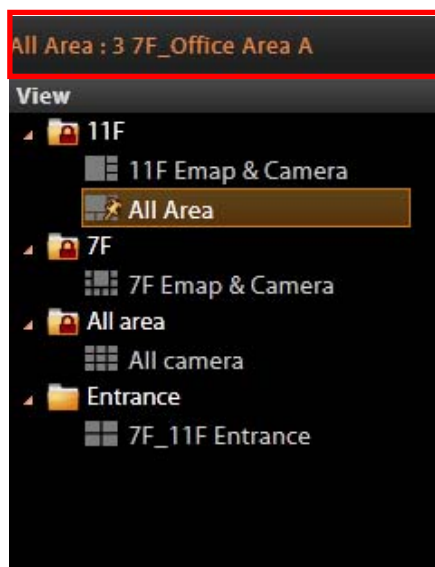
- **View Info:** Displays the information: [Current View name][Focused Channel name].
- **Video Source Panels:** View List panel and Camera list panel provide two types of video source for live view display area.
- **Event Panel:** Displays alerts of detected motion, abnormal system and device status.
- **PTZ Panels:** Displays the onscreen buttons for you to manipulate PTZ operations.
- **Layout Selection Bar:** Offers different layout styles.
- **View Tool Bar:** You may create a view and save it using the buttons here. You may also assign specific layout to start patrolling.
- **Live View Display Area:** You may add up to 64 channels into this area to monitor them concurrently.

5.1 Select a View




In the NVR-E6480 system, a **View** refers to the layout where the live images of a few cameras are arranged in proper positions to suit the monitoring purpose. This is very similar to a **Camera Group**, which consists of cameras in the same physical location or with the same camera functions. For example, a View named **First Floor** may contain the cameras that are actually placed in the secured area on the first floor. Once created, each camera view is assigned to a certain channel on the layout style selected by creator.

 Note	<p>Based on your User Group permissions, you may or may not own the privilege</p> <ol style="list-style-type: none"> 1. To create, edit or delete a Public View or a Private View 2. To assign a specific View as default View 3. To see all the cameras included in a Public View. Therefore, you may find certain view edit functions not available on the View Tool Bar.
---	--

To watch a saved View, simply click on it on **View List** panel.



Above the **View List** panel title will display
[Current View name]: Camera name

- The **Public Views**  are open to every User
- The **Private Views**  are only available to the User who created them. You may not see this folder if without the User right to own the **Private Views**.
- The view with a pin on  is set by system administrator as default view. You will enter this view every time you log in.

For details about how to create and edit a **View**, please refer to Chapter **Customize Views** in the NVR-E6480 Enterprise Administrator's Manual.

5.2 Select a Camera

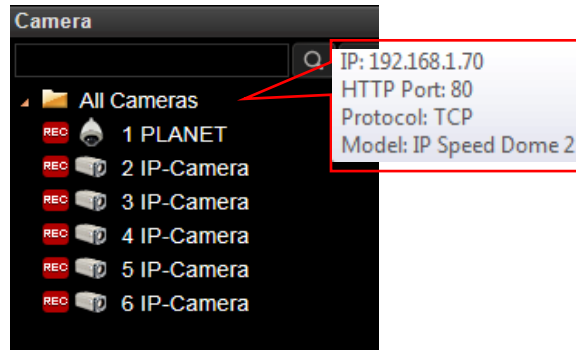
To watch the live view of individual cameras, you need to identify and add this camera video stream to a blank channel in display area. All the cameras that you are allowed to see are in the **Camera list** panel on the left. The permissions to watch different cameras are defined by your User Group, the details of which are managed by the system administrator. To pull in video sources to the display area:


From **Camera** panel, double-click on a camera or drag it to **Display** area. By double-clicking on “**All Cameras**”, all the cameras will be added to the **Display** area.

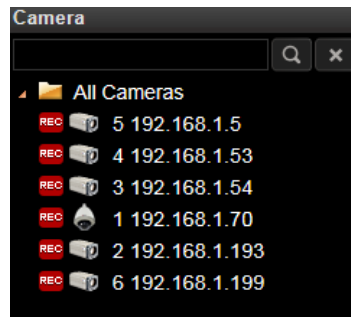


5.3 Camera List

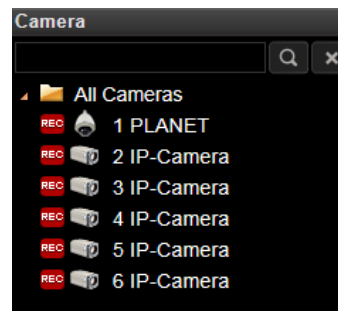
To view the camera information, put the cursor over the camera figure to bring the info box up.



In Camera panel, you may also sort the cameras in a different order. Click  on the title bar, select **“Camera Sort”**, and choose **“by IP”** or **“by ID”** as the sorting method.



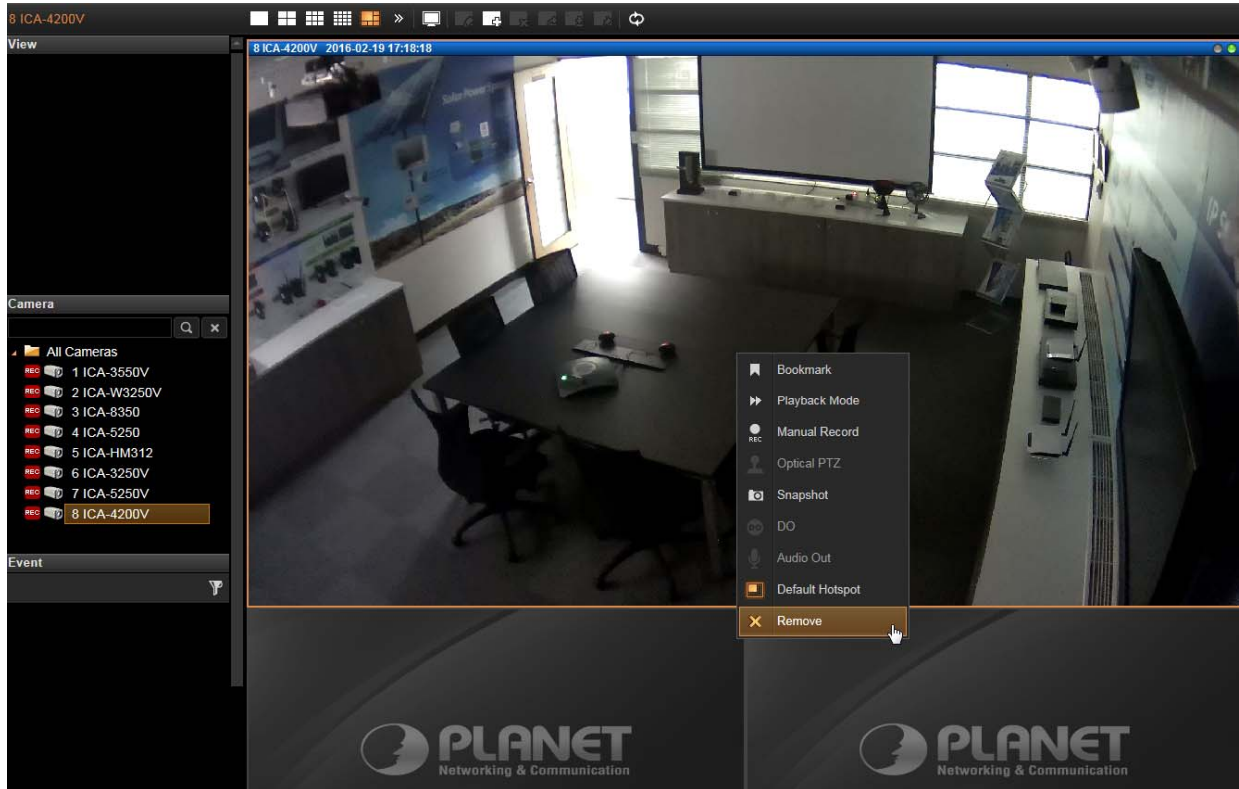
By Device IP




By Device ID (default)

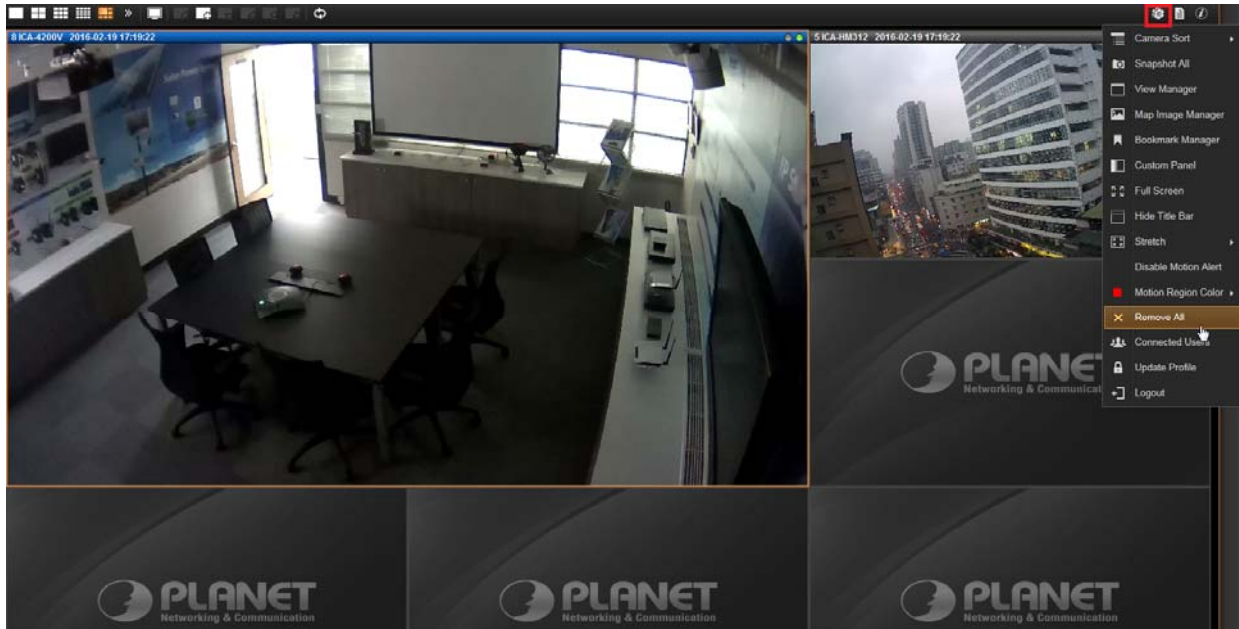
5.4 Remove a Channel

To remove a channel from display window, right-click the mouse for the quick menu on the channel, and select “Remove” to remove this video source.



5.5 Remove All Channels

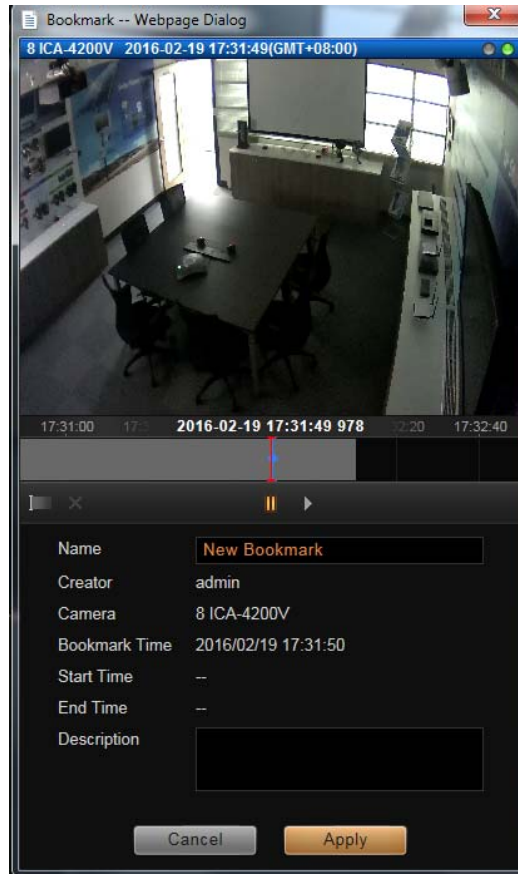
To remove all channels, disconnect all cameras by clicking  in the title bar and select “Remove All”.






5.6 Add Bookmark

During live monitoring, you can create a bookmark of any time on any channel and edit your remarks about it. Select a channel and on the floating command bar, click on the bookmark button. On **Bookmark** window, input the name and description of this bookmark and then click on “**Apply**”.



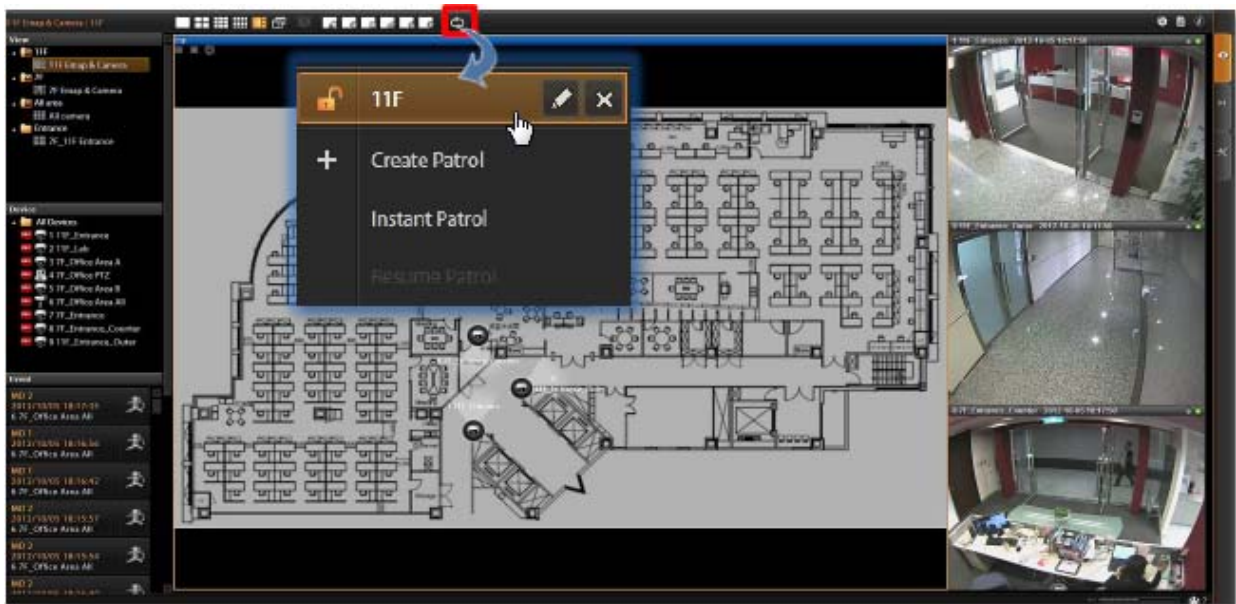


TIP	<p><u>Full Screen</u></p> <p>On the system title bar, click  and then select “Full Screen” to enter full screen mode. Click the icon  on the top right corner of the title bar to return to normal mode.</p> <p><u>Stretch/Un-stretch Channel</u></p> <p>On the title bar, click  and then select “Stretch” to make the width of video fill the window.</p>
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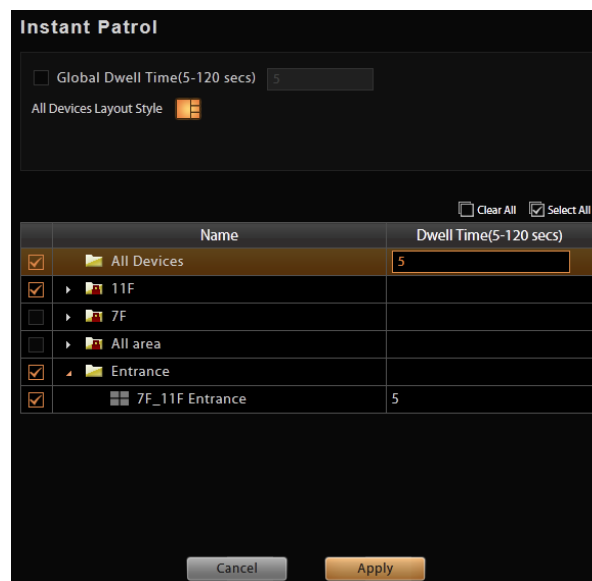
5.7 Enable View Patrol

You may have the saved Views patrol in turn. In this way, the views in different areas in your site may cycle through themselves for you automatically.

