



Navigator Control Center and View Manager 3.1 User Manual

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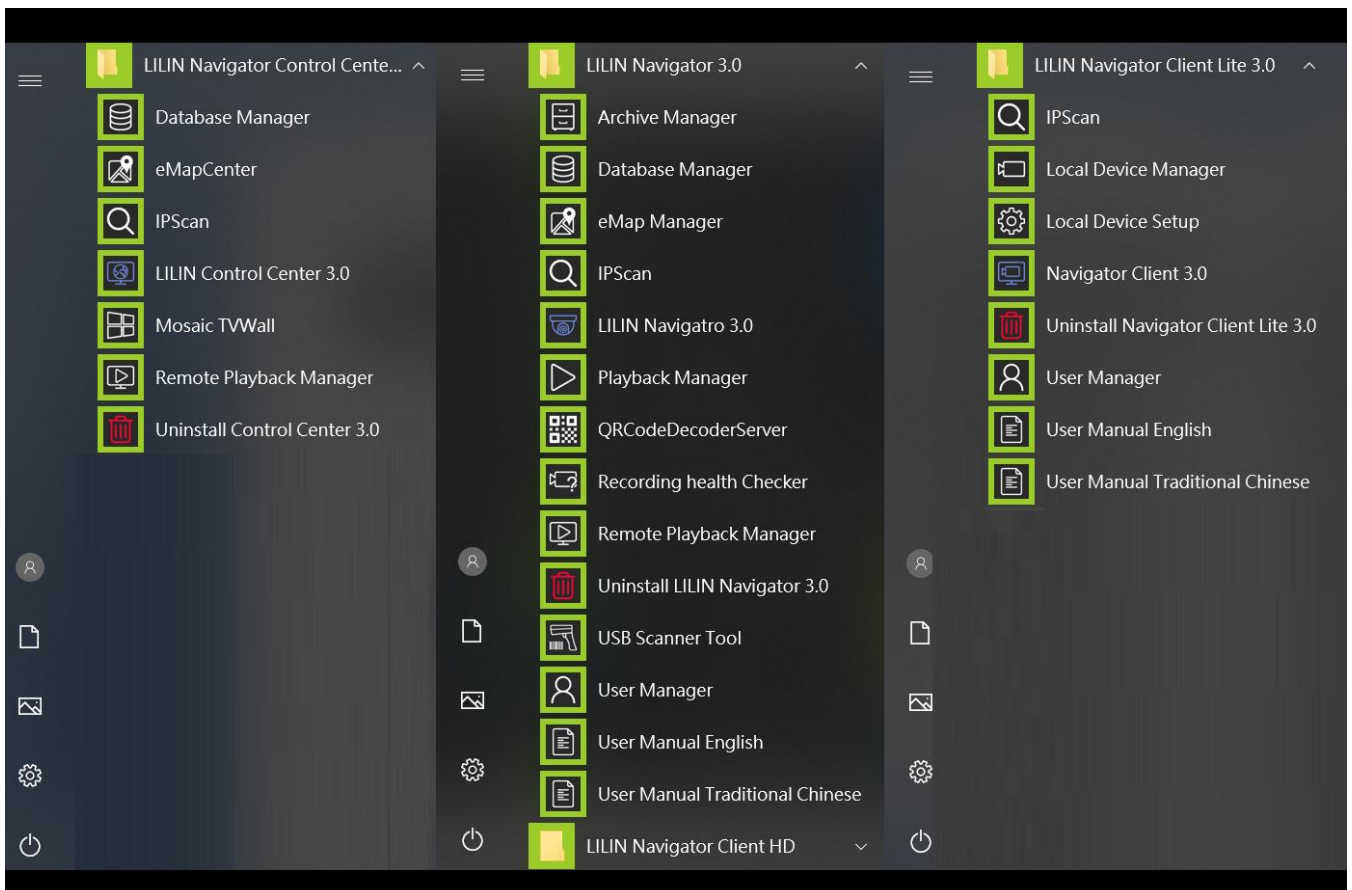
Introduction

Navigator Control Center 3.0

With Navigator Corporate servers, Navigator Control Center can be used as the video management software for Navigator Enterprise servers, NVRs/DVRs, and IP cameras. The differences between Navigator Corporate and Enterprise are: Navigator Enterprise is operated as a standalone recording device, whereas Navigator Corporate can communicate user database, event information, and device database among Navigator Corporate servers. Navigator Control Center can also manage Navigator Corporate servers. Main features of Navigator Control Center include:

- Hierarchical management for Navigator Corporate servers
- Centralized user management database via View Manager at remotes
- Centralized view groups management database via View Manager
- Pre-configured video groupings for user login
- Centralized event management via View Manager
- Centralized alarm management for cameras under Navigator servers
- Remote device management under Navigator servers
- Centralized HDD/device report management for Navigator Corporate servers

For remote live monitoring, a user can customize viewing window. User authentication allows accessing a user's own grouping windows. Remote video playback and backup allows remote access to the video clips in Navigator Software, NVR, DVR, and/or IP camera SD card. Device status report such as video loss information, recording status, and connection status can be provided by the software.



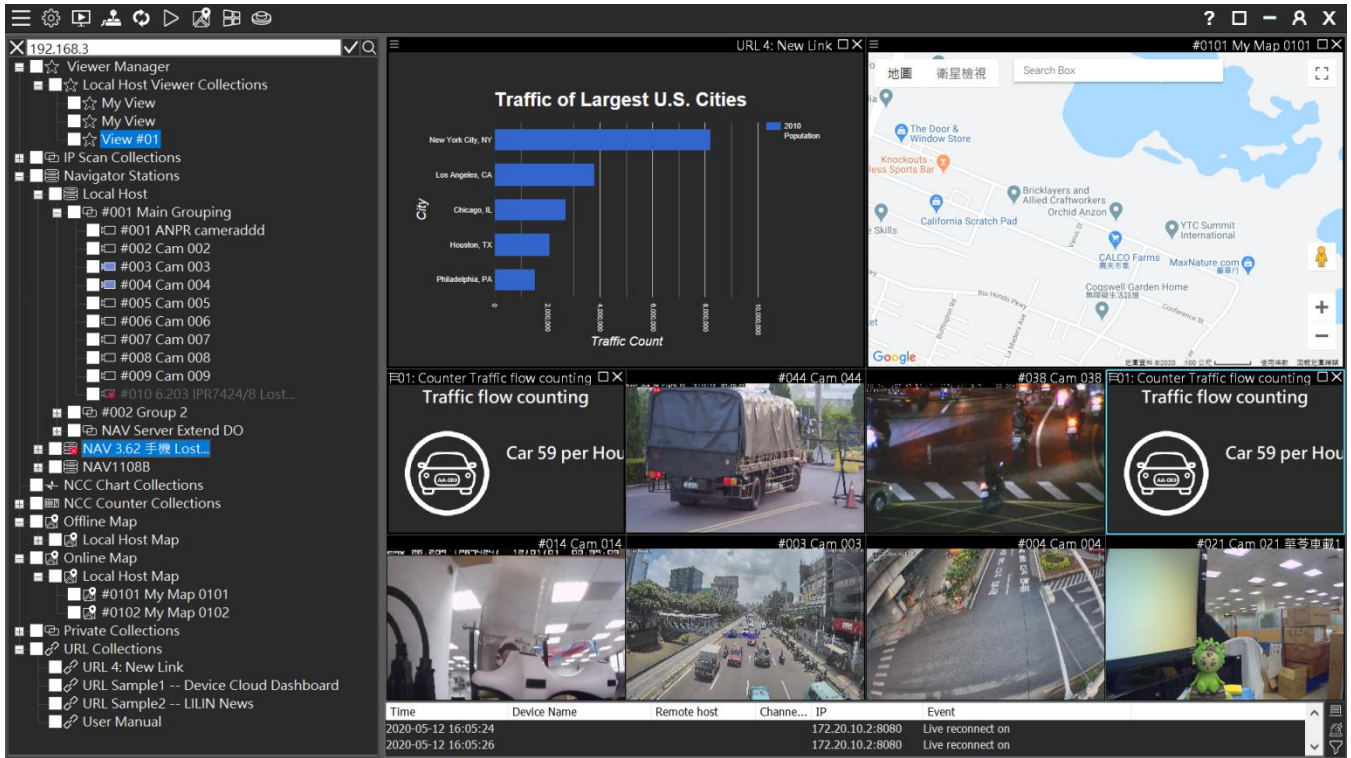
Note: Navigator Enterprise cannot be managed by Navigator Control Center.



View Manager 3.1

The View Manager is a 64-bit Windows program that supports up to 65,000 cameras and 128 group views. Each group views can have a maximum of 36 channels. This software is an ideal solution for managing a large amount of installations across the Internet.

The View Manager 3.0 can manage LILIN Navigator Corporate servers, NVRs, and DVRs. The major features of the View Manager include remote live monitoring, remote video playback, remote video backup, remote device status report, PTZ control, and user authentication.



View Manager System Requirements

- Processor: Intel i7 Quad core 3.0 Ghz and above.
- Memory: 8GB DDR3 and above (Recommended: 16GB and above).
- Operating System: Windows 10 64Bit (Recommended: Professional Edition Version 1803 and above).
- Graphics Card: GTX1650 same level and above (Recommended: 4GB and above).
- It is recommended to use dedicated graphic cards.
- It is necessary to connect a physical monitor or install a virtual EDID emulator, otherwise Direct3D will not work normally, resulting in black screens in real-time and playback videos.
- Please do not connect Virtual EDID simulator and external output simultaneously.



Acronym

- NCC: Navigator Control Center
- NAV: Navigator server or Navigator software
- PTZ: Pan, tilt, and zoom camera
- DVR: Digital video recorder
- NVR: Network video recorder
- HDD: Hard disk drive
- FPS: Frame rate per second
- OSD: On-screen display
- ANPR: PC based number plate recognition system
- LPR: Edge license plate recognition camera

Function Keys of View Manager

Press **F1** to expand the screen to the full screen. Press **F1** again to return to the normal mode.
 Press **F2** to see the bitrate and frame rate (FPS) information, which can be used to determine the smoothness of the video. When the bandwidth is very low, a user chooses a proper stream according to the bandwidth information.



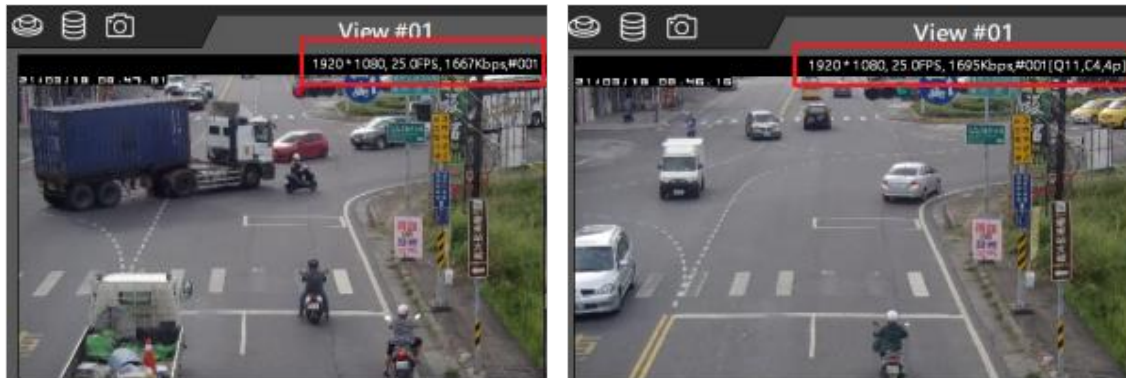
Press F2 to see the device name and time combination display mode. There are 6 display modes as follows:

Hide Device Name	Display Device Name	Display Device Name and Time (HMS)
Display Device Name, Date (YMD) and Time (HMS)	Display Time (HMS)	Display Date (YMD) and Time (HMS)

The device streaming has 2 display modes available.

The following information can be displayed:

1. Resolution, Number of Frames (FPS), Streaming Size (bitrate), channel number
2. Resolution, Number of Frames (FPS), Streaming Size (bitrate), channel number [QXX,CXX,4p/5p]



The Q, C, P, i, j numerical description is as follows:

Q (Queue Value)	Image processing buffer reference value, theoretically Q10 is the best. <ul style="list-style-type: none"> ● The lower queue reduces the delay, but it will be affected by network packets and the video data will not be received completely. ● The higher queue will lead to the delay that will cause uneven picture.
C1	CPU processing thread "C1~C4". If the image needs higher CPU processing, for example: 60/120/4K fisheye camera.
I	Intel GPU Decode
N	Nvidia GPU Decode
4P	H.264 P-frame
5P	H.265 P-frame
4i	H.264 i-frame
5i	H.265 i-frame
j	JPEG

GPU Decode is described as follows:

- CPU Decode(C) : The Intel CPU system automatically determines how many threads the device requires (C1~C4)
- Intel GPU Decode(I) : Supports Intel HD530 series and above.
- Nvidia GPU Decode(N) : Supports Nvidia GTX 1030 series and above.

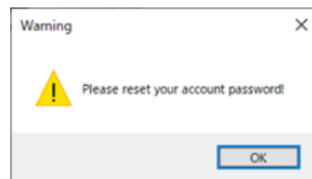
In the early days when monitoring computers have to display multiple channels, but the CPU performance is insufficient, GPU decoding functions are used to greatly reduce the burden on the CPU and provide more analytic video monitoring through the graphics card. But now, the CPU performance is sufficient to cope with it and additional graphics card GPU is no longer required to aid the CPU.

List of Display Resolution is as follows:

CIF	320x240
VGA	640x480
480p	720x480
720p	1280x720
FHD	1920x1080
WFHD	2560x1440
QFHD	3840x2160

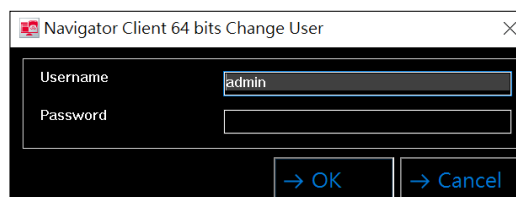
How to Login View Manager

Due to security reason, for the first time View Manager installation, a warning dialog box will appear to remind user to reset the password to log in. Please create the username and password on the User Manager page.



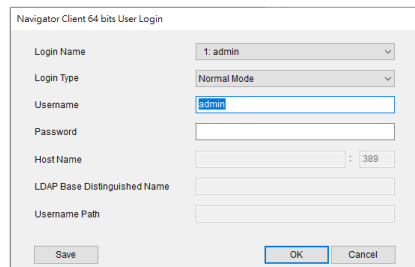
How to Login Navigator Control Center

Once Navigator Control Center gets launched, enter “admin” and empty as username and password to login the system by default.



Chapter 1 How to Add a Device

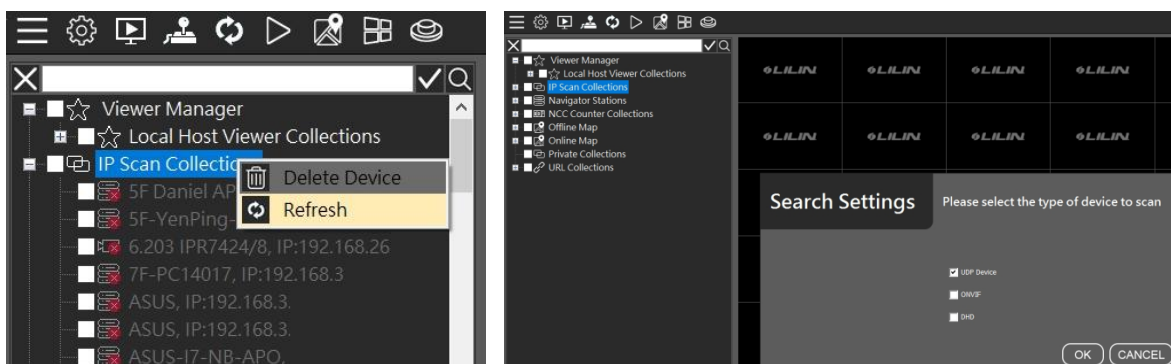
The LILIN Navigator Control Center supports IPScan protocol. IPScan protocol is quite easy for adding LILIN NAV, NVR/DVR, and IP cameras.



註: 登入預設為「Normal Mode」, AD/LDAP 伺服器相關資訊, 請參考 第七章節

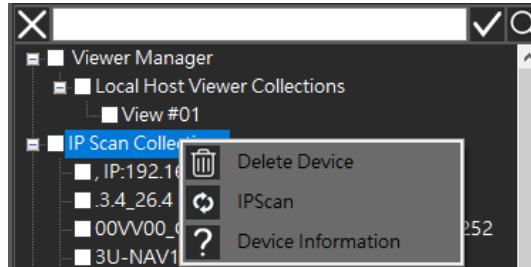
Chapter 1.1 IPScan

Mouse right click on **IP Scan Collection**, select **Refresh** and search for the supported DVR/NVR or IP camera within the LAN. The devices will be automatically scanned and archived to the IP Scan Collection.



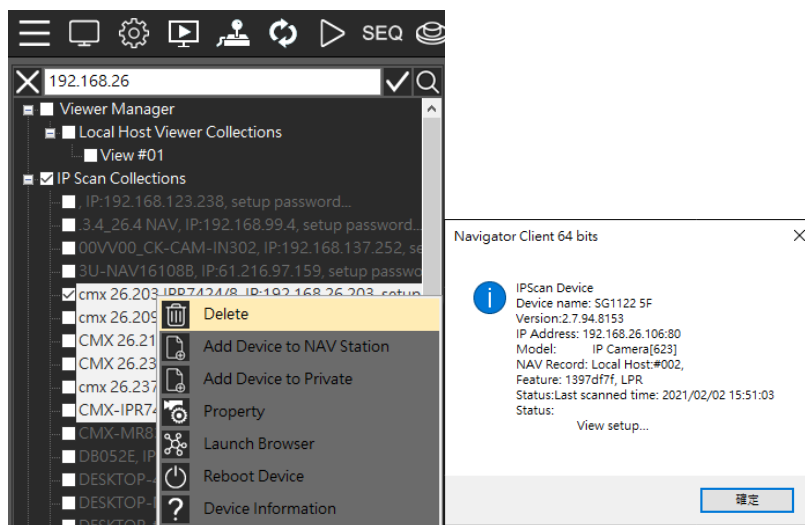
For IP Scan feature, there are menu systems when mouse right click on the device. The features are described below:

- Delete: Delete all devices from IP Scan.
- IP Scan: The IPScan scan the devices on a local area network (LAN).
- Device Information: The total number of network devices scanned



For the device feature on IPScan tree diagram, there are menu systems when mouse right click on the device. The features are described below:

- Delete: Delete a device from IP Scan.
- Add Device to NAV Station: Add a device to the NAV Station.
- Add Device to Private: Add a device to a specified group.
- Property: The property of a device.
- Launch Browser: Open the device with a browser via port 80.
- Reboot Device: Remotely reboot a device
- Device Information: Display the detailed device information including device name, firmware, IP address, MAC, model, and etc.



The device information is described as follows:

- Device: The device name.
- Version : The device firmware version.
- IP Address: The device IP.
- Model: The device type.
- Feature: The device model.

The status is described as follows:

- Last scanned time: The last scan time of the device.
- Check connection: The device has not been detected on the Internet for more than a day (ex:Device lost).



- Check Recording: The device has not been added to any NAV host for recording.
- View setup: The device has not been added to any view group.
- Setup Device: The device (has an account and password set) but has not been connected to obtain information (ex: IP Cam profile, DVR/NVR max channel...).
- Setup password: The connection account password of the device has not been set.

Chapter 1.2 Device Status Icon

Navigator Control Center can display the device connection status. Device status icons are useful for system installers to identify and to diagnose the issues of remote devices.

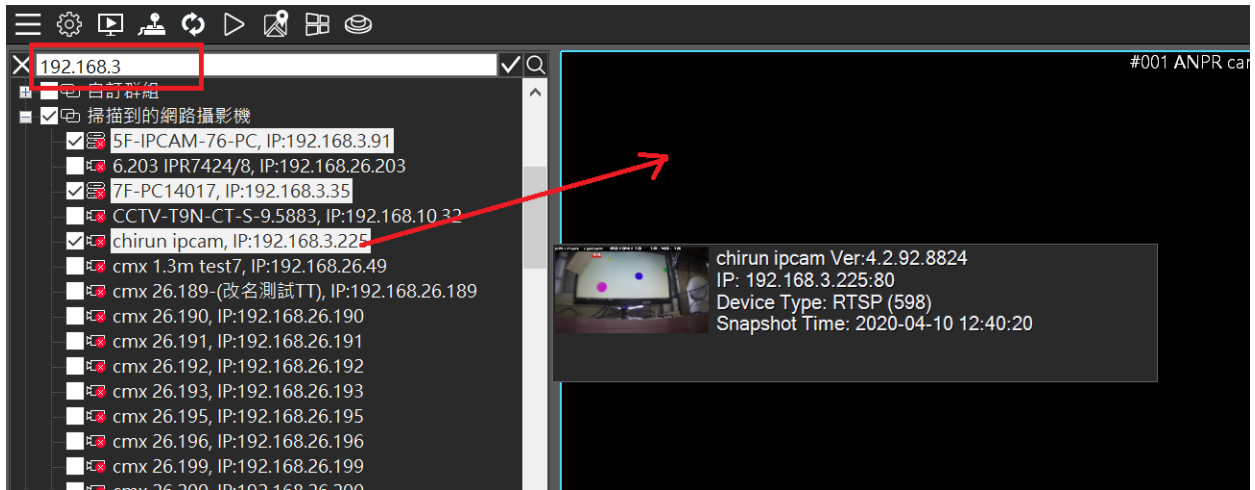


The statuses of devices are described below. These can help installers to troubleshoot the settings of an installation site.

Icon	Device status	Icon	Device status
	NAV: IPScan OK		Camera: IPScan OK
	NAV: IPScan NG, connection: NG		Camera: IPScan NG, connection: NG
	NAV: IPScan OK, connection OK, authentication: OK		Camera: IPScan OK, connection OK, authentication: OK
	NAV: IPScan OK, NCC OK		Camera: IPScan OK, NCC OK
	NAV: IPScan OK, View Manager OK		Camera: IPScan OK, View Manager OK
	NAV: IPScan OK, NCC OK, View Manager OK		Camera: IPScan OK, NCC OK, View Manager OK
Icon	Device status	Icon	Device status
	NVR/ DVR: IPScan OK		PTZ: IPScan OK
	NVR/ DVR: IPScan NG, connection: NG		PTZ: IPScan NG, connection: NG
	NVR/ DVR: IPScan OK, connection OK, authentication: OK		
	NVR/ DVR: IPScan OK, NCC OK		
	NVR/ DVR: IPScan OK, View Manager OK		
	NVR/ DVR: IPScan OK, NCC OK, View Manager OK		

Chapter 1.3 Device Filter & Quick Camera Browsing

To create a camera display screen, drag the camera and DVR/NVR to the **camera view**. If you want to quickly browse the camera screen, move the mouse to the scanned IP camera and the camera information along with the snapshot will be displayed.

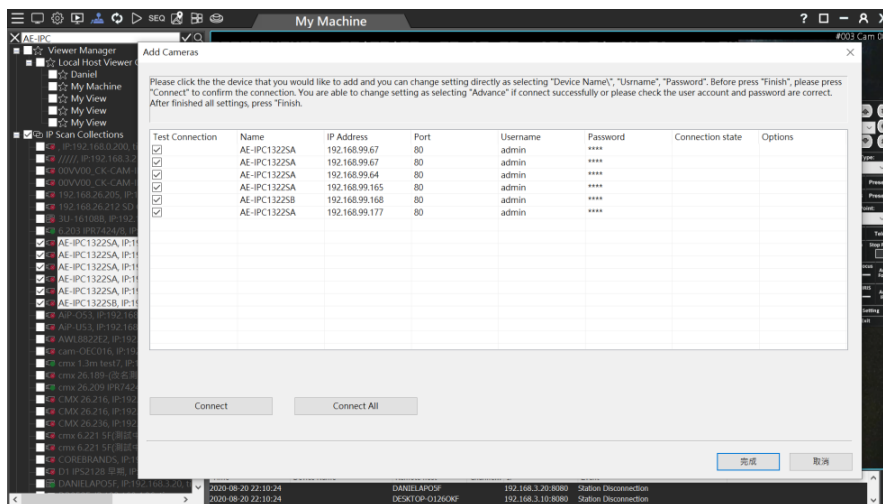


To manage hundreds or thousands of cameras, you can use the device filter to quickly search for the device. Enter the keyword of the device to be searched, and click to select the searched camera in the quick box. Then, drag the camera to **camera view** to quickly create and manage the camera.

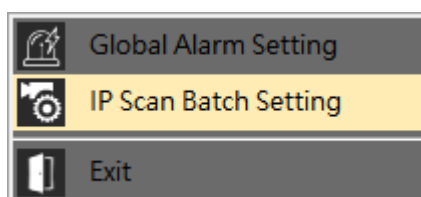
Click on to search for the device. To end search, click on to clear the search keyword.

Chapter 1.3.1 Batch IP Cameras Settings for Username and Password

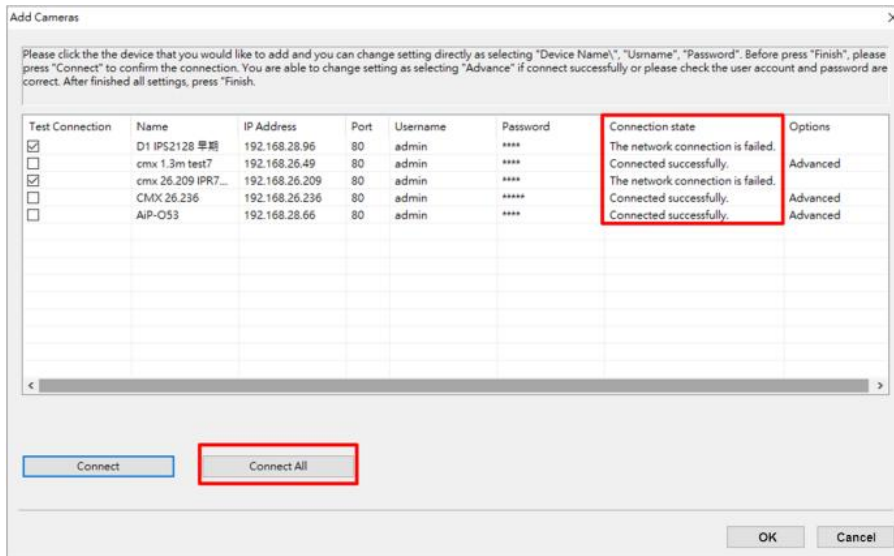
For quick set up of cameras all at once, enter the device name in the Device Filter. Click icon for selecting the cameras for setting username and password.



Click the menu icon in the upper left corner. Then, click on IP Scan Batch Setting

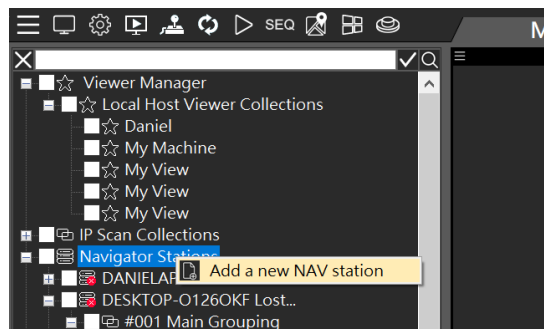


Please confirm the connection status of the device, and then enter a valid account and password. Then, click OK.

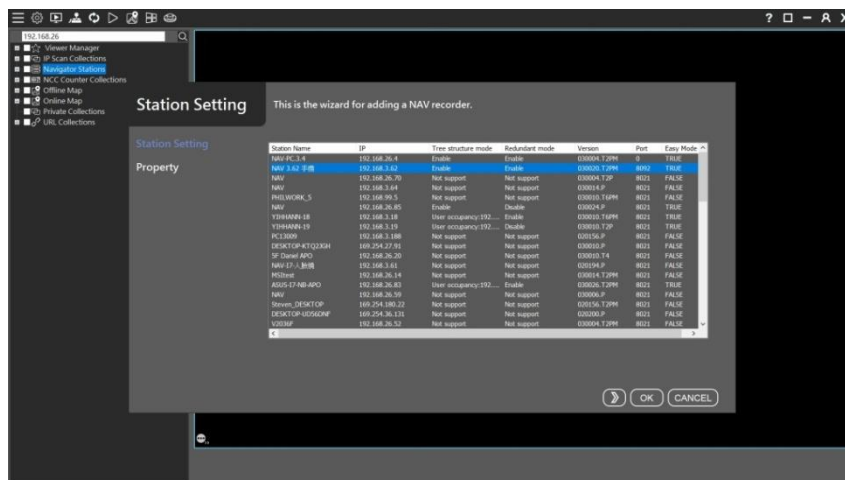


Chapter 1.4 How to Add a Navigator Corporate to Navigator Control Center

To add a Navigator, click on **Main Menu** and select **Add a new NAV station**. Then, the online NAV station can be added.

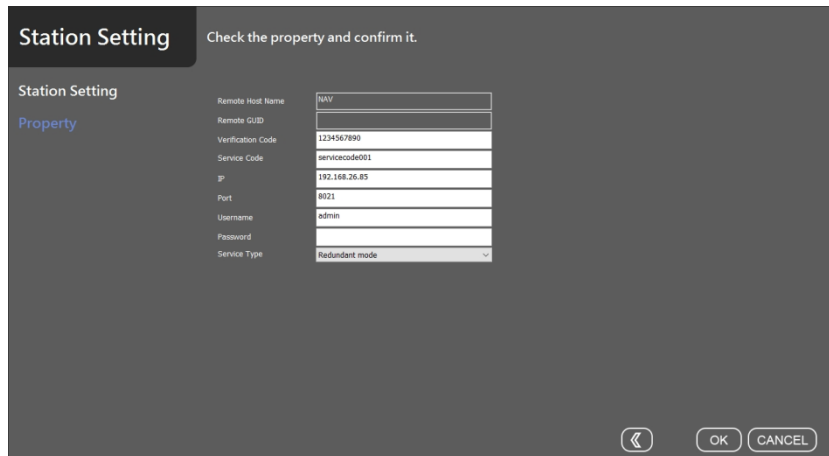


On the Station Setting page, click on the scanned NAV station, and click OK. The NAV station will be added in the Navigator Control Center. If the camera has been assigned to the NAV station, the camera will be added only once for its recording.



