

LILIN Navigator User Manual



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Overview

LILIN Navigator (hereafter referred to as “Navigator”) is a comprehensive solution to the management of LILIN’s network products, including IP cameras, DVRs/NVRs, and a wide range of applications. Navigator consists of (1) network video recording software, (2) eMap Manager, (3) Database Manager, (4) Web Server, and (5) Remote DVR/NVR playback and file download.

Major functions of this software include the management of videos and images recorded by a wide range of cameras produced by LILIN, recording video clips in the SD card of remote IP cameras and DVRs/NVRs, and supporting video playback and file download. Navigator can be installed at various sites for camera management. According to geographical locations and functionalities, the software can also divide IP cameras and DVRs/NVRs into groups to help users view group images and videos.

eMap Manager is an innovative central management system for live monitoring, alarm snapshots, and map management. Devices installed at different locations can be displayed and managed with simply clicks on user-defined maps. One of the many highlights of this function is the dual screen design, which ease the management of DVRs/NVRs and IP cameras.

Navigator Software is designed for hybrid installment of IP camera, video server, IP Fast Dome, and DVRs. Its diverse functions provide the necessary flexibility in managing record storage devices and deliver a comprehensive solution to digital surveillance. Major features of Navigator are listed as followed.

Navigator Main Features

- Record and manage the videos recorded by an infinite number of IP H.264/MJPEG cameras and DVRs/NVRs
- Scheduled, continuous, and motion detection recording support
- eMap live video with alarm snapshots
- Integrated alarm management for alarm output
- Web server for live video and PTZ control
- iPhone and Android devices support
- Innovative solutions for retail and transportation industries
- Video groups that allow easy management
- IP Fast Dome control and PTZ control
- Recorded videos can be exported to AVI file format
- Easy-to-use calendar and time selections for video playback
- Secure user access configurations
- Complete event logs
- Two-way audio and audio recording
- Digital zoom, ePTZ, and region of interest (ROI) support
- Dynamic Drag-and-drop swapping of video channels

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General Notations

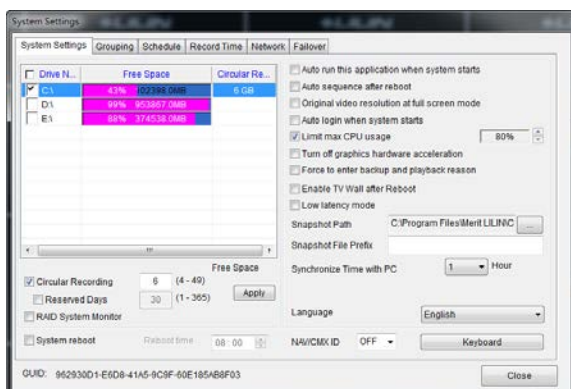
The terms of IP-based devices or products used in this document refer to H.264 HD/MJPEG IP Fast Domes, Video Servers, or IP Cameras. The terms of DVR devices/products refer to DVR 3 and 5 series.

Before Using Navigator

Navigator is a video recording application. Although Navigator supports multiple hard drives recording, when

the overwrite setting is enabled, the oldest recorded video clips will be deleted first if the designated storage is full. Should you want logical partitions in your hard disk drive, allocate at least 20 GB for each drive.

To change the hard drive setting, click **System Settings** . Select the hard drive(s) to which you want Navigator to save the recorded videos. It is recommended not to choose the system disk as the destination drive.



Furthermore, each logical HDD drive should contain at least 10% empty space for storing video data. Navigator deletes the oldest files first until it reaches 90% of the logical drive, and it proceeds to the next logical hard disk drive for recording.

User Manual

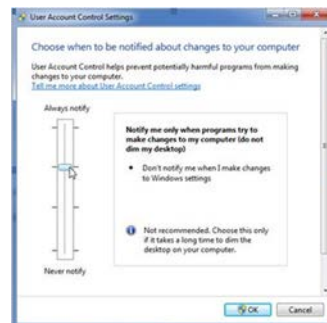
This Navigator user manual is in the PDF format. To access the manual, go to **Start→All Programs→LILIN Navigator→User Manual**. You must install Acrobat Reader before opening the manual.

Uninstall Navigator

To uninstall Navigator Software, select **Start→All Programs→LILIN Navigator→Uninstall LILIN Navigator**. Before you continue, be sure to back up your database, and you can import the database to the new installation. Please see **Database Manager** in this document for details.

Use Navigator on Windows 7 and Windows 8 platforms

When you install Software on Windows Vista and Windows 7 platforms, please go to **Control Panel→User Account Control** settings, and lower the setting to **Default**. This will ensure that Navigator starts and logins automatically when the watchdog timer performs a system reboot.



Getting Started

Start Using LILIN Navigator

You can follow either of the following steps to explore the world of Navigator:

- 1) Go to **Start→All Programs→LILIN Navigator→LILIN Navigator**
- 2) Click the **Navigator** icon on the desktop.

To log in to **Navigator**:

- 1) For first-time users, enter “admin” for password; for existing users, enter the combination of your username and password.
- 2) Click **OK**.

Username: admin

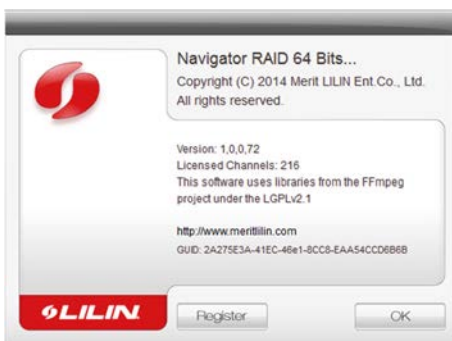
Password:

User Change Hide Lock OK Cancel

Note: The default passwords for all users are empty.

Register LILIN Navigator

To enable all the useful features of Navigator, visit <http://www.meritilin.com/webe/html/support/support.aspx> and register an account. An unlocking key will be sent to your email account after you complete the registration process. Or you can click "?" at the top right corner of the screen and press **Register**→**Get Unlocking Key**.



Then you will be directed to LILIN Agent Cloud, as shown in the image below.

LILIN

Login LILIN Agent Cloud

Account (email address)

Password

Security Code: 9hh5

☐ Remember me

Sign In

[Sign Up](#) [Forget Password](#)

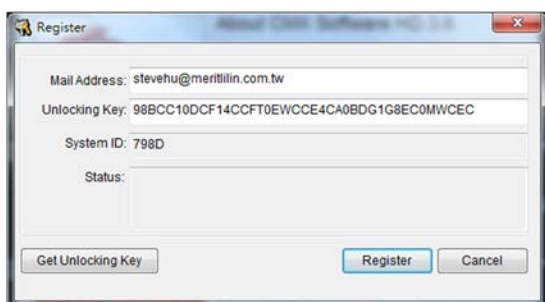
You may either sign up for an account or sign in with your credentials.