On the title bar, click to select a saved patrol. As patrolling is running on Live View, click to stop. You may create an **Instant Patrol**, which will only temporarily take effect during your current login.




To configure the instant patrol, please do the following:



1. Define the **Global Dwell Time** between the views. If you want to set a different dwell time length for individual views, do not check this option. Configure them separately in the table

below.

2. Choose the **Views** to display in patrol. If you select the **All Cameras** group, you will also need to select “**All Camera Layout Style**” for it.
3. Click “**Apply**” to save the settings. This patrol will instantly start running until you click .

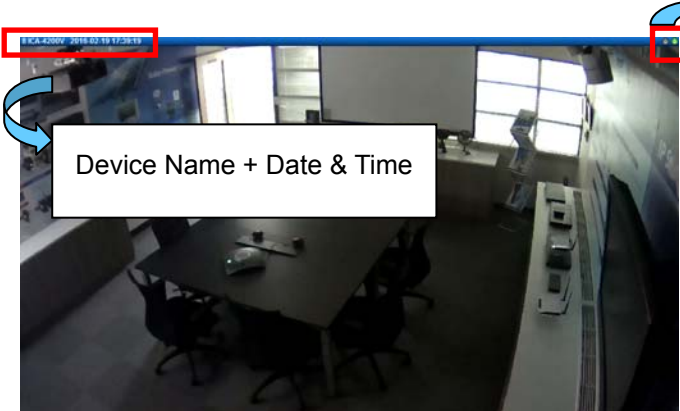
Chapter 6. Monitor the System

6.1 Read System Alerts and Channel Status

On NVR live view screen, it is essential to observe the system status events. As unexpected environmental factors or human behaviors may take place to influence your surveillance system like power failure or internet connection interruption, NVR server may lose the connection with cameras, and hence you might lose the important video evidence.

6.1.1 Channel Status

The title bar of each channel window displays certain status information about this camera.



Device Name + Date & Time

The indicators

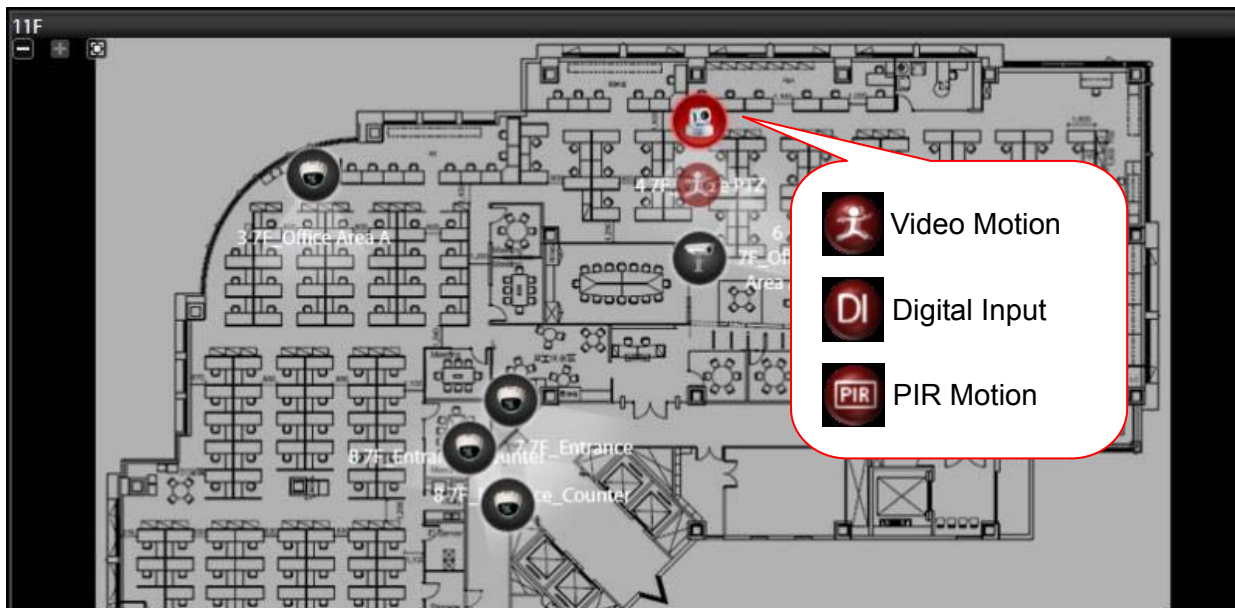
The color of two indicators on top right channel title bar shows the following status:

- **Right**
 - : Device is connected with video presence
 - : Devices is not connected
 - : Device is connected, video is not received
- **Left**
 - : Performing manual recording
 - : Taking snapshot

If this camera is triggered by events such as video motion, PIR motion or digital input device, the channel title bar would turn red for a while to alert you that some movements have been detected.



On a map channel, if a camera is triggered by events such as video motion, PIR motion or digital input device, an event icon will blink beside the camera icon for a few seconds. Click on the camera icon to see mini live view window on the map.

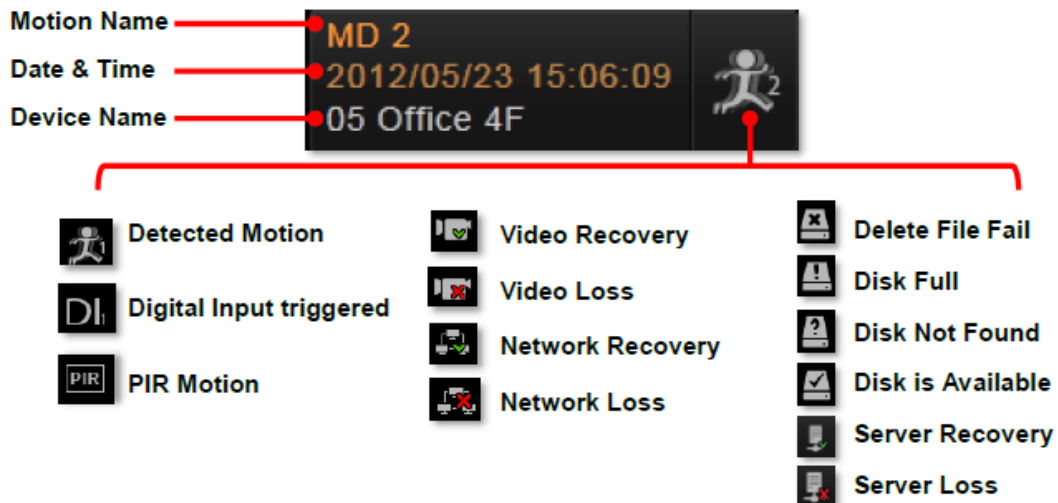


6.1.2 Event Panel

It is important to check out the messages pushed into **Event** panel all the time. These messages are arranged in a reverse-time order (newest on top, oldest on bottom).



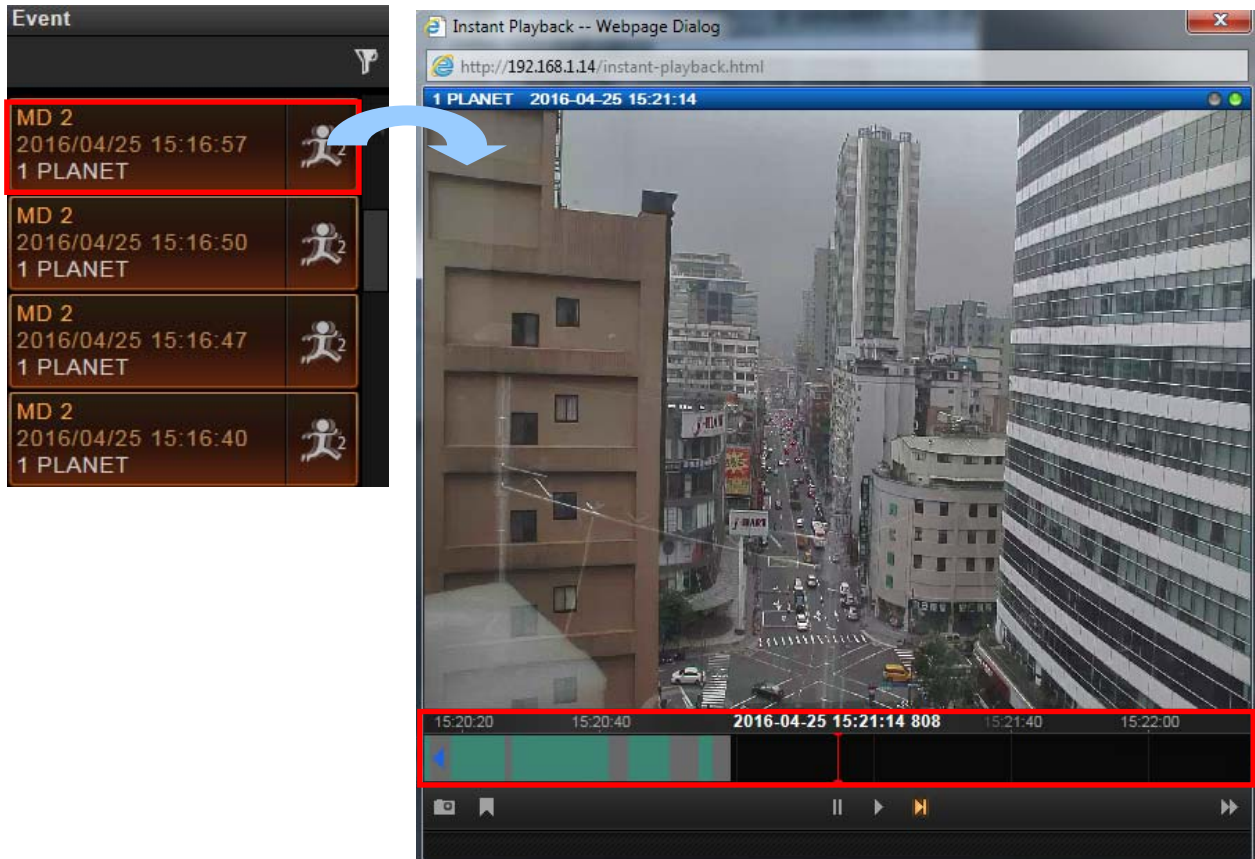
The messages notify you of the following camera or system status:













Note When NVR server fails to connect a device, to get the video or have disk problems, it might be caused by a temporary network disconnection in your overall environment. The connection might recover after the problem is fixed. If not, please contact your system administrator.

6.1.3 Instant Event Playback

Among these types of Event messages, you may individually watch the event playback of a motion (video motion, DI or PIR) event or transmission status event (video recovery and loss, or network recovery and loss). To bring up the instant event playback window, double-click on an event entry:

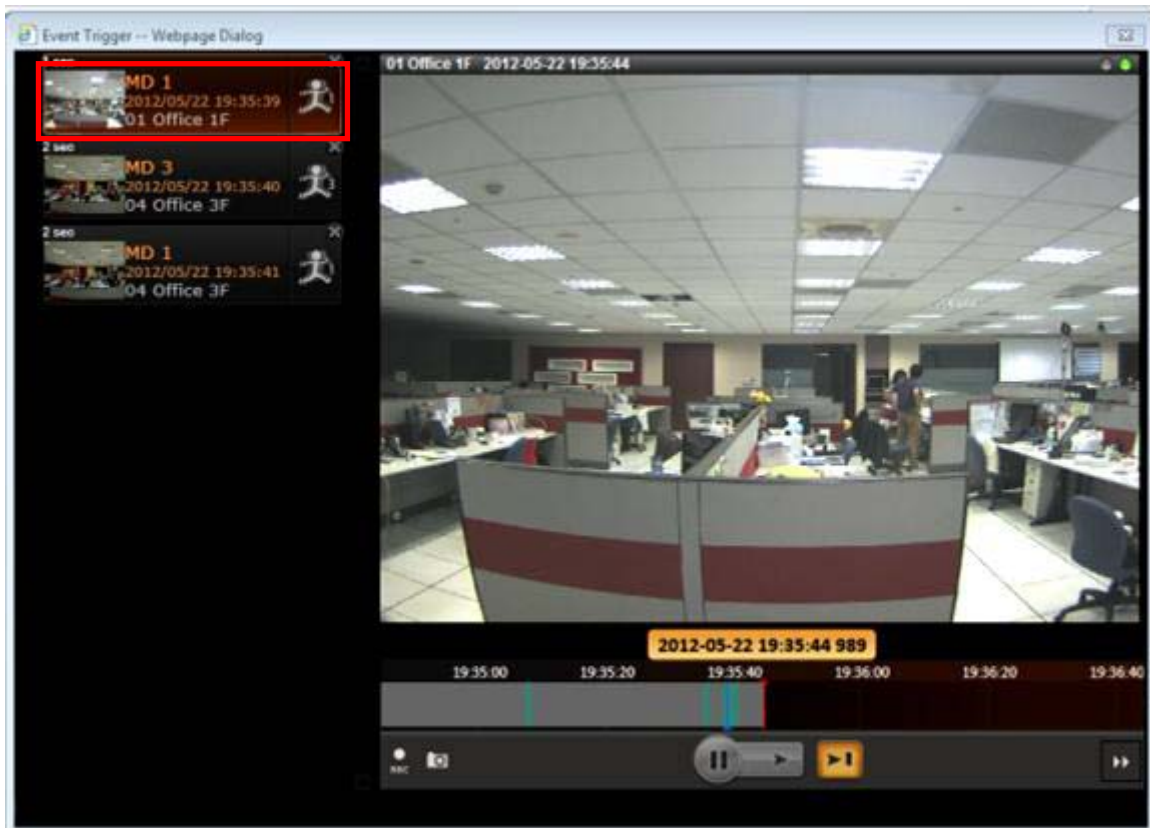


As the window pops out, it will immediately start playing live view stream. You may draw the time bar back and forth to search.