For adding NAV station manually, click on **Property** and fill in the related information on the fields below to connect to remote Internet devices. For information security, below data must be set to connect to the remote NAV station:

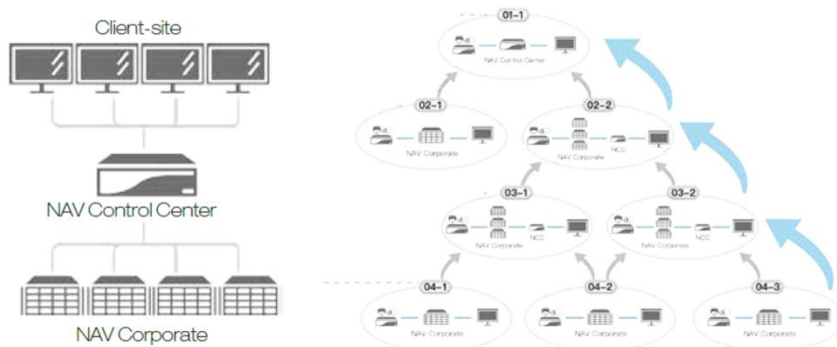
- IP: IP address of NAV station.
- Port: Port number of the NAV station. The default port is 8021.
- Username: The username of the NAV station.
- Password: The password of the NAV station.
- Service Type: The service type of the NAV station. The service type is described below:



The service types include redundant mode and tree structure mode. Below left diagram is the NAV station redundant mode, and below right diagram is the NAV station tree structure mode.

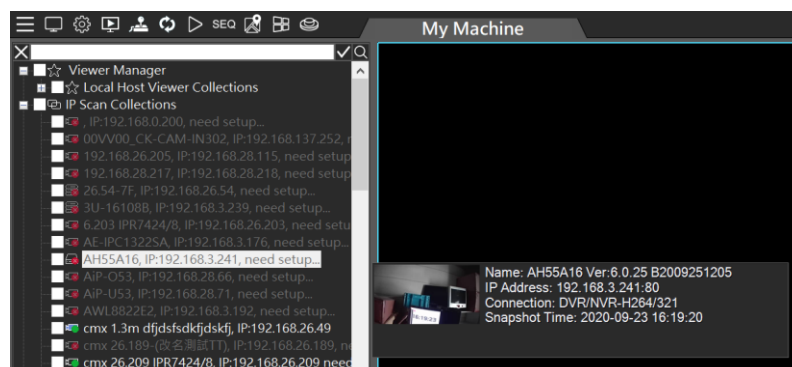
NAV Redundant Mode: suitable for single point multiple camera installation.

NAV Tree Structure Mode: suitable for multiple points, multiple layers camera installation.

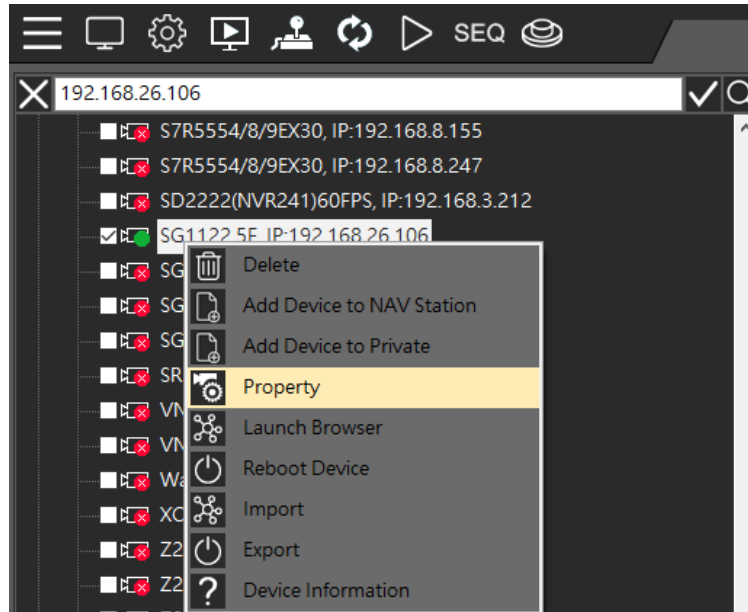


Chapter 1.5 Add a DVR/NVR to the View Manager

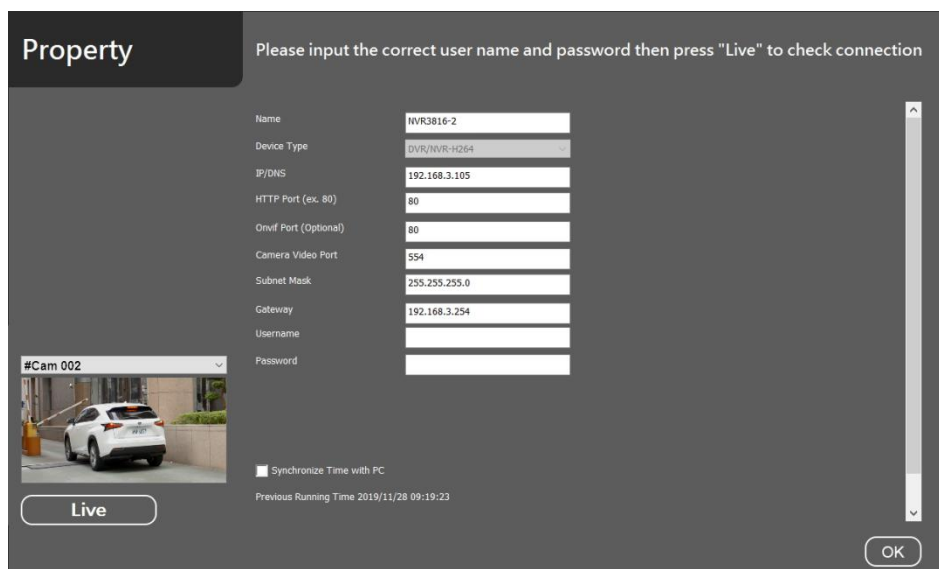
Add the DVR/NVR to IP Scan Collection, and the scanned devices can be quickly added.



Mouse right click on the menu **Property** to set the NVR/DVR related settings including IP address, username and password.



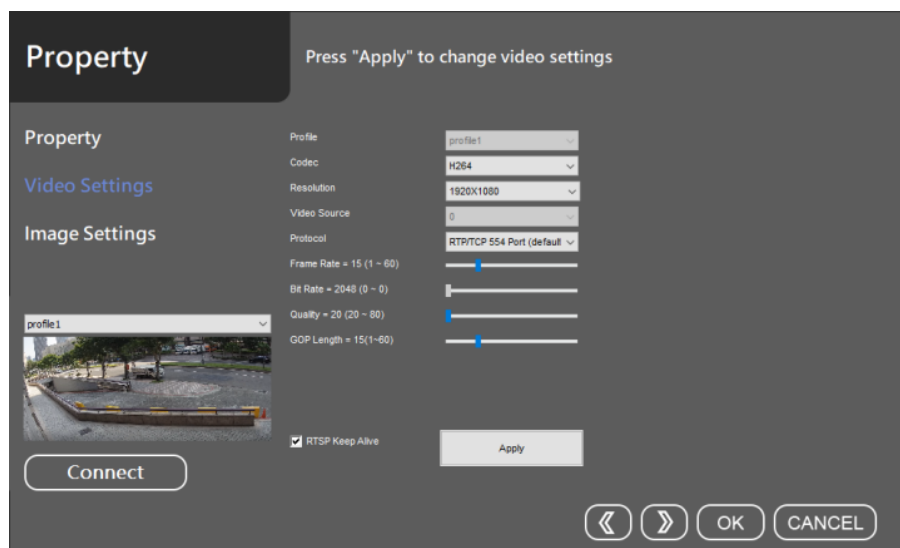
- Name : Camera name
- Device Type : Camera location
- IP/DNS (Required Field) : IP address of the camera
- HTTP Port (Required Field) : The HTTP port number of the camera, DVR or NVR.
- Onvif Port (Optional Field): Standard ONVIF protocol third-party device.
- Camera Video Port : RTSP URL for a camera if you want to use RTSP URL for video connection.
- Subnet Mask: Device's subnet mask.
- Gateway: Gateway address of the device.
- Username : The username for the camera.
- Password (Required Field) : The password for the camera.
- Main Stream: Main stream resolution.
- Sub Stream: Sub stream resolution.
- Synchronize Time with PC: Time and date can be synchronized to NVR/DVR through the View Manager server. (Excluding time zone and other settings.)



Chapter 1.5.1 Video Settings of Device IPCAM Property

This page describes how to set the video parameters.

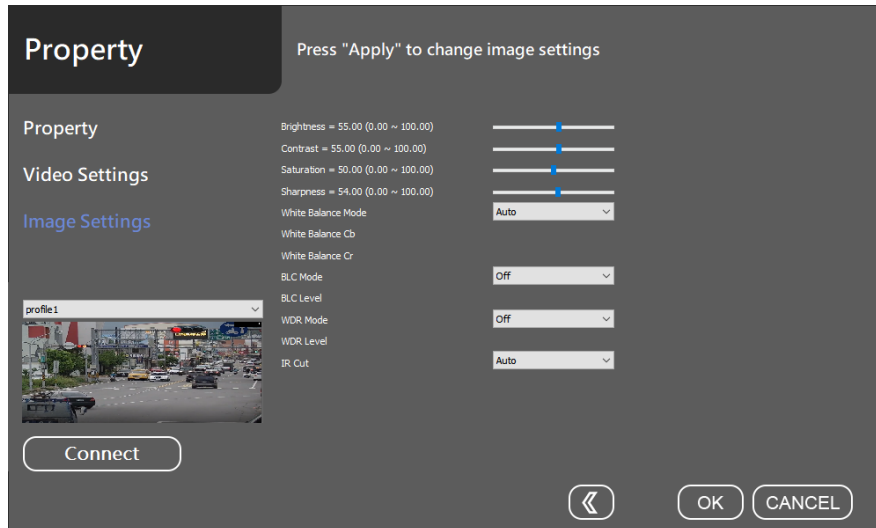
- Profile: Main Stream, Sub Stream, JPEG compression codec settings.
- Codec: H.265, H.264, JPEG compression mode.
- Resolution: Screen resolution switch.
- Video Source: IPCAM image source.
- Protocol: RTP/UDP/TCP/HTTP Network protocol settings.
- Frame Rate: Frame rate of the device image.
- Bit Rate: Device bit rate.
- Quality: Device video quality.
- GOP Length: Video stream is the arranged succession of pictures between I frame and I frame.



Chapter 1.5.2 Image Settings of Device IPCAM Property

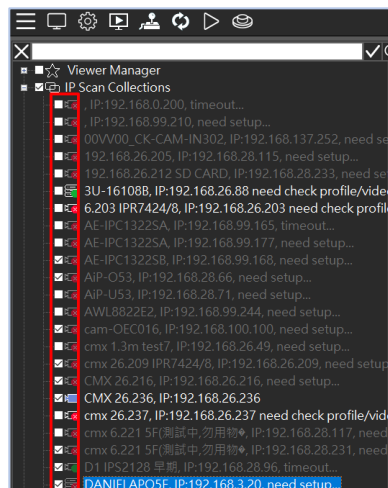
This page describes how to set the image parameters.

- Brightness: Camera image brightness.
- Contrast: Camera image contrast.
- Saturation: Camera image saturation.
- Sharpness: Camera image sharpness.
- White Balance Mode : Camera color temperature and white balance (Cb: Chromacity of blue and green, Cr: Chromacity of red and green).
- BLC Mode: Increase light exposure for low bright area.
- WDR Mode: When exposed to strong light sources and low-brightness areas simultaneously.
- IR Cut: When there is sufficient visible light (for example: daytime), the infrared filter will block infrared rays from entering the image sensor, and the camera will only receive visible light, and its image will show true colors. When the visible light is insufficient (for example: at night), the infrared filter will be disabled, allowing infrared rays to enter the image sensor, so that the camera can make full use of all the light and improve the low-light performance. In practical applications, when the infrared filter is disabled, the camera will automatically switch to black and white mode.



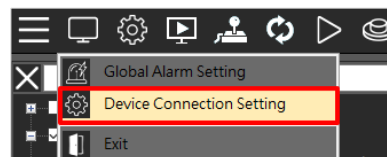
Chapter 1.6 Quick Add a Device Group IP Camera / NVR / DVR

You can customize and select a different IP camera, NVR and DVR. And quickly set the connection account password at the same time.



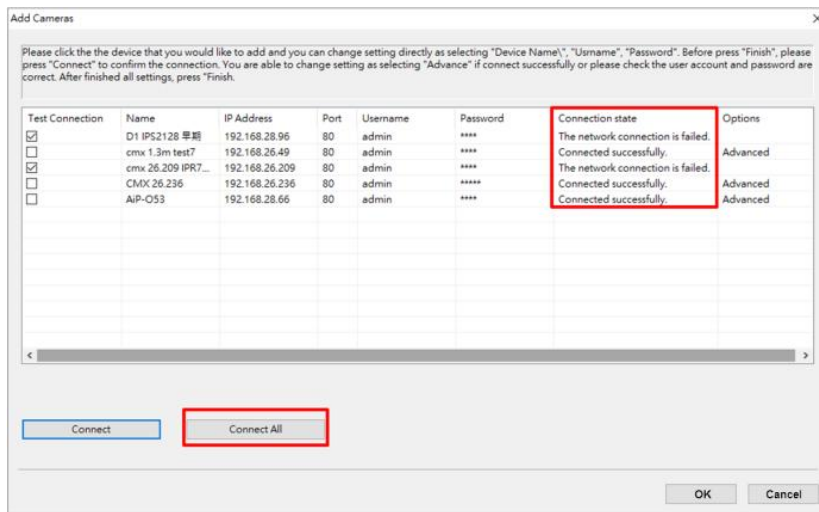
Note: The View Manager supports connecting multiple DVRs. If the connected 16-ch DVR reached 3 units and above, the View Manager will display I frame.

Click the **Menu** in the upper left corner, click on **Device Connection Setting**



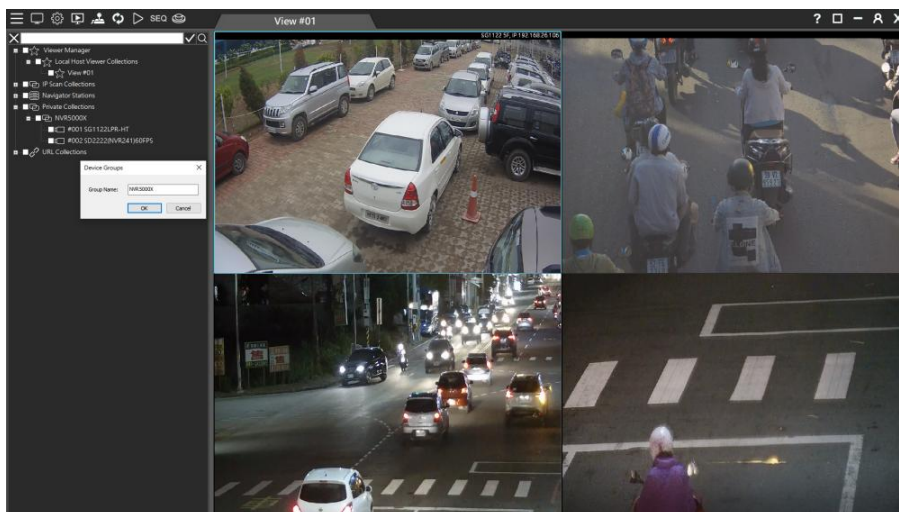


Please confirm the device's connection state and enter a valid username and password. Then, click on **OK**.

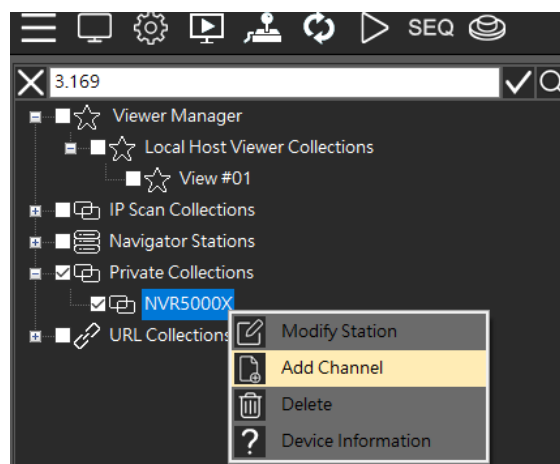


Chapter 1.6.1 Add a Remote DVR/NVR to View Manager

For adding a remote DVR/NVR via Internet, right-mouse-click on Private Collection for select Add Group for a DVR/NVR.

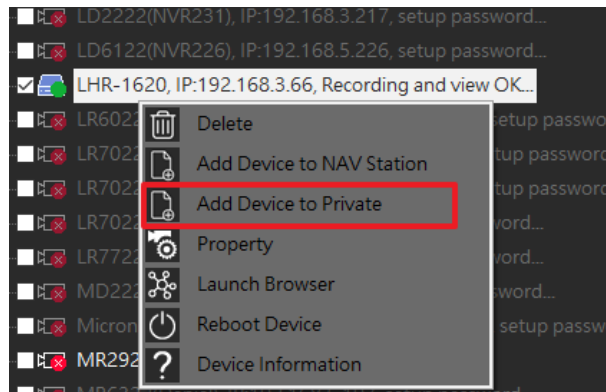


Select the added group, right-click on "Add Channel".

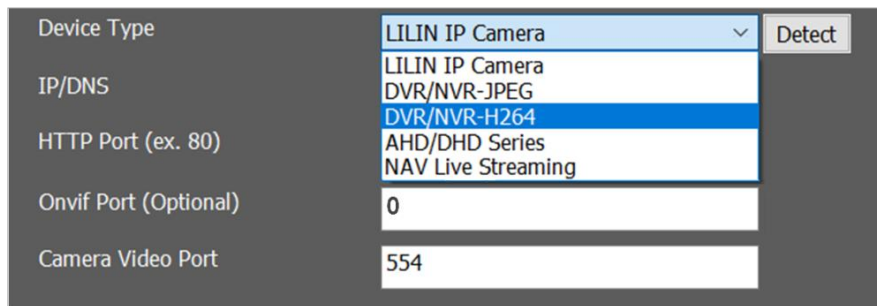




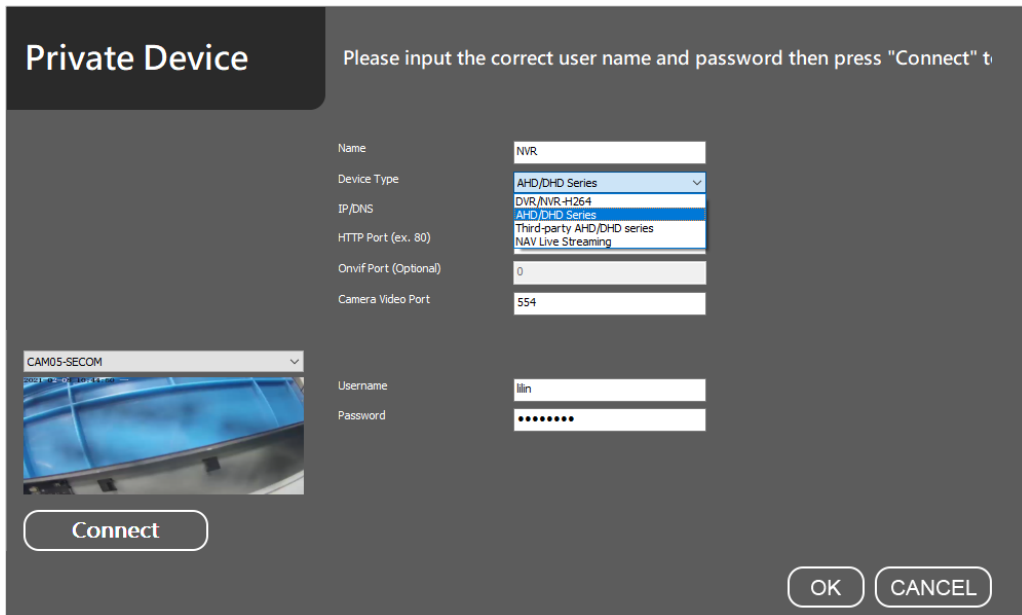
Or search IPCAM/DVR/NVR from IPScan and add to the Private group.



Select DVR/NVR-H264 or AHD/DHD series driver. Click “Detect” for auto detection.

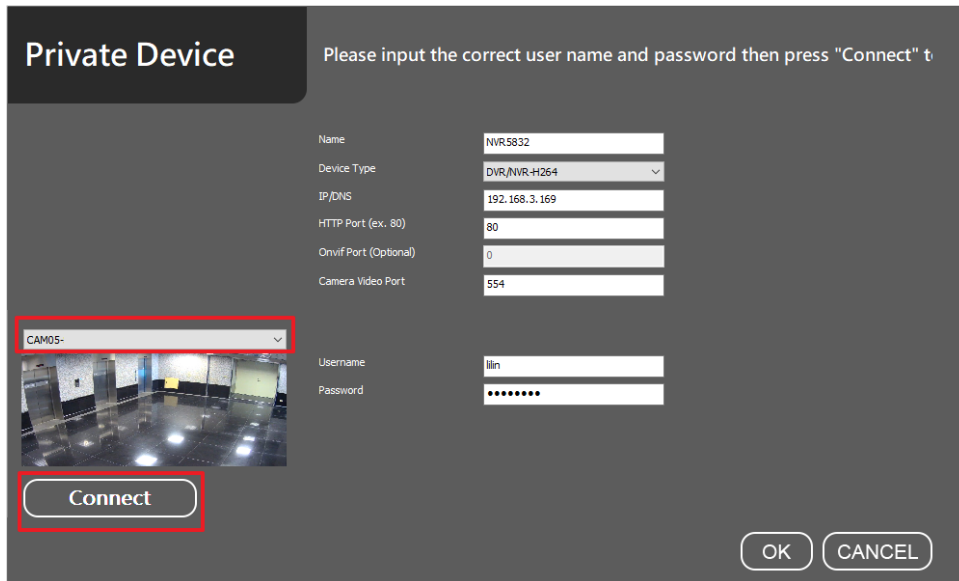


Enter IP/DNS address, HTTP port, ONVIF port, video port, username, and password.

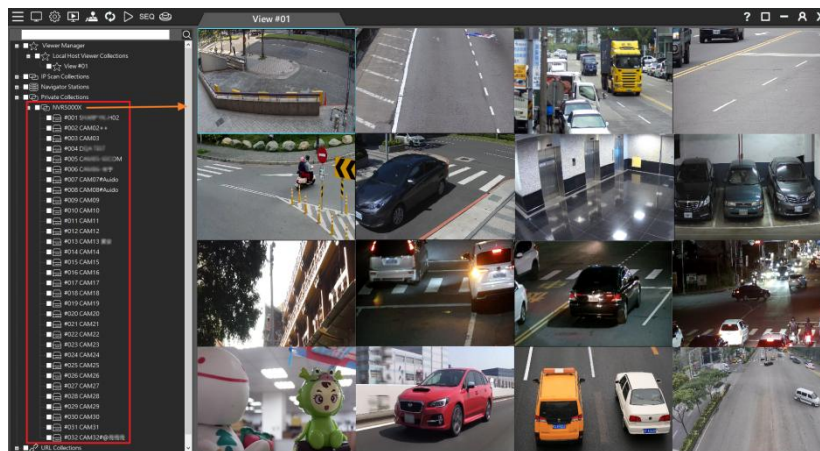




Click on Connect button for testing the video. Once this setup is finished, you can start to setup the view, playback the video, or perform remote video backup.

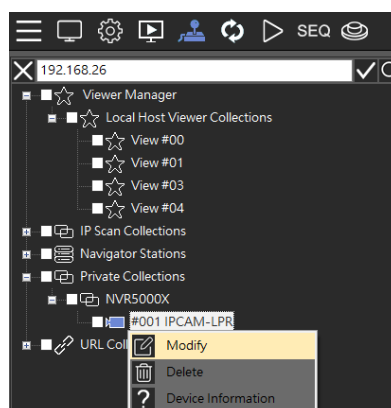


After completing the setting, drag the mouse to add it to the screen group, and you can start to watch real-time images, remote playback, and backup and other functions.



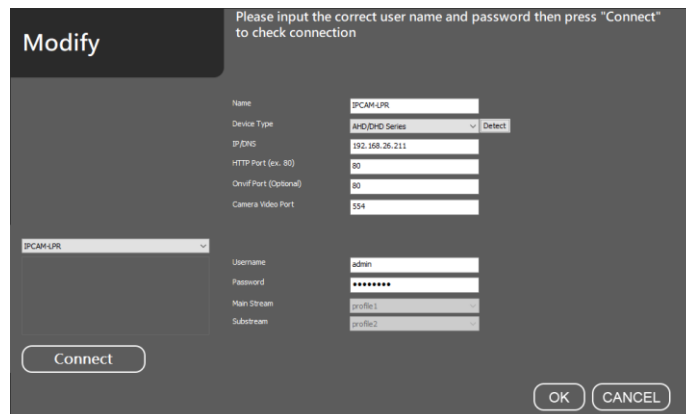
Chapter 1.6.2 Modify custom groups connection information IPCAM/NVR/DVR

Select the group, right-click on "Modify".





Modify the IP/DNS address, HTTP port, ONVIF port, video port, username and password. Then click the Connect button to connect to the IPCAM/DVR/NVR video screen. When the settings are completed, you can start to use the functions including live view, remote playback, and backup.

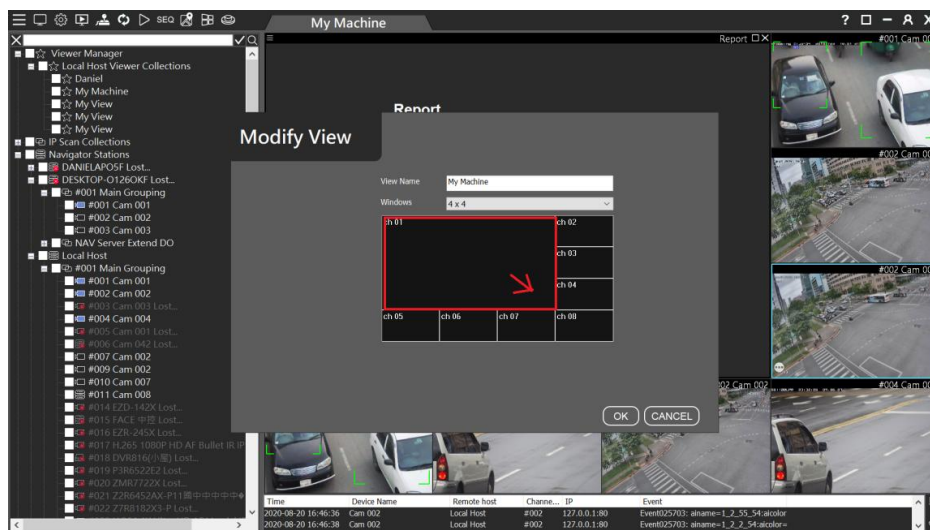


Chapter 1.7 Window View

Under **View Manager**, mouse right click and select **Add View**, then fill in the following fields:

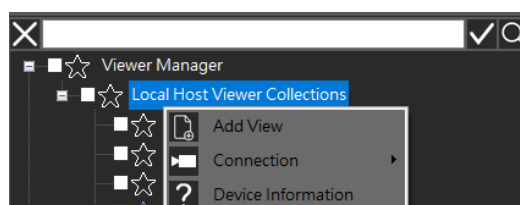
- View Name : Enter the view name.
- Windows : Select the camera split screen view.

To flexibly set the camera group, please use the mouse cursor to drag the grid for defining the split screen.



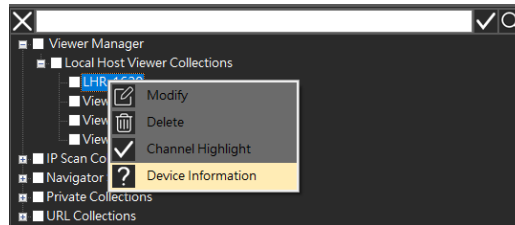
Chapter 1.7.1 Local Host Viewer Collections Right-Click Menu

- Add View: Add group view on split screen.
- Connection: All devices are connected, all devices are disconnected, and delete all channels of the group.
- Device Information: The Local Host connected IP address and connected group.



Chapter 1.7.2 View Group Right-Click Menu

- Modify: Modify group name and split screen.
- Delete: Delete a group.
- Channel Highlight: Quickly fine new devices in the group.
- Device Information: Group name, group number, number of divisions, number of connections.



Chapter 1.7.3 Select On Screen Camera

Quickly find the added devices in the group and highlight them to get attention and serves as a reminder.



Chapter 2 Live Monitoring of View Manager

First, please log in to View Manager. The default username is "admin", and leave the password blank.

To change user, please click "Change User"  and enter your username and password.

Navigator Client 64 bits User Login

Login Name: 1: admin

Login Type: Normal Mode

Username: admin

Password:

Host Name: : 389

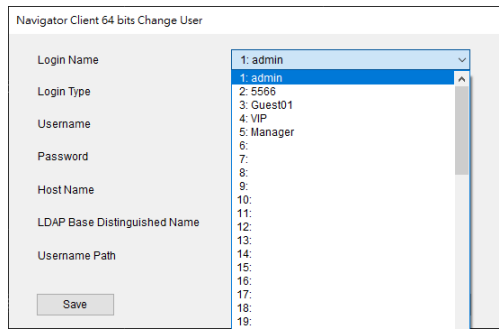
LDAP Base Distinguished Name:

Username Path:

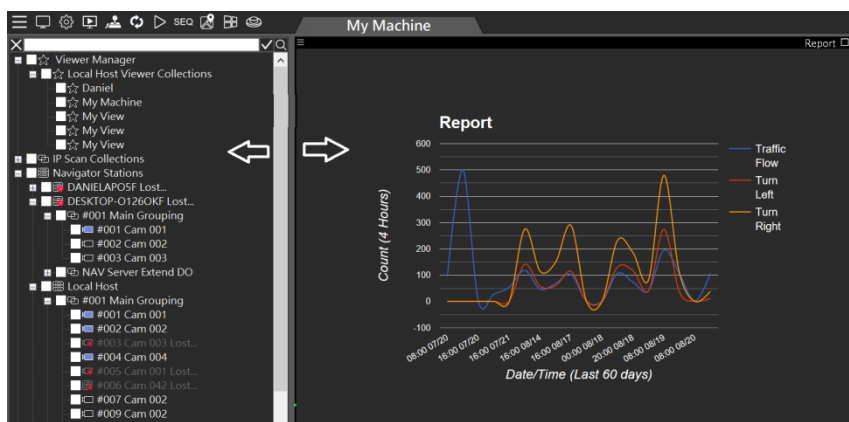
Save




Supports group settings for storing multiple accounts and passwords, may set up to 128 groups.