Before sending a request for the unlocking key, you must fill out the account information form. Then press



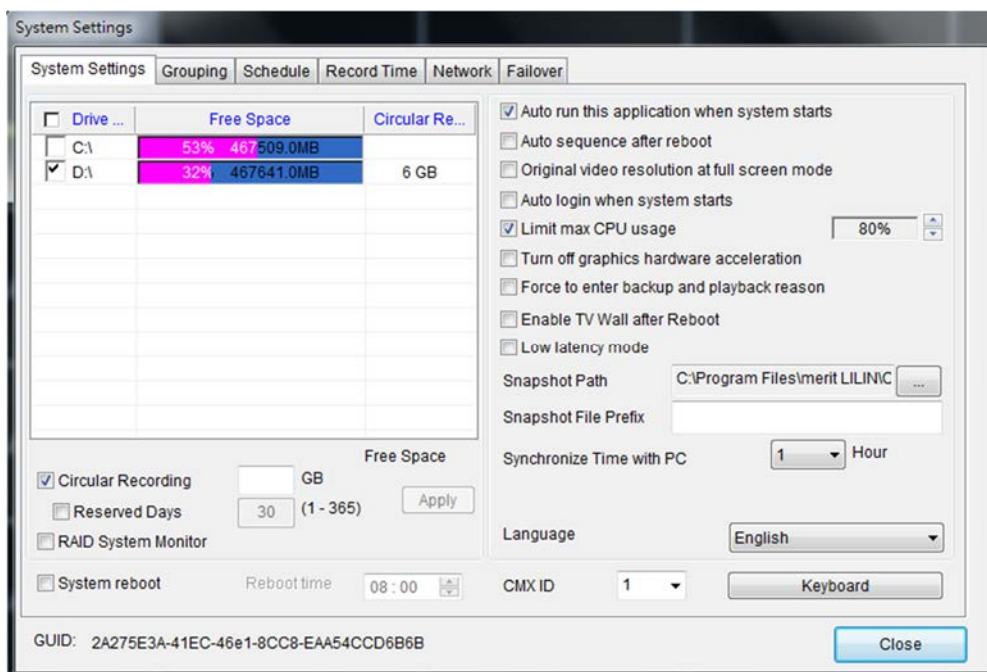
at the top left corner of the screen, and click **Get NAV Lite** to retrieve the unlocking key, which will be sent to the email address you just provide.

Enter your email address and the unlocking key and press **Register** to access the full features of Navigator.



System Settings

In **System Settings**, you will find a number of tabs that allow you to change the configurations of this software. Configure the settings to fit your needs.



Auto run this application when system starts:

Launch Navigator automatically on system startup.

Auto sequence after reboot:

Perform group sequential display after a system reboot.

Original video resolution at full screen mode:

Use original video resolution in full screen mode.

Auto login when system starts:

Log in to Navigator automatically when the system starts.

Limit max CPU usage:

Set CPU loading to a particular value.

Turn off graphics hardware acceleration:

If you are using an older computer or experience system performance slowdown, check this option to turn off

graphics hardware acceleration.

System reboot:

Check and set the time you want the system to reboot every day.

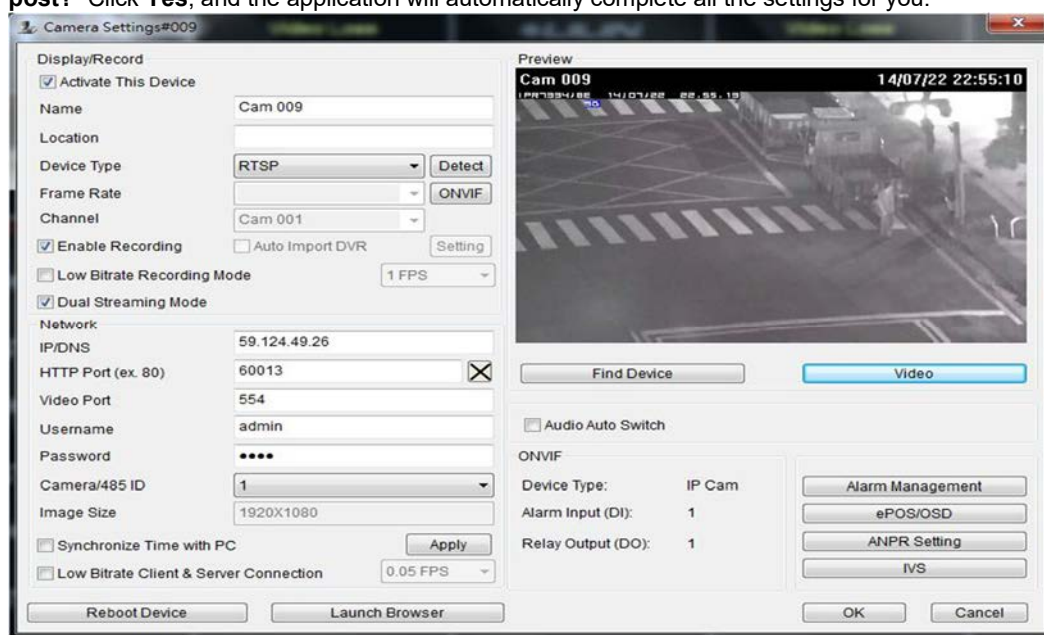
Language:

Choose your language from the drop-down list.

Note: We recommend you set the destination drive to any drive that is not the system drive.

Add a New Device

To add a new device, select any channel and click the **Properties** button . Click the **Find Device** button to open **IPScan**, a tool that helps you find all devices in your network. Choose the device you want to use and press **Close**, and you will see a prompt window asking “Do you want to auto set the IP/DNS and the host post?” Click **Yes**, and the application will automatically complete all the settings for you.



The configurable settings in **Properties** are listed as followed:

- Name—camera name displayed on top of the live video channel
- Location—location of the camera installed
- Frame rate—frame rate of the device
- ONVIF—settings related to the ONVIF protocol
- Device type—type of the device; RTSP is for H.264 D1 or H.264 HD IP cameras.
- Enable recording—check to enable or disable recording for the device
- IP/DNS (required)—IP address of the device
- HTTP Port—HTTP port number of the device
- Video Port—DVR's video port number/IP camera's RTSP port number
- Username
- Password
- Image size—the source video size of the device
- Camera/485 ID—IP Fast Dome RS-485 ID.
- Synchronize Time with PC—synchronize time with the local PC.

Note: RS-485 camera ID (1 to 128) must match the ID setting of the IP Fast Dome. The software may not control PTZ movement if the ID setting is incorrect.

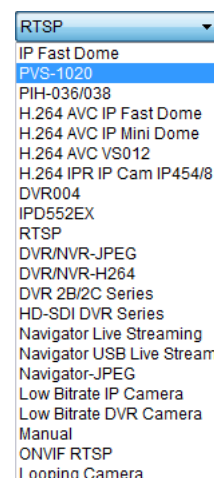
Once you complete the above settings, you can click **Video** to test if the device is working

properly. For information of the default username and password, please see **Appendix** for details.

Device Type

For video streaming, there are several device types to choose from:

- RTSP—Connect an IP camera with RTSP streaming protocol.
- DVR/NVR-JPEG--Connect a DVR/NVR with MJPEG protocol.
- DVR/NVR-H264—Connect a DVR/NVR with H.264 protocol.
- Navigator-JPEG—Connect to Navigator with MJPEG protocol.
- Low Bitrate IP Camera—Connect an IP camera with low bitrate protocol.
- Low Bitrate DVR Camera--Connect an IP camera with low bitrate protocol.
- Looping Camera—For the purpose of demonstration, you can choose **Looping Camera** in the drop-down box to duplicate video channels without physically connecting to an IP camera or a DVR camera. This will save bandwidth for other network videos.