- Click  to play video,  to pause, or  to play live view video.
- On time bar, click the blue mark  or  which indicates the event's occurrence, and then  to play back this event.
- Click  to manually start recording the currently-playing video.
- Click  to take a snapshot of this view.
- Click  to switch to Playback screen.
- Click  on the top right of the window title to close.

6.1.4 Pop-up Event Playback

Sometimes the instant event playback window would automatically pop up to notify you of events detected on certain camera sites. As the events in certain sensitive spots will have higher priority than other channels, your system administrator would apply this “**Pop-up Event Window**” function to these cameras. In this way, these critical events will be pushed into your sight actively.



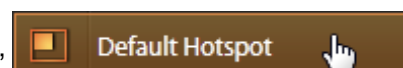
On the left of the window may list a series of motions detected within the same period. You may double-click on any entry to see its live view or play back the event. This window would automatically disappear after a while, and you may still look these events up in the **Event** panel.

6.1.5 Hotspot Window

In your Live View screen, the upper left window may sometimes display a camera video instead of the original channel. This is because the events detected in certain sensitive spots will have higher priority than other channels. Whichever View you are watching, the events detected by those cameras will be temporarily displayed in this window to catch your attention.

You can set any other channel on your live view screen to be the default hotspot channel.

Right-click on the desired channel and select “**Default Hotspot**”



6.1.6 Motion Region Indicator

The motion region indicator is a red frame that blinks when motion inside this ROI (Region of Interest) is detected.



You can turn off the indicators of all channels on Live View screen. On Live View screen, click


 → “Disable Motion Alert”.

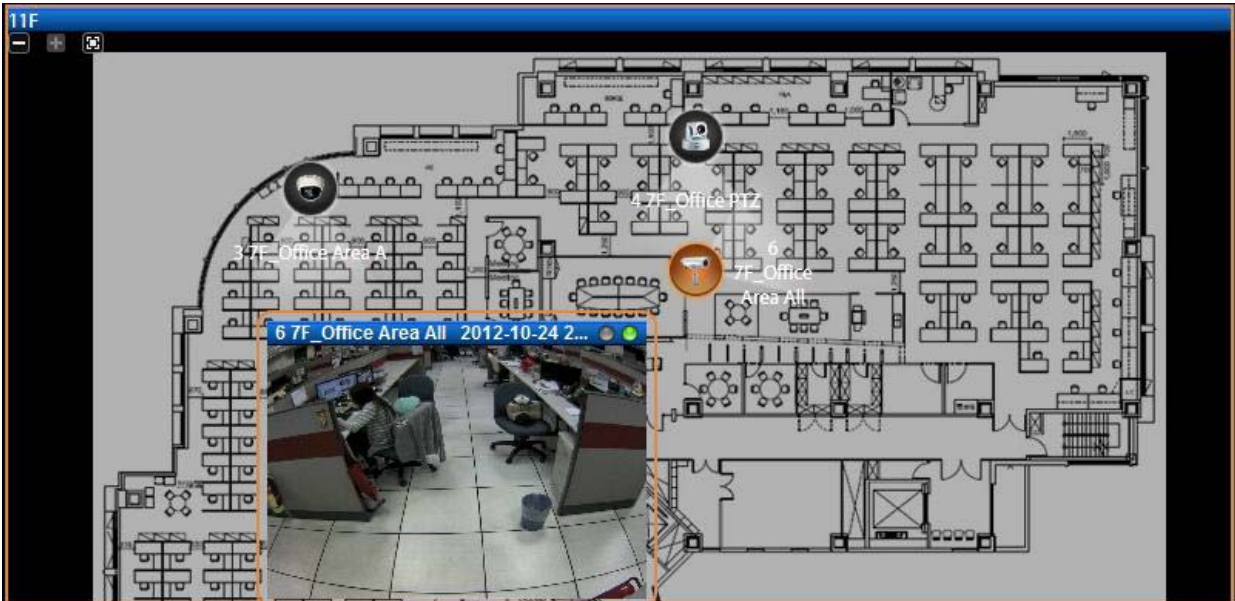
6.2 Live View Operations

Aside from pure watching, there are more benefits provided by NVR server to accomplish more tasks. For example, you may make use of the audio function to communicate with people on camera side, look into more details with PTZ cameras, or navigate the whole scene on the maps.

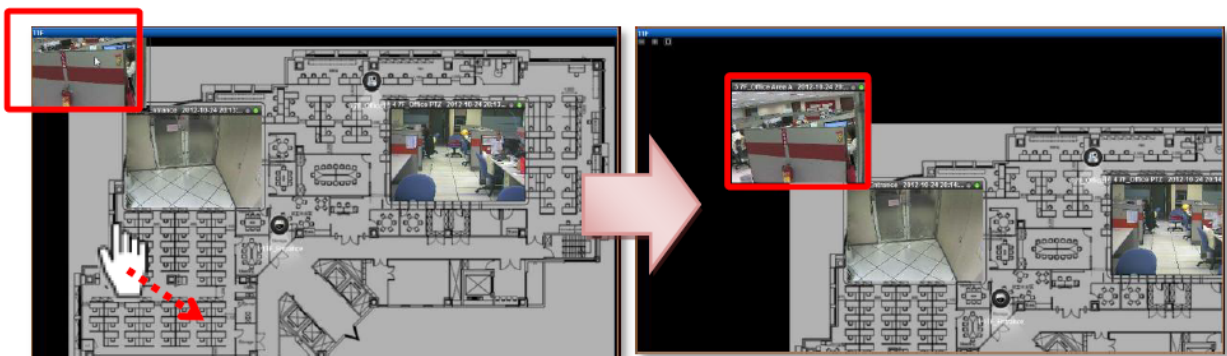
6.2.1 Show Mini Live View Windows on a Map

You may open mini live view windows of all cameras on a map channel to get an overview of what is happening on this map.

- Click on the icon  to enter another linked map.
- Double-click on a camera icon to open its live view window.
- On the map channel, right-click and select “**Show All Live View**”.



If certain mini windows appear out of view, you can drag on anywhere on the map to move the image until the window reveals.





6.2.2 Adjust Audio-in Volume

If one or more cameras are connected with an audio-in device like a microphone, or supports two-way audio function, the audio signal will be recorded along with video stream. You may listen to the real-time audio on **Live View** screen or recorded audio in **Playback** screen. In **Live view**, NVR server will send out the audio signal when you select a channel. On the

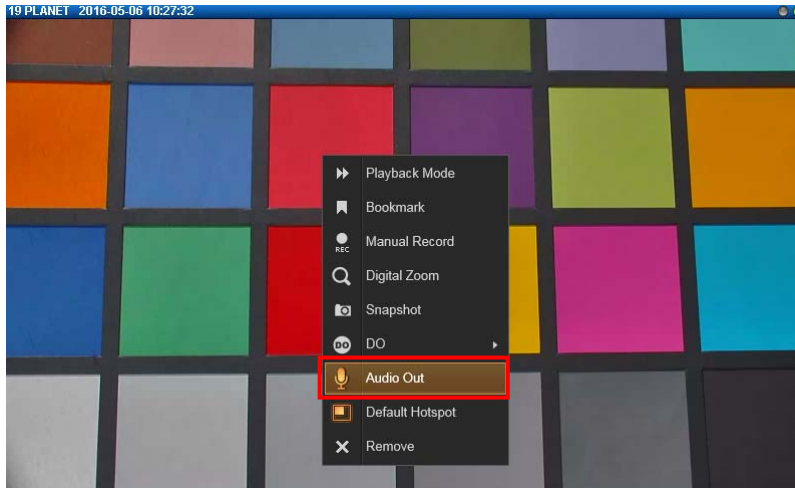
bottom right of **Live View** screen is the audio-in volume control.




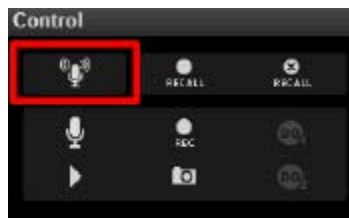
- To mute the channel audio, click  .
- To activate the channel audio, click  .
- To adjust audio volume, drag on the volume meter.

6.2.3 Send Audio Signal

To talk to the audience through speaker connected to one camera, right-click on a channel to bring up the quick menu, and select “**Audio Out**”. When this icon appears in orange, your audio-out function is activated, every sound you make through the microphone on your client computer will be sent out to this camera only.



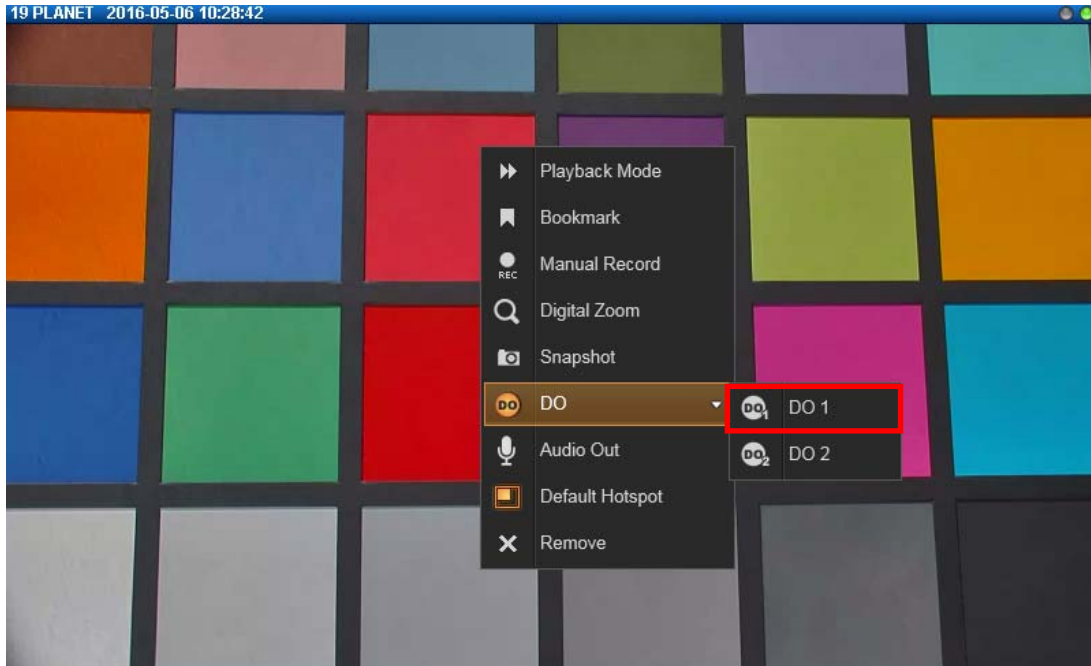
To broadcast to multiple cameras, click  on **Live View Control** panel. Your audio will be sent to all the channels connected to a speaker in current View.



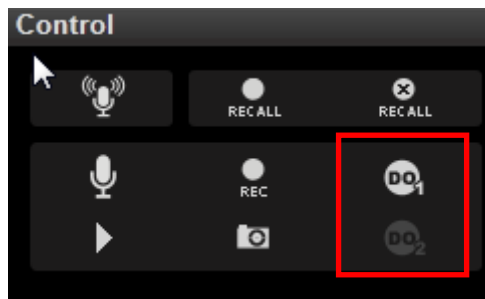
6.2.4 Trigger Digital-out Device


If a camera is connected with a digital-out device such as a door contact or an alarm, you may trigger it via NVR server on **Live View** screen. Do either of the following:

On the channel, right-click to bring up the quick menu, the DO icon will appear available if the corresponding DO device is connected. Click “DO” to trigger it, click again to stop triggering.




As a channel is focused, click  on **Live view Control** panel, click again to stop triggering.



 **Note** Triggering DO and sending audio to a specific device are only available on a single camera channel. On a map channel, you may do “**Audio Broadcast**” to all devices in this view.

6.2.5 Watch Instant Playback of a Channel

You may watch the playback of any channel in a pop-up window on **Live View** without switching to **Playback** screen. As a channel is focused, click on  **Live View Control** panel.





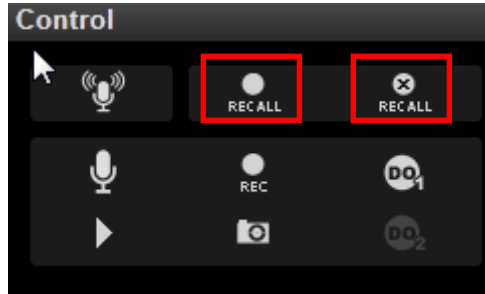
6.2.6 Manual Recording

You may manually record the real-time video on **Live view** screen. This video will only be searchable in **Playback**. You may switch to **Playback** screen to find this clip (please refer to the section in this manual: How to Do Playback on page 41 for instructions). To do manual recording, do one of the following:

On a channel, right-click to bring up the quick menu and then select "**Manual Record**". Once the recording starts, the left indicator on the channel title bar will turn red. To stop recording, click "**Manual Record**" again on quick menu.



To manually record all channels in current View, on **Live view Control** panel, click  to start; click  to stop.



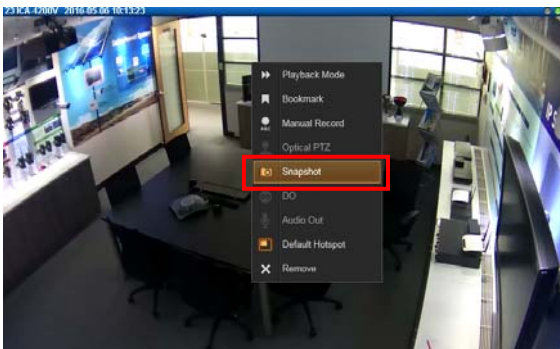
6.2.7 Take a Snapshot of Live Image

You may take a snapshot on a channel live image on **Live View** screen. The snapshot will be saved to default folder on your client computer as .jpg format (The system default location is **Windows Desktop**). You may find the location path on the bottom of NVR window after taking a snapshot.