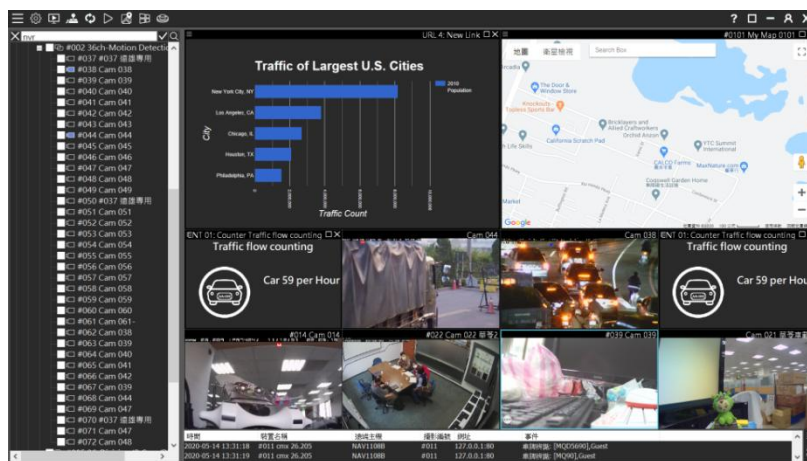


Note: If the existing user password is blank, please change it to comply with the information security policy.



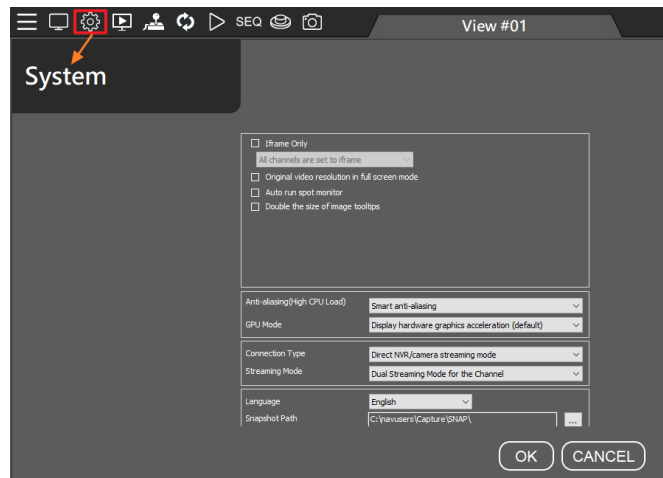
Chapter 2.1 Configure Live View Group

Click **Private Collections**  to drag a device from the left pane to the right pane. You can also check multiple devices and drag them to the right.



Chapter 2.2 View Manager System Settings

Advanced parameter setting



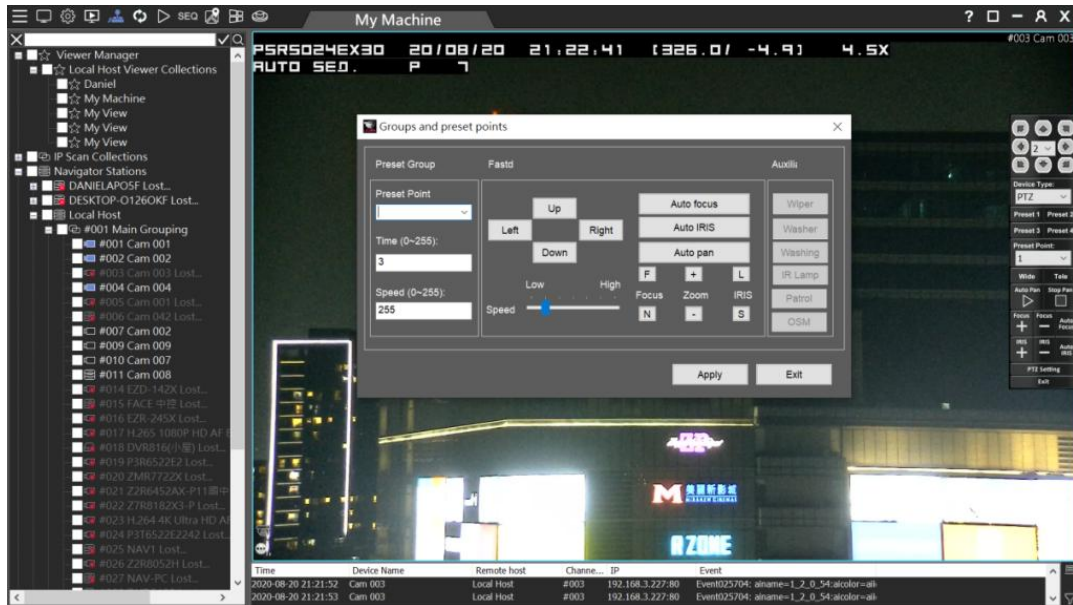
1. Iframe Only: When system resources are insufficient, the live view channel will display one frame per second to reduce CPU load.
 - All channels are set to iframe: All channels display one frame per second to reduce CPU load.
 - Channels not selected are set to iframe: The selected channel displays normally, and the remaining channels displays one frame per second.
2. Original video resolution in full screen mode: The size of the device original image (if not checked, the system will automatically adjust the image to the best suitable display area).
3. Auto run spot monitor: Automatically activate the spot monitor every time the View Manager is launched.
4. Double the size of image tooltips: The size of the tree diagram detailed device information is doubled.
5. Smart Anti-aliasing: Smart channel image edge smoothing.
 - Anti-aliasing mode (High CPU Load): Utilize CPU resources to soften image edges.
 - Disable anti-aliasing: Disable image edge smoothing.
6. GPU Mode: CPU hardware accelerated video decoding (Default)
 - GPU decode and display, display high priority: Intel or NVIDIA graphics card GPU hardware accelerated display and decoding. Image displays first priority, image quality and bandwidth second priority.
 - GPU decode and display, decode high priority: Intel or NVIDIA graphics card GPU hardware accelerated display and decoding. The video channel will be displayed after decoding.
7. Connection Type: IPCAM/NVR/DVR device connection mode and NAV server image relay mode. (**Note:** NAV recorder only)
8. Streaming Mode: The default streaming mode of the device, when the device is dragged to the View Manager, this streaming mode will be used to create the camera canvas. If the network bandwidth is very low or the CPU computing power is limited, the SD Streaming (720 x 480) standard can be used. If the network bandwidth is good, please use Dual Streaming mode. If Streaming Mode is set at "Low Bitrate Mode", it will display one frame per second, which can be used to decode more than 144 frames to reduce CPU computing requirements and use lower bandwidth.
 - Dual Streaming Mode: Dual Streaming Mode (Multiple split screen SD, Full screen HD) ◦
 - HD Streaming: Main stream HD mode.
 - SD Streaming: Sub stream SD mode.
 - SD Streaming at Low Bitrate Mode: Substreaming low bandwidth mode.
 - HD Streaming at Low Bitrate Mode: Mainstreaming low bandwidth mode.
 - Dual Streaming at Low Bitrate Mode: Dual-streaming low bandwidth mode .

Note: Streaming at Low Bitrate Mode supports connected to NAV recorder only.
9. Language: View Manager display language.
10. Snapshot Path: Snapshot storage path.

Chapter 2.3 PTZ Control & Setting

Select a PTZ camera and click **PTZ Control** . Features include preset positions, PTZ controls, auto focus, and zoom in and out among others. These features can be operated via the network.


Click on **PTZ Setting** button. You are able to set up the PTZ position and save the preset positions.

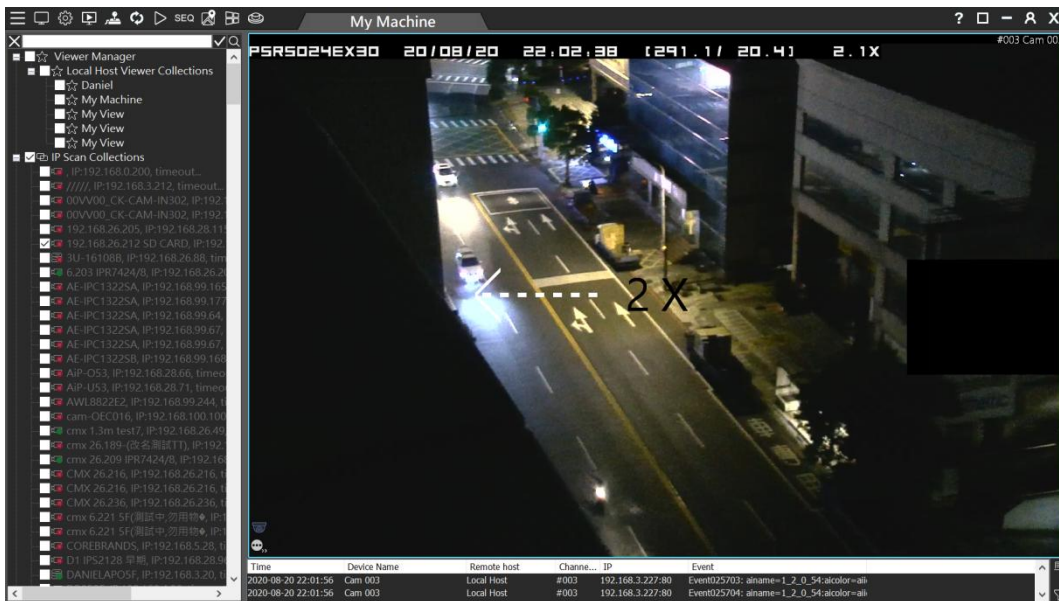


PTZ Control Panel Description:


Icon	Function	Description
	Direction Button	Rotate the PTZ to 8 different directions including up and down, left and right, upper right and lower right, upper left and lower left.
	Moving Speed	Select to adjust the speed of PTZ rotation (up to 7x).
	Device Type	Select supported camera device type, ePTZ, PTZ, auto focus, Fish Eye.
	Preset Recall	Up to 4 preset points can be recall instantly.
	PTZ Preset Point	Up to 128 preset points can be programmed.
	Zoom +/-	Adjust digital zoom in/out.
	PTZ Auto Pan	<input checked="" type="checkbox"/> Enable Auto Pan, <input type="checkbox"/> Disable Auto Pan
	Auto Focus	Manual Focus +/- , Auto Focus AF
	Auto Iris	Manual Iris Far/Near, Auto Iris
	Preset Point Setting	Set auto pan preset positions.

Chapter 2.3.1 On-screen PTZ Control

In full screen mode, click on  on-screen control icon that can enable PTZ control by using a mouse. Use mouse scroll wheel for PTZ zoom in and zoom out.

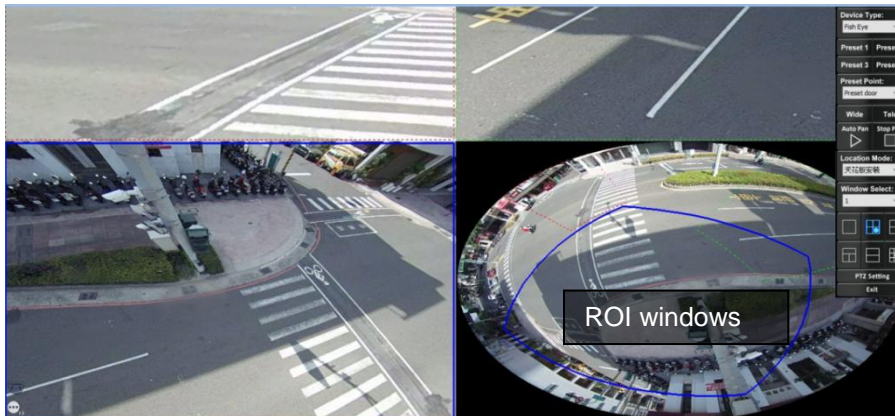


Chapter 2.3.2 On-screen Panoramic Camera Control

In full screen mode, click on  on-screen control icon to enable panoramic camera control by using a mouse. Use mouse scroll wheel for camera zoom in and zoom out.



Drag the window at the panoramic view to adjust the ROI window. There are three mount types available - ceiling mount, desk mount, and wall mount.



Panoramic Control Panel Description:

Icon	Function	Description
	Location	Location: Ceiling Mount, Table Mount, Wall Mount
	R Mode	Full-screen panoramic view
	3R1O Mode	Three ROI views and one panoramic view
	4R Mode	Four ROI views
	2R1P Mode	One panoramic view and two ROI views
	2P mode	Two 180 degree views
	8R1O Mode	One panoramic view and eight ROI views
	Preset Point Setting	Provide up to 128 preset points storage.

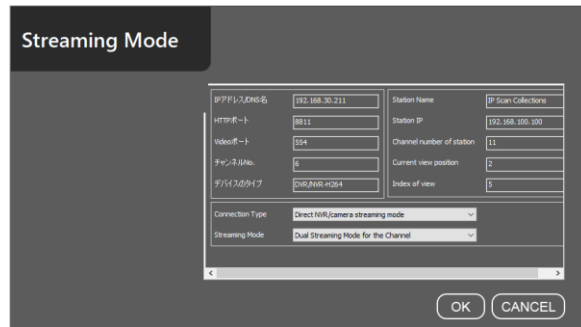
Chapter 2.3.2.1 Wall Mount Installation

The wall mount mode is different in some split screens and angles, please refer to the following.

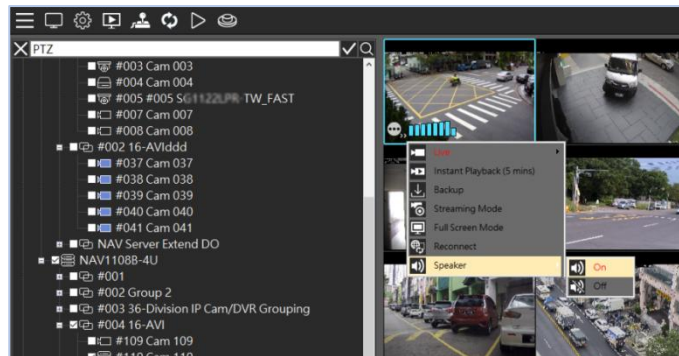
Icon	Function	Description
	2R1P Mode	One 180 degree view and two ROI views
	1WP Mode	One wall mount 180 degree view

Chapter 2.4 Camera Shortcut Keys

- Live: Discontinue an image or remove a channel.
- Instant Playback (5mins): Playback the video archive 5 minutes ago.
- Backup: Single channel backup image data.
- PTZ Panel: PTZ camera mode.
- Streaming Mode: Streaming switch.

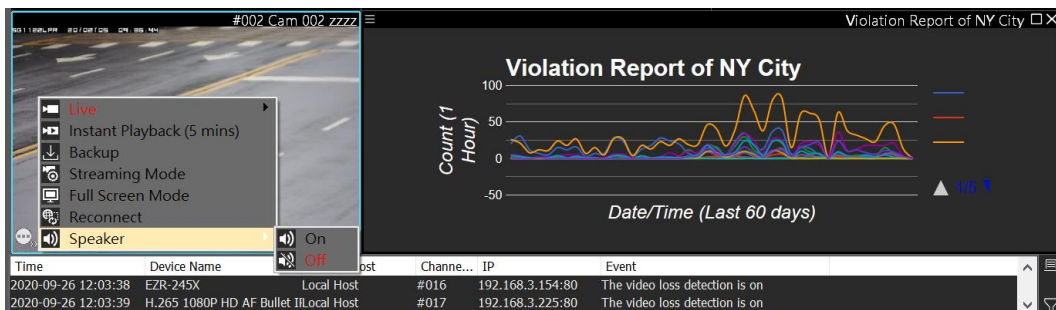


- Station Name: Remote device host name.
 - Station IP: Remote device IP.
 - Channel number of station: Which device is the connected device in the Station list.
 - Current view position: The current selected screen number
 - Index of view: The screen group number currently being viewed
- Full Screen Mode: View Manager channel full screen mode.
 - Reconnect: Reconnect the device.
 - Speaker: If the device supports audio, select the channel and right-click on the screen. When the speaker is turned on, you can listen to the audio. To change the channel volume, click the volume control.



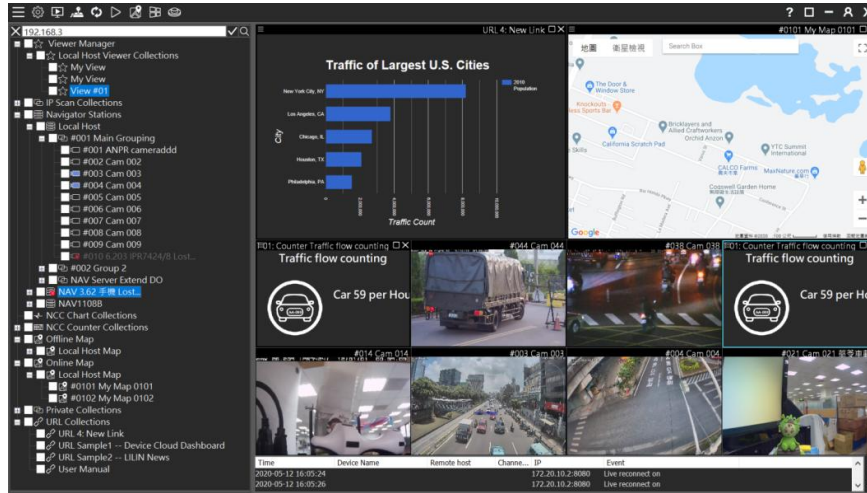
Chapter 2.5 Short-cut for Audio Monitoring

If a device supports audio monitoring, select the channel and right-click on the screen. When the speaker turned **On**, you will be able to listen to the audio. To change the volume of the channel, click the **volume control**.



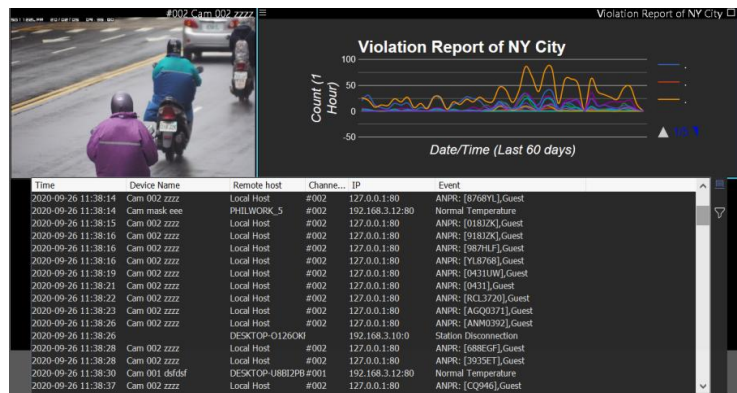
Chapter 2.6 Dynamic Channel Editing

If you want to change the layout of the camera channels, you can drag a camera and drop it to another video channel. This operation swaps the position of the two cameras dynamically in the software. If you need to change the position of a specific camera after the installation is completed, you will not need to re-assign all the IP settings.

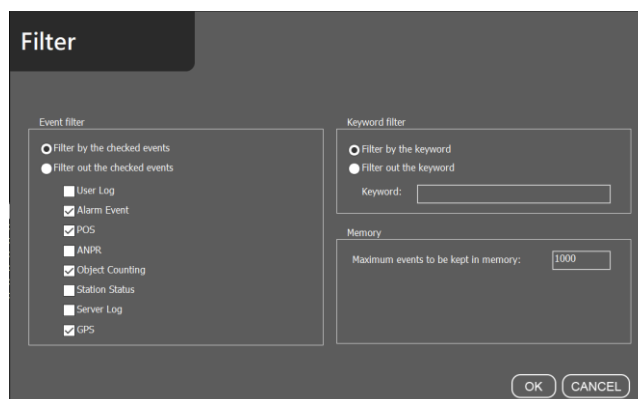


Chapter 2.7 Alarm Event List

Click on the **alarm event list** to display the alarm event list. The alarm list includes: connection details, alarm events, POS event table, license plate recognition, counter, GPS satellite data, and station status and other data.

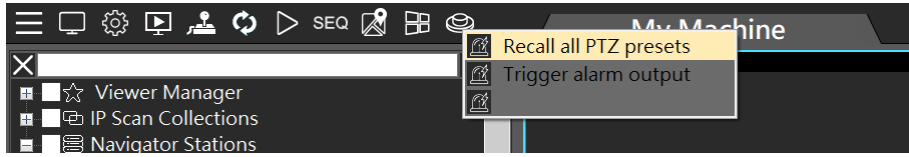


To filter the alarm events list, click the filter icon.



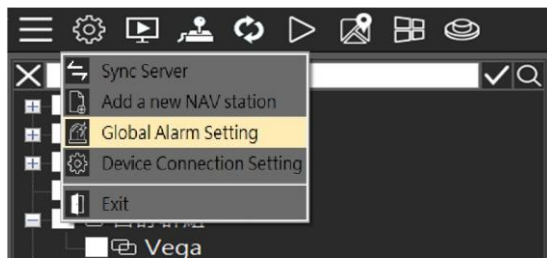
Chapter 2.8 Manual Alarm and Digital Control Shortcut Keys

When an event occurs, the user can use the alarm and the shortcut keys of digital control to manually control the alarm and digital control.

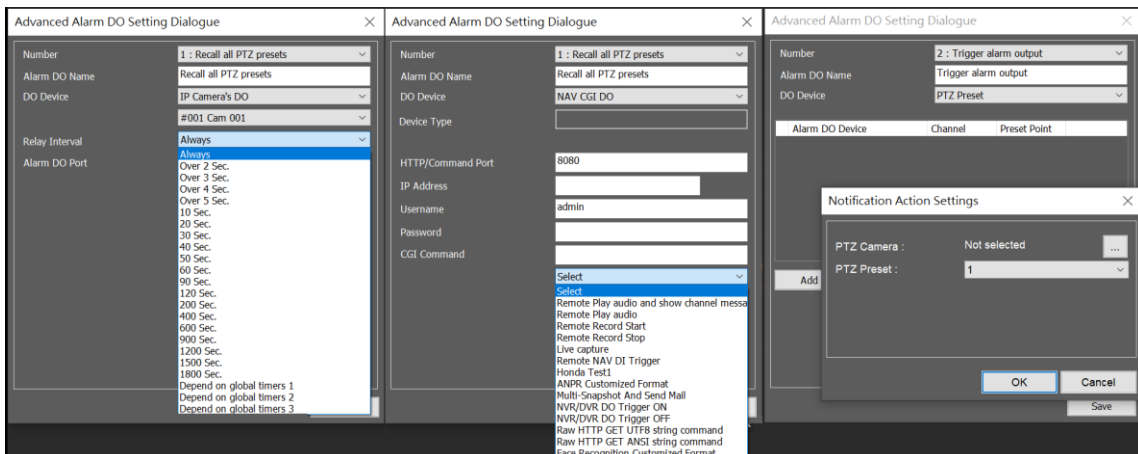
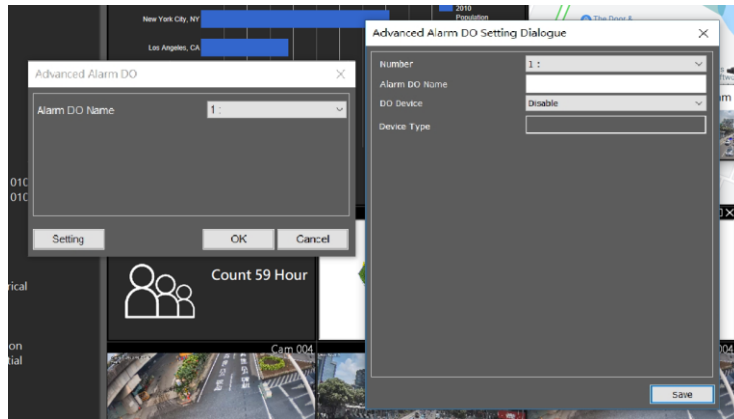


Chapter 2.8.1 Global Alarm Setting

The Global Alarm Setting is to program shortcut menu on the menu bar for triggering digital output devices. This could be IP camera's digital output, Navigator's virtual output, or PTZ presets. Click on Global Alarm Setting for setting up the alarm outputs.

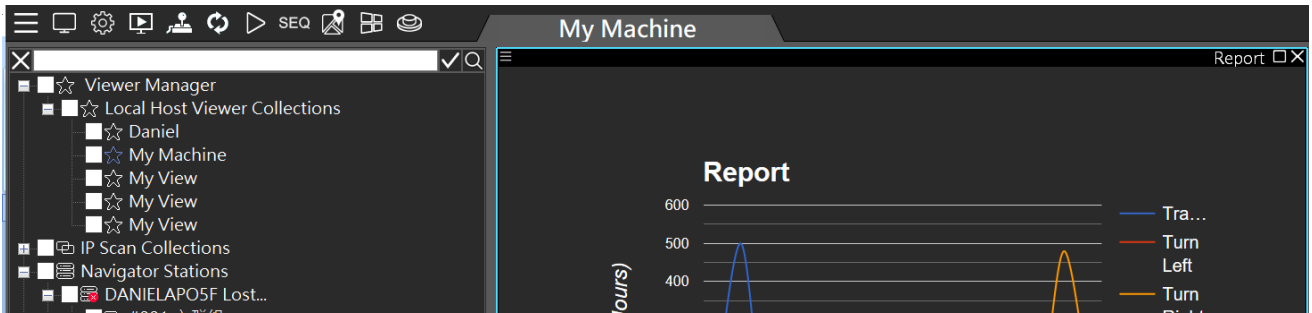


There are total 64 global alarm settings. Click on the Setting icon to access Advance Alarm Setting Dialogue box. Select on DO device for the output device of the alarm.



Chapter 2.9 Sequence Display

SEQ Click on SEQ button. The SEQ button allows to sequentially display for the setup views.

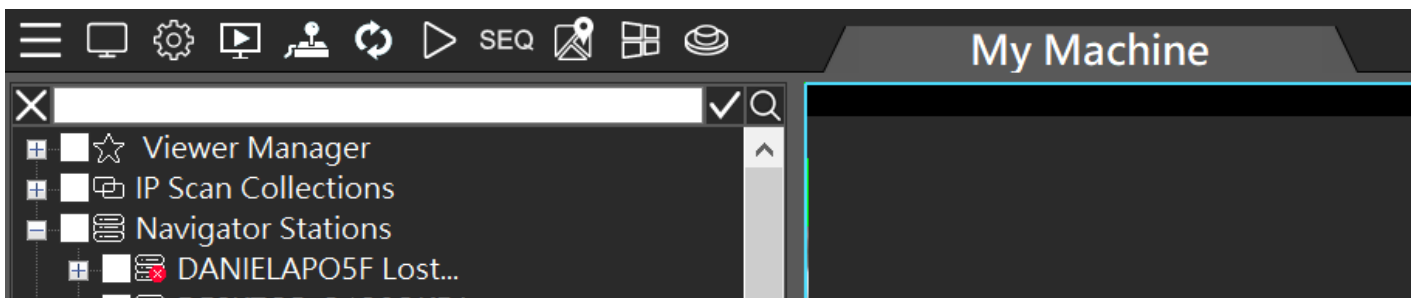


The Sequence dialogue box can add a view into the sequence table. Click the up and down arrow for switching the sequence. Set the sequence time in seconds for the dwell.



Chapter 2.10 Spot Monitor

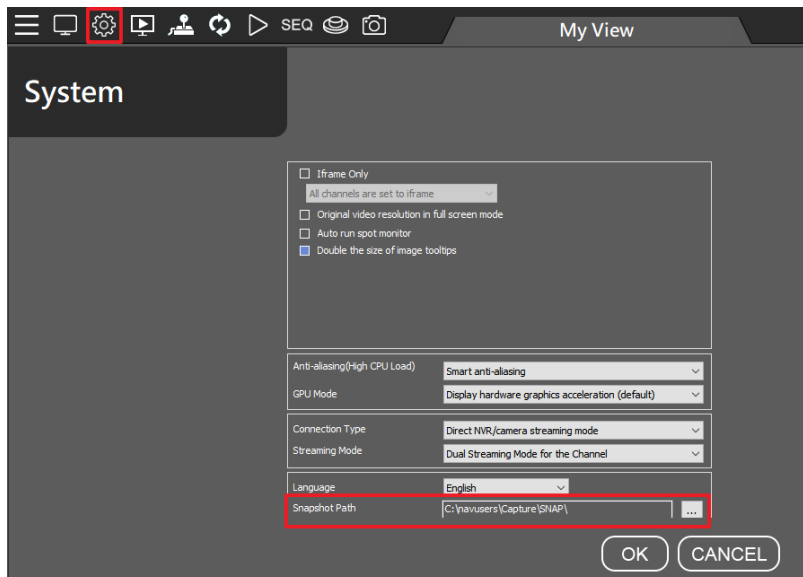
Many PCs have a secondary monitor output. Click on the icon and create another View Manager view. A user is able to set up the second monitor for monitoring purpose.



Note: System settings and channel group configuration can only be set on the main monitor. (Main Monitor, Spot Monitor).

Chapter 2.11 Instant Snapshot

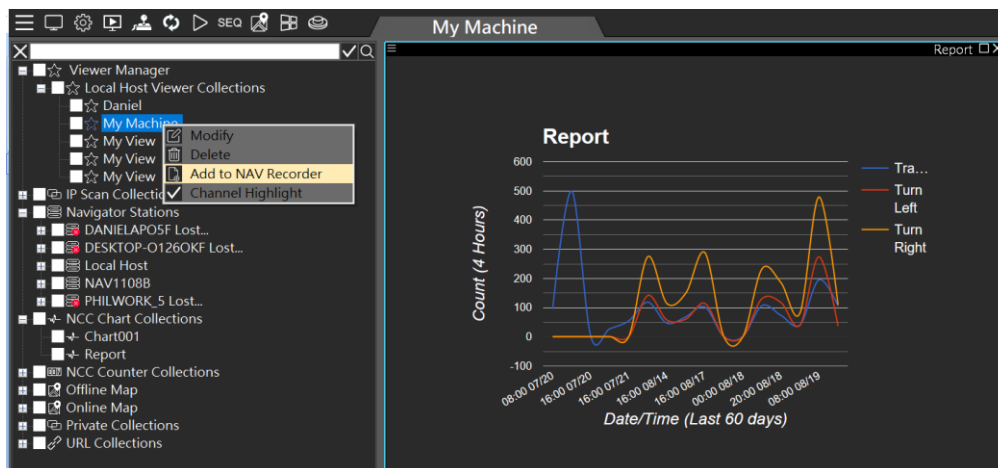
On System settings, set the snapshot directory. And then, click the "snapshot" icon, to capture the group's full image and each channel image on the live screen.