ONVIF Settings

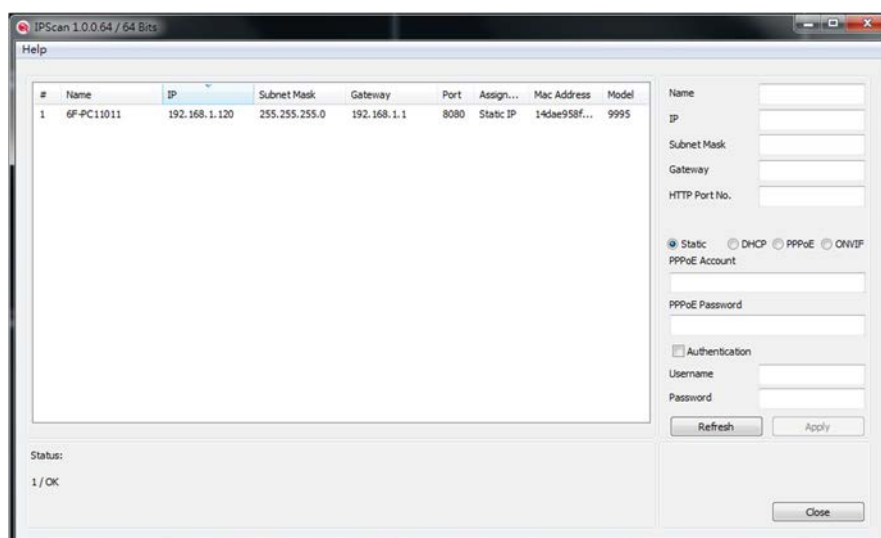
To use RTSP streaming, first you need to set up the ONVIF protocol:

- Profile: a user can select different streaming profiles such as H.264 720P or MJPEG 720P.
- Protocol: streaming protocol such as RTP/UDP, RTP/TCP, or RTP/TCP/HTTP.
- Quality: compression quality
- Brightness
- Saturation
- Contrast
- Sharpness
- Frame rate
- Bit rate

Note: ONVIF settings are only available for LILIN's ONVIF camera.

IPScan Utility

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



Select a device in IPScan and click **Close** to set up the device. All the device information such as IP address and port number will be automatically detected by Navigator.

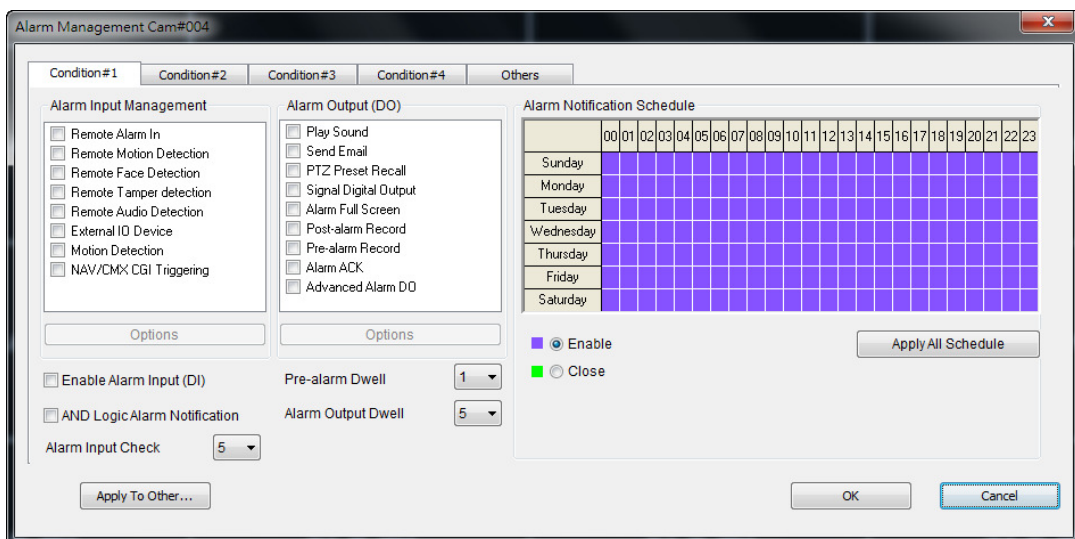
You can also manually add devices of IP Fast Dome, IP camera, video server, or DVR .

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

Alarm Input Management

Navigator supports a wide range of alarm inputs:

- Remote Alarm In: Receive a digital input (DI) alarm from a remote IP camera.
- Remote Motion Detection: Receive a motion detection alarm from a remote IP camera or the camera of NVR/DVR. This option can further save the CPU usage of Navigator.
- Remote Face Detection: Receive a face detection alarm from a remote IP camera with a built-in face detection feature.
- Remote Tampering Detection: Receive a tampering alarm from a remote IP camera with a built-in tampering detection feature.
- External IO: Receive an alarm from an Ethernet APG cash drawer or remote Ethernet IO device.
- Motion detection: Navigator supports local motion detection.
- Video Loss Detection: If video loss detection is detected, Navigator can send alarm output (DO) signals, such as Play Sound and Send Email, to alert the user.



Ethernet Digital I/O Device (Enterprise Only)

Ethernet I/O devices such as Moxa ioLogik E1212 can be linked to an IP camera as an external alarm input and output device. If the camera does not offer a built-in DI/DO, you can alternatively use the Ethernet digital I/O device.



Mapping of an IP camera's logical digital input and digital output.

Click **Device Scan** to find Moxa I/O devices on the network. Once the IP address is selected, map the logical digital input (DI) or logical digital output for an IP camera. To activate digital output (DO), click the **Alarm On** or **OFF** button.

Remote IP Camera with Digital I/O

If an IP camera is equipped with a DI/DO interface, enable **Remote Alarm In (DI)** in the alarm input list. To enable alarm output, click on Alarm On or OFF to trigger the digital output of the IP camera.

Alarm Output Management

The alarm output features support various alarm reactions for motion and remote motion alarm detection management. The alarm outputs include (1) PC alarm sound, (2) send JPEG email snapshot, (3) recalling a PTZ preset, (4) triggering a DO output of an IP camera, (5) full screen alarm, (6) pre-alarm and post alarm. Please check the alarm output from the list to enable the option.

The screenshot shows two panels: 'Alarm Input Management' and 'Alarm Output (DO)'. The 'Alarm Input Management' panel has a list of checkboxes for various alarm inputs: Remote Alarm In, Remote Motion Detection, Remote Face Detection, Remote Tamper detection, Remote Audio Detection, External IO Device, Motion Detection, and NAV/CMX CGI Triggering. The 'Alarm Output (DO)' panel has a list of checkboxes for various alarm outputs: Play Sound, Send Email, PTZ Preset Recall, Signal Digital Output, Alarm Full Screen, Post-alarm Record, Pre-alarm Record, Alarm ACK, and Advanced Alarm DO. Below these panels are 'Options' buttons. At the bottom, there are checkboxes for 'Enable Alarm Input (DI)' and 'AND Logic Alarm Notification', and a dropdown for 'Alarm Input Check' set to '5'. On the right, there are dropdowns for 'Pre-alarm Dwell' set to '1' and 'Alarm Output Dwell' set to '5'.

Alarm Sound Alert

To select pre-recorded alarm audio, click **Alarm Audio** and choose a WAV file.