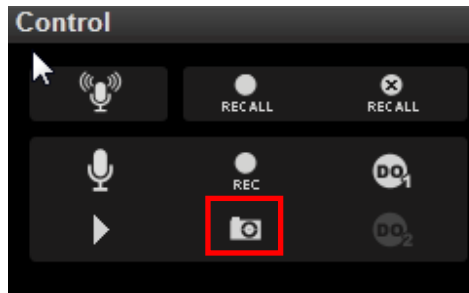
Snapshot to: C:\Users\Wen.Cheng\Desktop\Channel01_20121024184041_759.jpg

You may do one of the following to take a snapshot:

On a channel, right-click to bring up the quick menu and select “Snapshot”. While the snapshot is being taken, the left indicator on the channel title bar will turn blue. After the picture is taken, the indicator will then turn gray.



As a channel is focused, click  on **Live view Control** panel to take a snapshot.

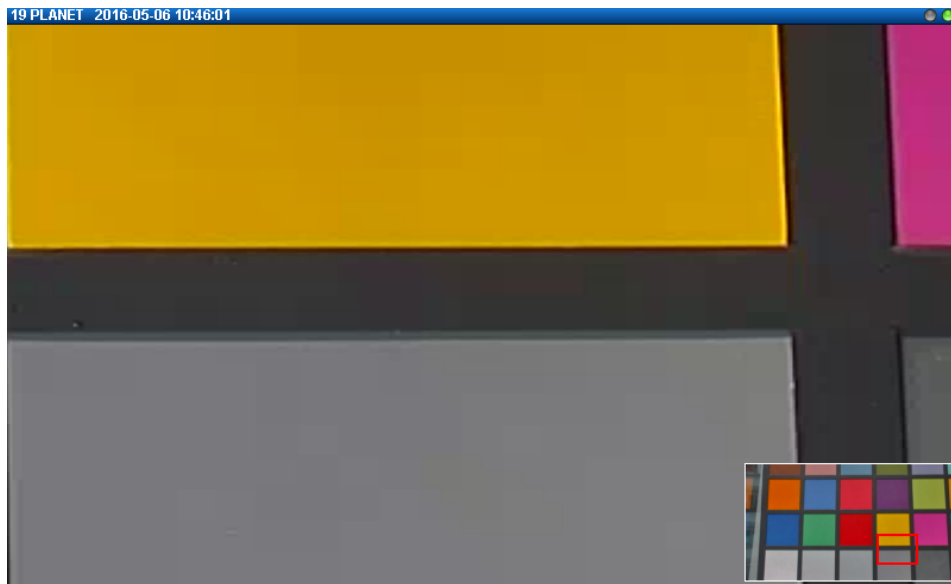


6.2.8 Digital PTZ Operation

Regardless of the camera models, you may perform digital zooming on **Live view** screen.

Click and drag a highlight rectangle over any channel, and the area highlighted will be displayed in the full live video window. In this mode, a picture-in-picture view will show in the lower right of live view window. A red rectangle will mark the currently enlarged view area within the full size video. You may drag the red rectangle over the image to zoom another area.

To go back to the original full video view, just right-click on the minimized Picture-in-Picture view.



6.2.9 Optical PTZ Operation

If there is a camera supporting optical pan/tilt/zoom function in current view, you may operate it via the PTZ panel.

Once you select the camera, the optical PTZ controls will become available on **PTZ Panel**.

PTZ Panel Overview



Digital/Optical Zoom switch
Click to switch the PTZ mode between digital PTZ [🔍] and optical PTZ mode [🔍]. A non-PTZ device will only have digital PTZ mode.

Zoom Controls
If the camera has controllable zoom, these two buttons will zoom the lens in or out.

8-directional PTZ navigation controls
Click to control PTZ movements.

Focus Controls
If the camera has controllable focus, this will shift the focus of the camera.

Pan/Tilt/Zoom Speed Controls
Click on the speed meter to define the speed of PTZ movement.

Iris Controls
If the camera has controllable iris, these two buttons will modify Iris level.

Goto Preset Menu
Select the preset point name from the list to go to the spot. Click the title "Goto Preset" to close menu.

Preset Tour Menu
Select a tour name from the list to start a PTZ tour. Click "Stop" to stop touring. Click the title "Preset Tour" to close menu.

PTZ Command Menu
Select a command from the list to execute particular action command. Click the title "PTZ Command" to close menu.

Using Mouse Controls

You may also use mouse to perform PTZ negation on a channel view or a mini live view window on a map.

Place the mouse over the channel to do the following PTZ operations:

- To execute optical **Panning** and **Tilting**, click anywhere on the live window to allow the camera to move in that direction. The length of the direction indicator is proportional to the Pan and Tilt speed. The farther you place the cursor from the center, the faster the Pan/Tilt movement.
- To execute optical **Zoom in** or **Zoom out**, scroll the mouse wheel forward to zoom in;

scroll the mouse wheel backward to zoom out.

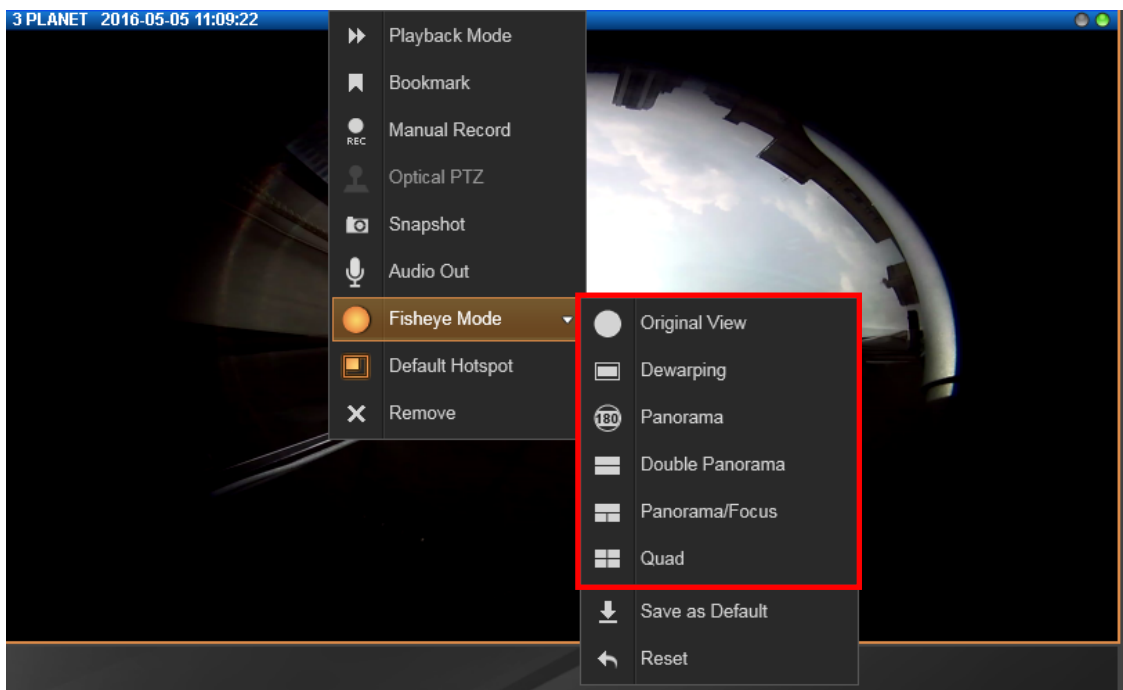


6.2.10 Navigate a Fisheye Camera Channel

On a fisheye camera channel, you may change the fisheye view mode and view point at will. What you see on **Live View** screen will not affect what is being recorded, and you can have an alternative of view mode when doing playback.

Change Fisheye Mode

On this channel, right-click to bring up channel menu; click "**Fisheye Mode**" and select one mode.



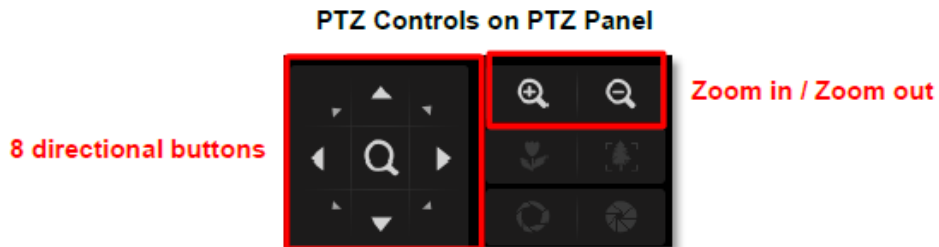
When you click on a channel which is set to such modes: **Panorama** mode with **Wall** mounting, **Double Panorama** mode with **Wall** mounting, **Panorama Focus** mode with **Wall** mounting and **Double Panorama** mode with **Ceiling** mounting, a clickable cursor will appear on the view to allow you explore the image.



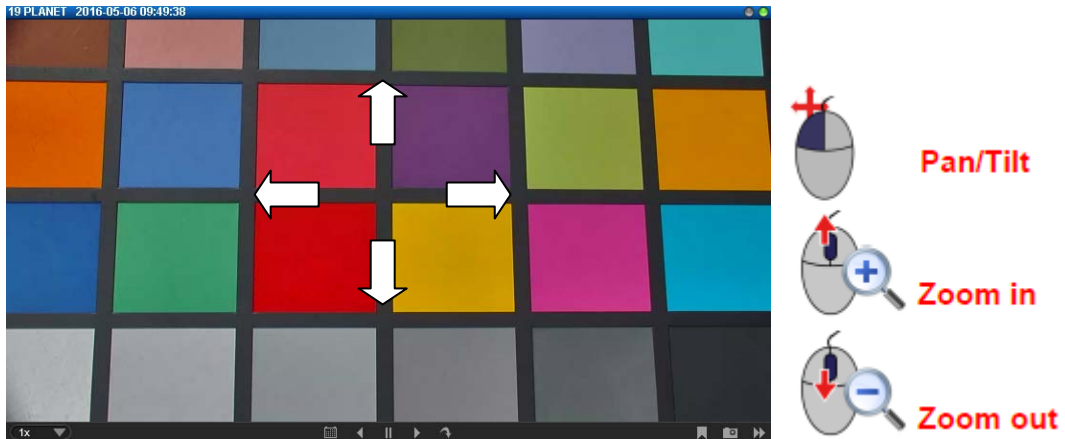
PTZ Operation

Select a fisheye mode; click the entire channel or a region of interest to navigate this view.


- Use PTZ Panel controls to operate PTZ movements:



- Click the mouse anywhere on the view to pan/tilt; scroll the mouse wheel to zoom in/out.



- To reset the PTZ navigation area back to default viewing angle, right-click to bring up channel menu, and then click “Reset”.

 <p>Note</p>	Once a channel is changed to any of the following fisheye modes: Dewarping , Panorama , Double Panorama , Panorama/Focus or Quad , the resolution of this live stream will become 1920x1080, so will the resolution of the snapshot.
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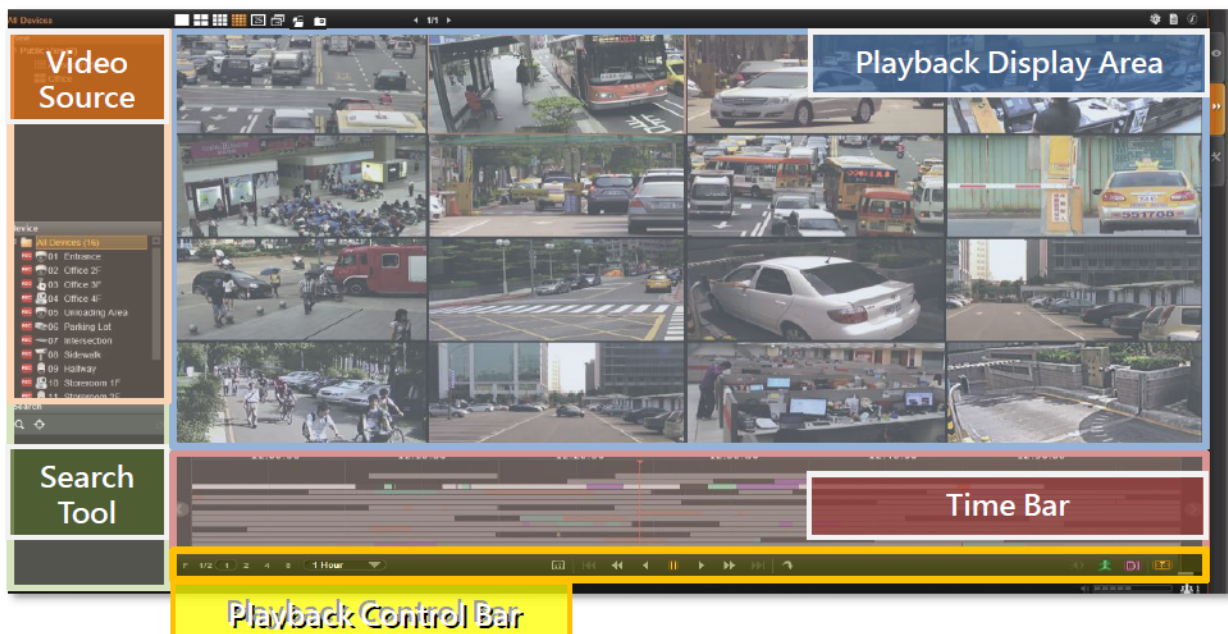
Chapter 7. Playback

NVR Playback is the NVR module that processes recorded clips, where you may search, play back and export video. Multiple channels can be played synchronizedly, and video clips may also be exported in either RAW or AVI format.

7.1 Playback UI Introduction

Playback screen consists of four function areas: **Video Source**, **Playback Display**, **Time Bar** and **Search Panel**.

- **Video Source:** Provides both saved **Views** and **Camera Tree**, you may drag a view or camera to **Playback Display** Area to view the recordings.
- **Playback Display:** You may have multiple-channel synchronized playback in this area.
- **Time Bar:** The time bar of the video source in **Playback Display** area will be shown here. You may drag on the time bar back and forth to your desired time spot.
- **Search Tool:** Other than navigating the recordings by scrolling the time bar, you are provided with two search methods: IVS smart search and event type search. In this area, you will define your customized search filters.
- **Playback Control Bar:** All the controls related to video playing including play speed switch, play or pause button.



7.2 How to Do Playback

On NVR screen, click on “**Playback**” page to enter **Playback** view; none of the video sources

is selected in the beginning, and you have to select your desired channels.