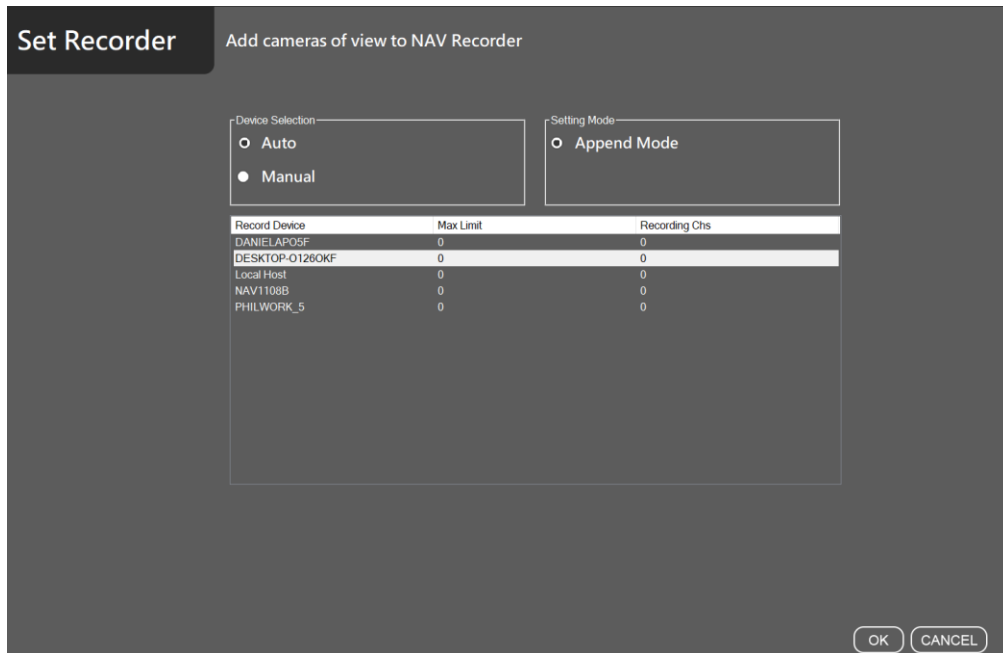
Note: After setting the destination directory, a SNAP folder will be automatically generated, and all subsequent screenshots will be displayed there.

Chapter 3 Assign Cameras for Recording on a Remote Navigator

Once all cameras are configured for views, click on "Add to NAV Recorder" menu. This can assign the cameras for recording on a remote Navigator. This feature makes adding cameras to a remote Navigator quite easy.



“Set Recorder” dialogue box can assign which Navigator for recording. Select a Navigator and click the OK button.



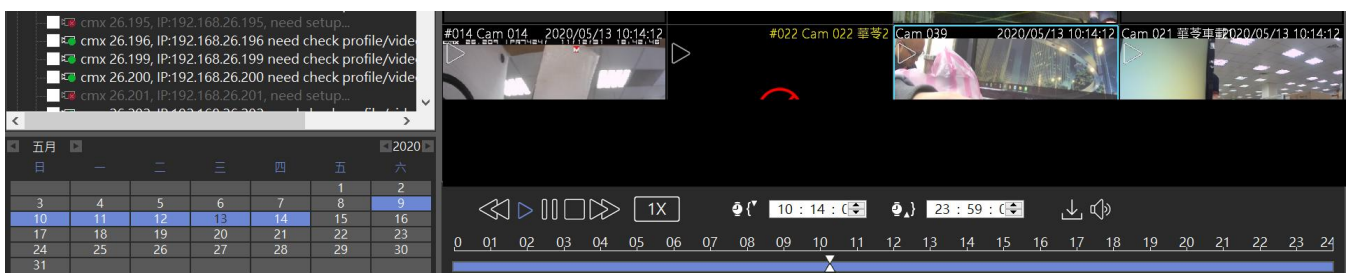
Chapter 4 Playback and Backup

The Navigator Control Center provides integrated playback and backup features within the View Manager. The camera recordings of Navigator recorders and LILIN DVRs/NVRs can be set up in a View based on the function of the view. A user is able to perform camera view playback and backup. The speed bar also supports fast forward and rewind functions.

Chapter 4.1 Playback

Chapter 4.1.1 Synchronous Playback

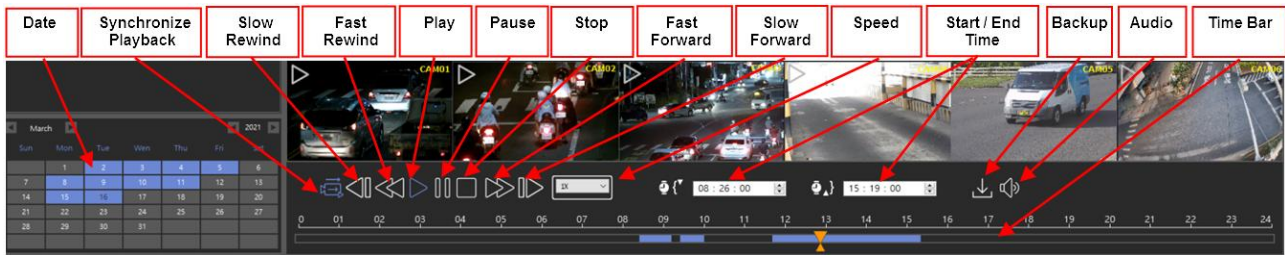
Click **Playback** to play synchronous videos in a group. Supported camera recordings include different NVR, AHD camera, DVR, and Navigator. Click the date and drag the time bar for video playback.



Note: The NVR/DVR supports up to 8 connected video playback.

Chapter 4.1.1.1 Multi-channel Synchronous Playback Interface Description

Multi-channel synchronous playback UI



Chapter 4.1.2 Asynchronous Playback

For asynchronous playback, select a camera from left device tree and drag it to the playback view group. Click **Single Playback** icon and select date and time. Select cameras and drag their individual time bar to play videos at different time.

Icon	Function
	Multi-channel synchronous playback
	Single-channel asynchronous playback



In the playback screen, live image mode can be enabled. This will enable user to immediately switch to live view when there is a live event.

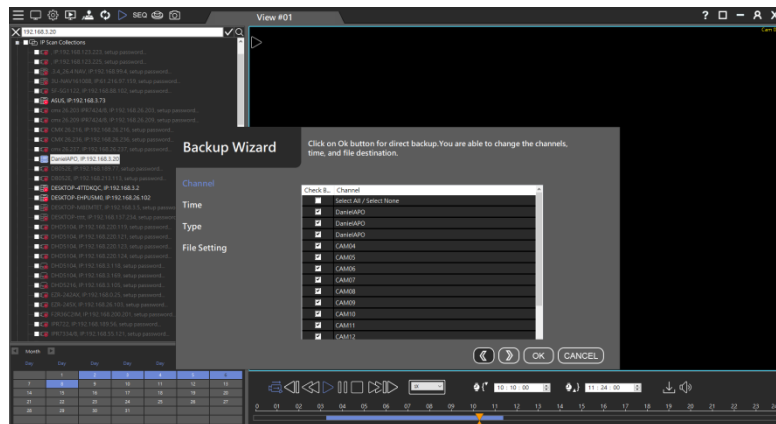


During playback, mouse right click on **Live** to refresh a specific camera. Click on **Refresh** at the window top to refresh all camera images.

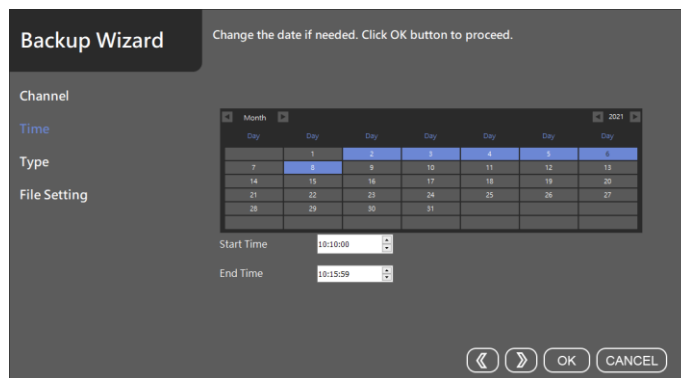
- Instant Playback (5mins): Playback the video archive 5 minutes ago.
- Backup: Single channel backup image data.
- PTZ Panel: PTZ camera mode.
- Streaming Mode: Streaming switch.
- Full Screen Mode: View Manager channel full screen mode.
- Reconnect: Reconnect the device.
- Speaker: Device speaker switch.

Chapter 4.2 Remote NAV Recording Backup

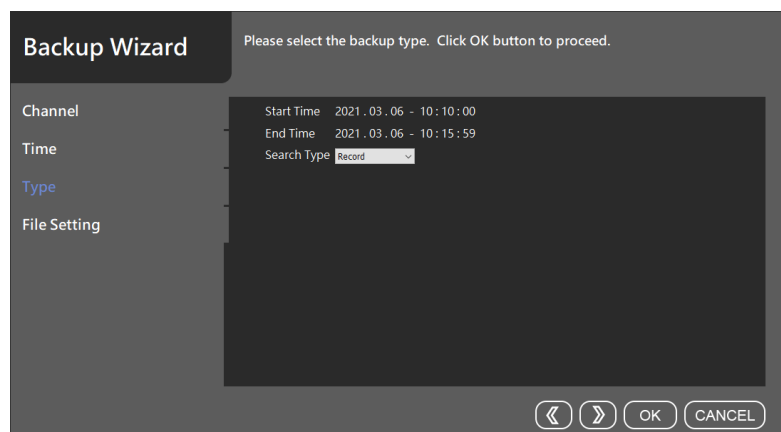
On the playback page, click the backup icon to download recorded video and perform recording backup.



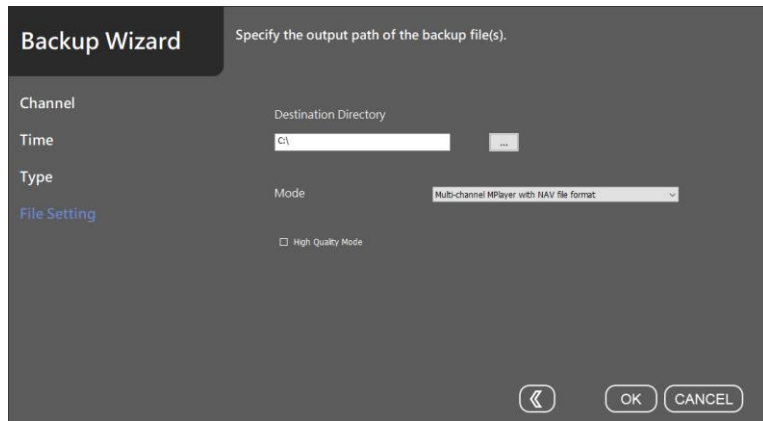
The selected month, date and time.




Confirm the time of backup.

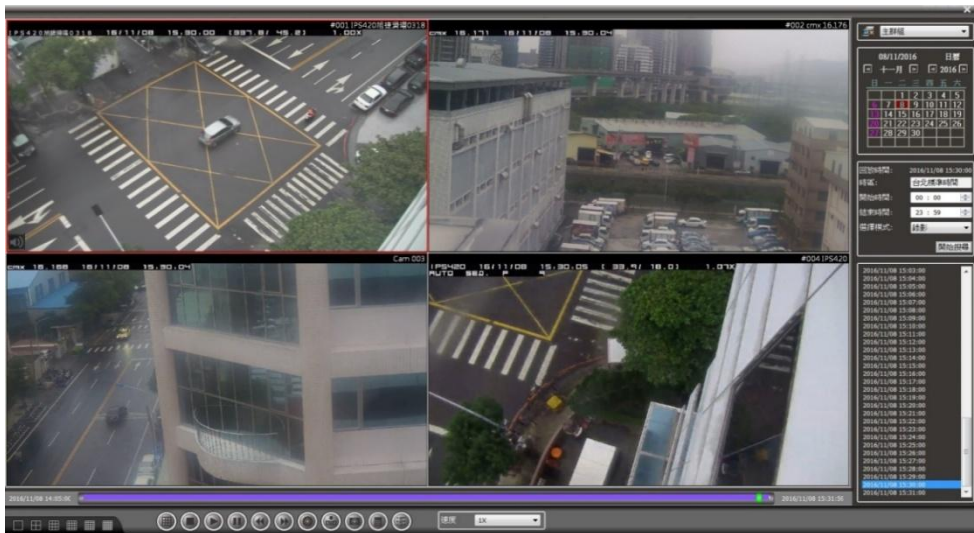


- Destination Directory: Set the backup destination folder.
- Mode: Multi-channel Mplayer NAV file format, Single channel AVI or MPG file format.
- High Quality Mode: NVR/AHD back up main stream or sub stream.

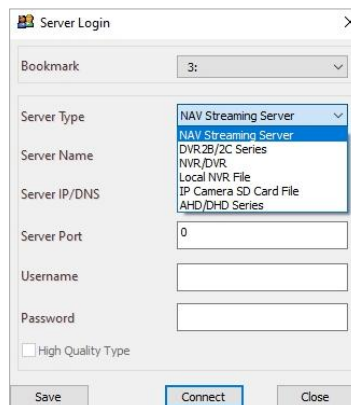


Chapter 4.2.1 Remote NAV/NVR/DVR Event Backup

To perform remote playback on the screen, click **Remote Playback** icon  and log in automatically to the remote device. You can remotely playback and backup at any time.



To manually log in to the remote device, please click on **Server Login** icon and fill up the fields. Press **Save** and **Connect** to remotely playback and backup.



- Bookmark: The bookmark of the server.
- Server Type: Select a server type.
- Server Name: Name of the server.



- Server IP/DNS: The IP address of the server.
- Server Port: The port number of the server.
- Username: The username of the server.
- Password: The password of the server.
- High Quality Type:

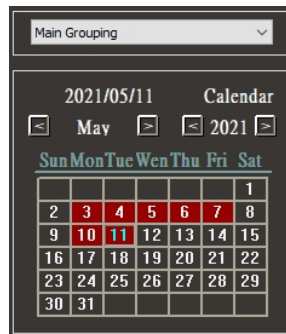
The following image indicates the taskbar of Remote Playback and Backup.

Icon	Function	Description
	Split Screen	1、4、9、16、25、36 Split screen selection
	Stop	Stop playback
	Play	Start playback
	Pause	Pause playback
	Slow Rewind	Slow rewind speed: $-(1/2X)$ 、 $-(1/4X)$ 、 $-(1/8X)$
	Fast Rewind	Fast rewind: $-1X$ 、 $-2X$ 、 $-4X$ 、 $-8X$ 、 $-16X$ 、 $-32X$
	Fast Forward	Fast forward: $1X$ 、 $2X$ 、 $4X$ 、 $8X$ 、 $16X$ 、 $32X$
	Slow Forward	Slow forward: $(1/2X)$ 、 $(1/4X)$ 、 $(1/8X)$
	Playback System Setting	Playback System Setting
	Backup Download	Backup channel or download AVI, MPG file.
	Snapshot	Channel image snapshot (1 group full screen, 1 channel screen)
	Snapshot Path	Set snapshot storage path
	Event Log	Record of various alarm events, (motion detection, POS detection, face detection, license plate detection, etc...)

Chapter 4.2.2 Remote Device Download and Backup

- Step 1. Click on the date on the calendar.
- Step 2. Specify starting time and ending time.
- Step 3. Click **Search** button to search the video clips.

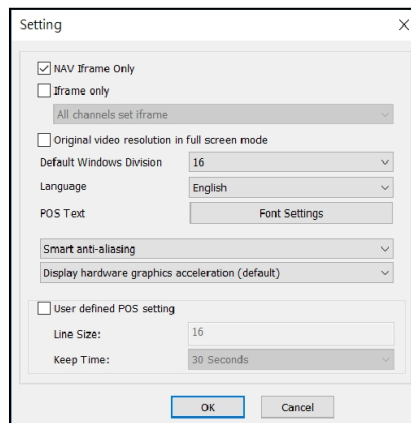
To perform remote video backup, click **Backup** and select specific channels. Specify date, time, and destination directory. Finally, select Start Backup or Convert AVI for multiple channel video backup.



Chapter 4.2.3 Remote Playback Settings

Playback setting will display the following:

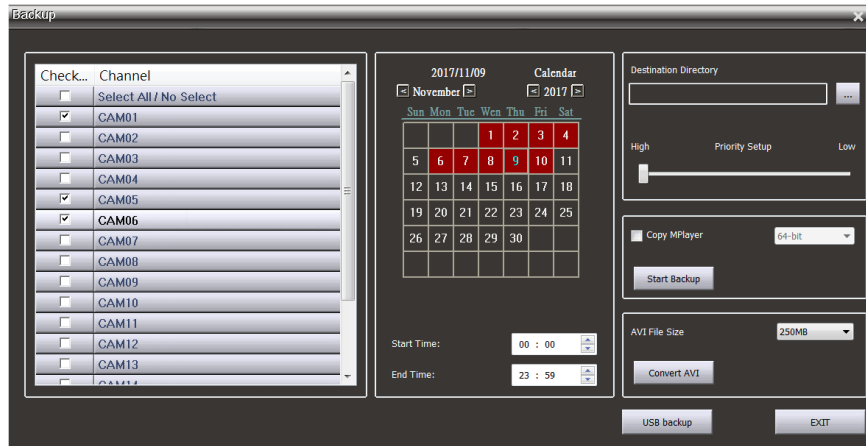
- (1) NAV Iframe Only: When performing remote playback, this setting force NAV to show one frame per second for reducing CPU load.
- (2) Iframe Only: When foreground remote playback, whether to set the channel to display one frame per second, to reduce CPU loading.
 - All channels set iframe: When foreground remote playback, all channels in the foreground play back one frame per second.
 - Channels not selected are set to iframe: When foreground remote playback, the selected channel in the foreground play back normally, and the remaining channels play back one frame per second.
- (3) Default Windows Division: Remember the preset main group split screen when remote playback.
- (4) Language: Remote playback display language.
- (5) POS Character Setting: Remote playback POS character display settings.
- (6) Smart anti-aliasing: Smart channel image edge smoothing.
 - Anti-aliasing mode (High CPU Load): Utilize CPU resources to soften image edges.
 - Disable anti-aliasing: Disable image edge smoothing.
- (7) Display hardware graphics acceleration (default): CPU hardware accelerated video decoding (Default)
 - GPU decode and display, display high priority: Intel or NVIDIA graphics card GPU hardware accelerated display and decoding. Image displays first priority, image quality and bandwidth second priority.
 - GPU decode and display, decode high priority: Intel or NVIDIA graphics card GPU hardware accelerated display and decoding. The video channel will be displayed after decoding.
- (8) User defined POS setting: Customize image POS font or color settings ◦
 - Line Size: Maximum number of POS line.
 - Keep Time: Maximum duration of POS keeps time.



Note:-For reducing the CPU load during playback, it is recommended to tick on "NAV Iframe Only" box.
For Video compression picture types, please refer to [Wikipedia](#).

Chapter 4.2.4 Remote Multiple Channel Backup

The software supports multi-channel playback, backup download, and AVI format conversion. To perform remote video backup, click **Backup** and select channels. Specify date, time, and destination directory. Finally, select Start Backup or Convert AVI for multiple channel video backup. You can also backup the image to a USB flash drive for multi-channel image backup.



Note: USB backup feature is only limited to NVR/DVR.

Chapter 4.2.4.1 Copy MPlayer

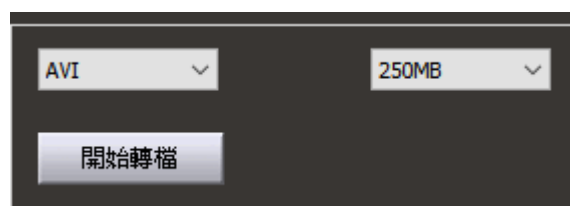
Copy MPlayer program.



Chapter 4.2.4.2 Backup Image Conversion Format

Backup Image Conversion Format: AVI, MP4.

Image conversion split size: 250MB, 500MB, 1GB.

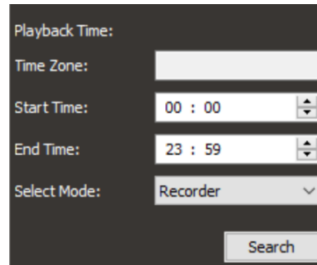


Chapter 4.2.5 Backup and Snapshot

For IP-based devices, you may want to capture still images in videos. Press **Snapshot** , and the image will be exported to a JPEG file format.

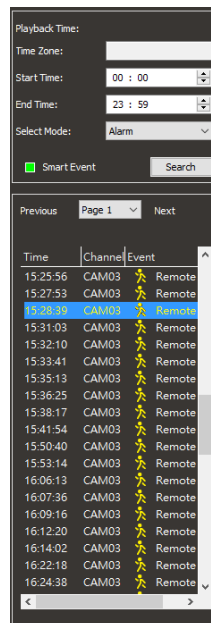
Chapter 4.2.6 Remote NAV/NVR/DVR Event Search and Backup

To view remote NAV/NVR/DVR alarm events and perform video playback and file download, click "Remote Playback" icon and click "Select Mode" in the backup manager to view a recording of events, POS cash register information, license plate recognition, and face recognition.



Chapter 4.2.6.1 Event Playback

When Smart Event is checked, all alarm (digital input) events will be automatically played until the end of the alarm events.



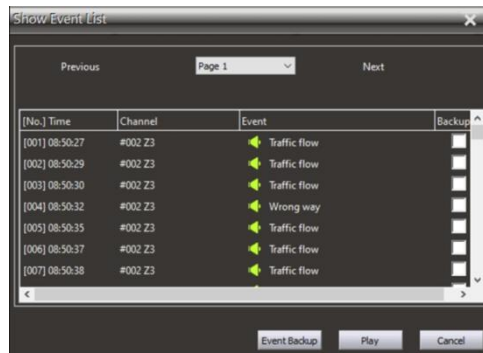
Recording Time Bar Color Coding:



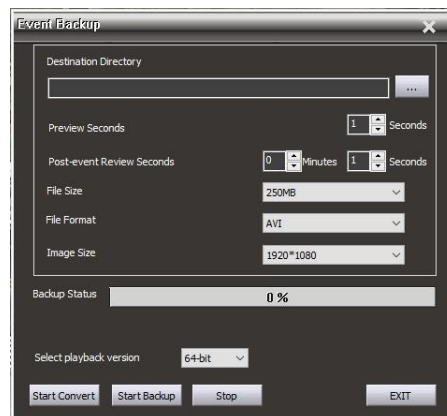
- White: No recording
- Purple: Continuous recording
- Yellow to Green: Event recording. The color depends on the frequency of event. The frequency range is from 1~10. The color changed to green as the event became more frequent.

Chapter 4.2.6.2 Event Backup

To back up an alarm recording, check the **Smart Event** box and press the **Event List** icon . This list all events for backup purpose.



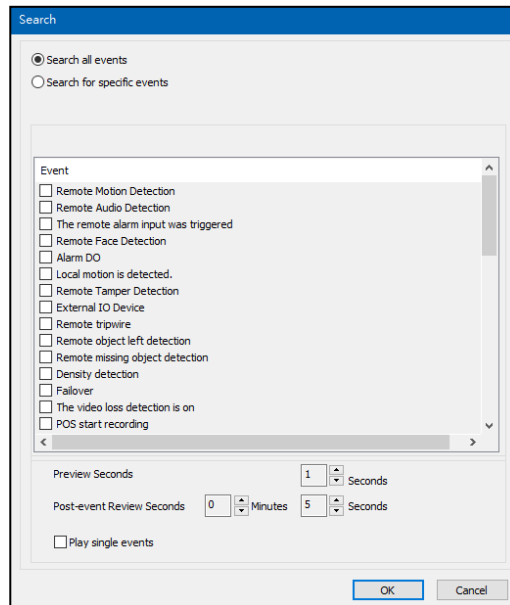
Select the file to backup and click on **Event Backup**.



- Destination Directory: Set the backup destination folder.
- Preview Seconds: The event recording of pre-alarm.
- Post-event Review Seconds: The event recording of post-alarm.
- File Size: 250MB, 500MB, 750MB, 1GB for each video backup. **Note:** NAV recorder only.
- File Format: AVI or MP4 file conversion. **Note:** NAV recorder only.
- Image Size: The size of the recording resolution, 320*240, 640*480, 704*480, 1920*1080 **Note:** NAV recorder only.
- Backup Status: The progress percentage for backup.
- Select playback version: MPlayer application in Windows 64-bit or 32-bit.
- Start Convert: The button is for starting the process of AVI or MP4 backup conversion. **Note:** NAV recorder only.
- Start Backup: The button is for starting the process of proprietary recording backup.
- Stop: Stop the backup process.
- Exit: Exit the program.

Chapter 4.2.7 Alarm Search for Remote NAV/NVR/DVR

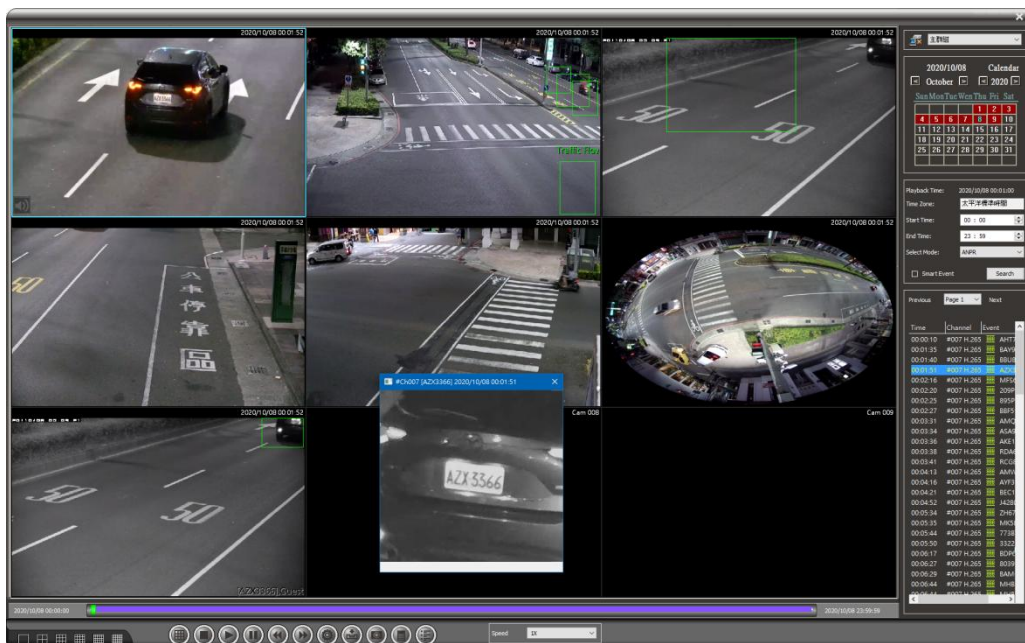
Select "Alarm" in "Select Mode", select "Search all events" or "Search for specific events" in the search dialogue box, the event will be listed. Click the event and the image will be displayed and perform video playback or download backup.



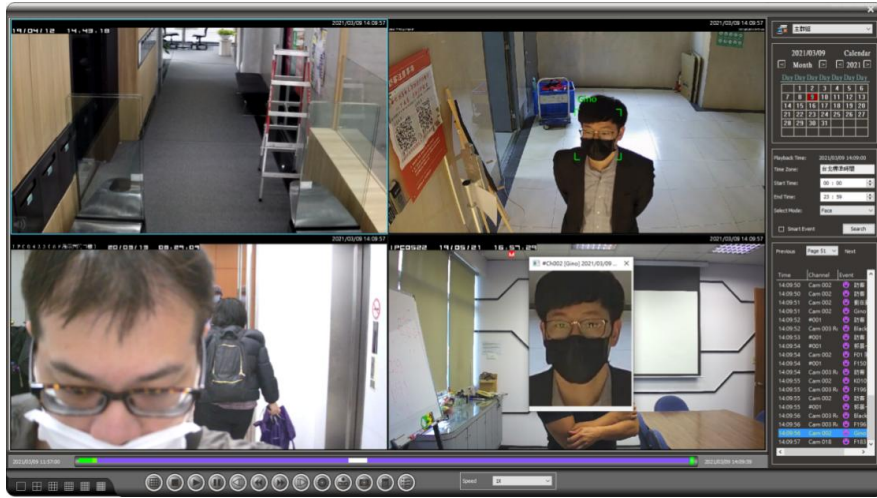
Note: When "Play single events" is ticked, only one alarm event will be played back at a time.

Note: "Search for specific events" feature is for NAV recorder only.

Chapter 4.2.8 Remote ANPR Event Search and Backup



Chapter 4.2.8.1 Remote Face Recognition Event Search

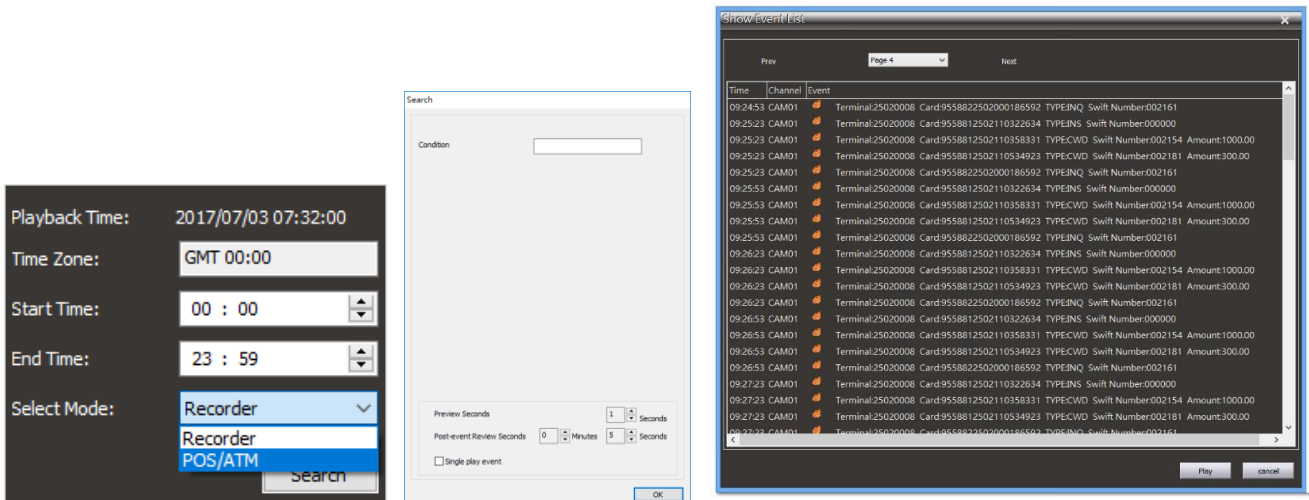


Chapter 4.2.8.2 Remote POS/ATM Transaction Report from NVR

If a POS/ATM is connected to an NVR, View Manager can perform remote POS/ATM transaction query. To do so, click Playback and specify the date and time to search for the POS/ATM transaction.