The screenshot shows the 'Alarm Audio Setting Dialog' box. It has a 'Number' dropdown set to '1', a file path 'C:\Program Files (x86)\Ment Lini\CMX39\alarmb.wav', a 'Play' button, an 'Interval' field set to '30' seconds, and buttons for 'Save', 'Select', and 'Cancel'.

Alarm Redirects to a PTZ Preset

Once an alarm goes off, it can redirect another IP camera's preset for a video.

The screenshot shows the 'Notification Action Settings' dialog box. It has a 'PTZ Camera' dropdown set to 'CAM 02' and a 'PTZ Preset' dropdown set to '5'. There are 'OK' and 'Cancel' buttons at the bottom.

Alarm Redirects an IP Camera's Digital Output

Once an alarm goes off, this option will redirect the signal to another IP camera's digital output.

The screenshot shows the 'Notification Action Settings' dialog box. It has a 'Relay Camera' dropdown set to 'CAM 02', a 'Relay Output' dropdown set to '1', and a 'Relay Interval' dropdown set to 'Always'. There are 'OK' and 'Cancel' buttons at the bottom.

Pre-alarm & Post-alarm

Pre-alarm and post-alarm recording activities are triggered by an alarm event. The recording period is controlled by the **Pre-alarm** and **Post-alarm** dwell setting. Pre-alarm & post-alarm can significantly reduce the use of storage devices because videos will not be recorded until an alarm goes off..

Alarm Acknowledgment

You need two monitors to enable alarm acknowledgment, one for Navigator and the other for alarm acknowledgment. Click the **Monitor Setting** button  and set the Alarm ACK Monitor to the second monitor.



Navigator main monitor



Alarm acknowledgement monitor

Video is displayed on the Navigator alarm acknowledgement monitor you designated. To acknowledge the alarm, click the **ACK OFF** button at the bottom left corner of the Navigator alarm acknowledge monitor.



Click the **ACK OFF** button to acknowledge the alarm.

To setup the acknowledgement feature, check **Alarm ACK** in the alarm output list.

Alarm Input Management	Alarm Output (DO)
☐ Remote Alarm In ☐ Remote Motion Detection ☐ Remote Face Detection ☐ Remote Tamper detection ☐ Remote Audio Detection ☐ External I/O Device ☐ Motion Detection ☐ NAV/CMX CGI Triggering	☐ Play Sound ☐ Send Email ☐ PTZ Preset Recall ☐ Signal Digital Output ☐ Alarm Full Screen ☐ Post-alarm Record ☐ Pre-alarm Record ☐ Alarm ACK ☐ Advanced Alarm DO
Options	Options
☐ Enable Alarm Input (DI) ☐ AND Logic Alarm Notification Alarm Input Check 5	Pre-alarm Dwell 1 Alarm Output Dwell 5

Notify Navigator installed on other computers (Enterprise Only)

Third-party software can enable or disable videos on the alarm acknowledge monitor using the CGI commands provided by Navigator. See HTTPAPI.PDF on our official website for more details.

Recording Settings

By default, Navigator starts continuous recording after an IP camera is connected. To change recording configurations, please read the following sections..

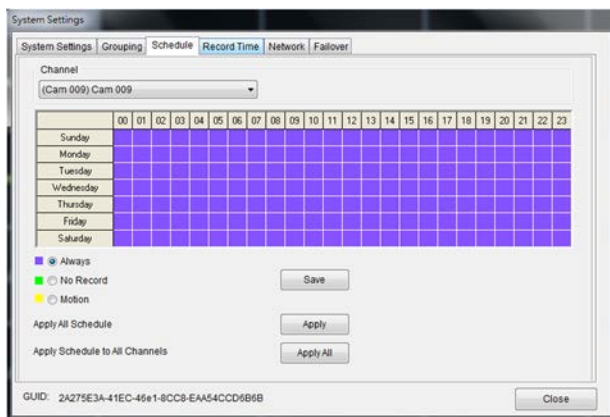
Schedule Recording Settings

The recording schedule of Navigator can be set to **Always**, **No Record**, and **Motion**, and the time increment can be set down to an hour.

To designate which hours to record, first choose the recording type (**Always**, **No Record**, and **Motion**), and then highlight as many boxes as you like in **System Settings**→**Schedule**.

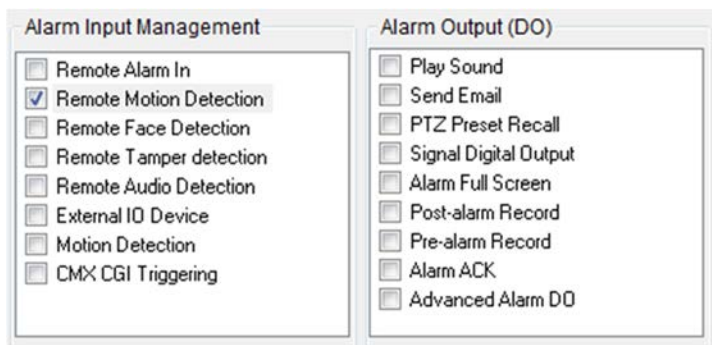
Click **Apply** next to Apply All Schedule to apply the selected recording type to all days and hours.

To apply a recording type to all channels, click **Apply All** for Apply Schedule to All Channels.

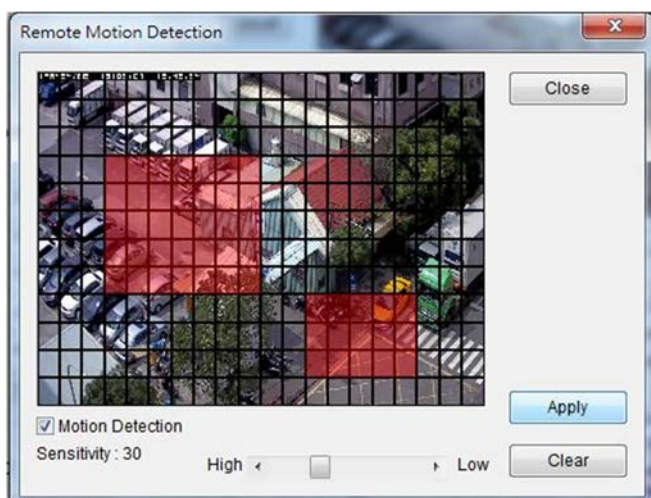


Motion Detection Recording

To enable motion detection recording, click  to open the **Properties** dialog box. Next, click **Alarm Management** and check **Remote Motion Detection**



To enable motion detection recording, click  to open the **Properties** dialog box. Next, click **Alarm Management** and check **Remote Motion Detection**. Click **Options** to configure the settings. Navigator provides up to four user-configurable motion detection areas. Simply drag across any areas on the screen to define a motion detection area. Right-click to clear one or all designated areas. To adjust motion detection sensitivity, use the scroll bar at the bottom of the window. Motions that are detected within the highlighted areas will send an alarm to the system. Click **Apply** for the settings to take effects.



In the live monitoring mode, a “little man” appears in the channel if any motion events are detected.



Note: The use of **Remote Motion Detection** can further reduce the CPU load of a Navigator PC, for this function utilizes the motion detection engine of the IP camera.