Add Video Source

There are two ways to pull in video sources:

1. In **View** area, click on a saved view.
2. From **Camera** panel, double-click on a camera or drag it to **Display** area.

Through either way, you may add video sources, and their time bars will display in **Time Bar** area. Your playback operations and search will be based on these selected channels.

Meanwhile, you may change the layout styles from **Layout Selection Bar** on the title bar.



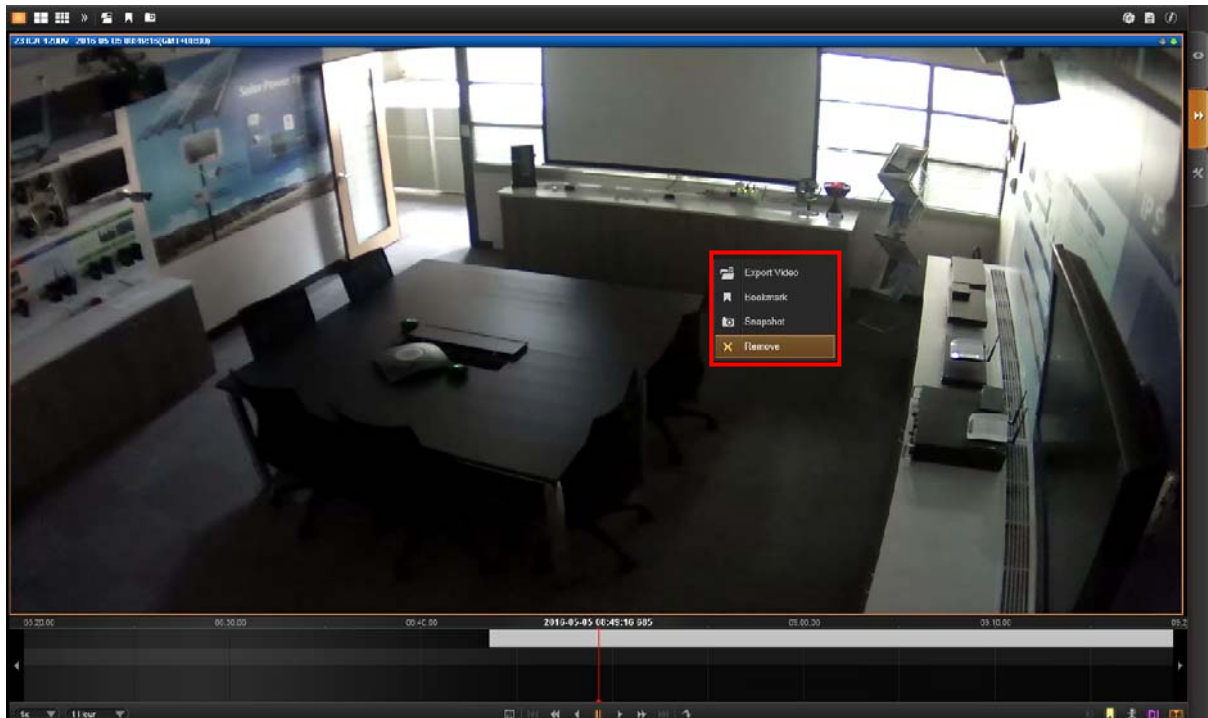
Remove Unwanted Channels


You will only need the desired channels to be kept in **Display** area, as you don't want too many unnecessary results after you perform a search.

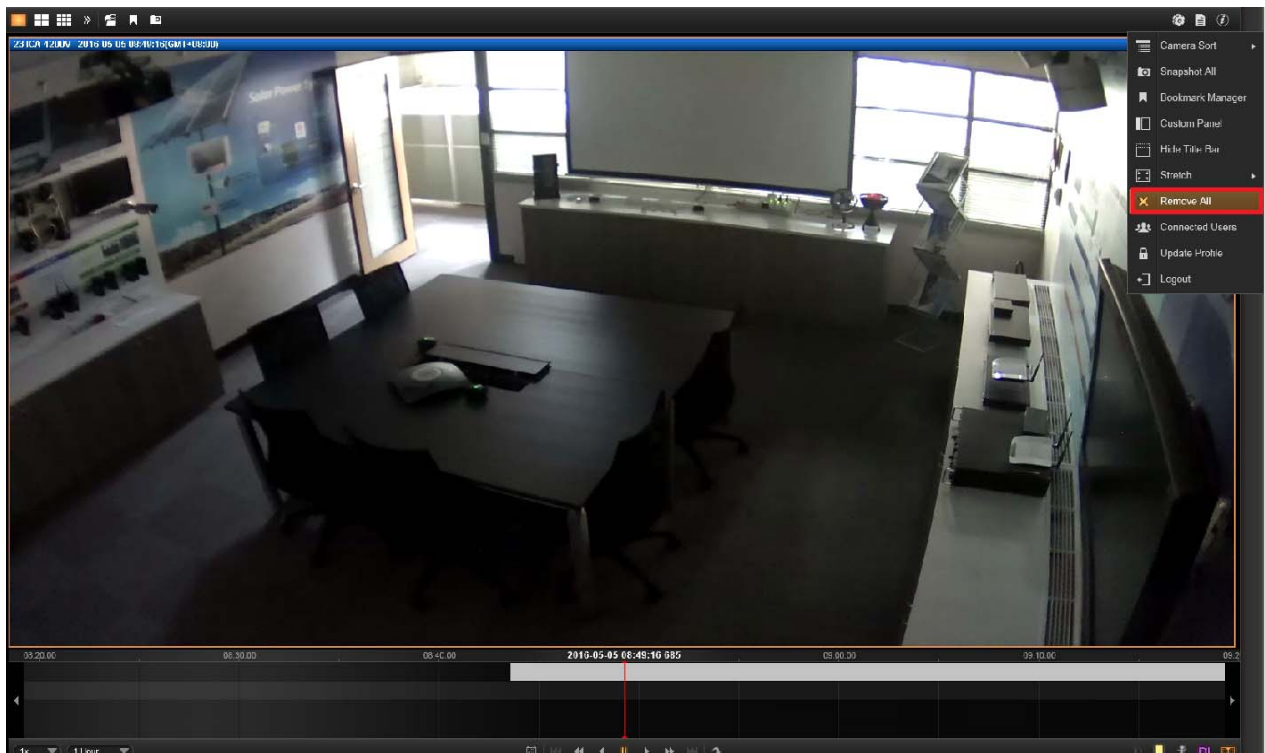
To remove a channel from **Display** area, you may place your cursor over the channel, and right-click the mouse and then right-click the menu that provides "**Remove**", "**Export Video**" and "**Snapshot**" for a single channel.



The view of a map channel will not be recorded; therefore, it has no time bar or recordings for playback.



To remove all channels at one time, on the title bar, click  to bring up the most used playback-related commands menu, and select **“Remove All”**.



7.3 Search on Time Bar

You may focus on a certain channel as a search base. Its time bar will be highlighted as well.



1. To adjust the time frame seen on the **Time Bar**, you can click on any location on the **Time Bar** and use the scroll wheel on your mouse:

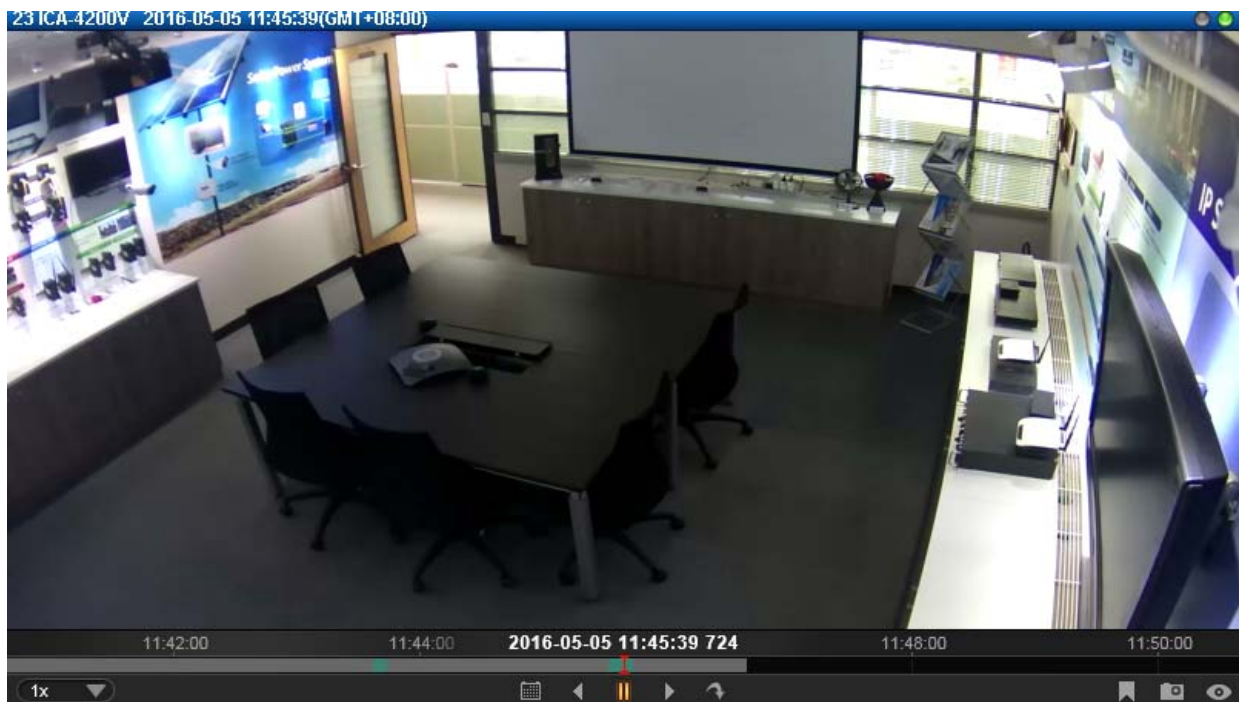
- Scroll upwards to view a narrower time frame (For example, change the time frame from 1 hour to 30 minutes)
- Scroll downwards to view a broader time frame (For example, change the time frame from 1 hour to 2 hours)

Note that if your mouse doesn't provide a scroll wheel, this function can also be achieved by adjusting the "**Time Bar Scale**" in the **Playback Control Bar**.

2. To find specific later time spot, drag the cursor to the left.

3. To find specific former time spot, drag the cursor to the right.

4. Click on  to previous time section;  to next time section.

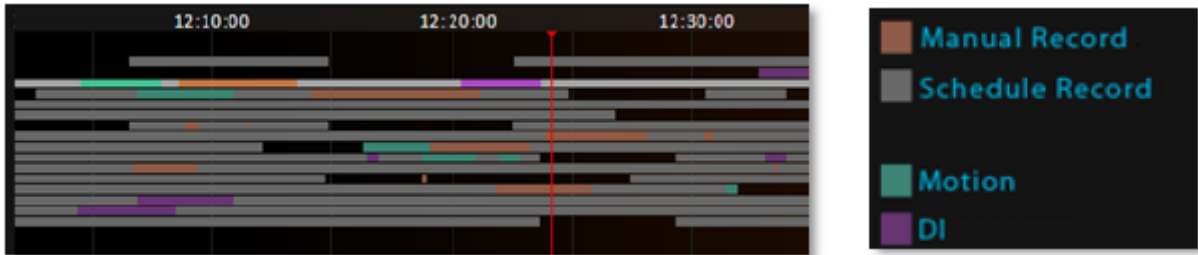


Display Event Types

By default, the “**Manual**” recording will display in orange, while “**Schedule**” recording displays in gray on the time bar. To highlight specific events, you may enable the “**Event**” and “**DI**” event highlighters on **Playback Control Bar**.

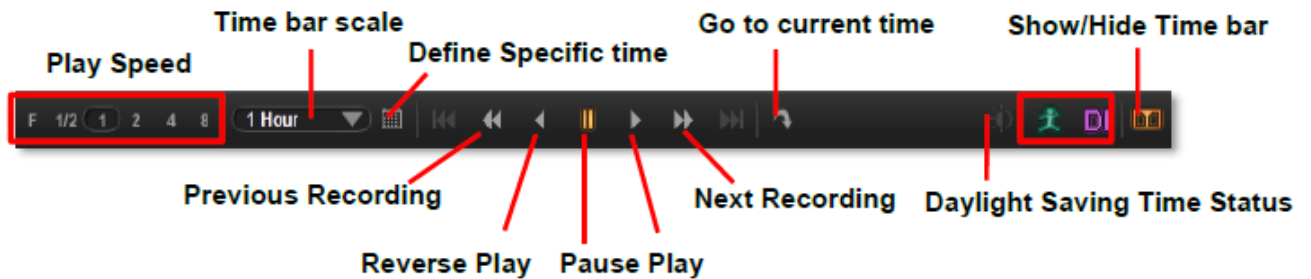


Event Type Highlight Colors



Playback Controls

The playback related controls reside in **Playback Control Bar**. You may adjust the video play speed, do a reverse/forward play, or pause the video to spot your desired view. For non-continuous recording types such as **DI**, or **Event** recording, you may use the “**Previous Recording**” or “**Next Recording**” buttons to jump to the part directly.



Daylight Saving Time Switch



NVR Server will detect and display your client computer local time on **Live View** and **Playback** screen. Once you apply **Daylight Saving Time** rule on your computer, NVR server will automatically enable this function on **Control Bar**. By default, this function will be enabled automatically as daylight saving time begins. You may disable this function to view playback according to **Coordinated Universal Time**.