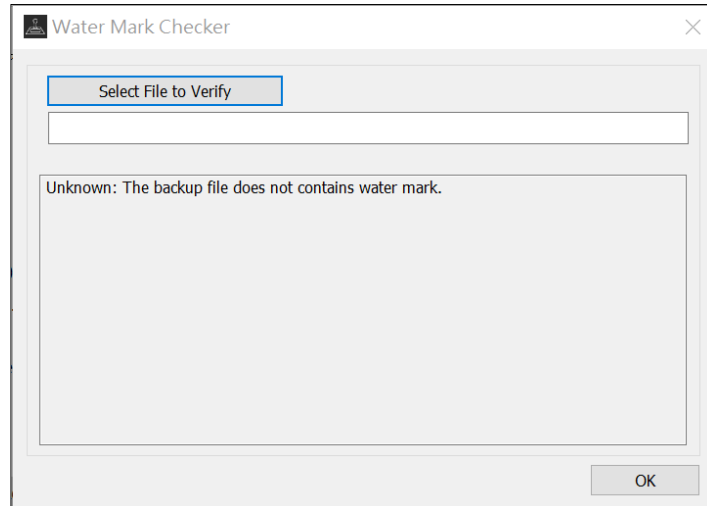
Select the POS/ATM option and press **Search** button, next, **POS Search Condition** will be displayed, enter the keyword in the field and press **OK**.



Chapter 4.2.9 Digital Water Mark

Water Mark Checker is used to verify whether the AVI or MP4 files are backed up from our company's NVR/DVR or NAV series. The video recordings backed up from our product are encrypted with the company's digital watermark, which can be used to check whether the video recordings have been tampered with or not.

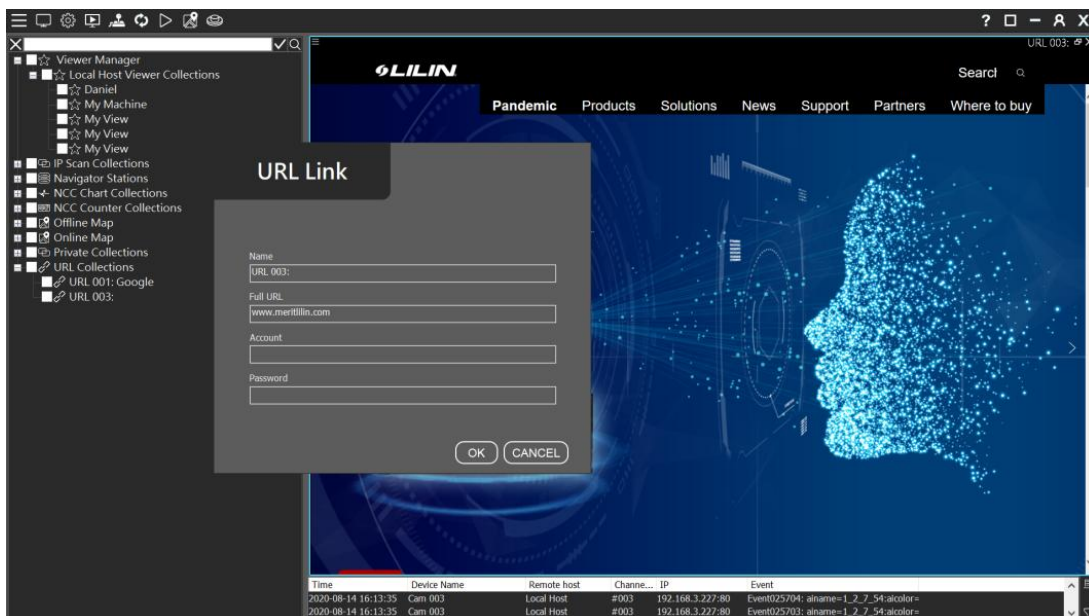
To use this application, Water Mark Checker, please click the "Select File to Verify" button and select the backup file. This program will automatically check whether the file has been altered or is a file produced by the products of our company.



Chapter 5 Third-party Applications & Device Integration

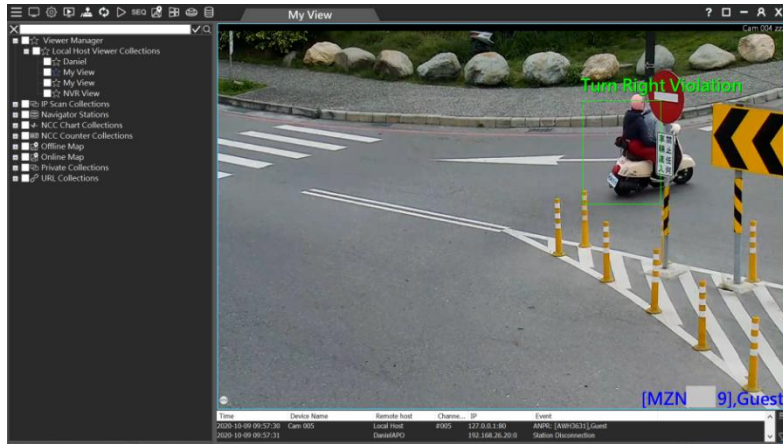
Chapter 5.1 Add Third-party Web Based Application via URL Collection

For the integration of third-party web application, click on **URL Collection** and enter the "Full URL" to embed the web application into the Navigator Control Center.



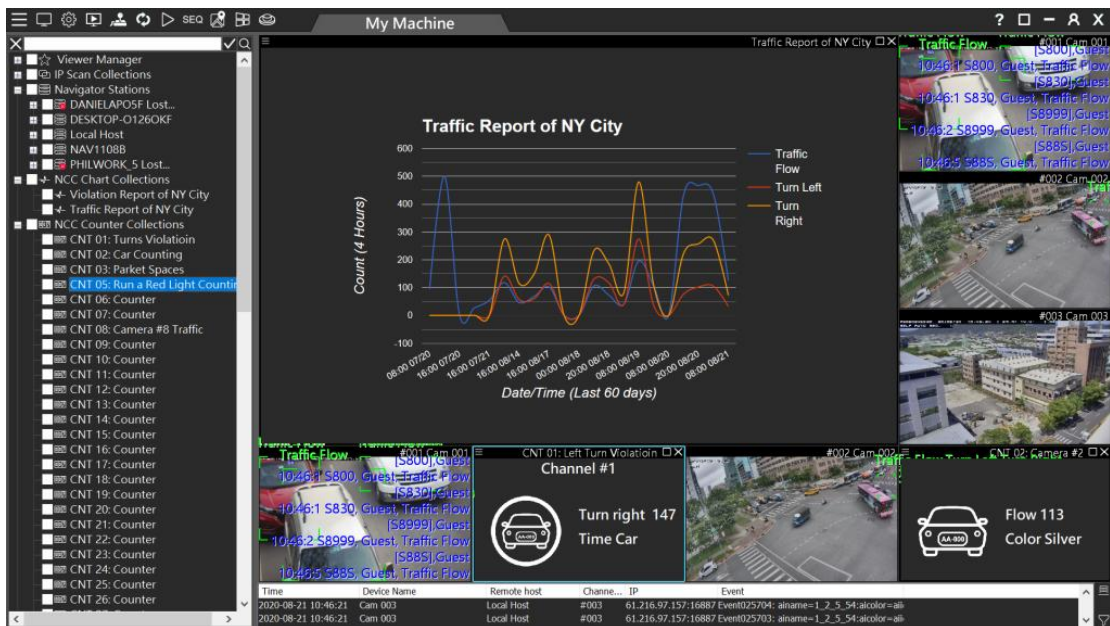
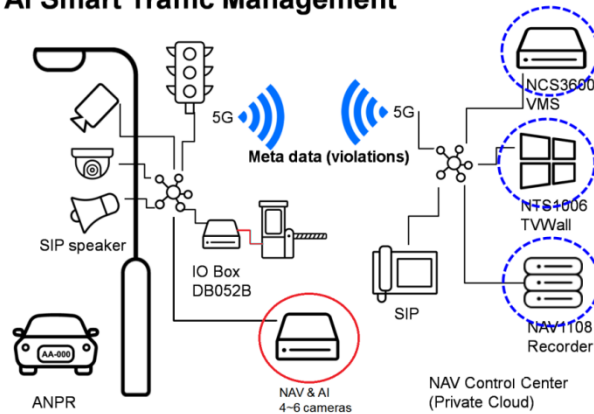
Chapter 5.2 Aida Integration

Please install Aida software on NAV Corporate server. Aida software is a plug-in for Navigator software and installed to become edge computing server.



See diagram below. The channel of Aida software and Navigator software is one-to-one mapped. For example, if camera #1 is set up in Aida software, Navigator software should also set up channel #1 for the camera.

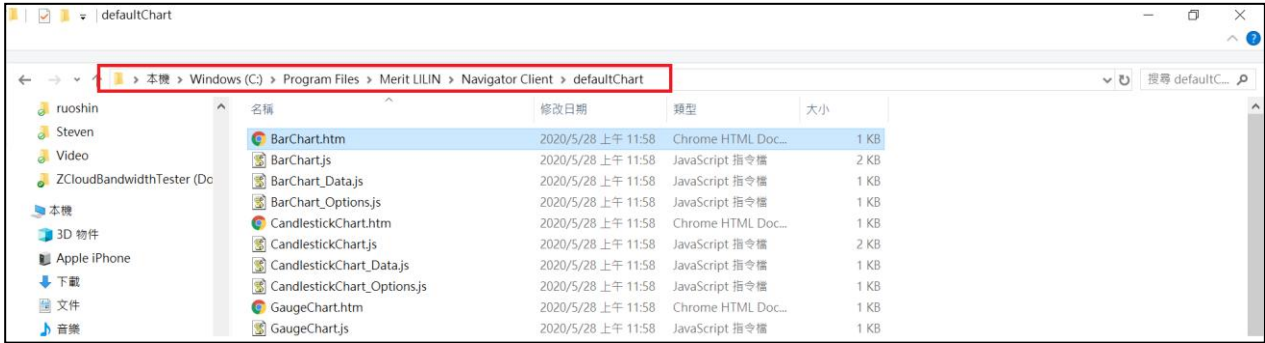
AI Smart Traffic Management



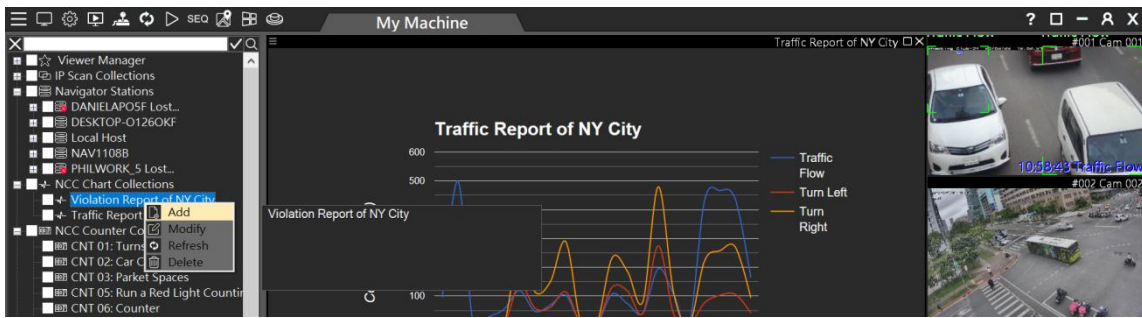
Chapter 5.2.1 Chart

Traffic management reports and other statistic reports are in the NCC Chart Collections. Chart Collection contains HTML5 based reporting system.

The HTML5 chart templates can be found at “C:\Program Files\Merit LILIN\View Manager\defaultChart.” For advanced users, a user is able to modify the template for customization purpose.



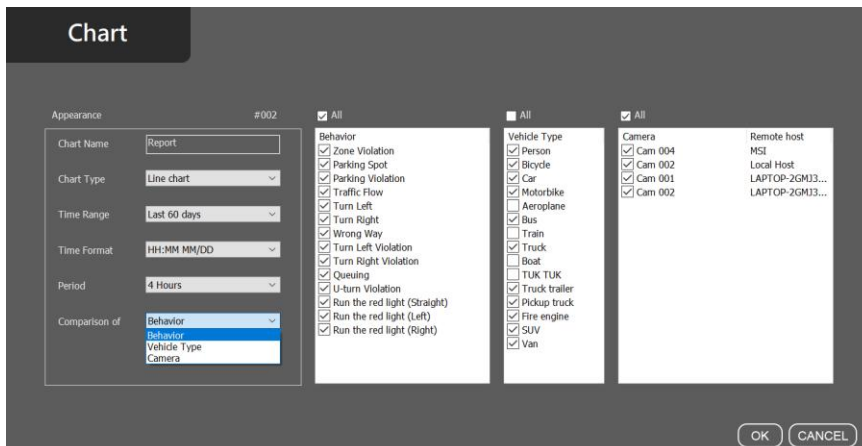
To set up a chart, mouse right click on NCC Chart Collections for adding, modifying, or deleting a chart.

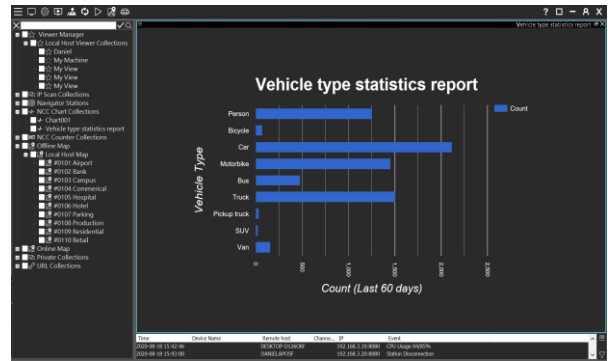
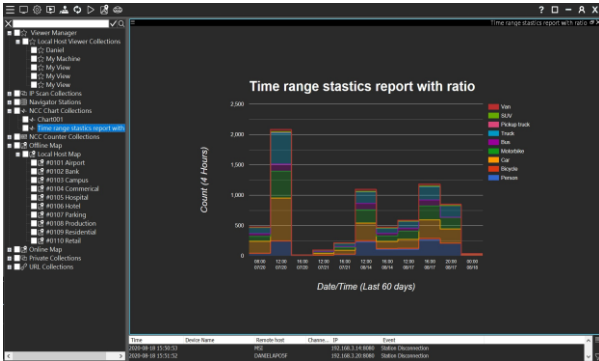
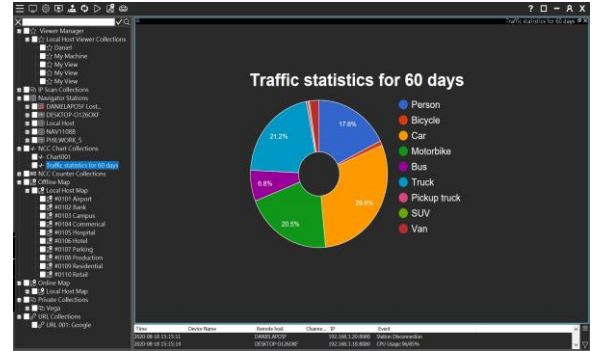
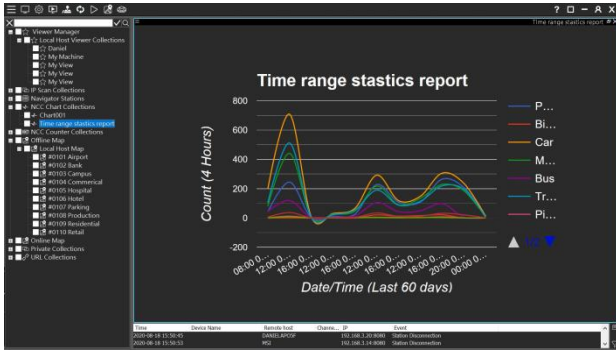


Please enter the following information:

- Chart Name: The Chart Name shown on the chart
- Chart Type: There are bar, line, pie, and stepped charts.
- Time Format: The time display format
- Period: Calculation period for the chart

The chart can be set up based on the comparisons of behavior, vehicle type, and camera.



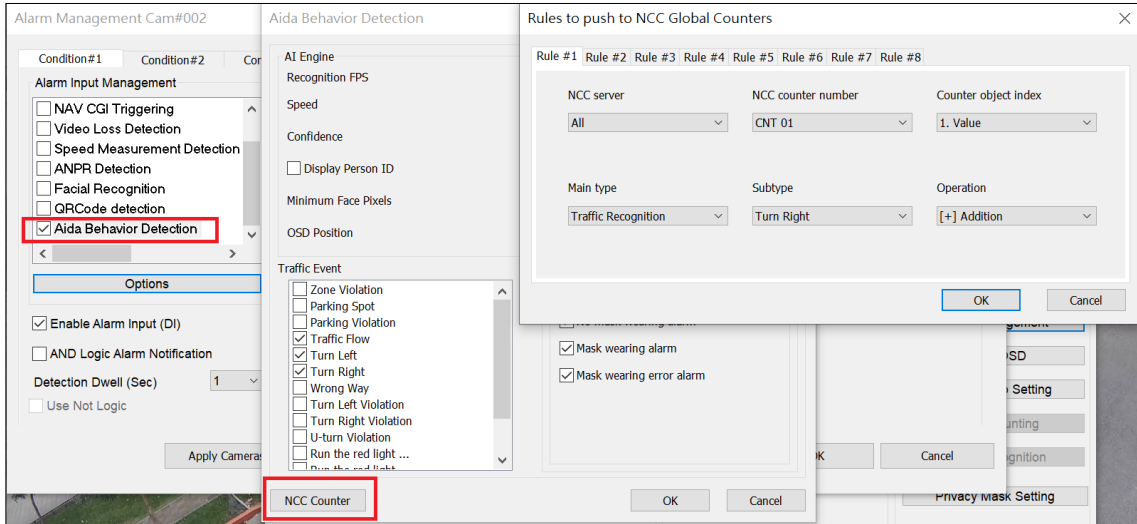


The following graph shows the comparisons of various statistics.

Behavior	Vehicle Type	Camera
<p>Traffic Report of NY City</p> <p>This line graph shows traffic flow, left turns, and right turns over a 7-day period. The y-axis is 'Count (1 Hour)' (0-200) and the x-axis is 'Date/Time (Last 7 days)'.</p>	<p>Traffic Report of NY City</p> <p>This stacked bar chart shows the count of various vehicle types over a 7-day period. The y-axis is 'Count (1 Hour)' (0-100) and the x-axis is 'Date/Time (Last 7 days)'.</p>	<p>Traffic Report of NY City</p> <p>This horizontal bar chart shows the total vehicle count at four camera locations (Cam 001, Cam 002, Cam 003, Cam 004) over a 7-day period. The y-axis lists the cameras, and the x-axis is 'Count (Last 7 days)' (0-1000).</p>
<p>The statistics report of the traffic flows for counting the behaviors of going straight, turning left, and turning right at the four intersections in NY city.</p>	<p>The statistics report of the vehicle types for counting the number of vehicles at the four intersections in NY city.</p>	<p>The statistics report of the total vehicle count at the four intersections in NY city.</p>

Chapter 5.2.2 Counter

Once LILIN Aida software is installed with Navigator software, please set up the Counters in Navigator software. In Navigator Software, click on Camera Properties and select Aida Behavior Detection setting. Click on NCC Counter button for setting the counters. There are 64 counters in total per Navigator software for communicating Navigator Control Center.

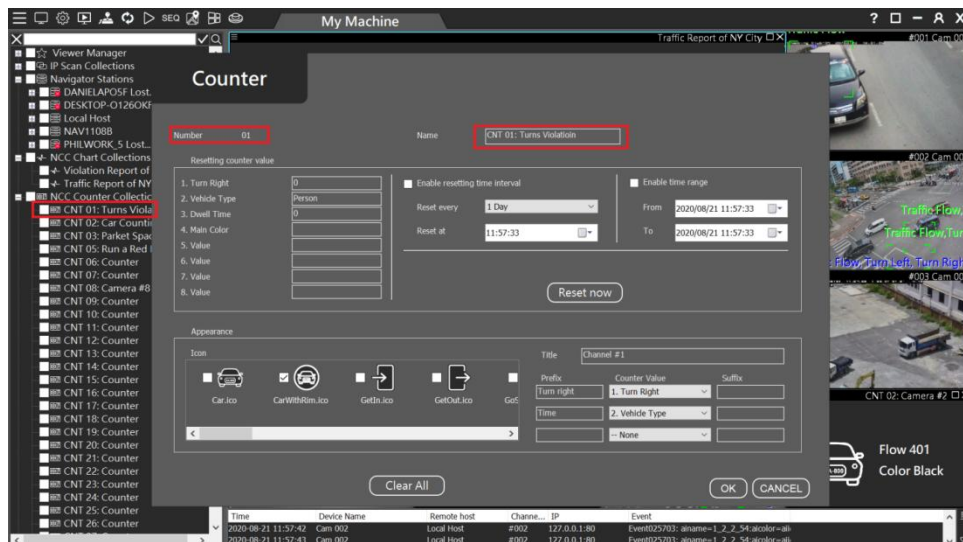


- NCC station: The Navigator Control Center stations.
- Main type: The Aida engines.
- Subtype: Behaviors.
- Counter object index: Reserved for future use.
- Operation: Calculation

Once the Counters of Navigator software are set, a user can go to Navigator Control Center side for using the Counter. Mouse right click on the item of NCC Counter Collection for the Counter Dialogue. Enter the settings below:

- Name: The device title of the Counter.
- Appearance: Select the icon for the Counter.
- Title: The counter title.
- Prefix: The prefix text of the Counter.
- Surfix: The surfix text of the Counter.

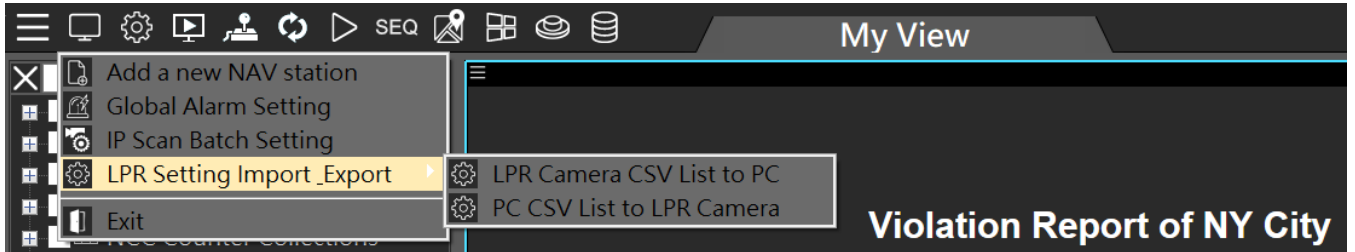
Once the Counter is set up, drag the item into the View.



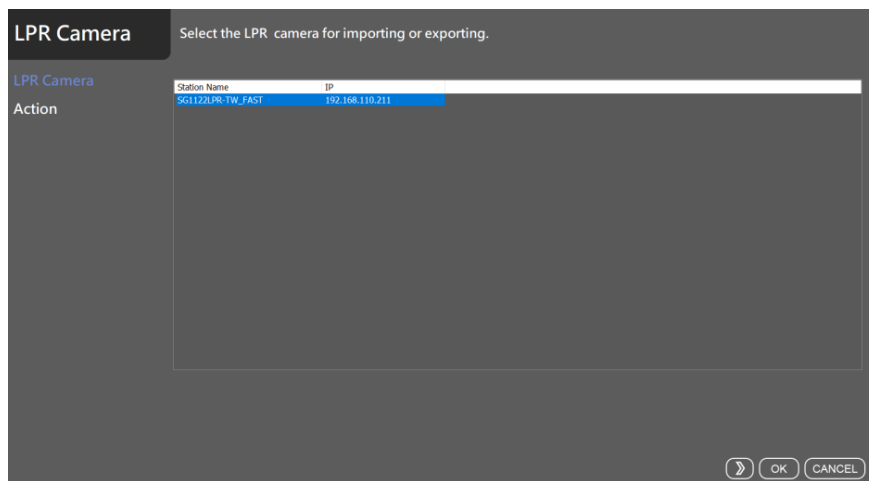
Chapter 5.2.3 Edge LPR Camera Import & Export

For edge LPR camera, NAV Control Center provides the feature for importing and exporting for the allowed & denial lists.

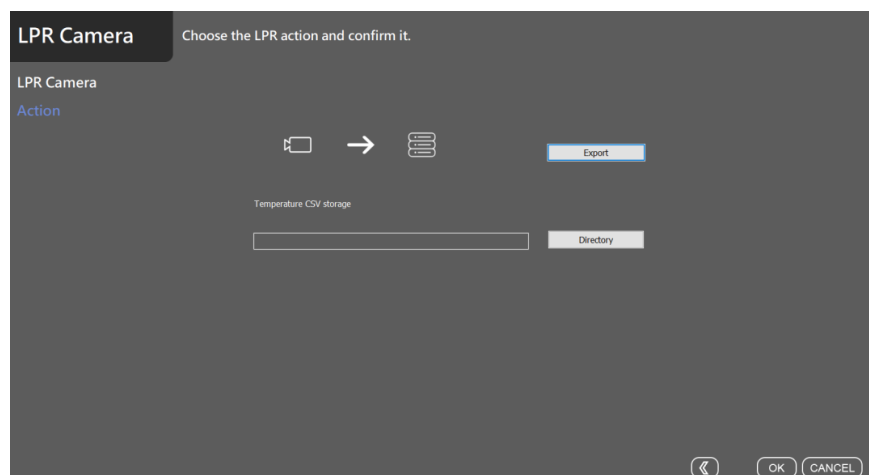
To use this function, please click the "LPR Camera CSV List to PC" menu for the exporting of the allowed & denial lists.



To export, please click the "LPR Camera CSV List to PC" menu, select a LPR edge LPR camera, and export the allowed and denial lists.

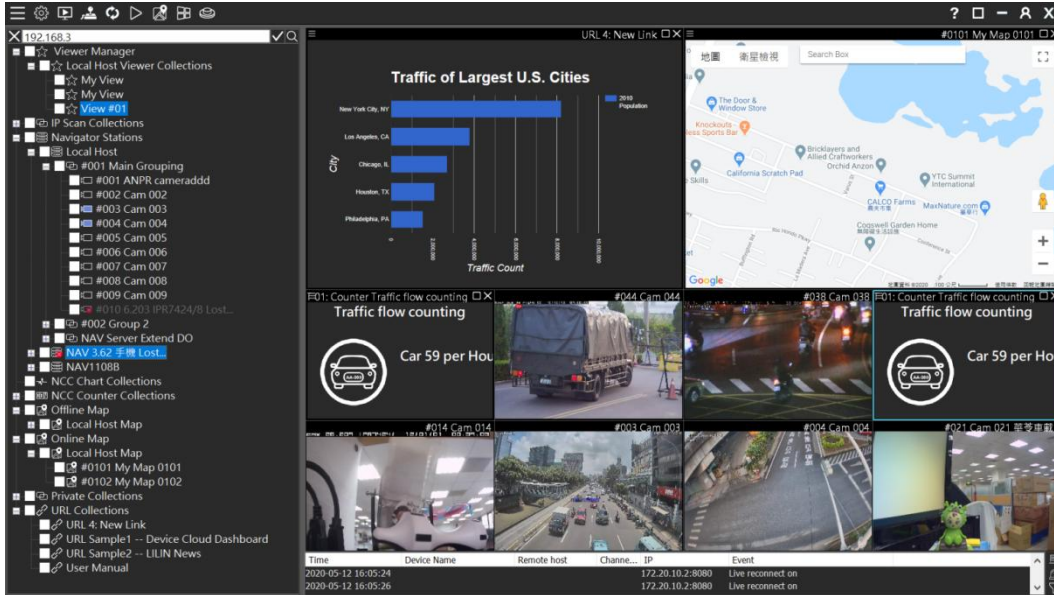


If you need to import the allowed and denial lists for edge LPR cameras, click on the "PC CSV List to LPR camera" menu.



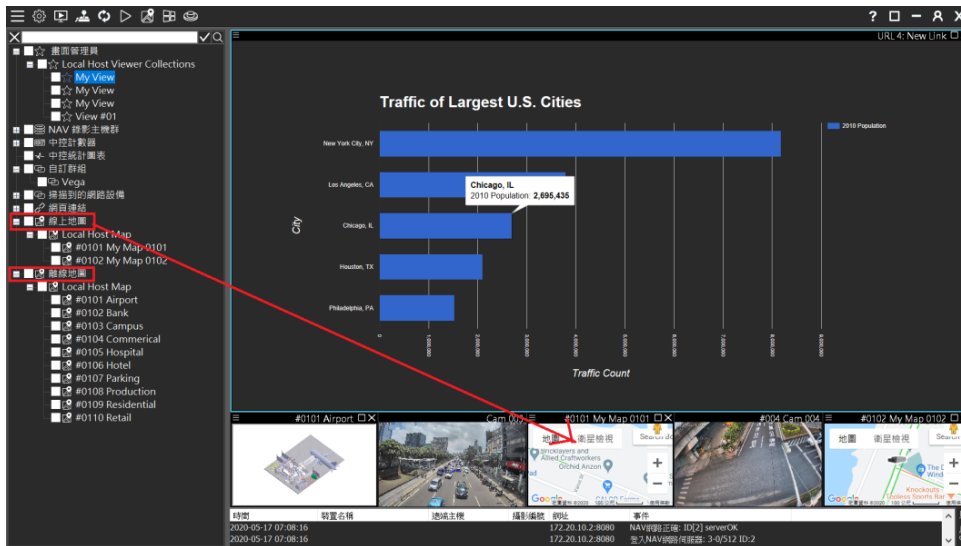
Chapter 6.0 eMap Manager

Navigator Control Center window can integrate eMap, as figure below. For example, after the alarm, the eMap live image will be displayed, GPS fleet management tracker, and find reported road name on search button can all be integrated. Related functions are described as follows:



Chapter 6.1 Create an eMap Manager to the Group View Window

You can drag the eMap created by the eMap Manager including: (1) Online Map, (2) Offline Map. Please use your mouse to drag and drop the node from the left control bar to the right screen.