Recording at System Startup

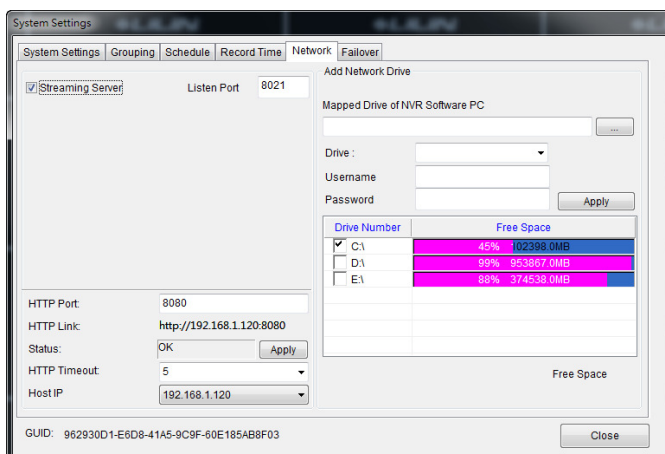
Check this option to start recording automatically every time you boot the system. It is not required to start recording manually. If a schedule is set, Navigator will begin recording according to the schedule at startup.

Estimated Recording Days

To estimate the remaining storage capacity (days), a user can click **System Setting** and switch to the **Record Time** tab. Estimated recording day and time information will be displayed on the right side of the pane.

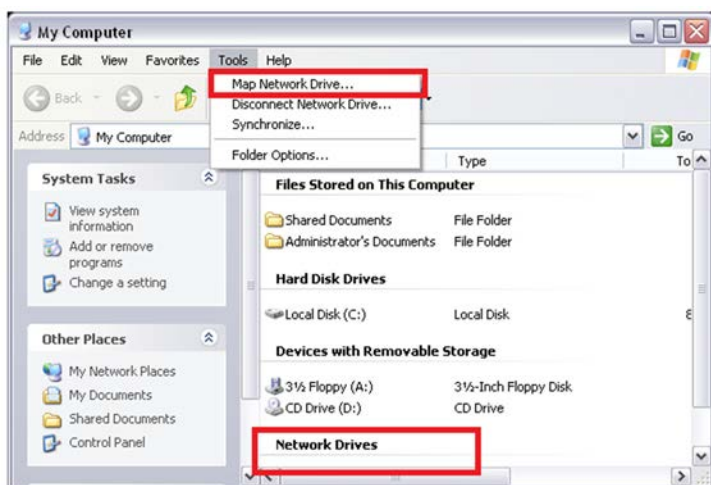
Network Storage NAS (Enterprise Only)

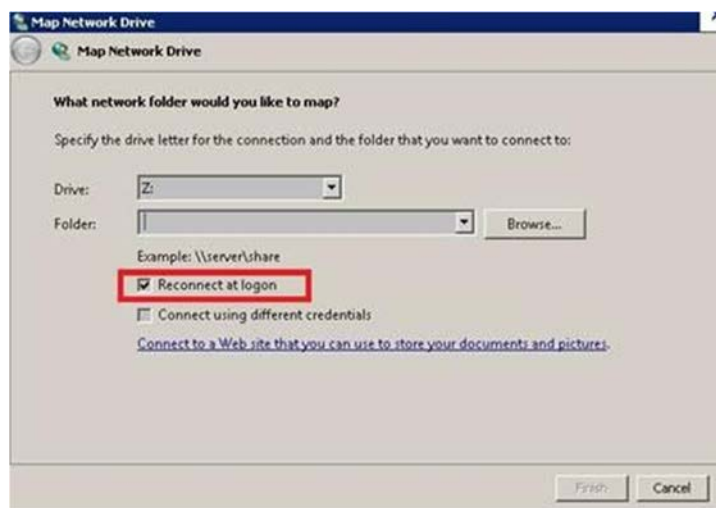
You are allowed to save recorded files on network storage such as iSCSI or NAS if the network storage supports “Network Neighborhood” protocol.



To do so, go to the **Network** tab. Click **Add Network Drive**, and select any network storage by clicking **Mapped Drive of Navigator Software PC**. Choose **Apply** when the network storage is selected. Check the storage you just added at the bottom of this window. Navigator will begin circular recording and save the files to the drive you selected.

Otherwise, you can go to **My Computer**→**Tools**→**Map Network Drive**. Please make sure that the **Reconnect at login** option is checked to avoid losing connectivity.



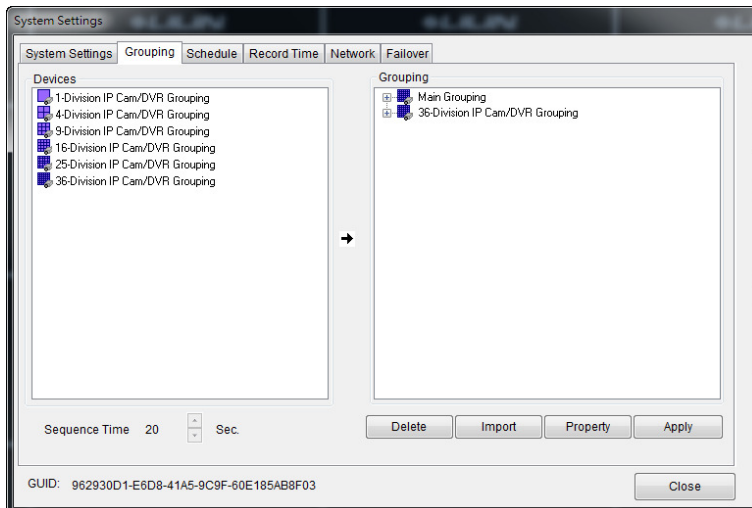
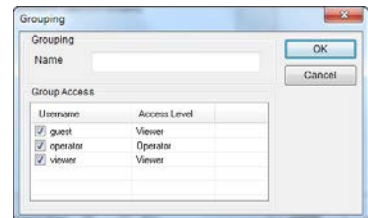


Group Settings

Grouping

Users are allowed to divide cameras or DVRs into groups based on their geographic locations or functions. You can easily view the videos recorded by the grouped devices. To create groups, enter **System Settings** and click **Grouping** and follow the followings steps:

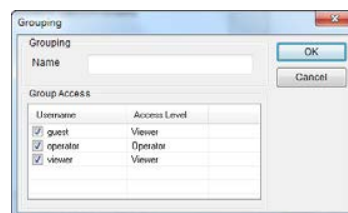
1. Select a group type from the left pane and click the **Right Arrow** to create a group.
2. Click Apply to save the settings.



Once the groups are set, you can easily switch between different groups.

Group Naming

To name a group, right-click a group and choose **Property**. Enter the name you want to use into the text field.



Arrange Devices in a Group

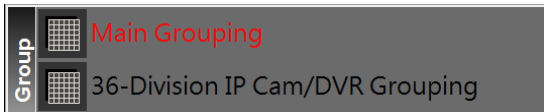
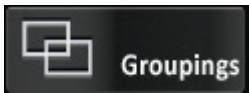
To set up devices in a group, right-click the device and select **Property**.

Group Authentication

To assign access rights to particular users, right-click a group and select **Property**. A **Grouping** dialog box will appear. The default setting allows every user full access to every device in the group. To disable the right to access, uncheck the checkbox next to a user. Group access rights also apply to web servers. Users with different access levels can only see the videos of their corresponding groups.

View a Group

To view the videos of a group, click **Groupings** and chose the group you want to see.



Group Sequential Playback

To adjust the group sequential playback interval (seconds), go to the **Grouping** tab in **System Settings**.