7.4 Digital Zoom on Channel View

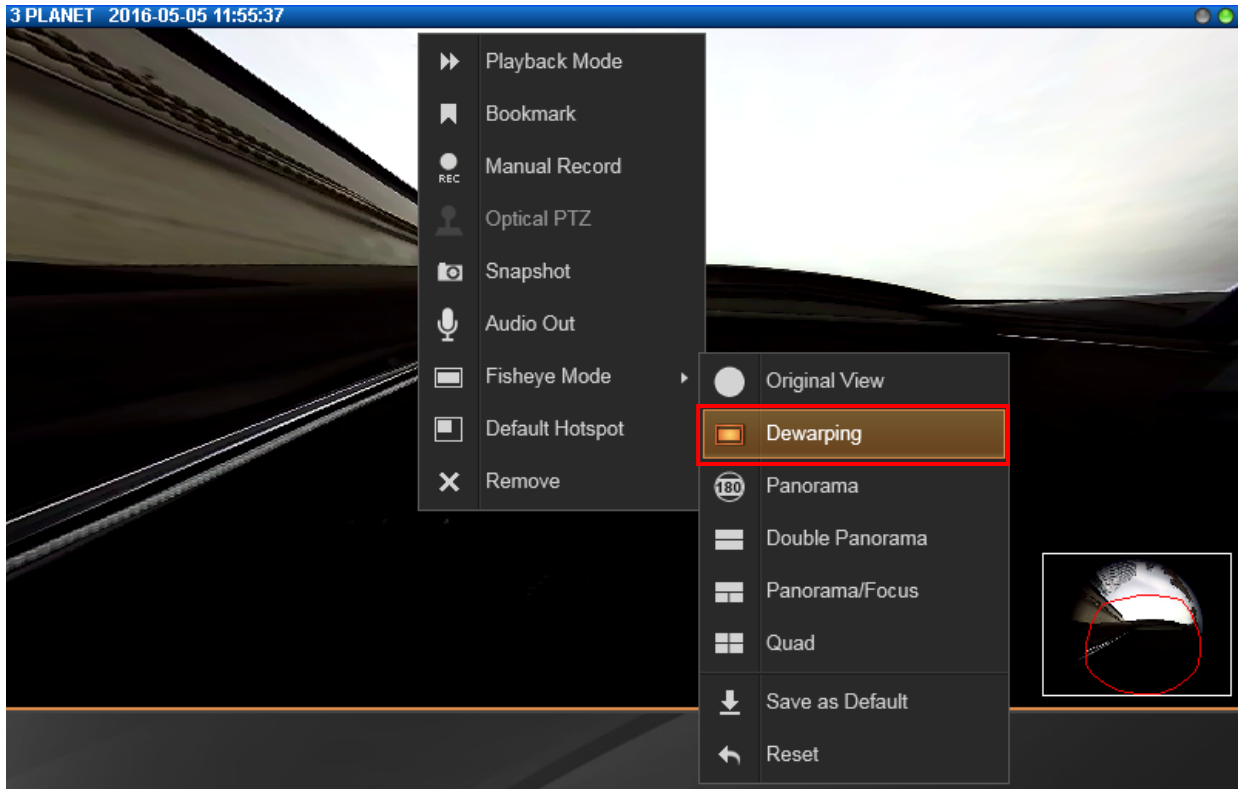
Regardless of the camera models, you may perform digital zooming while the video is playing.

1. Click and drag a highlight rectangle over any channel, and the area highlighted will be displayed in the full live video window. In this mode, a picture-in-picture view will show in the lower right of live view window. A red rectangle will mark the currently enlarged view area within the full size video. You may click and drag the red rectangle to see another area.
2. To go back to the original full video view, just right-click on the minimized Picture-in-Picture view.



7.5 Explore Fisheye View

You may change to the desired fisheye view mode on Playback screen. To select a fisheye camera channel, right-click to bring up the channel menu → Fisheye Mode → select one view mode.




In a view mode where ePTZ operation is available (e.g. **Quad** mode), you may explore the region of interest using mouse or **PTZ Panel** at will. For ePTZ operation instructions, please refer to Navigate a Fisheye Camera Channel on page 38.

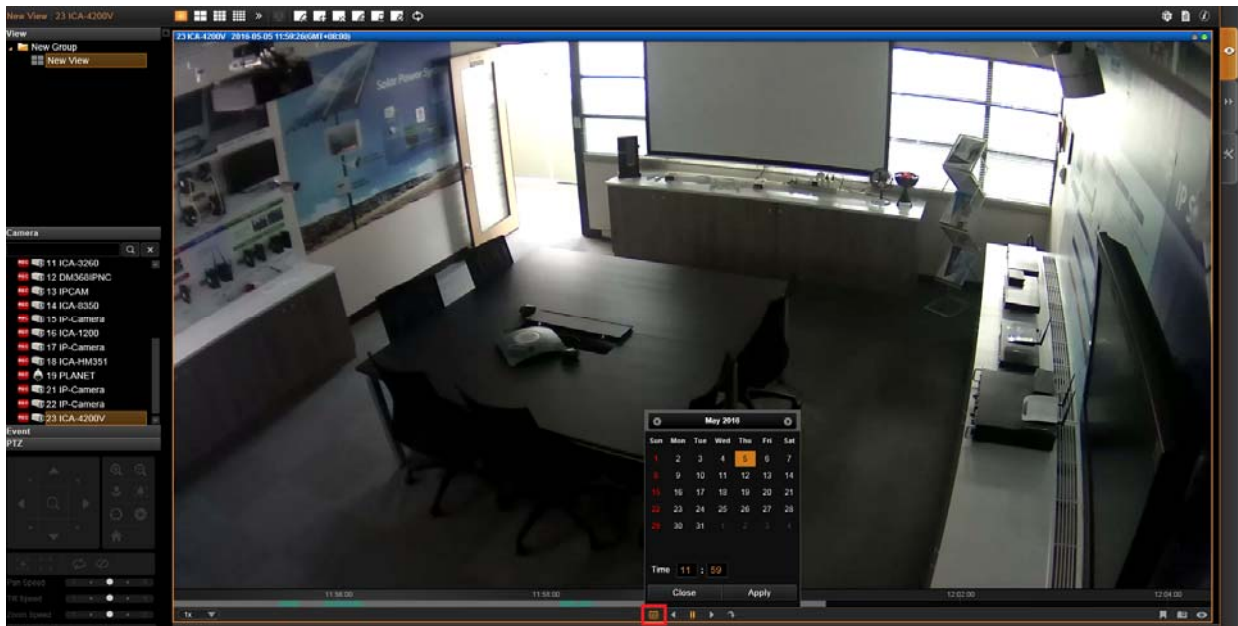
7.6 Search by Time

If you simply want to skim through the footage record around a certain time, you can start by locating the specific time on the time bar.

1. Double-click on your desired channel or drag it to the display window. The channel view will appear in the window.

2. On **Playback Control Bar**, click , and specify the target date and time on the calendar window, and then click **“Apply”**.

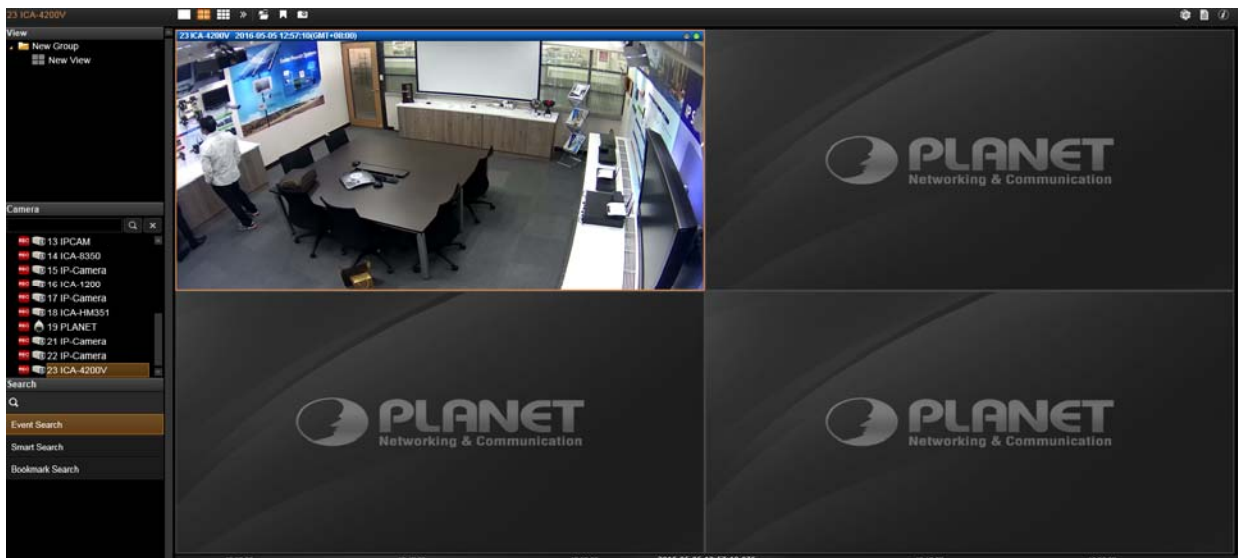
3. The time bar will immediately locate the target time.



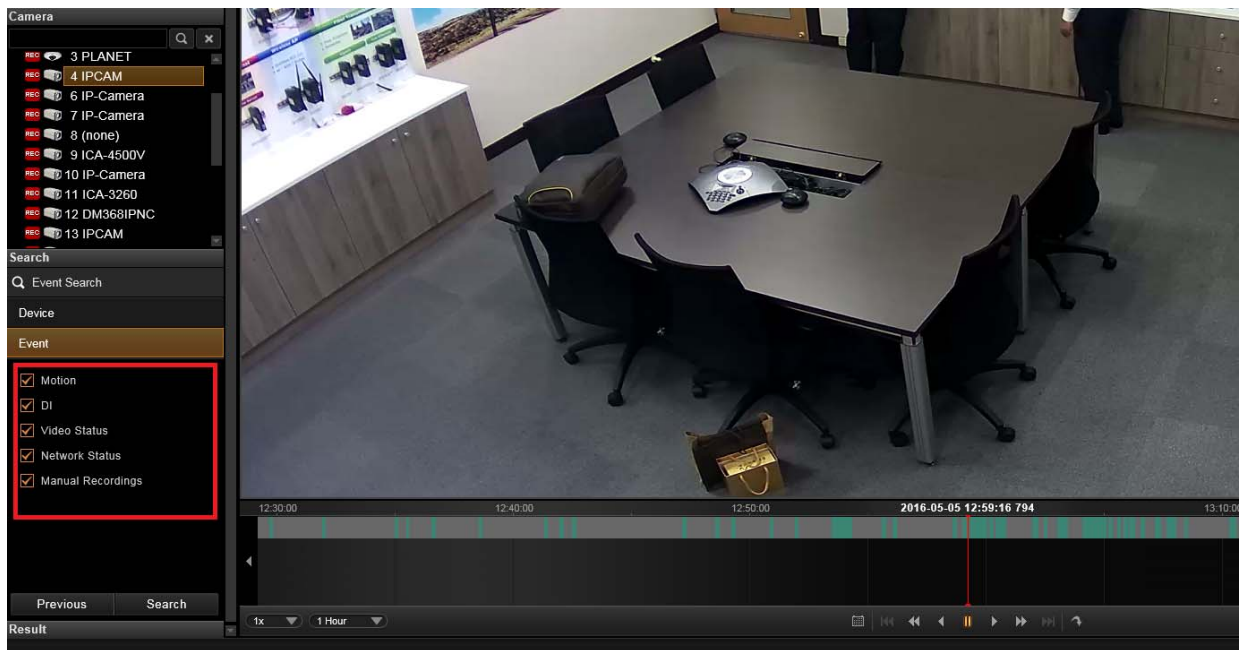
7.7 Search by Event Type

If you are clear about (1) When (2) as which event type (3) Where the incident happened, you will not need to drag on time bar all the way to the spot. The event search tool can sort out the video clips that match your criteria.

1. Double-click on your desired channel or drag it to the display window. The channel view will appear in the window.
2. Drag time bar to the target time.
3. On **Search Tool** panel, there are three options, such as **Event Search**, **Smart Search** and **Bookmark Search**.



4. Select an event type of event search, and you can select an unwanted filter and delete it by unchecking the option.
5. Select the desired filter and click “**Apply**” to start searching.



7.8 Search by Video Analytics

NVR server is equipped with two useful video analytics that can perform advanced search – **Motion** and **Tamper**.

Motion

- Unlike the typical motion detection method, this motion video analytics algorithm can detect a maximum of six regions in a view, including rectangle regions and polygon regions.

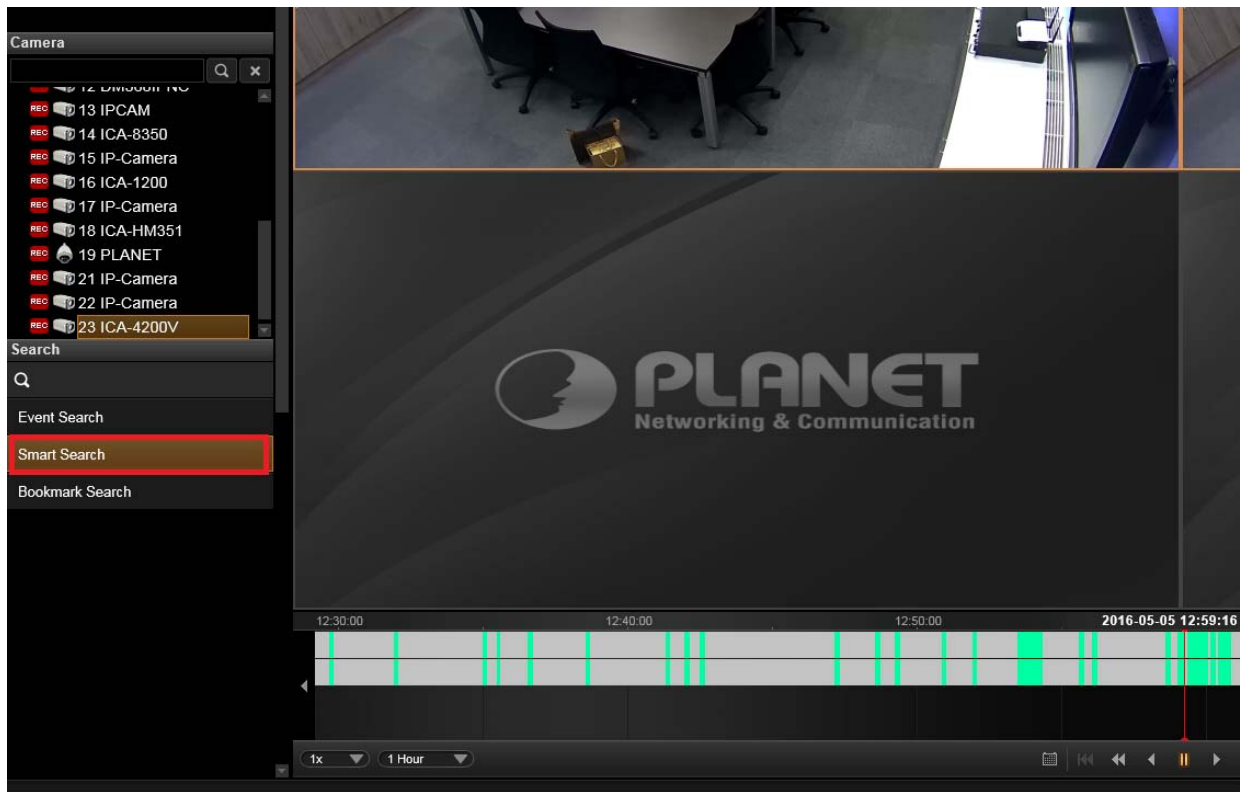
Tamper

- A camera that has been tampered with is not able to serve its purpose. To avoid this, NVR offers an algorithm to detect whether any form of tampering has been done to a camera, be it in the form of redirecting the angle of the camera, de-focusing the camera, covering, or spray-painting the camera.