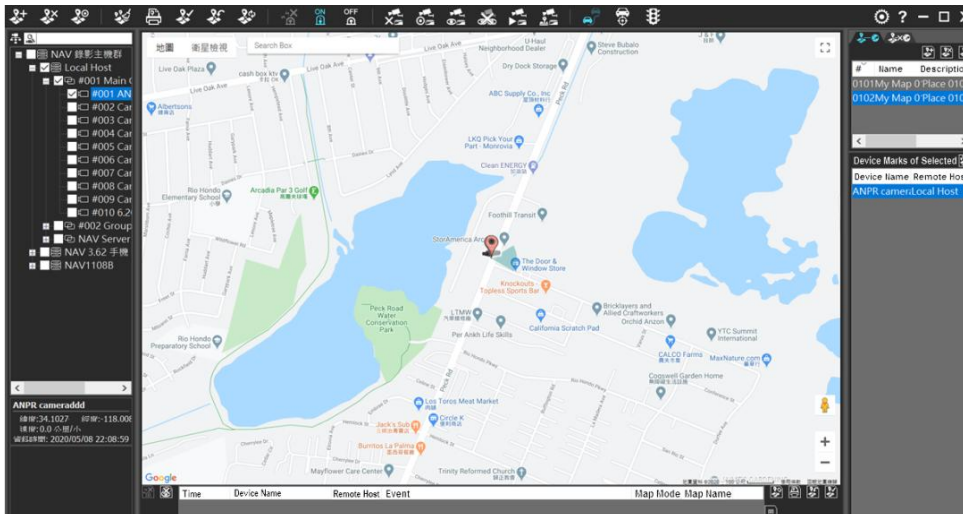
Chapter 6.2 eMap on the Group View Window

Please double-click on the camera icon to monitor the live image of the eMap. The road or place name can also be input to quickly access to live image. GPS fleet management tracker and other functions are also supported.



Chapter 6.3 How to Set up an Map via eMap Center

Please click on **eMap Center** icon to open the eMap Center and create (1) Online Map, (2) Offline Map. To set up camera on eMap Center, just drag-n-drop cameras into the eMap Center.

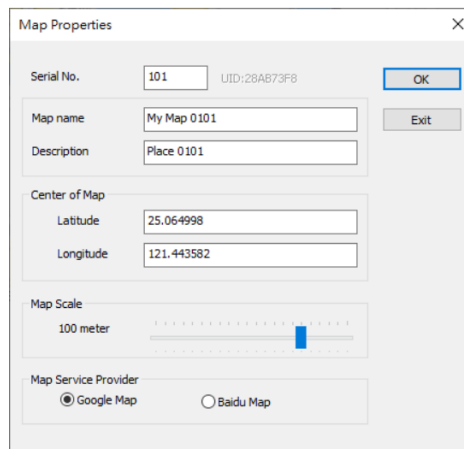


eMap icon functions are described below:

	Add Map, Delete Map, Set Map Property.
	Remove the camera icon from the eMap
	Print eMap
	Create eMap geographic location window.
	Restore eMap geographic location window.
	Refresh eMap geographic location window.
	Confirm and delete alarm events.
	Enable eMap alarm event notification.
	Disable eMap alarm event notification.

Chapter 6.3.1 eMap Property

To edit map properties, please click on icon and make detailed adjustments.



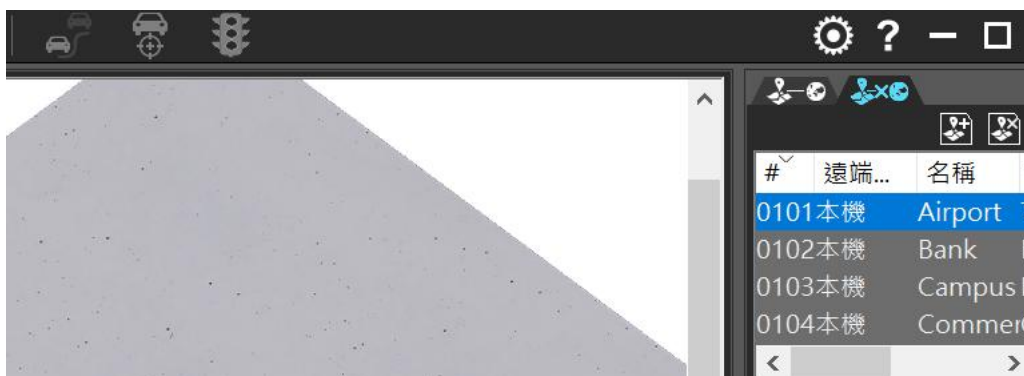
Chapter 6.3.2 Modify Camera on eMap

Below are icon descriptions to add, delete or edit the camera on eMap:

	Remove a camera from eMap
	Edit the camera properties on eMap
	Enable/Disable camera image on eMap.
	Close the camera image on eMap.
	Playback the camera recording on eMap.
	Control the PTZ camera on eMap.
	Enable eMap Car Tracker.
	Enable eMap car follow DVR/NVR GPS mode.
	Turn on the real time traffic flow mode on the eMap.

Chapter 6.3.3 Modify Offline eMap

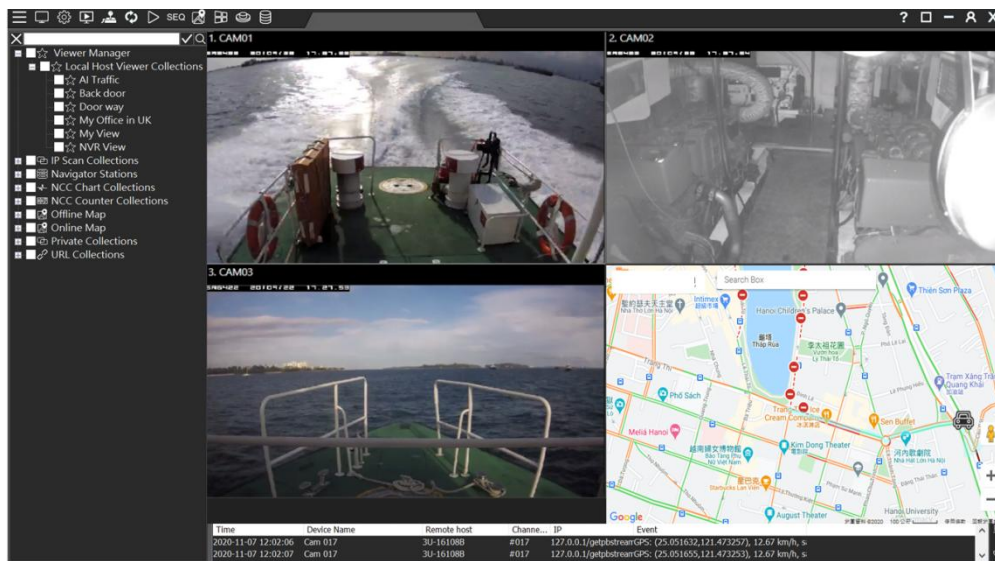
To edit the offline map, click on **offline mode** icon.





Chapter 6.3.4 NVR/DVR with GPS Integration for eMap

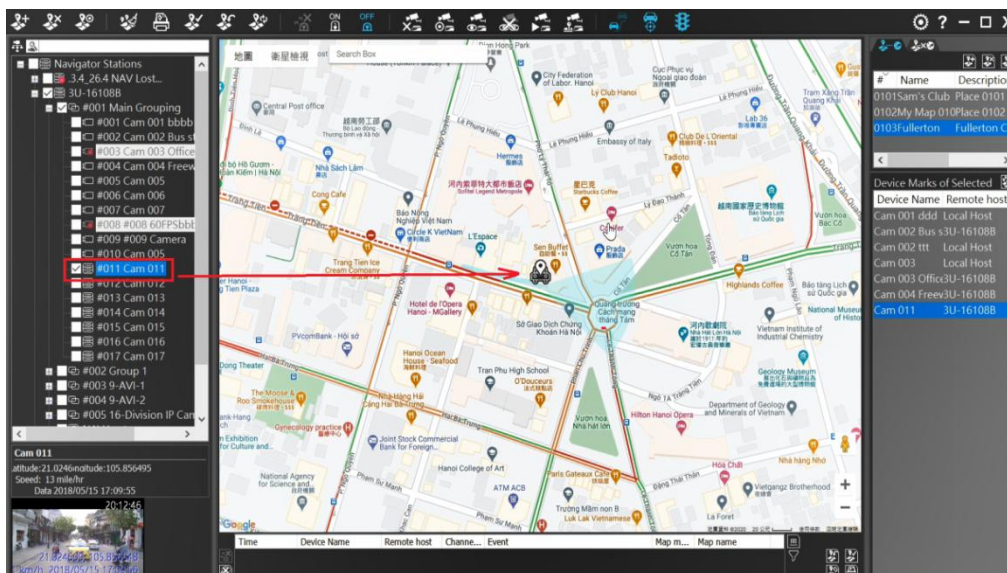
LILIN NVR/DVR support USB GPS integration and the video can be streamed via 5G for remote access. The GPS signal is streamed via Navigator Corporate and then to Navigator Control Center for fleet management.



Once the NAV Corporate is set up for video recording and the GPS streaming to a remote DVR/NVR, drag the cameras of the NAV connecting to a GPS NVR via 5G into View Manager.

Make sure that the GPS signal gets transmitted to the NAV and is seen in View Manager.

For creating a map, click the eMap Manager button. Drag the camera of NAV connecting to a GPS NVR via 5G into eMap.

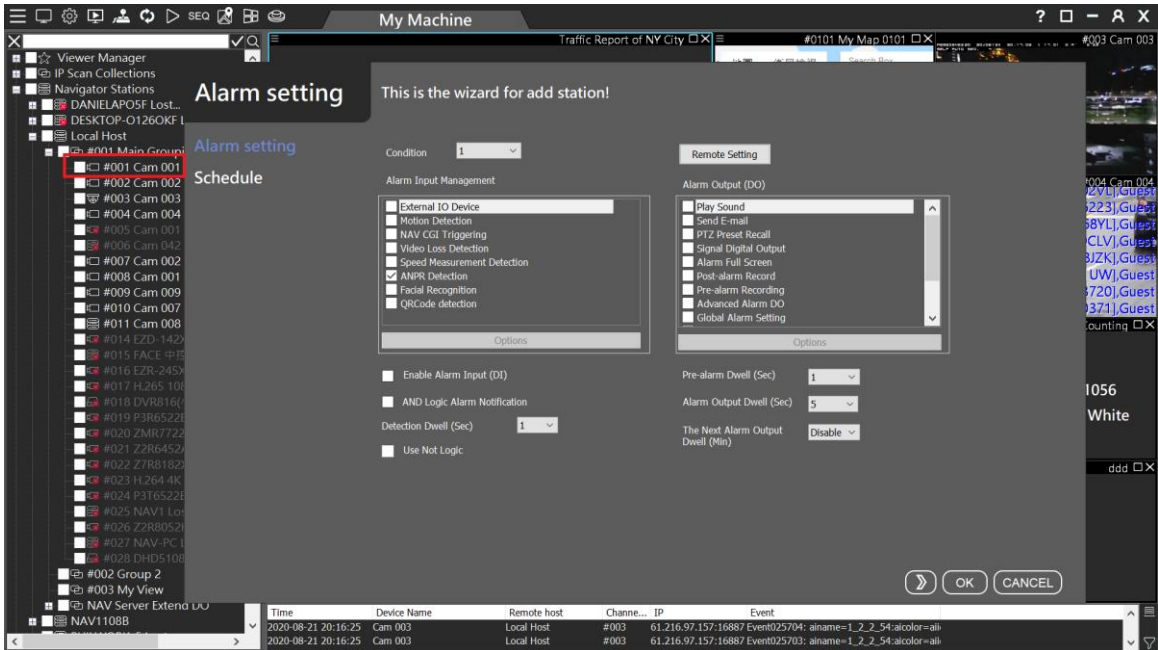


Click on “Lock focus on car” button for tracking the vehicle. Double click on the icon of the car for live video in eMap. Switch to View Manager, and drag the eMap just created into View Manager. Select the icon of the car for tracking the vehicle.

Note: Please make sure supported GPS integration DVR/NVR models.

Chapter 7 Alarm Management

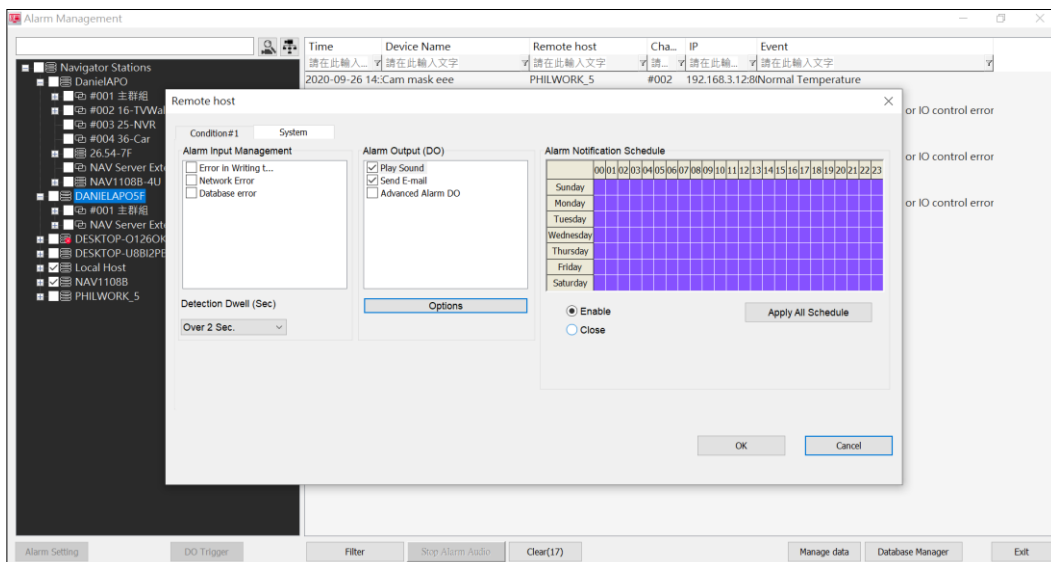
Navigator Control Center provides an easy way for configuring the alarm of a camera for a remote Navigator station.



Chapter 7.1 System Alarm Management for Navigator Stations

To monitor IP cameras, DVR, and NVR on the Navigator Corporate stations, see if any Navigator Corporate station is in the list. Once checked, the station will be documented in Database Manager.

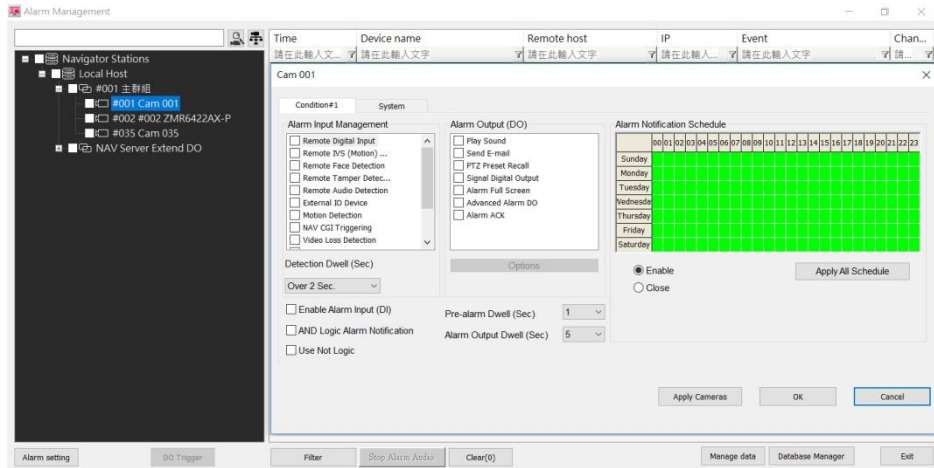
Click **Alarm Setting** for remote monitoring: (1) File Write Error, (2) Network Error, and (3) Database Error detections. Specify alarm outputs for Play Sound and/or Send Email, when a station alarm is detected.



Chapter 7.2 Alarm Management for Cameras

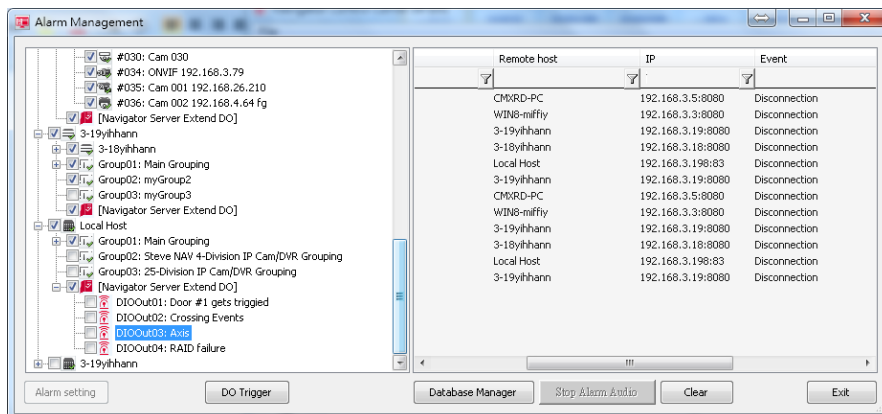
Check a camera and press **Alarm Setting** to specify alarm inputs and alarm outputs. Once checked, the camera alarm status will be captured in Database Manager.

Features such as tripwire, motion detection, alarm digital input, tampering detection, audio detection, and ANPR/LPR detection can be activated individually.



Chapter 7.3 Existing Alarm Output for Cameras

If an alarm has been created via Navigator Corporate, you can trigger the alarm in **Alarm Management** of Navigator Control Center.





Chapter 8 Database Manager

Database Manager can generate user access log, AI metadata, events, GPS log, POS log, and system log. In addition, this built-in feature allows database import, export, and repair. Database Manager is a good tool for troubleshoot.

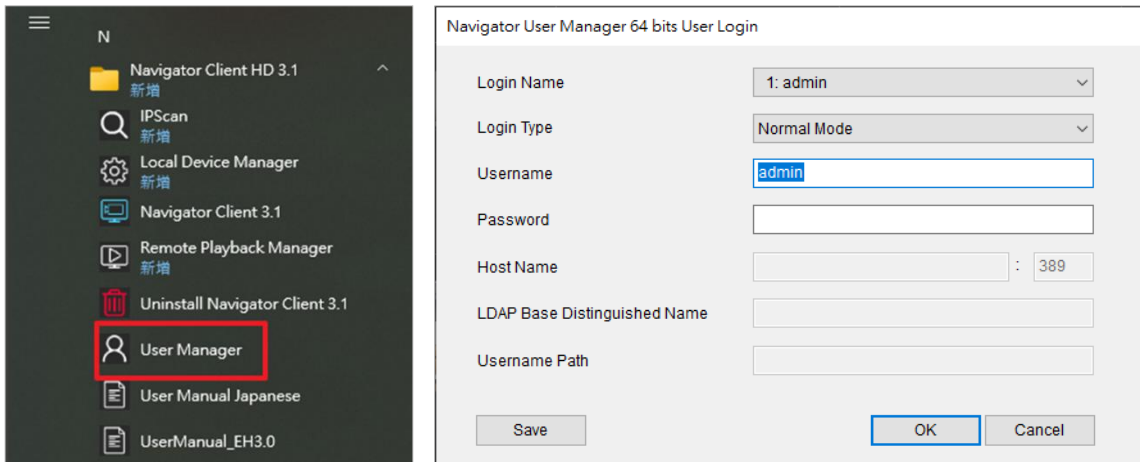
#	Date/Time	Device Name	Zone Viol.	Parking S.	Parking V.	Traffic Flow	Turn Left	Turn Right	Wrong Way	Turn Left	Turn Right	U-turn Viol.	Run the r.	Run the r.	Run the r.	Queuing	Main Color	Vehicle T.	Count
1	2020/08/21 19:59	Cam 001 ccc															Silver	Bus	1
2	2020/08/21 19:59	Cam 002 ddd															Dark Gray	Bus	3
3	2020/08/21 19:59	Cam 002 ddd															Silver	Bus	3
4	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Black	Truck	1
5	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Dark Gray	Motorbike	2
6	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Silver	Car	1
7	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Red	Motorbike	1
8	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Green	Suitcase	1
9	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Black	Van	1
10	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Dark Gray	Car	1
11	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Dark Gray	Motorbike	3
12	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											White	Car	1
13	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Dark Gray	Truck	1
14	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Black	Bus	1
15	2020/08/21 19:59	Cam 002 ddd				Traffic Flow		Turn Right									Silver	Car	2
16	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Dark Gray	Car	5
17	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Black	Truck	1
18	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Blue	Person	1
19	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Dark Gray	Truck	2
20	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Silver	Truck	1
21	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											White	Car	6
22	2020/08/21 19:59	Cam 001 ccc				Traffic Flow											Silver	Car	5
23	2020/08/21 19:59	Cam 002 ddd				Traffic Flow											Silver	Car	13
24	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Red	Person	1
25	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Silver	Motorbike	1
26	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Silver	Person	1
27	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Dark Gray	Motorbike	2
28	2020/08/21 19:58	Cam 002 ddd				Traffic Flow											Black	Motorbike	1
29	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Black	Person	1
30	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Dark Gray	TUK TUK	1
31	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Black	Car	1
32	2020/08/21 19:58	Cam 002 ddd				Traffic Flow											Black	Car	2
33	2020/08/21 19:58	Cam 002 ddd				Traffic Flow		Turn Right									Silver	Motorbike	1
34	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											White	Car	1
35	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Dark Gray	Car	1
36	2020/08/21 19:58	Cam 002 ddd				Traffic Flow		Turn Right									Black	Car	1
37	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Silver	Car	6
38	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Black	Car	1
39	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											White	Car	2
40	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Silver	Car	5
41	2020/08/21 19:58	Cam 002 ddd				Traffic Flow											Silver	Bus	2
42	2020/08/21 19:58	Cam 001 ccc				Traffic Flow											Green	TUK TUK	1

User Log Report		Click User Log Report icon to show a complete user log. Press File→Export Log to export a CSV log file.
Event Report		Click Event Report icon to show a complete event report. Press File→Export Log to export a CSV log file.
POS Event Report		Click POS Event Report icon to show the full POS record. Press "Export Log" to export the CSV log file.
ANPR Event Report		Click ANPR Event Report icon to show the complete license plate record. Press Export Log to export the CSV log file.
Object Counting Report		Click Object Counting Report icon to show the full object counting record. Press Export Log to export the CSV log file.
AI Report		Click AI Report icon to show the full AI record. Press Export Log to export the CSV log file.
TAG Report		Click on Tag Report icon to show full tag record. Press Export Log to export the CSV log file.
NAV Status		Click NAV Status icon to show the complete NAV host status record. Press Export Log to export the CSV log file.
GPS Report		Click GPS Report icon to show the complete satellite positioning record. Press Export Log to export the CSV log file.
Face Report		Click Face Report icon to show the full face recognition record. Press Export Log to export the CSV log file.
Server Report		Click on Server Report icon to show the full server log record. Press Export Log to export the CSV log file.
Import Database		XML format database can be imported into Database Manager. Click Import Database icon and choose the database you want to import.
Export Database		Database Manager supports database export to XML format files. Click Export DB icon and choose the database you want to import.
Export Log		Various event transfer report.

Statistics		Click on Statistics Chart icon and the object counting record will be converted to chart mode.
Refresh Database		Click Refresh Database icon to refresh the new event message.
Search Settings		Customizable search events

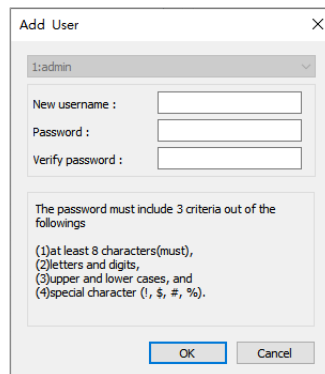
Chapter 9 User Management

To add users, click **User Manager** icon which supports up to 64 user groups. Each group can assign individual accounts for operations and camera access privilege. Choose one of the user types and click **Add** to create an account.



Chapter 9.1 Add a User

Please select access permission for the user, then, click on **Add** and enter the necessary information in the **Add User** dialogue box. Click on **OK** to save the settings.



Chapter 9.2 Edit an Existing User:

Please select user type and a user, and click **Password** to change the password of the user.

Chapter 9.3 Delete a User:

To delete a user, select user type and a user. Then, click **Delete** and **OK**.

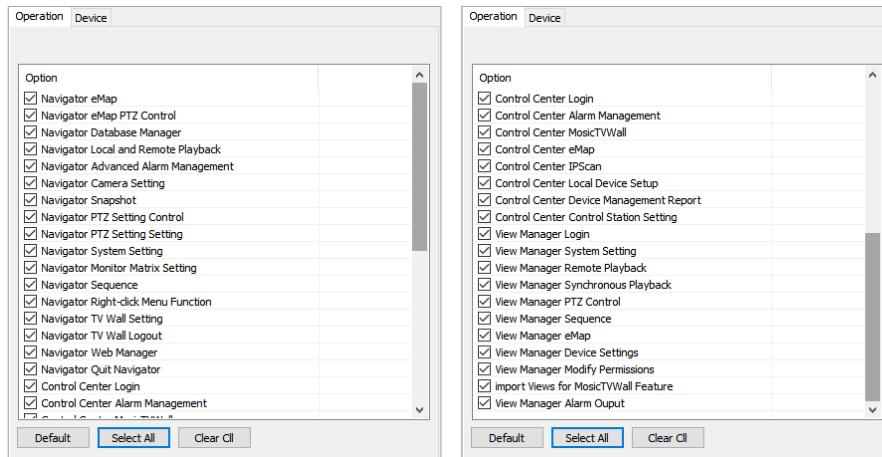
Chapter 9.4 User Authorization

You can specify each user access privileges to Navigator function. To authorize a user to have access in the function, click **Operation**. Then, check on the functions to grant the user the access rights.

Note: Please close all the View Manager software and restart the application settings.

Chapter 9.5 Operation Access Management

Select user type and click on user. Then, click on **Operation** option, please check the required permissions. Then click on **Save** and **Exit** to save the settings.



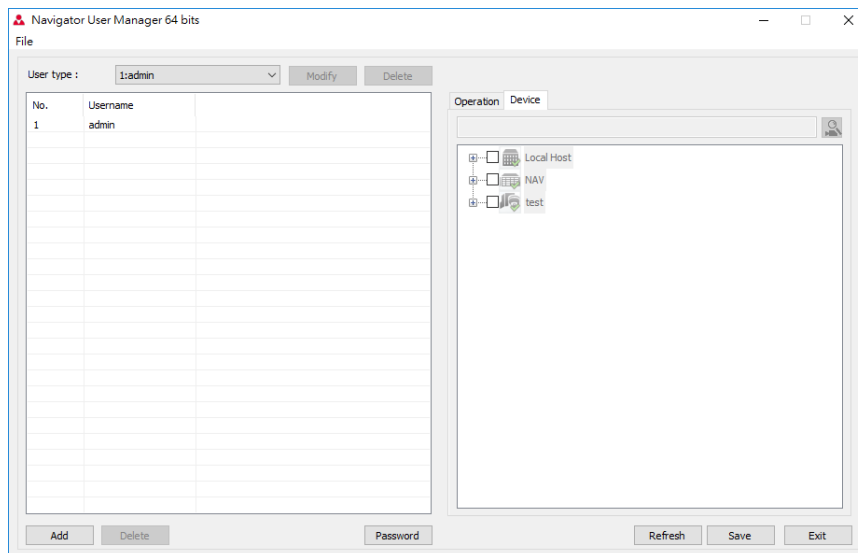
Function Permission Icons			
	Navigator eMap		Control Center Login
	Navigator eMap PTZ Control		Control Center Alarm Management
	Navigator Database Manager		Control Center MosaicTVWall
	Navigator Local and Remote Playback		Control Center eMap
	Navigator Advanced alarm Management		Control Center IPSan
	Navigator Camera Setting		Control Center Local Device Setup
	Navigator Snapshot		Control Center Device Management Report
	Navigator PTZ Setting Control		Control Station Settings
	Navigator PTZ Setting Setting		View Manager Login
	Navigator System Setting		View Manager System Setting
	Navigator Monitor Matrix Setting		View Manager Remote Playback
	Navigator Sequence		View Manager Synchronous Playback
	Navigator Right-click Menu Function		View Manager PTZ Control
	Navigator TV Wall Setting		View Manager Sequence
	Navigator TV Wall Logout		View Manager eMap
	Navigator Web Manager		View Manager Device Settings
	Navigator The software Power Down		View Manager Modify Permissions
-	-		import Views for MosaicTVWall Feature
-	-		View Manager Alarm Ouput

Additional Description:

View Manager Device Settings		For any device in the NAV server group, right-click the menu to configure permissions.
View Manager Modify Permissions		Tick or drag the mouse to the screen group to restrict permissions.

Chapter 10 Device Management

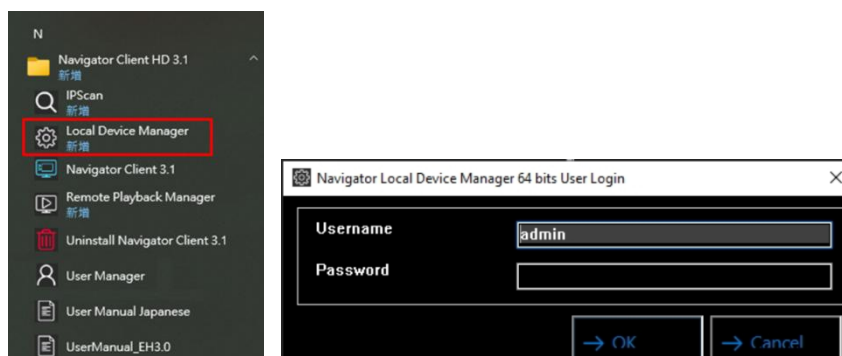
Click one of the users in User Management, and the Device tab will be shown on the right side. Check the devices you need for the said permissions to be accessed. After setting is finished, click the **Save** and **Exit** buttons.



Note: Please close all the View Manager software and restart the application settings.

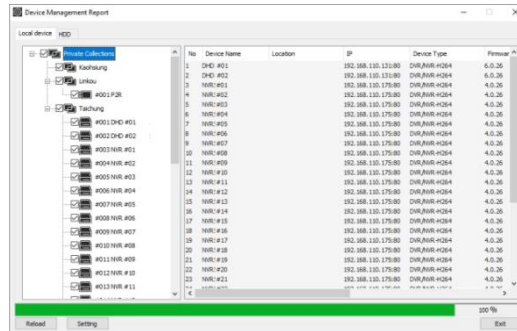
Chapter 11 Local Device Manager

The Local Device Manager is the tool that shows the status of the devices that are currently connected to the system.