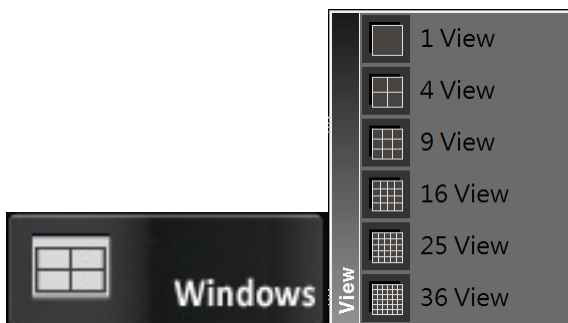
Main Grouping

Main Grouping is a groups consisting of 36 devices, which are displayed in a split view in Navigator. To add a device to the main grouping, please follow these steps:

- 1) Select **Main Grouping** in grouping dropdown list.
- 2) Right-click one of the cameras.
- 3) Select **Properties**.

Split View

Currently, Navigator supports four types of split views including full screen view, 4-channel view, 16-channel view, and 36-channel view. To open the full screen view, double-click a camera to maximize the screen. Click **Windows**, and choose the type of view you want to see.



Dynamic Video Channel Swapping

If you want to move a camera channel around, you can simply drag a camera to another video channel. This operation swaps these two cameras' positions dynamically in the software. For users who want to adjust the display position after site installation, they do not need to re-assign the IP settings.

Digital Zoom

To zoom in a specific area, click and drag to create an area for digital zoom. Then you can move the zoom-in area (green area) at will.





The digital zoom function is also available in the playback mode.



Playback in Navigator

Navigator can playback the videos recorded by all IP-based products including H.264 HD IP Cameras, Full D1 IP Cameras, IP Fast Domes, Video Servers, LAN Cameras, and DVRs.

Playback

First of all, select a camera channel or a DVR. Press the **Playback** button , and choose **Playback** . A new window will open shortly.



Playback for an IP Camera within the Main Grouping

Video recorded in the main grouping can be saved to a local PC. Stored video clips can be played by specified date and time. To do so, see the following steps:

- 1) Choose a date in the calendar.
- 2) Specify the starting time and ending time.
- 3) Click **Search** to search the video clips.



Continuous recording

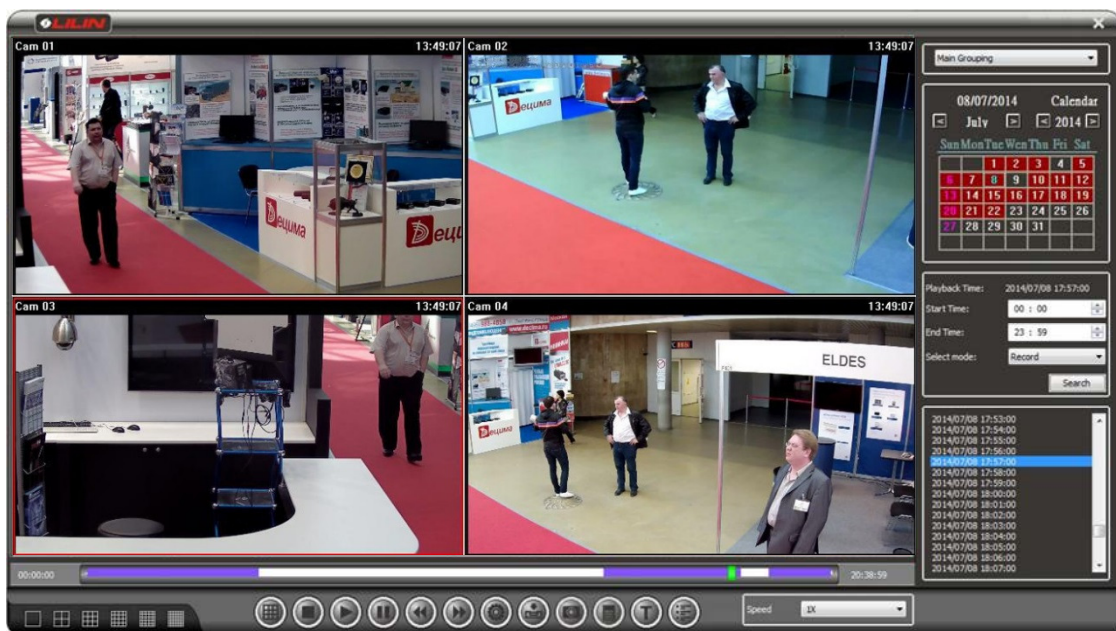
Alarm recording



When a video clip is playing, click **Stop**, **Play**, **Pause**, **<< (Rewind)** and **>> (Fast Forward)** and **Snapshot** buttons to perform the corresponding function. You can also click the time-bar or drag the scrollbar to jump to a specific time.

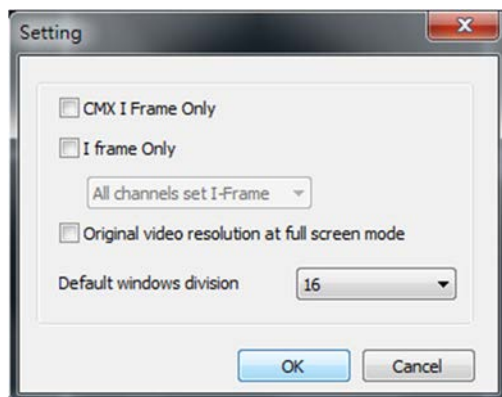
Multi-Channel Playback

You can choose a group for multi-channel playback. Just click the multi-channel playback button , and a playback window appears as below:



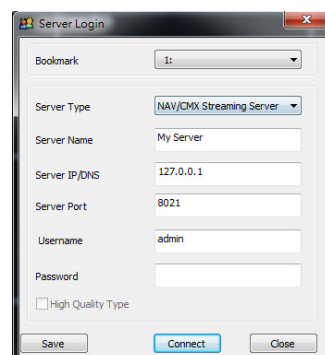
Navigator Lite supports up to 36-channel playback at the same time.

A number of settings can be changed for multi-channel playback: (1) NAV/CMX I frame only (2) I frame only. **I frame only** is only available when multi-channel playback is activated, and activate this option will force Navigator to show only 1 frame/sec in the background to reduce CPU load. For less powerful workstations, we suggest you activate this option. However, you may uncheck the option if CPU usage is low.



Remote Multi-Channel Playback

You may also connect to another Navigator host remotely and play videos saved on that host. To enable remote playback, click **Playback**, then choose **Remote Playback** . Click the **Connect** button  and enter IP/DNS address, port number, username, and password to access Navigator. Select a group for multi-channel playback. Moreover, you can add Navigator hosts as bookmarks to instant login in the future.