To start,

1. Double-click on your desired channel or drag it to the display window. The channel view will appear in the window.
2. Drag time bar to the target time.

3. On **Search Tool** panel, click “**Smart Search**”.

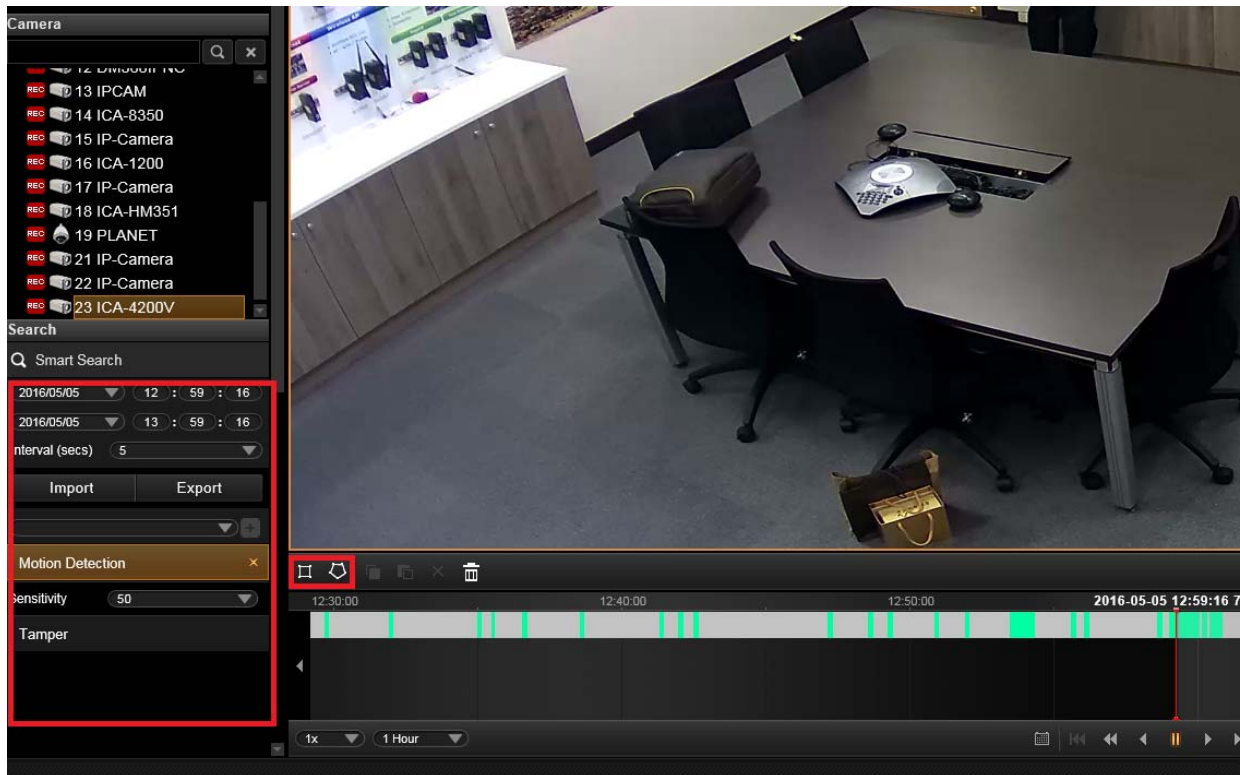



4. Define the time range.

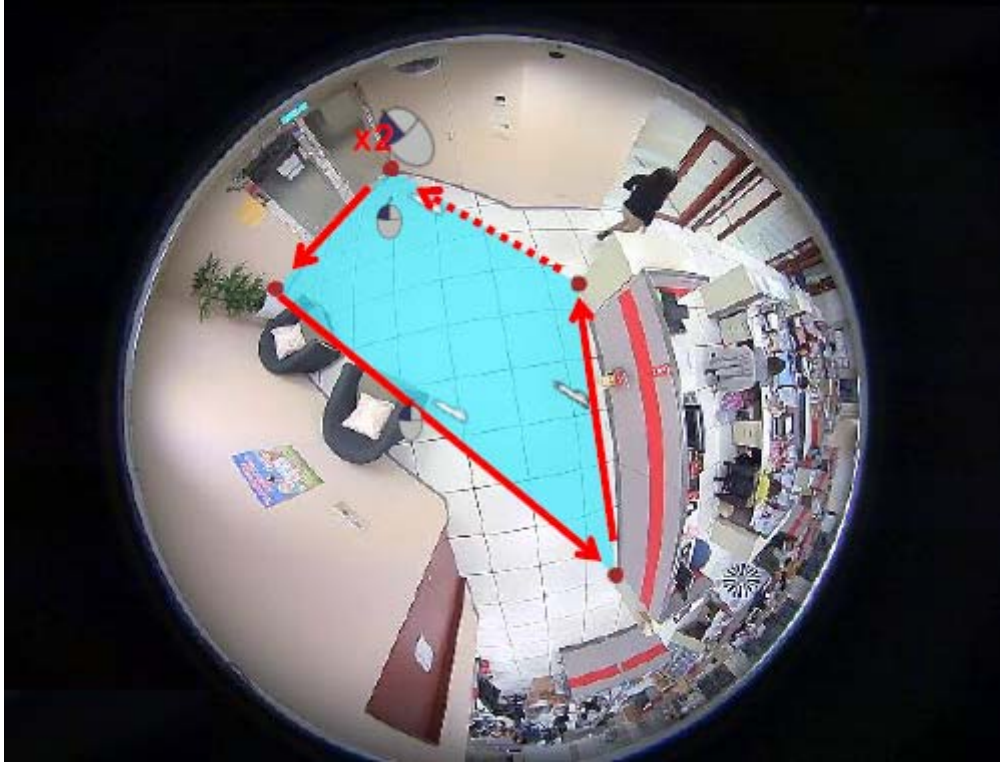
5. Select the video analytics type

6. Click “+” to create this filter. You can select an unwanted filter and delete it by clicking on the “x” on the right.

7. After this filter is created, draw the regions on the channel view. (You can define a total of six regions for a motion filter, while tamper filter will analyze the whole camera view.)



If the area you want to mark does not fit to the form of a rectangle, you may also want to draw a polygon by selecting the  icon. To draw the lines for the sides of your polygon, click your cursor to mark the endpoints of each line. **Double-click** on the final endpoint of the final line to confirm and highlight the polygon in light blue, as shown in the illustration below. Make sure your lines connect (a minimum of three lines) to form a closed shape.

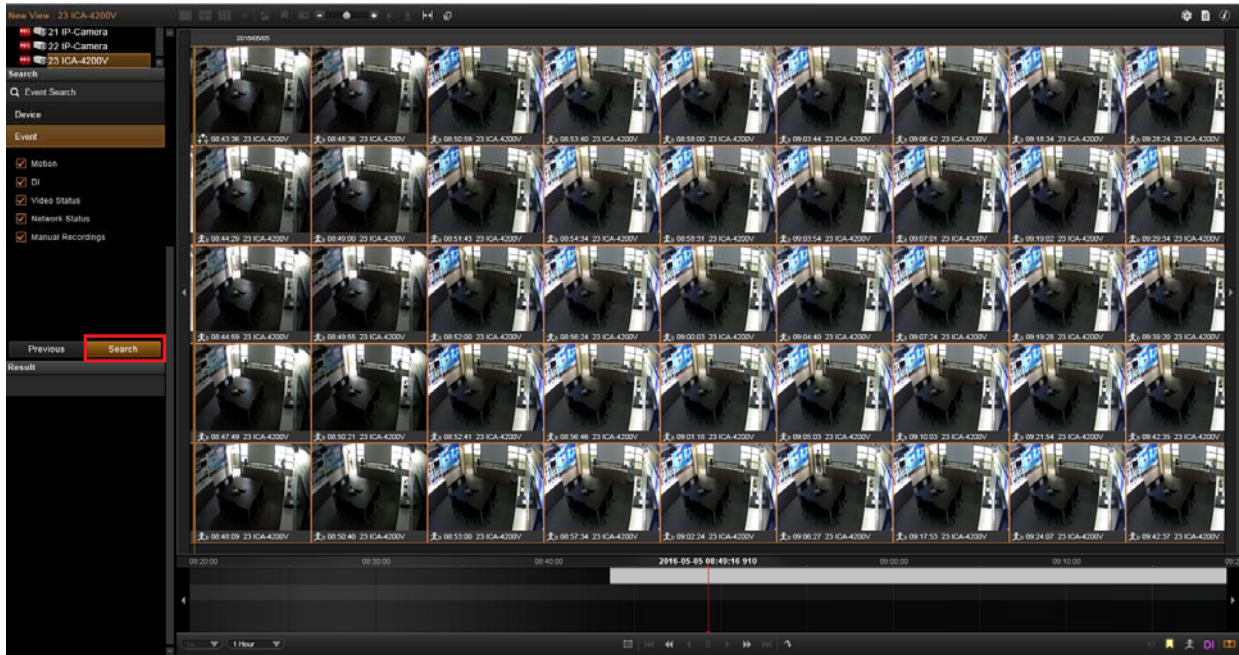


8. Click “**Apply**” to start searching.

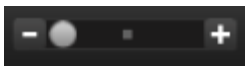



To create a new search, simply double-click on a camera on **Camera** list, and follow the steps mentioned above again.

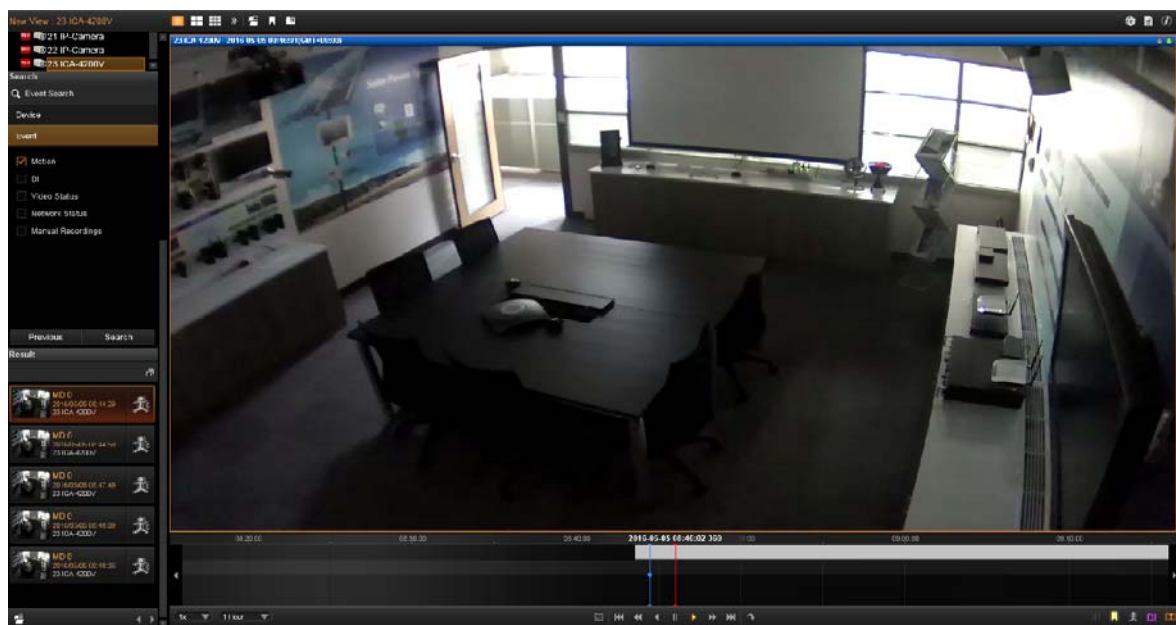
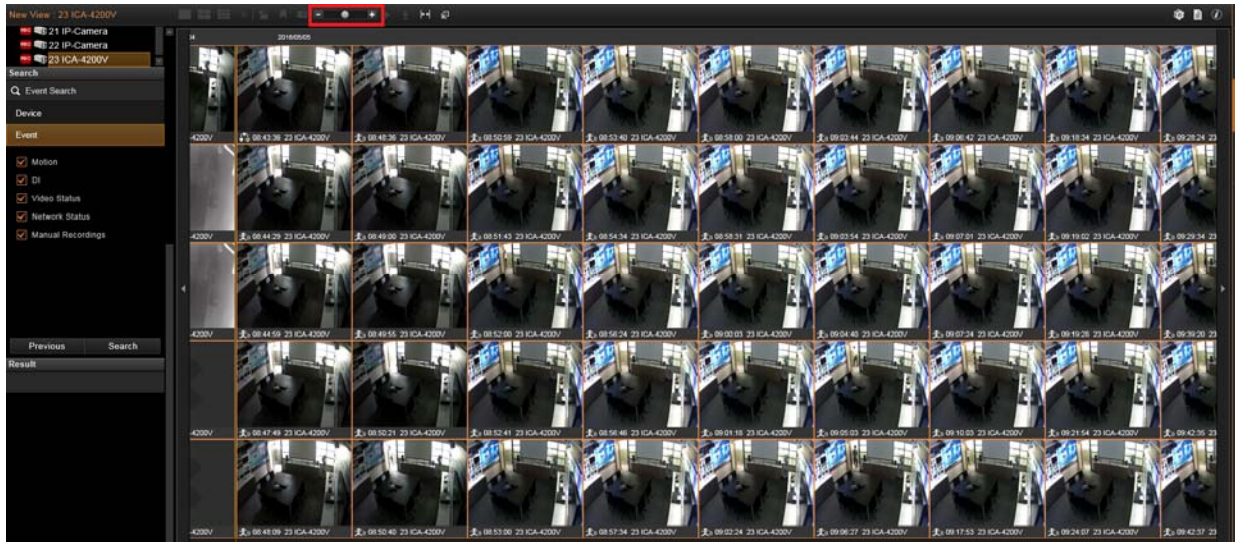
7.9 View Search Results


The search results will then start being generated in thumbnails in **Search Result Viewer** window. However, it might take a few seconds if a large number of results are found. The thumbnails are listed in sequential order, left-to-right and top-to-bottom. You can drag on the **Search Result Viewer** to your desired time to find the snapshots of the incidents.



For easy exploring the search results, on **Search Result Tool Bar**, you can

-  Adjust the size of the snapshots, the smaller the thumbnail's size is, the more results you can see in the view.
- Select a thumbnail and click  to download its snapshot.
- Select a thumbnail and click  to directly start playing this event.
- Select a thumbnail and click  to view the event card list instead of thumbnail view.