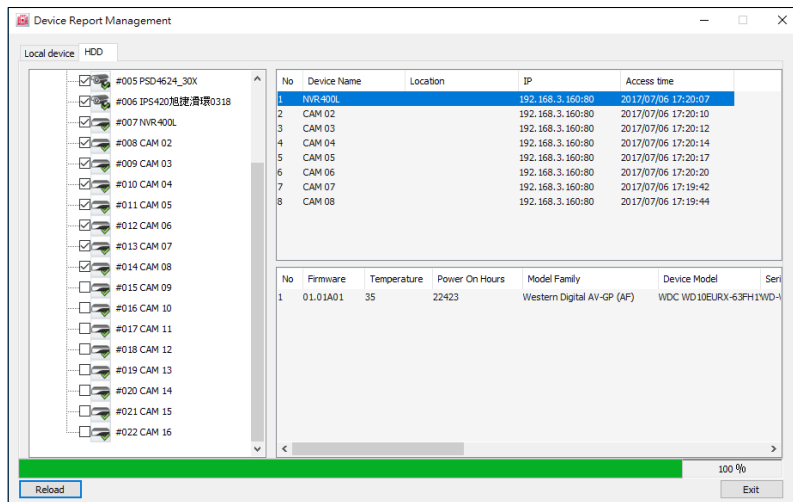
Chapter 11.1 Local Device Status Report

To query Local device status, please click **Local Device Manager** icon. Enter the username and password. And then, press **Local device** in the Device Manager tab. Check the DHD/NVR in the device tree and press **Reload** button. This can scan the DHD/NVR and provide a Local device S.M.A.R.T report, which shows all the DHD/NVR information including device name, location, IP address, device type, firmware version, channel no., current record time, connection status, device reboot time and access time.



Chapter 11.2 HDD Status Report

Press **HDD** in the Device Manager tab and check the NVR in the device tree. This can scan the NVR and provide a HDD S.M.A.R.T report, which shows all the HDDs installed for all NVRs.



- **Firmware:** Firmware of the HDD
- **Temperature:** Temperature of the HDD
- **Power on Hours:** The length of time between failures of the HDD
- **Model Family:** Manufacturer of the HDD
- **Device Model:** Model of the HDD
- **Device ID:** ID of the HDD
- **Capacity:** Maximum capacity of the HDD
- **S.M.A.R.T.:** S.M.A.R.T. status of the HDD

S.M.A.R.T. report is the potential indicators of imminent electromechanical failure. It does not mean that the HDD is broken. See appendix for detail.

Chapter 12 How to Connect via the AD/LDAP Server

The View Manager can support Active Directory (AD)/LDAP for user login management.

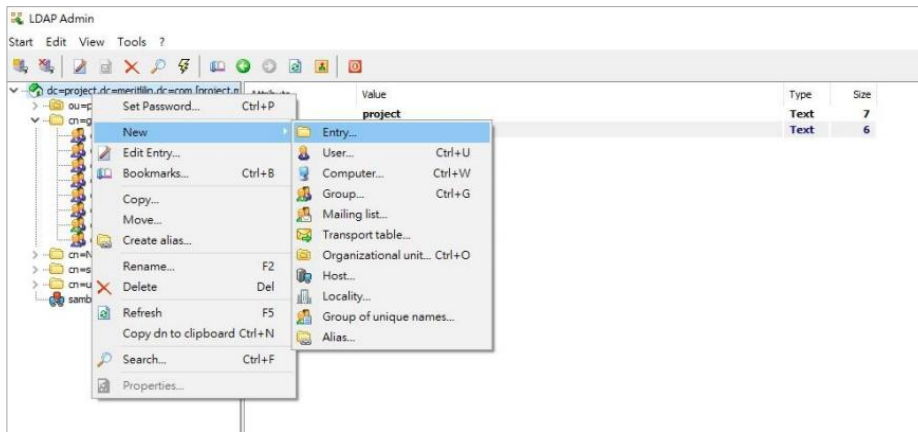
The View Manager is able to login via AD/LDAP for user accounts and to use the “user type” of Navigator Corporate with cameras and features available for the user group.

- Normal Mode: Use the user database of the View Manager’s or NAV Recorder for login.
- AD Server Login: Use the user database of an AD Server. Import these users of an AD Server into NAV’s user group.
- LDAP Login: Use the user database of an LDAP Server. Import these users of an AD Server into NAV’s user group.

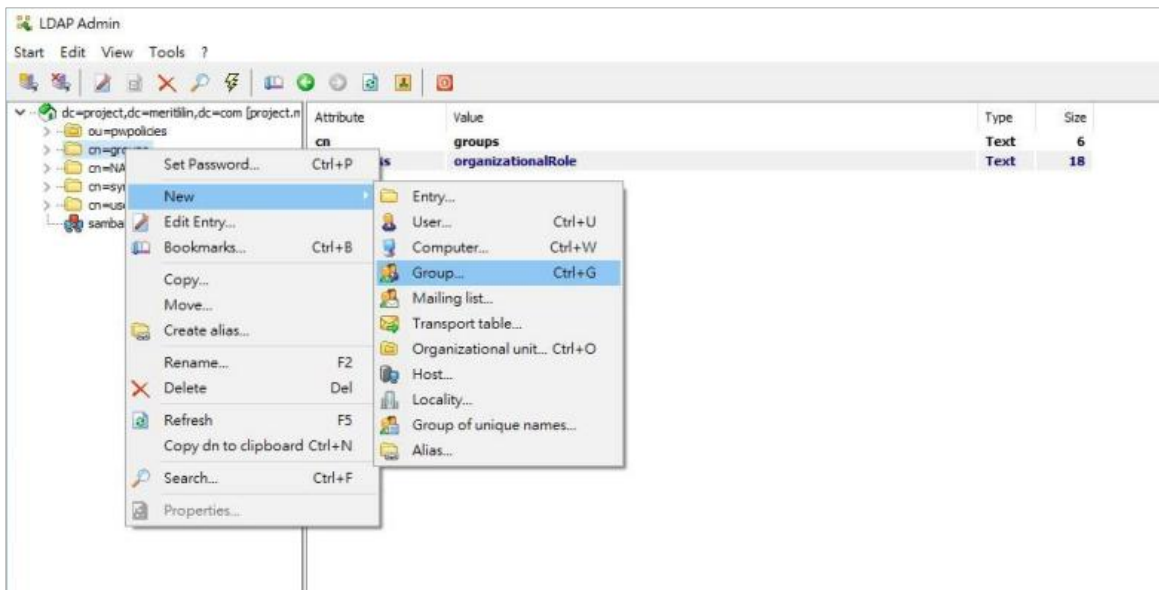
The AD/LDAP server specifies as follows:

- Host Name: The AD/LDAP server host name.
- Basic Distinguished Name: The AD/LDAP server distinguished name.
- DN Path: The AD/LDAP server distinguished name file path.

For example the LDAP server has created a new project.

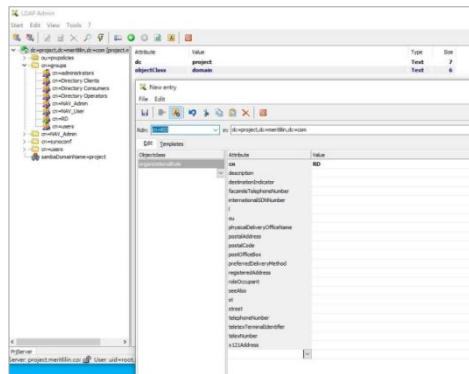


And LDAP server has created a new group.

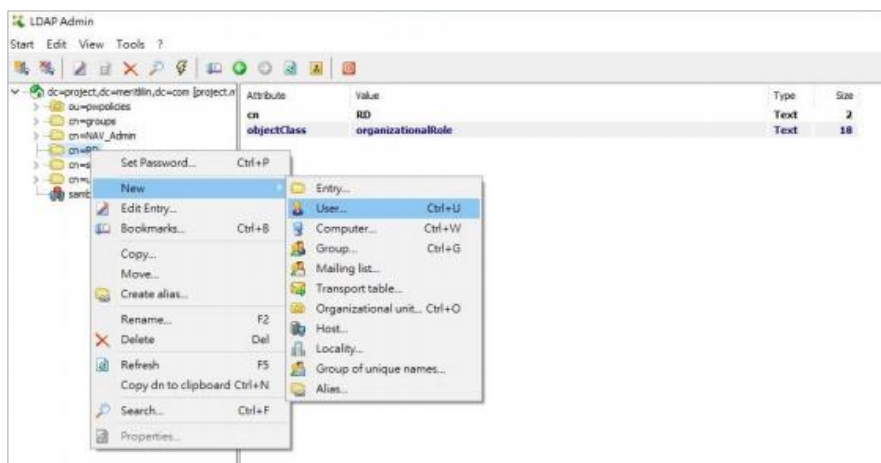




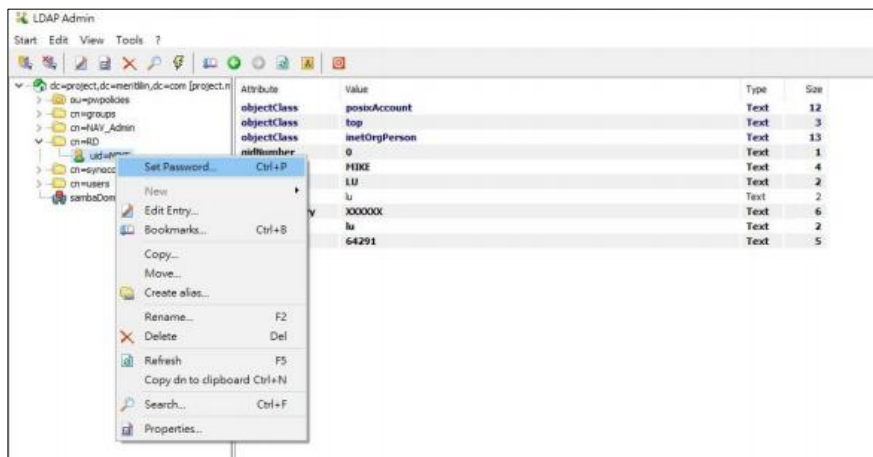
The following is an example, create a name with cn=RD.



Ensure that the CN account has established an RD name.



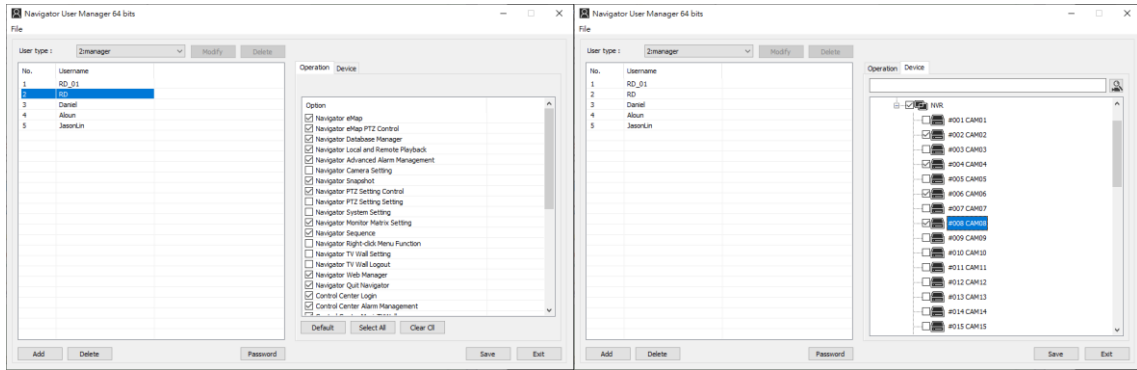
Ensure these accounts have established passwords.



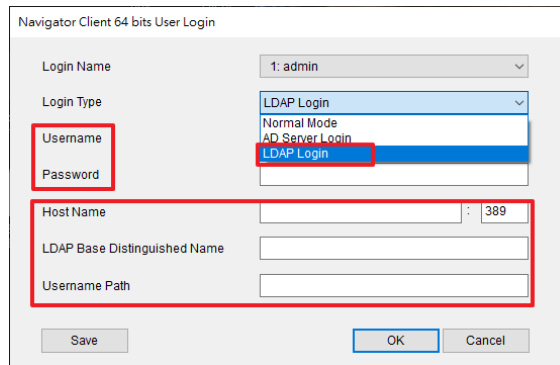


Create user type:

After creating an account on the LDAP server, please create an RD to enable the user type. Please enable the account permission setting and camera viewing permission.

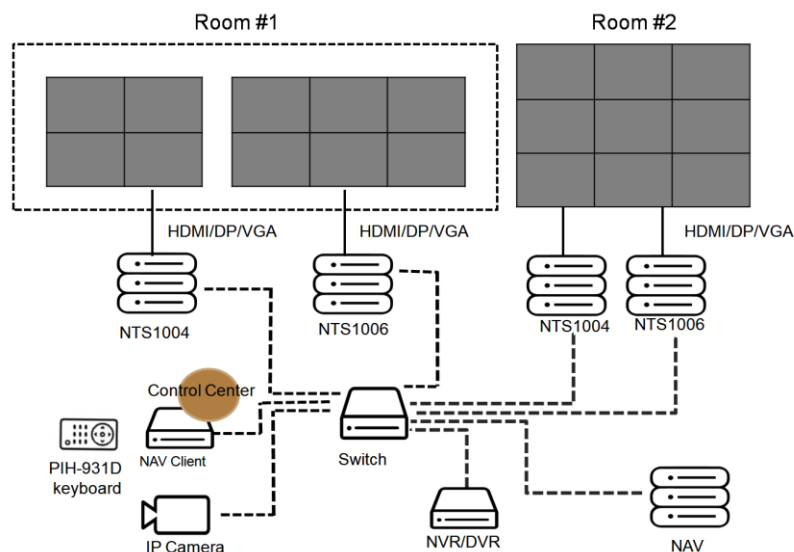


Login: Please select the AD/LDAP server to log in.



Chapter 13 Mosaic TVWall

The View Manager can manage to configure and to display the existing camera views to Mosaic TV Wall for controlling and streaming the views to the HDMI/VGA outputs of Mosaic TVWall. LILIN provides TV wall products NTS1004 (4-display) and NTS1006 (6-display). To wire the TV walls in a control room, the system is described below. Each monitor is connected to a TV wall station. Mosaic TV Wall application of Navigator Control Center can virtually direct video streams to TV wall station. The system diagram is as below:



Major features are described below:

- **Monitor Template:** Monitor set up for Mosaic TVWall.
- **Run:** Display assigned monitor template for monitors.
- **Sequence:** Display all the monitor templates.
- **Channel setting:** Drag and drop cameras on monitors.
- **Monitor setting:** Add monitors to a Mosaic TVWall.



The TVWall can display one camera's full screen video across multiple TVWall monitors for bigger display.

Chapter 13.1 Mosaic TVWall Setup

To set up Mosaic TVWall, click the icon for opening Mosaic TVWall application via View Manager.



A dialogue box will pop up, "Do you want to import the camera view to Mosaic TV wall". Please click OK.

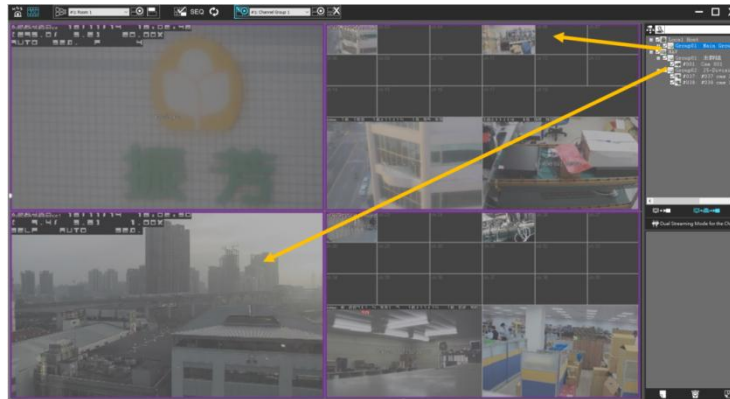
Chapter 13.2 How to Set up Camera View for Mosaic TVWall

Click on Mosaic TVWall icon that can import the existing View for TV wall display. Navigator Control Center will pop up a dialogue box for importing the existing camera view to the Mosaic TVWall application. This feature is important and easy-to-use. Once a camera view is set up, the view is then used for the TV wall display. There is no need to configure the camera view again.



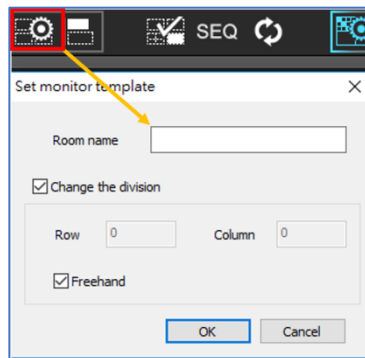
Chapter 13.2.1 Manually Add Camera to Mosaic TVWall

To add the camera configuration manually into the TVWall, drag the mouse cursor on the camera to camera view for the TVWall display.

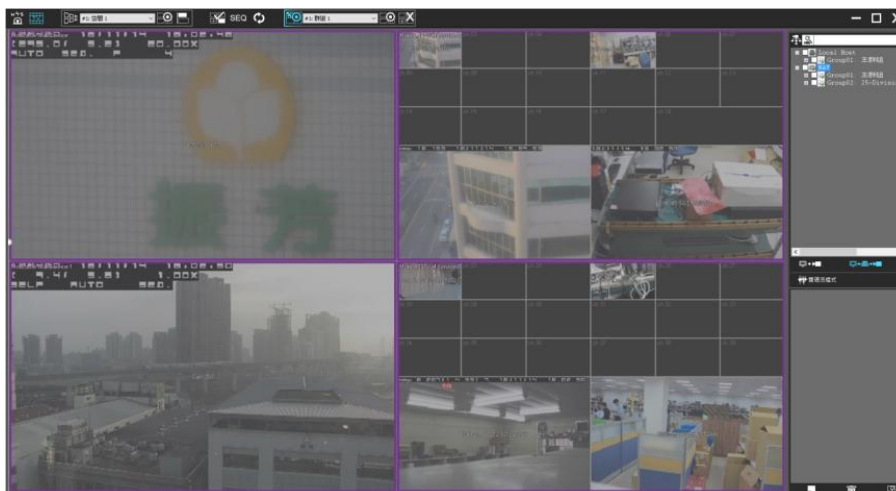


Chapter 13.3 Mosaic TVWall Monitor Layout Setting

To set up Mosaic TVWall, open **Mosaic TVWall**, and select **Set monitor template** and specify Room # to create M x N TVWall for a room.



The example below shows Room #1, and there are four monitors.



Chapter 13.4 Mosaic TV Wall Monitor Output Assignment

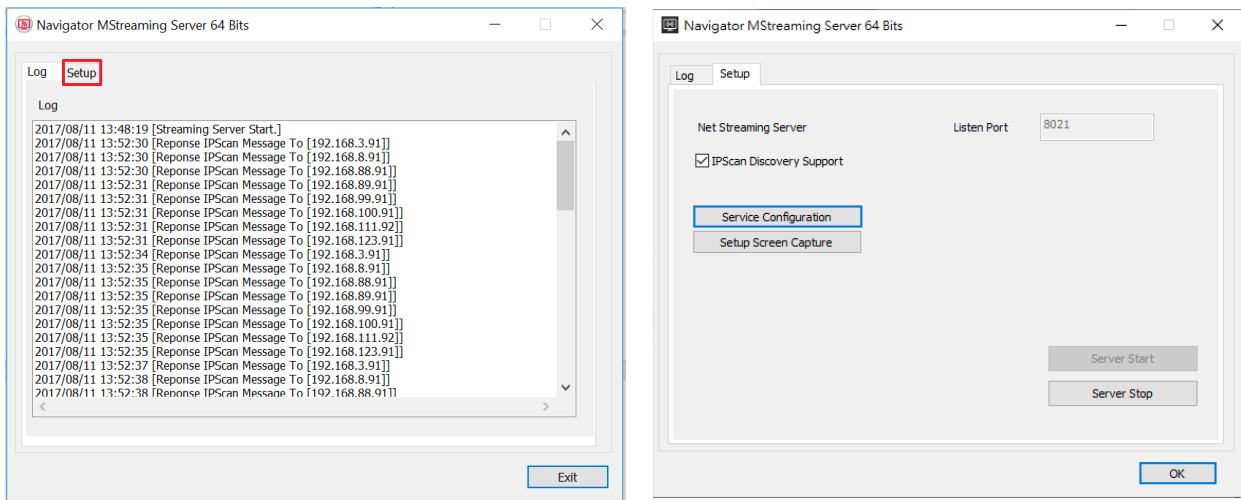
To add TV Wall monitors, click **Add** icon at the bottom right. Click **Search** to discover available TV Wall stations. Next, click **OK** and enter required information. Click **Verify** to test if the TV Wall station is working properly. If two monitors are connected to the station, the outputs (HDMI, VGA, or display port) will be shown on the TV Wall window.

After the outputs of the TV Wall stations are configured, follow the steps below to finish set up:

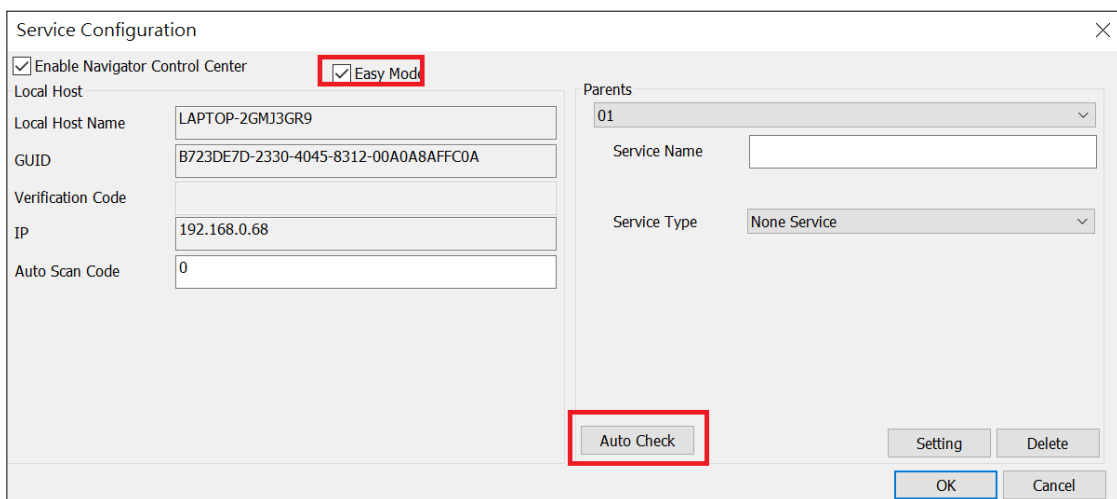
- Drag and drop monitor outputs to the left pane to assign a monitor.
- Drag cameras into the position of a monitor.

Chapter 13.5 How to Set up Communication for Mosaic TVWall Stations

To add Mosaic TVWall to Navigator Corporate, please click on Windows->Start->LILIN Navigator->Streaming Station-> Setup-> Service Configuration.

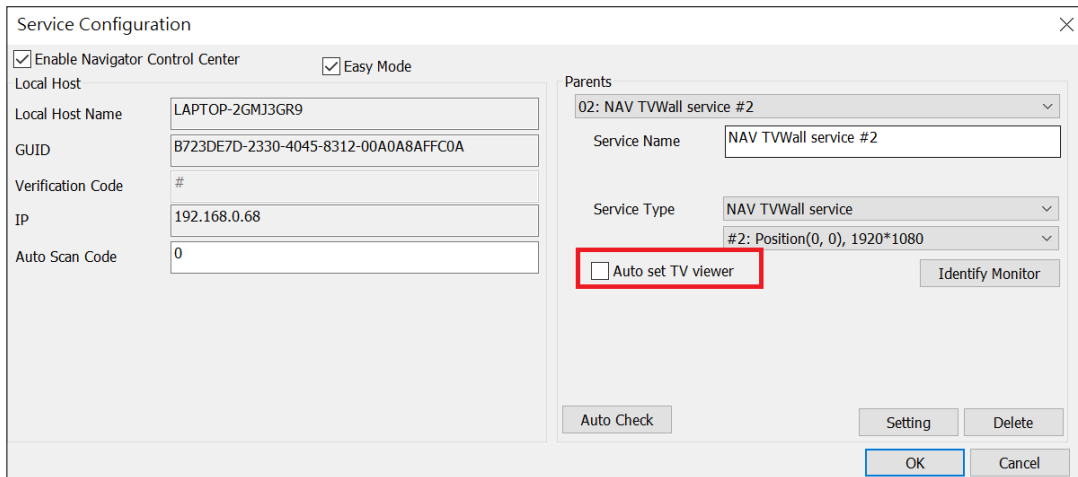


Make sure that the Service Configuration is set to Easy Mode. Easy Mode can simplify the system setting. Click **Auto Check** button to fetch the configuration automatically.





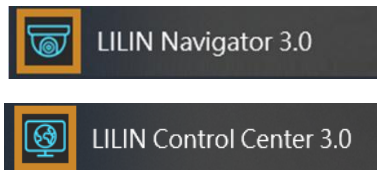
Enable Auto Set TV Wall. This can invoke the TV Wall and display the TV Wall when the system reboots.



For example, one company, the headquarter, wants to display their branch office NAV device camera all in a customized Mosaic TVWall.

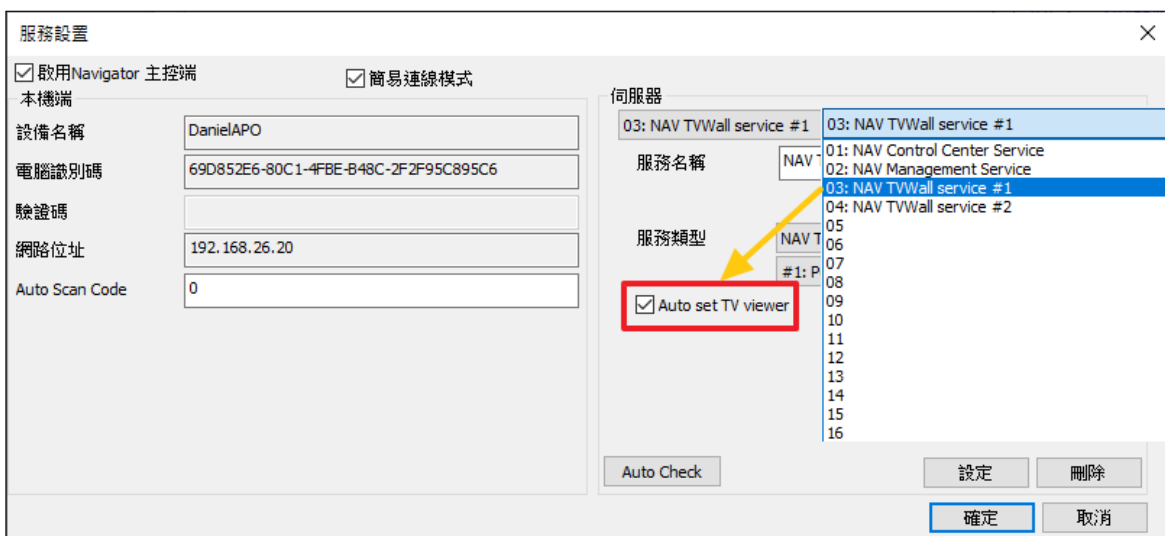
Assume the Navigator at each branch supports 4 monitors. Each branch office has one or several NAV recorders.

Please make sure that every branch office NAV Corporate recorder has LILIN Navigator Corporate and LILIN Control Center launched.



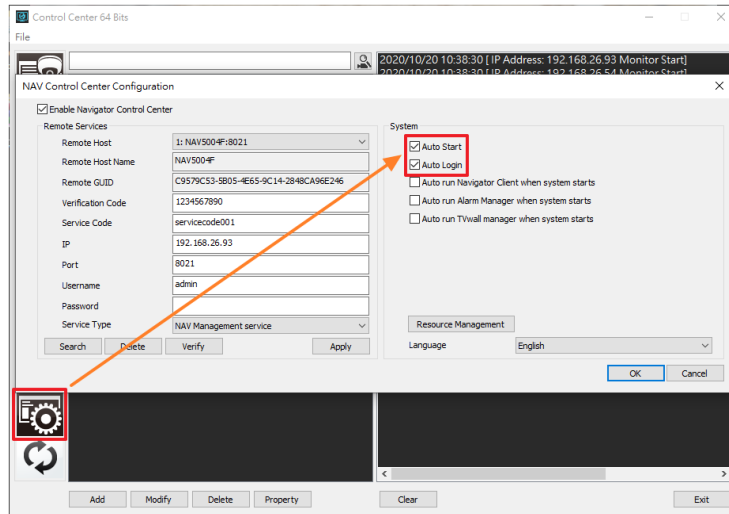
Chapter 13.6 Automatic Invoke Remote Mosaic TVWall Setting

To enable automatic invoke remote mosaic TVWall function, tick in “Auto set TV viewer” box.







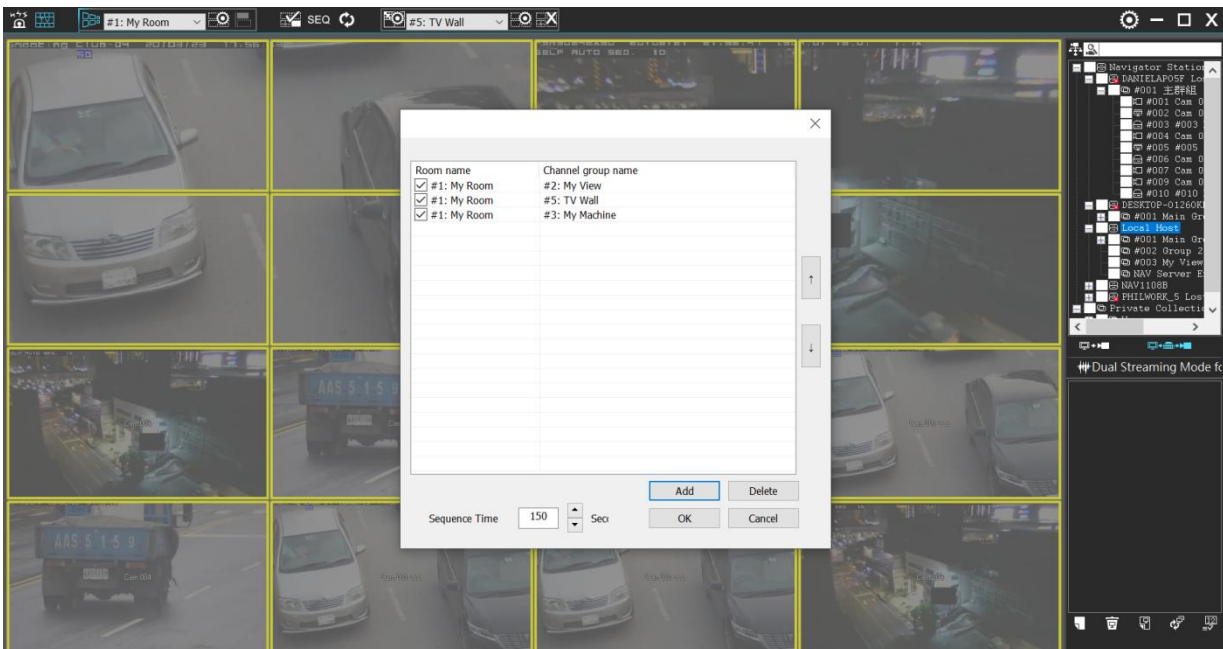
To set up LILIN NAV Control Center Configuration remote TVWall, please tick in the Auto Start and Auto Login boxes. When the computer or Control Center restarts, the automatic enable Mosaic TVWall will be determined according to streaming server setting, whether the "Auto set TV viewer" is set or not.