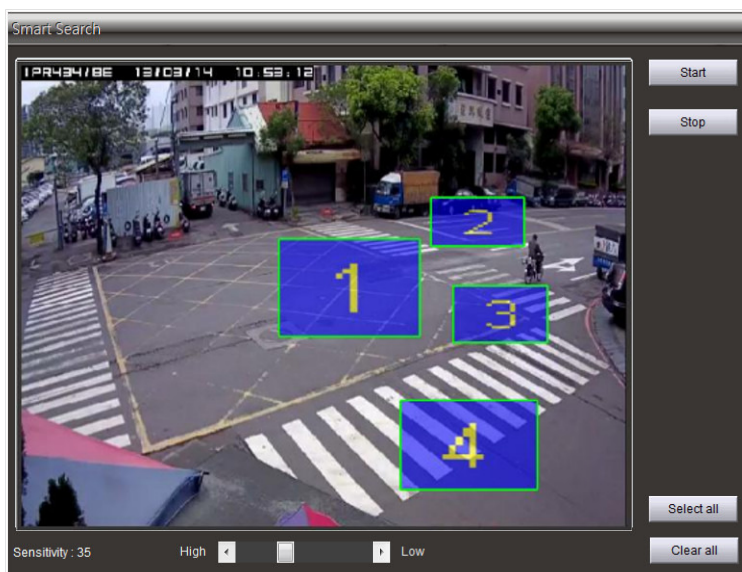


SmartSearch

SmartSearch is available in multi-channel playback. This search function provides quick video search in selected motion detection zones.

To perform SmartSearch, enable full screen mode for a particular camera. Select **SmartSearch** in the drop-down list of **Select Mode** and press **Search**. A SmartSearch dialog box will appear. Drag the motion detection area on the screen inside the SmartSearch dialog box. Click **Start**, and the system automatically performs a quick scan for any signs of motion activities in the video clip.

In the event list, snapshots of the motion activities will be displayed. Click on the snapshots to jump to the time when a particular event happened.



Remote DVR/NVR Playback

For playback videos on a remote DVR/NVR, right-click the DVR/NVR channel and select **DVR/NVR Remote Playback**.



Then you will see the DVR/NVR Playback dialog box. Specify the date and time information in the dialog box to start remote DVR/NVR playback.



AVI File Export & Play from a File

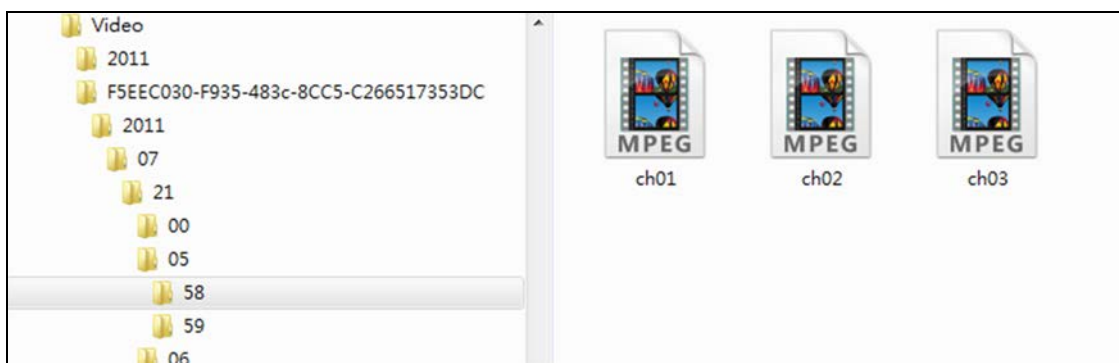
Export AVI with OSD

Users are allowed to export an AVI file recorded by a main grouping device. First you need to open the playback interface and search for a recorded video. Click the **Backup** button, choose **Destination Directory**, and press **Convert AVI with OSD** on the right side of the screen to export the AVI file.

Export AVI without OSD

Export an H.264 AVI file without an OSD timestamp can be much faster than rendering an AVI file with a timestamp.

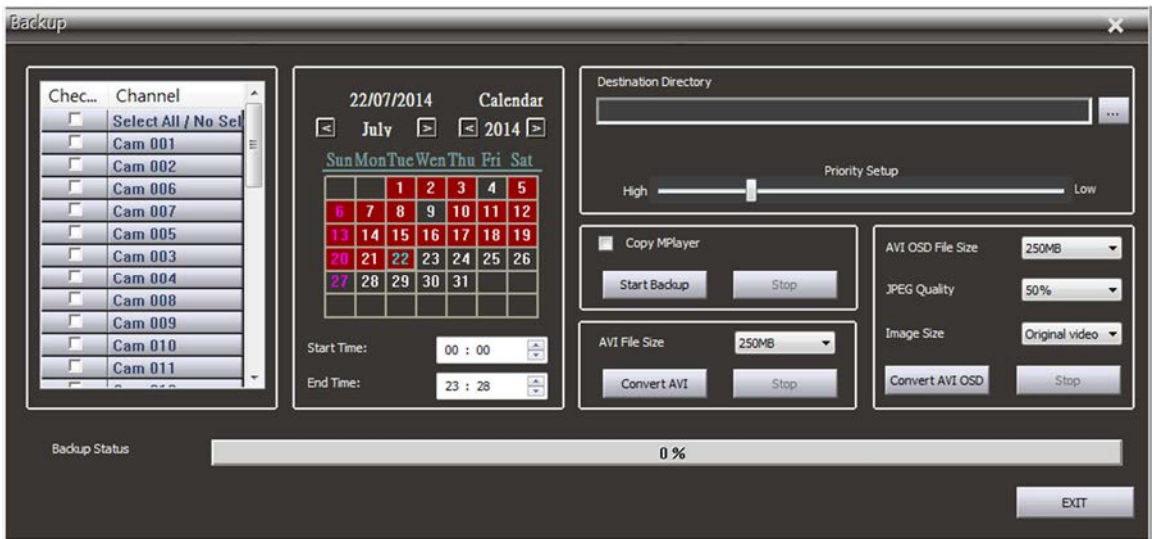
Navigator stores its video clips in a GUID folder inside the default Video folder. The GUID folder is named by a 32-digit hex string. The videos are saved under year, month, day, hour, and minute.



Multi-Channel Backup

Multi-channel backup features (1) multiple channel playback through MPlayer, which is a comprehensive media player; and (2) AVI backup for multiple channels.

To backup your files, click the **Backup** button  and select channels. Specify the date, time, and destination directory. Finally, choose **Start Backup** or **Covert AVI** for multi-channel video backup to begin.



Snapshot

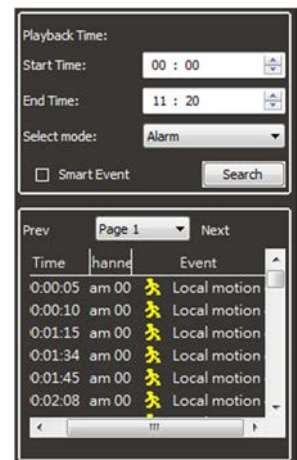
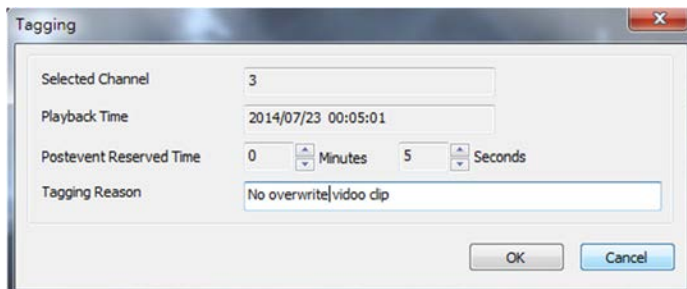
In a system of consisting of IP based services, you may want to capture images in a particular video. You can utilize this function in Navigator by simply clicking the **Snapshot** button . The picture will be saved as a JPEG file.