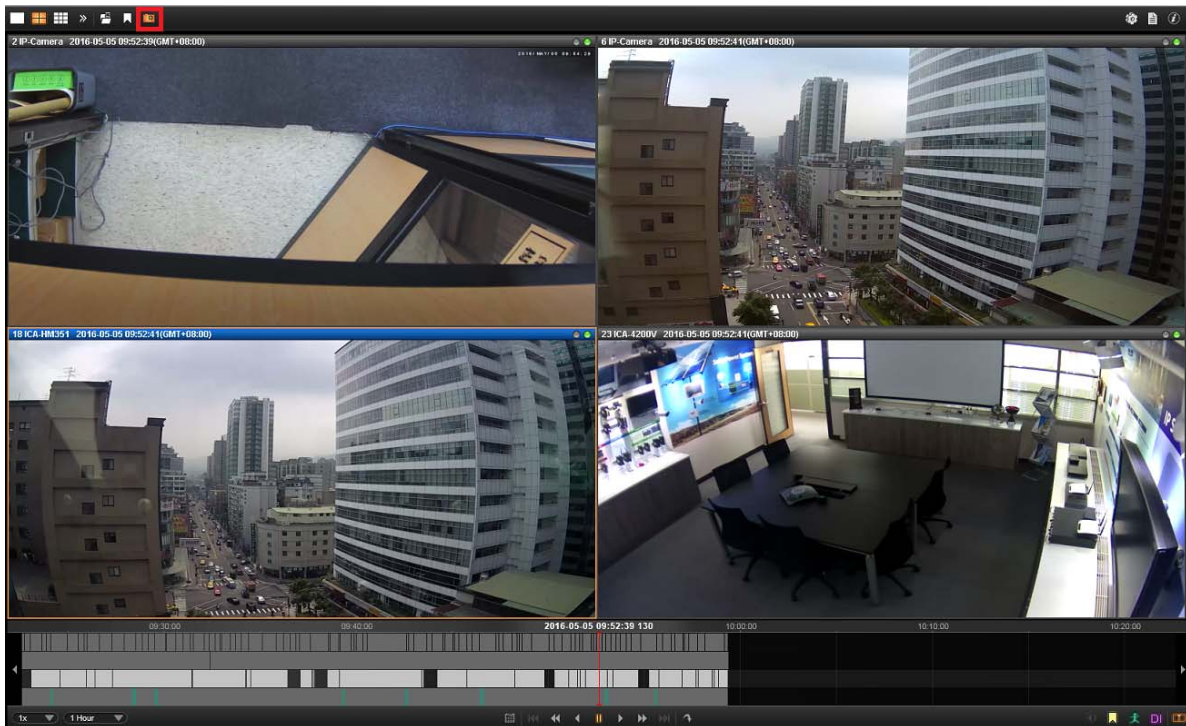


The event card list will be displayed in the **Search Tool** panel. You can click  to browse through the event list, or double-click on an event card to start playing this event.

To return to thumbnail view, click .

7.10 Take a Snapshot of the Playback View

You may take a snapshot of a channel live image on **Live view** screen.



The snapshot will be saved to default folder on your client computer as .jpg format (The system default location is **Windows Desktop**). You may find the location path on the bottom of NVR window after taking a snapshot.

Snapshot to: C:\Users\Wen.Cheng\Desktop\Channel01_20121024184041_759.jpg

7.11 Export the Recordings

NVR playback offers two choices of video format for the exported video. The *.raw file, as the original video file format captured from video source, is able to be played on PLANET CV7-VA and CV7-LP software. You may download the software from http://www.planet.com.tw/en/product/product_list.php?id=47898

The*.AVI file, as the most widely adopted video format on Windows system, can be instantly transferred by NVR server and played directly in **Windows Media Player**.

Before starting to export the video, please make sure there is enough memory space on the hard drive of your destination computer.

To play the exported *.AVI file in other video players, you must have FFDSHOW or DivX codec installed in your computer. They can be found over the internet at the following

sites:

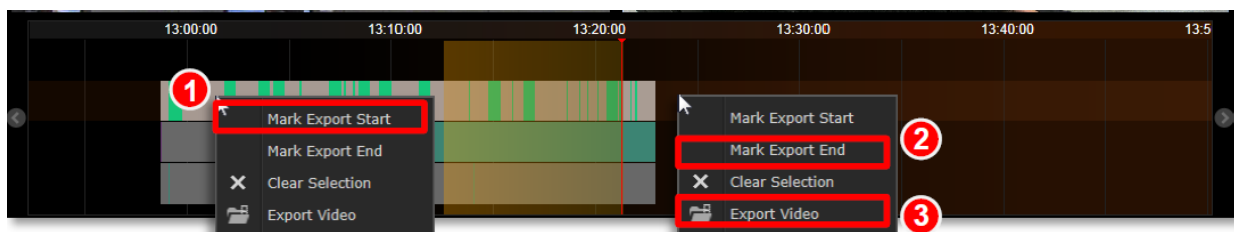
<http://sourceforge.net/projects/ffdshow/>

<http://www.divx.com/en/software/divx>

Define the Section of Exported Video on Time Bar



You may define the video duration on time bar during the playback. In this way, you don't spend extra time and effort on finding the specific date and time information.

1. On time bar, drag to the start point of the video, right-click to bring up quick menu and then select "Mark Export Start".
2. If you have successfully set the start point, the time duration will turn yellow as you drag to another point. Drag to the end, right-click to bring up quick menu, and then select "Mark Export End".




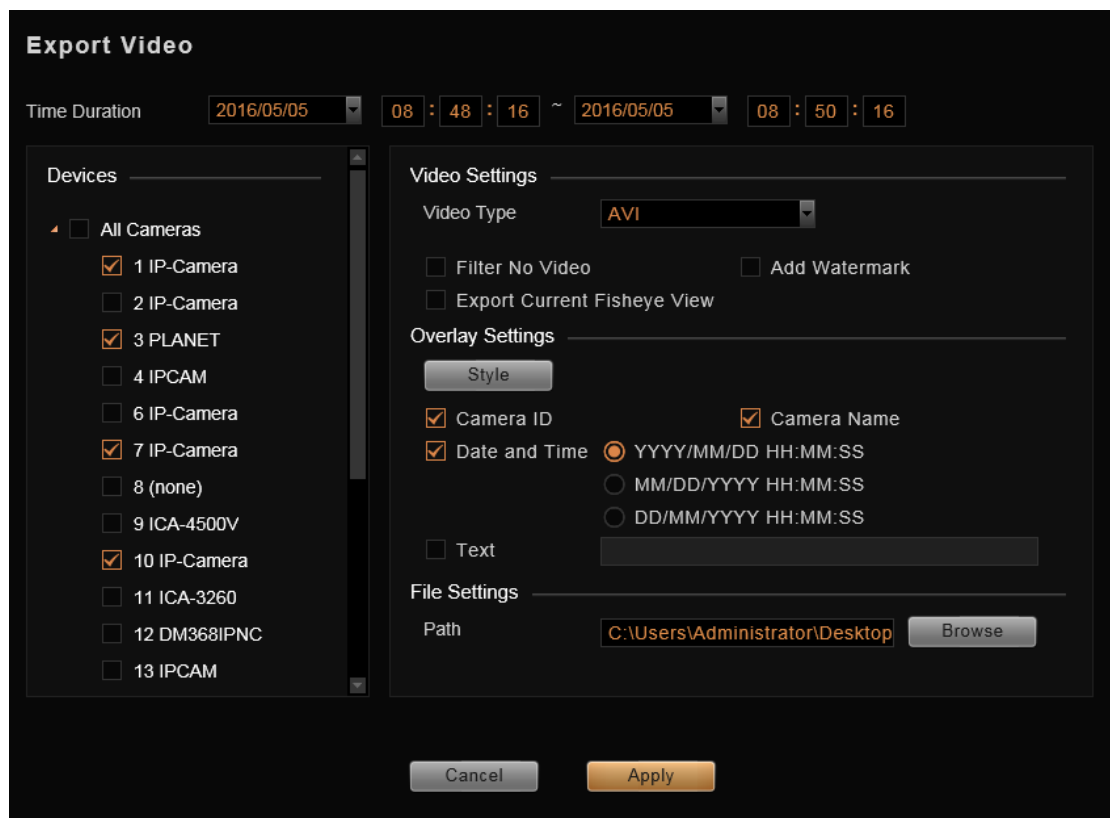
3. As both start point and end are set, you may right-click again the quick menu and find these two options are already grayed out. Select "Export Video"

Depending on your scenario, you may first set the end point and then the start point.

 Note	<p>Other than defining the time duration, on the time bar, you can rest the time cursor on a desired time and then click  to enter Export Video window. The default time duration will be one minute before this time spot plus one minute after it, at a total length of two minutes.</p>
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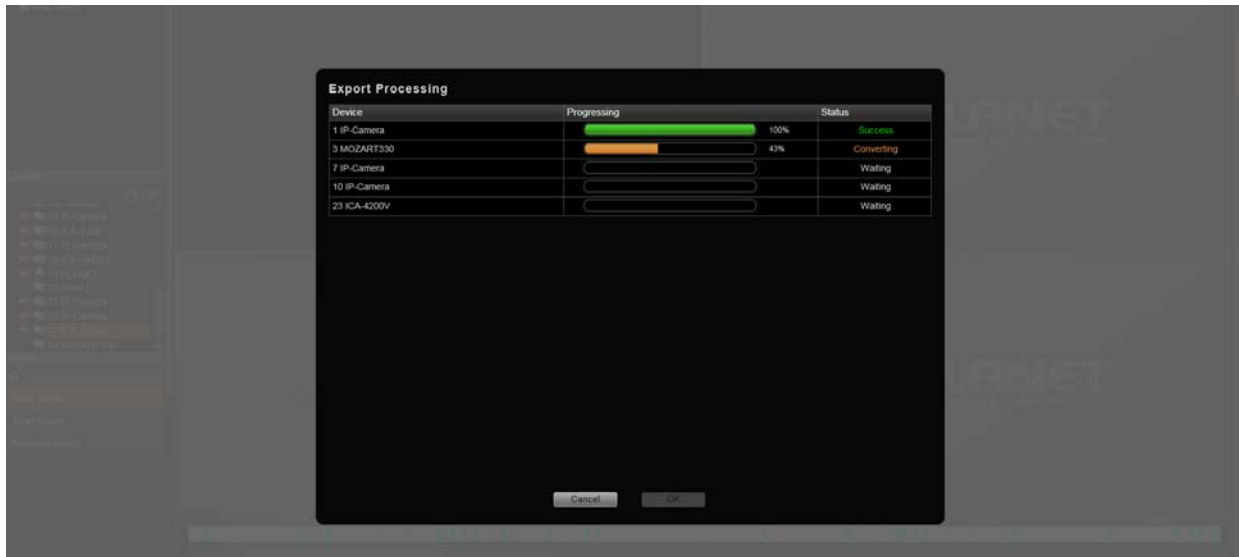
7.12 Set the Export Video Settings

You may export video with or without defining the time duration beforehand since you can configure all the settings on **Export Video** window. On **Search Result Tool** bar, click  to enter the window.



1. Select the cameras. If more than one camera is selected, you will get multiple recordings.
2. Set the time duration. The minimum duration is **10** seconds; maximum is **1 hour**. (For individual recording, if the total **size** is over **2 GB**, or the **video encoder type**, **frame rate**, **resolution** of this channel's stream once altered during the selected **Time Duration**, this file will be **divided**).
3. For **Video Settings**, you can (1) choose the video format, (2) enable the "**Filter no video**" function to skip the video gaps, and (3) enable "**Add Watermark**" to embed a unique code in every frame of this exported video footage. If this channel is a fisheye camera, make sure you select the desired fisheye view by right-clicking the menu → "**Fisheye Mode**", and check "**Export current fisheye view**" here. The exported video will be displayed in the view mode you are seeing now; otherwise, the default fisheye view for exported video is **Original View**.
4. Set the overlay text if needed. The maximum number of characters for Text is **40**.
5. This exported video can be saved to your current client computer. Please choose the location. By default, the files will be saved to Desktop.

6. Click “**Apply**” to start file converting and exporting. The export process window will appear. In the **Camera** column displays the processed/total number of video clips of that camera. You may also observe the remaining processing time of each camera’s video files.



There are five types of process status: **success**, **converting**, **waiting**, **no data** and **fail**.

It might happen that there is certain section in a recording that exists no video data; if the status shows “**Fail**”, it may be that your disk drive does not have enough space for video files.

Please make some space and click  again to re-execute this task.

	No Data
	Success
	Fail
Remain time: 01:10:15	Converting
	Waiting



Note

- Once a channel is changed to any of the following fisheye modes: **Dewarping**, **Panorama**, **Double Panorama**, **Panorama/Focus** or **Quad**, the resolution of this live stream will become 1920x1080, so will the resolution of exported video clip.
- Certain fisheye camera view modes (e.g. **Quad** mode) display multiple regions in a single channel. When being exported, these regions will still be put together as a single video file.

Appendix A: Default Setting

Default Login User Name for Windows	admin
Default Login Password for Windows	admin
Default Login User Name for NVR-E6480 Workstation	admin
Default Login Password for NVR-E6480 Workstation	admin

Appendix B: NVR Performance

NVR-E6480 (Live View)								
Camera	10MP	5MP	4MP	3MP	2MP	1.3MP	1MP	VGA
	6fps	15fps	8fps	15fps	30fps	30fps	30fps	30fps
1	6fps	15fps	8fps	15fps	30fps	30fps	30fps	30fps
2	1fps	1fps	1fps	1fps	1fps	1fps	30fps	30fps
3	1fps	1fps	1fps	1fps	1fps	1fps	30fps	30fps
4	1fps	1fps	1fps	1fps	1fps	1fps	1fps	30fps
5	1fps	1fps	1fps	1fps	1fps	1fps	1fps	30fps
6	1fps	1fps	1fps	1fps	1fps	1fps	1fps	30fps
7	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
8	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
9	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
10	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
11	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
12	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
13	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
14	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
15	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps
16	1fps	1fps	1fps	1fps	1fps	1fps	1fps	1fps

NVR-E6480 (Recording)								
Camera	10MP	5MP	4MP	3MP	2MP	1.3MP	1MP	VGA
	6fps	15fps	8fps	15fps	30fps	30fps	30fps	30fps
1-64	6fps	15fps	8fps	15fps	30fps	30fps	30fps	30fps



The above performance was tested on the following conditions:

Codec	H.264
Bitrate	3Mbps
Remark	Disable "Decode-I" function in Display Performance Settings