Chapter 13.7 Sequence Display for Mosaic TVWall


Press **Run**  on the top of the window to start using the TVWall. Press **Sequence**  to change the view according to the preconfigured time slot.

The screen setting **space** supports the same screen position. And in the **group** setting, the various display template can be changed to achieve real-time monitoring of the group.



Chapter 13.8 Mosaic TVWall Camera Groups

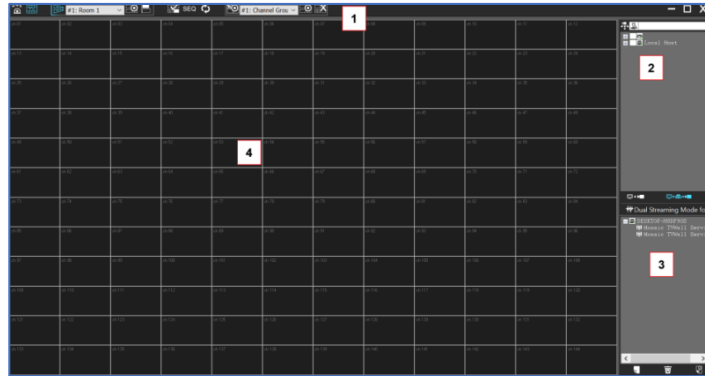
Once the monitors are set, press the **Group** drop-down menu  and select a group layout.

Click **all channels**  to delete all channel settings.

Chapter 13.9 How to Set up TV Wall Application

The Mosaic TV Wall consists of the following:

1. Monitor setting.
2. Camera setting
3. Mosaic TVWall service
4. Main screen.



On the top left, click on **Layout Monitor** icon.  On the bottom right, click on **Add** icon.



Click on **Search** button.

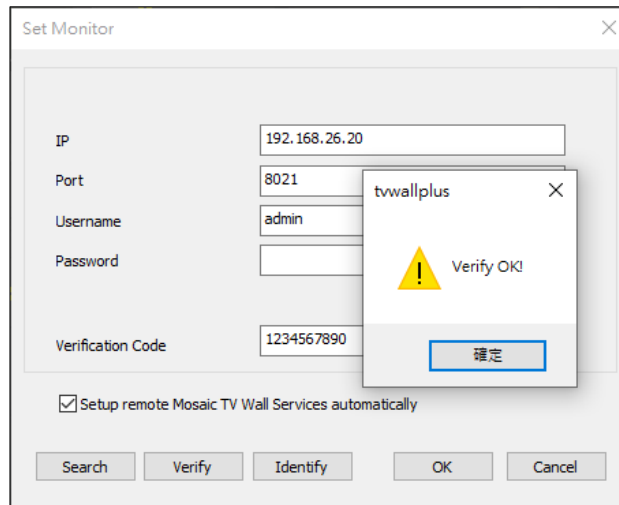
Note: The “Setup remote Mosaic TVWall Services automatically” is ticked as default. If LILIN Navigator and LILIN Control Center is open at the other party, the remote TVWall service is automatically invoked.

Select the computer that is being used as station. Click on **OK** button.

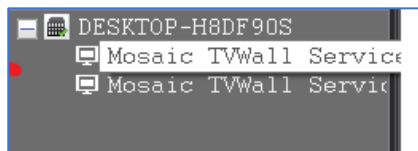
PC Name	IP	Port	Version	Service Status	Easy Mode
YIHHANN-19	192.168.3.19	8021	030052.P	Disable	TRUE
3U-16108B	192.168.3.239	8021	030072.P	Disable	TRUE
DESKTOP-U8BI2PB	192.168.26.4	8021	030082.T2PM	#3:Enable,	TRUE
MSI	192.168.3.14	8021	030082_F.P	Disable	TRUE
ASUS	192.168.189.73	8021	030054.T2PM	#2:Enable,	TRUE
DESKTOP-E4446EO	192.168.137.234	8021	030082.P	Disable	TRUE
DESKTOP-96PAV8S	192.168.26.97	8021	030072.P	Disable	TRUE
DESKTOP-OS724BO	192.168.26.242	8021	030076.P	Disable	TRUE
DESKTOP-UHKD906	192.168.112.170	8021	030082.P	Disable	TRUE
NAV1108B-4U	192.168.26.7	8021	030072.P	Disable	TRUE
YIHHANN-18	192.168.26.18	8021	030052.T6PM	#3:Enable,#4:Enable,	TRUE
26.54	192.168.26.54	8021	030082.P	Disable	TRUE
NAV5004F	61.216.97.159	8096	030080_F.T2PM	#3:Enable,	TRUE
MSI	192.168.26.20	8021	030080_F.T4	#4:Enable,	TRUE



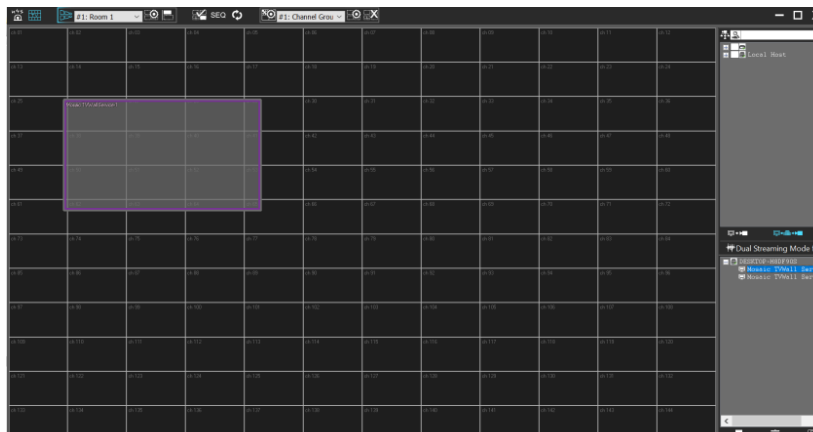
Click on **Verify** button. It will pop up **Verify OK!** if the station is working properly. If not, please check your Navigator Control Center



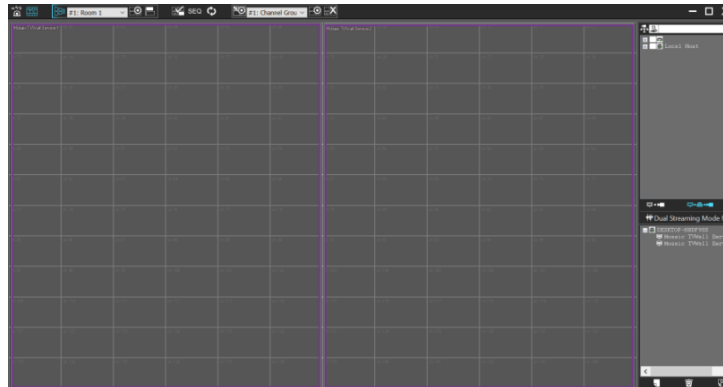
Pull the first Mosaic TVWall service icon by maintaining mouse left click.




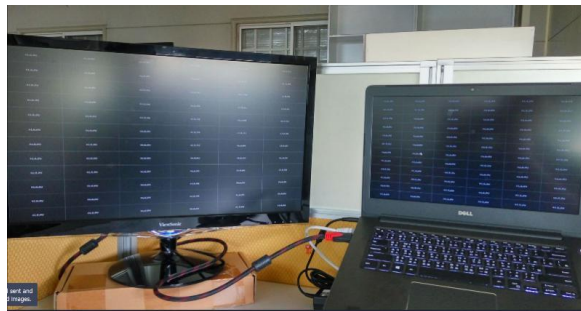
An adjustable purple window will appear.




Please follow the same step for the second Mosaic TVWall service. Readjust the size of each TVWall.

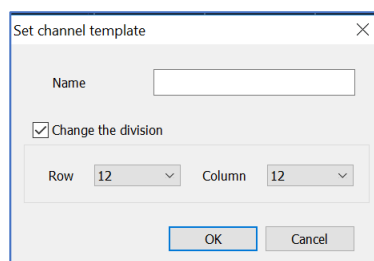


Click on the **run** icon  located on the top bar. For example, when a 12x12 channel display split into two screen is selected, the monitors will show below images. These images represent Mosaic TVWall is correctly set up.

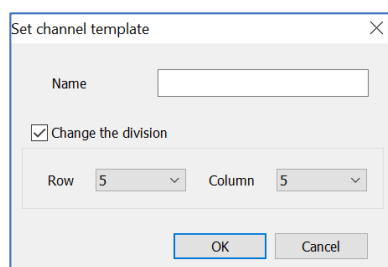


By clicking **layout channels** icon , it will also customize how the channel are displayed.

Click on the **set channel template** button to define a multiple window. Any template combination can be set up. However, be aware that some combination may result to distorted picture.

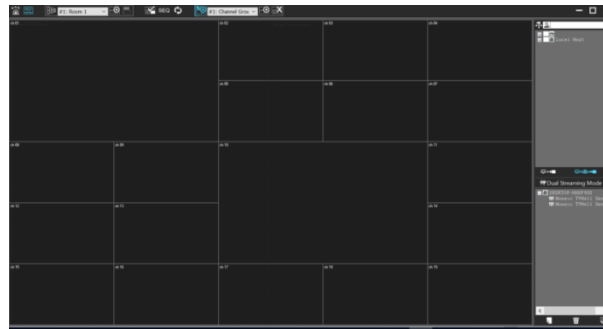


As example, we will select 5x5 display mode, select row **5**, and column **5**. Click on **OK** button.

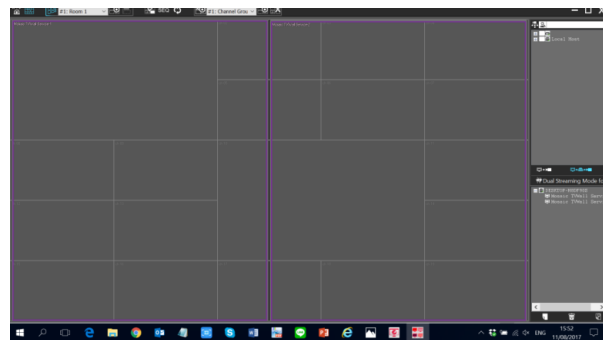




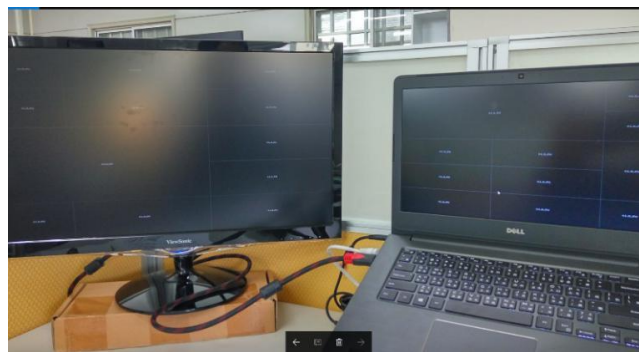
After adjusting some channels size, it will show below image:



Click on the layout monitor icon  to display the two TVWall preview.

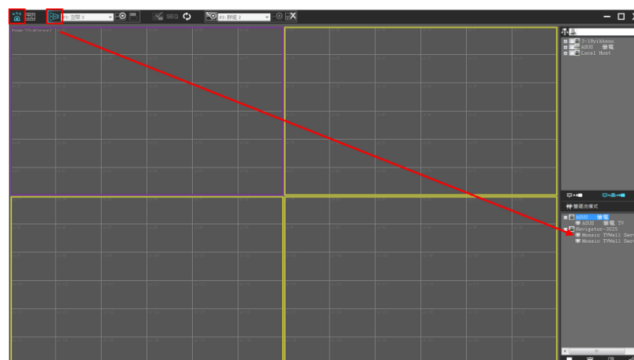


Click on the **run** icon  to see the results.



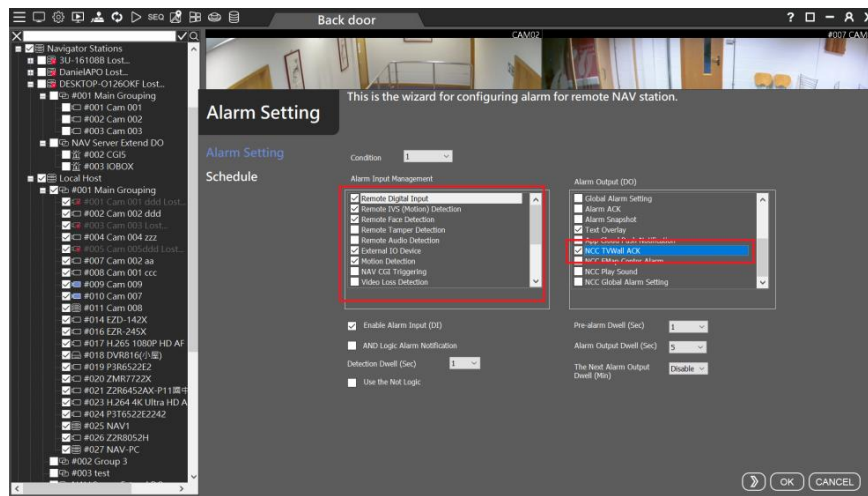
Chapter 13.10 Alarm Acknowledge Feature of TV Wall

Open **Alarm ACK** and specify the screen location to show the alarm confirmation in the display mode.



Chapter 13.10.1 Alarm Center Setting for TV Wall

Click on View Manager, mouse right click on selected channel, enter alarm setting and tick in NCC TVWall ACK box.



After Alarm Center received alarm notifications, the ACK will be imported to the following screen. Click “ACK OFF” for acknowledging the alarms.



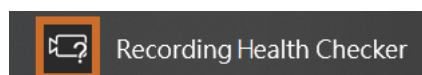
Chapter 14 Maintenance

Chapter 14.1 Recording Health Checker

For the following circumstances, a user might use the Recording Health Check App for checking if the recordings are well for playback purpose.

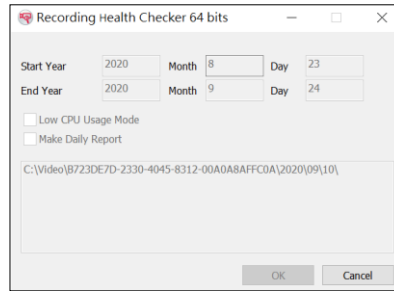
1. Rebuild a RAID after HDDs failure.
2. Move HDDs from one NAV machine to another.
3. Re-install Windows on NAV machine,

For above circumstances, please perform Recording Health Checker to scan through all the recordings. Go to Windows->LILIN Navigator 3.0->Recording Health Checker.





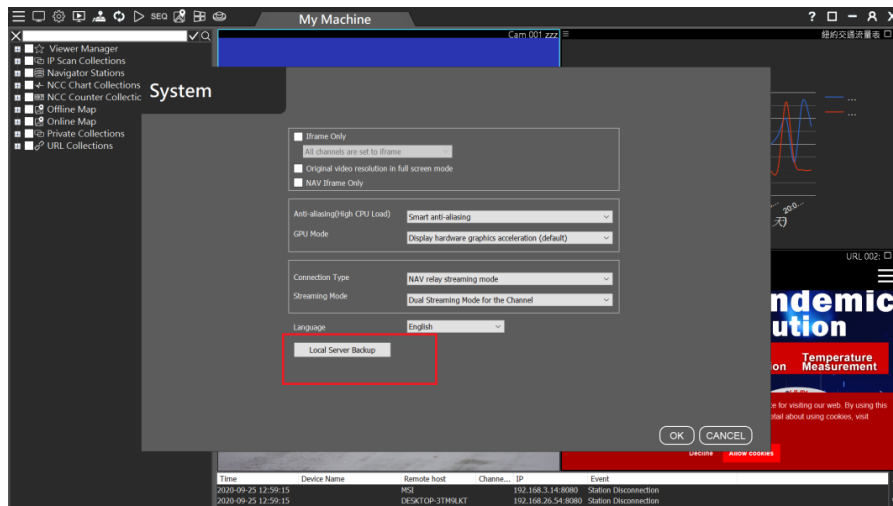
Enter start time and end time and click OK for scanning recordings for all HDDs. Select “Low CPU Usage Mode” for background scanning.



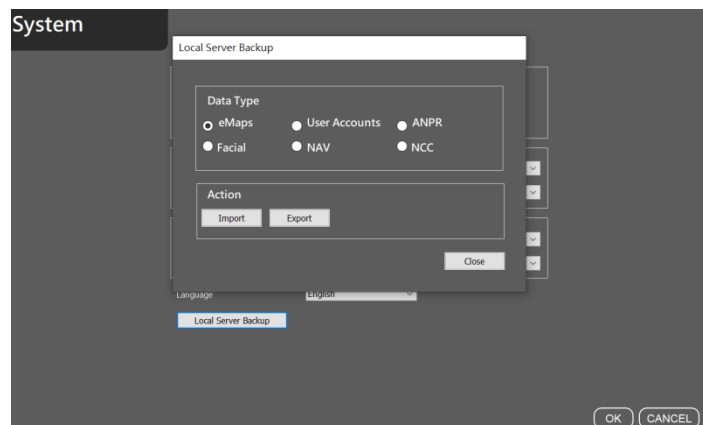
Chapter 15 System

Chapter 15.1 Import and Export for System Configurations

Select the "System Settings" icon and click "Local Server Backup" button to import and to export the local configuration file for future use.



As shown in the figure below, you can export databases such as electronic maps, user accounts, license plate recognition, and face recognition. Sensitive information such as user passwords has been encrypted with AES256 to ensure network information security protection.

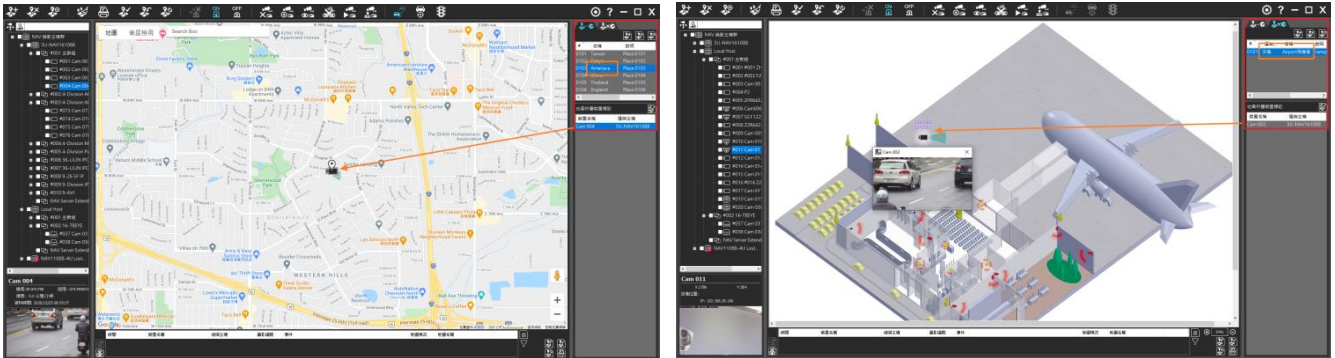


Note: The View Manager free version software only supports local backup NCC and user account import and export.

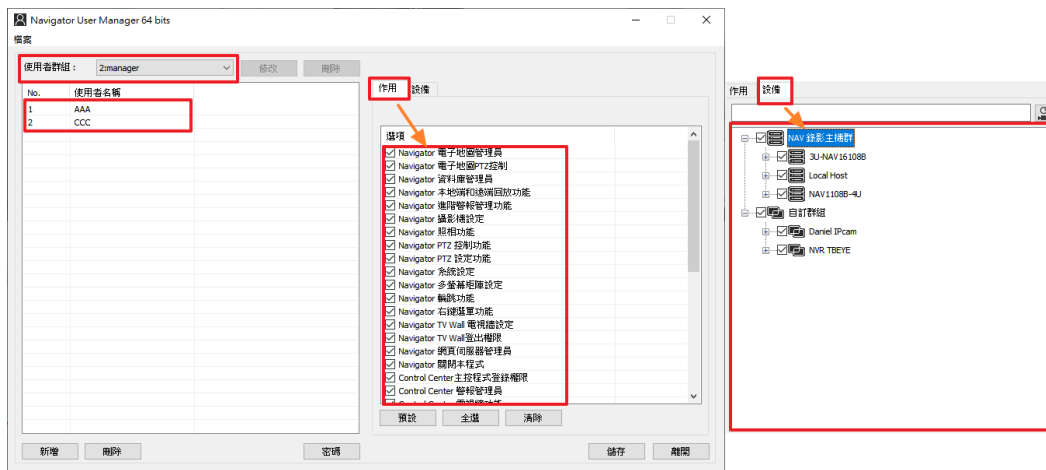
Chapter 15.1.1 Back up Import Location

The local host back up import location is as follows:

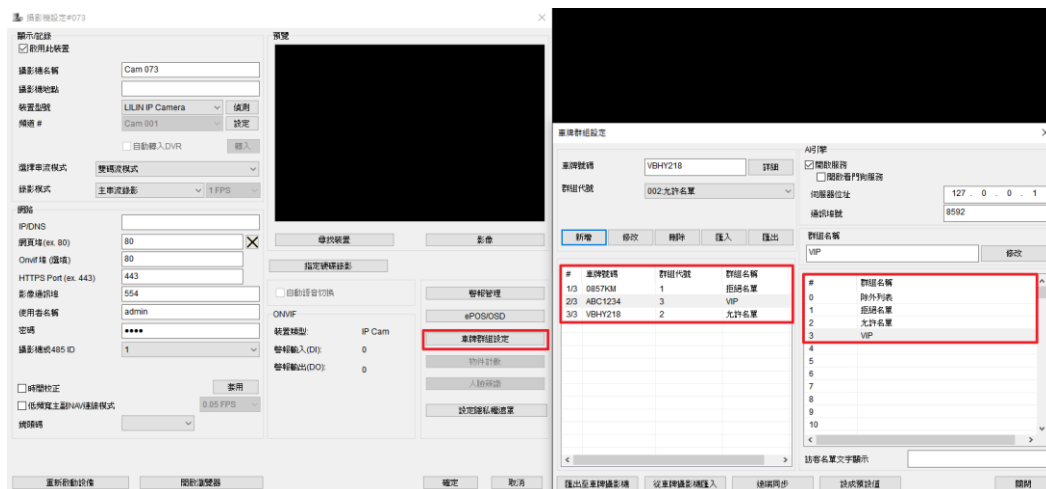
- eMap: NCC Navigator Control Center online eMap and offline eMap backup.



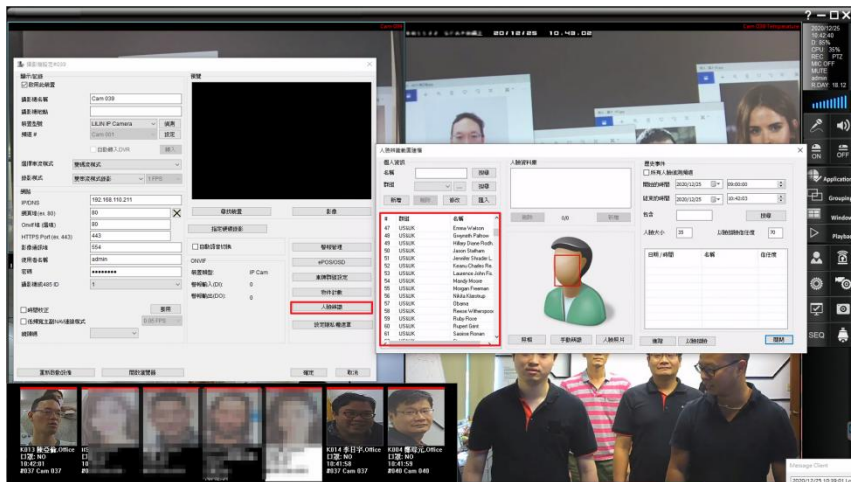
- User Account: NAV, NCC & View Manager user accounts authorization manager backup.



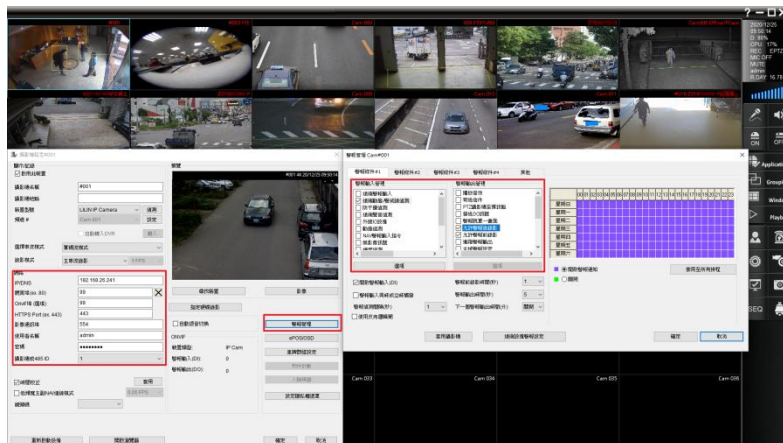
- License Plate Recognition: NAV license plate list back up.



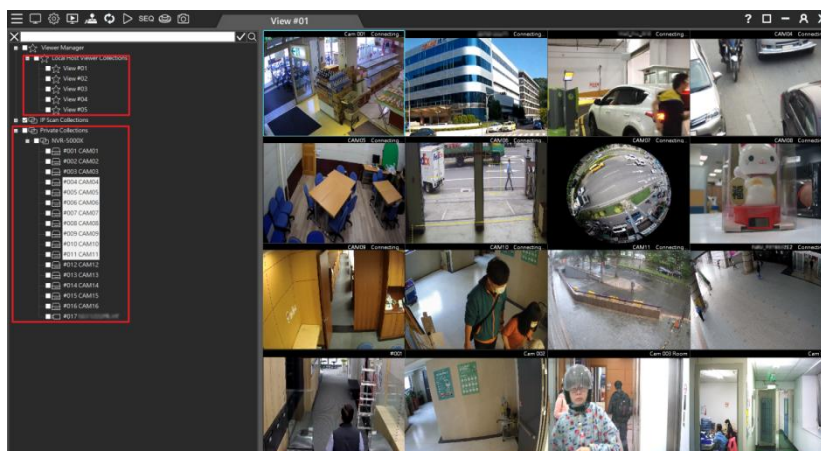
- Face Recognition: NAV Face list back up.



- NAV: NAV IP, groups, alarm setting back up.

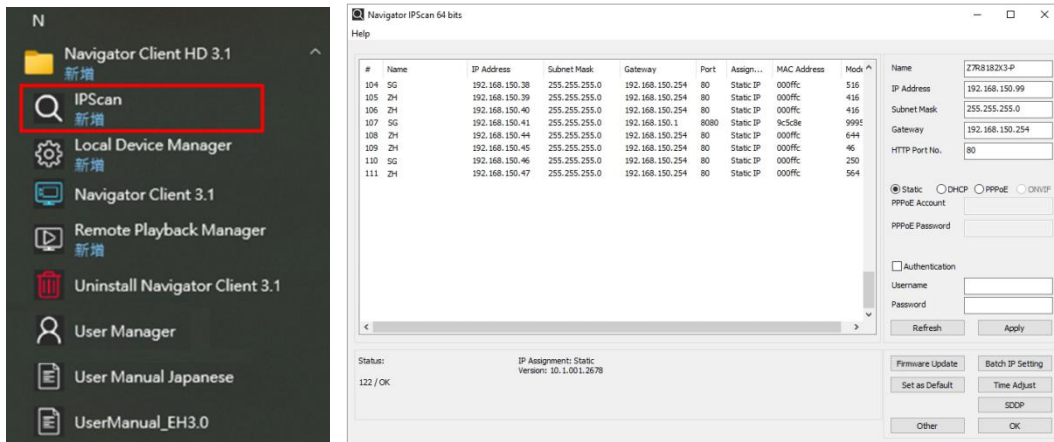


- NCC: The content of the NCC data backup is the View group and the connection information of the IP Cam/NVR/DVR/NAV.



Chapter 15.1.2 Find Device

IPScan utility can scan through all IP address in the LAN to locate devices.



Press IPScan and select a device in IPScan to manually add devices of IP Fast Dome, IP camera, video server, or DVR.

Note: IPScan can only work under a LAN environment and does not support an Internet environment.

Chapter 15.1.3 Device Status Message

- Check connection:

If the device is not scanned by NAV Control Center or NAV View Manager, the message, device lost, gets shown after the device name for showing to the operator for troubleshooting.

- Check Recording:

The device has not been assigned to any NAV recorder, if you need the device for recording. Please assign the device to an NAV recorder.

- View setup:

The device has not been assigned to any View Manager. If you want live monitoring, please assign the camera to a View.

- Setup Video:

The device has passed the authentication, but the camera's video profile or DVR/NVR's streaming information can not be acquired. Make sure that the camera or the DVR/NVR is supported by NAV Control Setting or NAV Recorder.

- Setup password:

The device has not been setup for its username and password. Please enter the username and password for this device.



Chapter 16 Troubleshooting

Chapter 16.1 Hard Disk Supported

Chapter 16.2 Choosing between SMR and CMR in Hard Drives

Many people ask what is the right hard drive for the intended use. Because different recording methods have different performance. SMR is used for cold data storage and CMR is used for repeated reading and writing data. Both technologies have their own characteristics for reasonable and right application.

In our guide, it is usually recommended to use CMR hard disks. When the recording host often reads and writes or important data transmission is important, CMR hard disks are a good choice. It is recommended to choose the Pro series of the same model, which can read and write for a long time. To maintain life and warranty, the following are WD and Seagate series hard drives.

For more detailed hard drive model brands, please consult the original manufacturer's technology.

Brand	Model #	Format
WD	Purple Surveillance AI	CMR
WD	Red Pro NAS	CMR
WD	Gold Enterprise	CMR
Seagate	SkyHawk AI	CMR
Seagate	IronWolf Pro NAS	CMR
Seagate	Enterprise Exos 7E8	PMR
Seagate	Enterprise Exos X16	PMR

Note: Technically speaking, SMR also uses a vertical magnetization method, so in order to segregate, the original PMR is renamed CMR.