Alarm Event Playback

To playback motion detection events, choose **Alarm** in the **Select mode** drop-down list, and click **Search** to display all motion detection events. Click any of the events to play associated videos.

Tagging (Enterprise Only)

To mark video clips as important, you may add tags to video clips by clicking the **Tagging** icon .



Audio

Two-way Audio

Navigator supports two-way audio enabled surveillance cameras. To activate this feature, select a particular channel and click the **Speaker** icon  at the top-right corner to listen to the audio of the channel. You can also move the volume bar to adjust the volume. To speak to a remote site, please click the **Microphone** icon  next to the **Speaker** icon.

Audio monitoring is only available in the full screen mode. Double-click a channel to enter the full screen mode.

Two-way Audio Auto Switching

Navigator supports two-way audio for IP cameras. Check **Audio Auto Switch** in **Properties**  will automatically enable audio when the camera is triggered by a remote IP camera's digital input.

Audio Recording

Navigator supports audio recording using IP camera models equipped with audio input. The **Playback** interface can play audio (if any) simultaneously with the video recorded.

Archive Manager (Enterprise Only)

Archive Manager, a built-in feature in every copy of Navigator, can archive videos to a central network storage device. Archive Manager delivers a hassle free experience that automatically saves your video clips to a secure location. To open Archive Manager, please go to **Start→All Programs→LILIN Navigator→Archive Manager**.

Archive Source

To start video archiving, select the cameras you want to archive. You can either keep the video clips in the local PC (**Duplicate Archiving**), move the local data to a remote archive destination, or stop archiving for a specific time frame. After the configuration is completed, you can schedule the archive task by choosing the hours and days you want the archiving to take place. Also, you can apply all settings to the schedules of other cameras.

Archive Destination

You can choose the **Archive Drive** where video clips will be archived. The Archive Drive could either be a network RAID drive or an internal SATA RAID for large data storage. To choose a NAS RAID as the archive destination, click **Setup Network Disk** to mount a remote drive to Navigator. After the disk is chosen, select **Real-Time Archiving** or **Scheduled Archiving**. The former will start archiving immediately the next minute, and the latter will start archiving in the designated time.

The screenshot shows the 'Navigator Archive Manager 64 Bits' window. It has three tabs: 'Archive', 'Archive Log', and 'Sync'. The 'Archive' tab is active.

Source Section:

- Source Camera:** A dropdown menu with a 'Refresh' button next to it.
- Schedule:** A grid showing days of the week (Sunday to Saturday) and hours (00 to 23). The grid is currently empty.
- Legend:** Three radio buttons: 'Duplicate Archiving' (purple square), 'Moving Source Archiving' (green square), and 'No Archiving' (blue square). The 'No Archiving' option is selected.
- Buttons:** 'Apply', 'Apply All Source Archiving for a Week', and 'Apply Weekly Archiving for All Channels'.

Destination Section:

- Archive Drive:** A dropdown menu showing 'C:\' with an 'Apply' button.
- Buttons:** 'Setup Network Disk'.
- Archiving Type:** Two radio buttons: 'Real-time Archiving' (selected) and 'Scheduled Archiving'.
- Scheduled Archiving Options:** A dropdown menu showing 'Sunday', a time input field showing '17:01', an 'Apply' button, and a button 'Apply all Time to All Channels'.
- Reserved HDD Space:** A checkbox labeled 'Reserved HDD Space' with a value of '10 GB (>= 6GB)'.
- Reserved Archiving Days:** A checkbox labeled 'Reserved Archiving Days' with a value of '30 Day (1 - 365)'.
- Priority Setup:** A slider control labeled 'Priority Setup' with 'High' and 'Low' endpoints.

Bottom Section:

- Buttons: 'Start', 'Stop', 'Copy MPlayback', and 'Exit'.

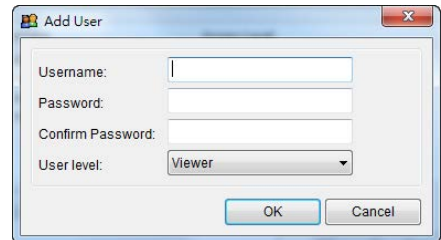
User Settings

In user settings, you can add users, delete users, change passwords, and change access rights for users.

To add, delete, and modify a particular user, click the **User** button  on the right side of the main screen of Navigator, and the **User Setting** dialog box will appear.

Add a User

To add a user, click the **Add** button. In the **Add User** dialog box, enter the required information. Remember to choose user access level before you press **OK**.



The 'Add User' dialog box contains the following fields and controls:

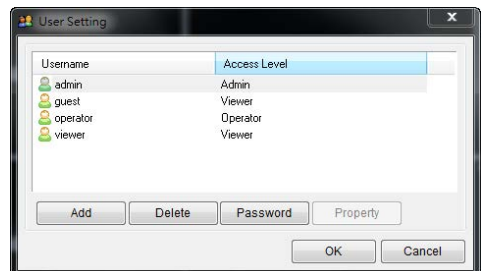
- Username:** A text input field.
- Password:** A text input field.
- Confirm Password:** A text input field.
- User level:** A dropdown menu currently set to 'Viewer'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

Modify an Existing User

To modify an existing user, choose a user and click the **Property** button. Here you may change the password of this user.

Delete a User

To delete a user, choose a user, press **Delete**, and click **OK**.



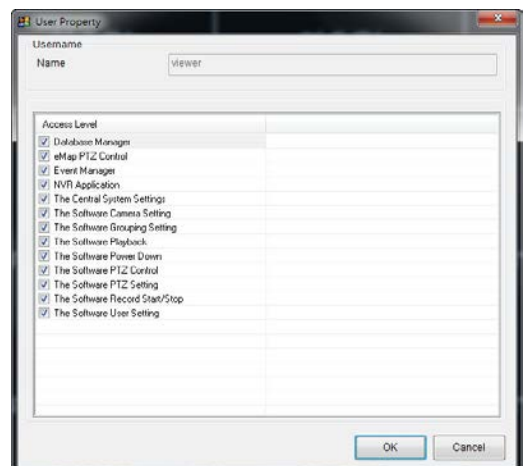
The 'User Setting' dialog box displays a list of users and their access levels:

Username	Access Level
admin	Admin
guest	Viewer
operator	Operator
viewer	Viewer

Below the table are buttons for 'Add', 'Delete', 'Password', and 'Property'. At the bottom right are 'OK' and 'Cancel' buttons.

User Authorization

Features supported by Navigator can be assigned to each user. To enable a feature for a user, click **Property**, and check whichever boxes to which you want the user to have access.



The 'User Property' dialog box shows the 'viewer' user selected. It contains a list of features with checkboxes for authorization:

Access Level
☒ Database Manager
☒ eMap PTZ Control
☒ Event Manager
☒ NVR Application
☒ The Central System Settings
☒ The Software Camera Setting
☒ The Software Grouping Setting
☒ The Software Playback
☒ The Software Power Down
☒ The Software PTZ Control
☒ The Software PTZ Setting
☒ The Software Record Start/Stop
☒ The Software User Setting

At the bottom right are 'OK' and 'Cancel' buttons.

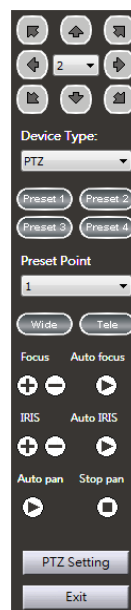
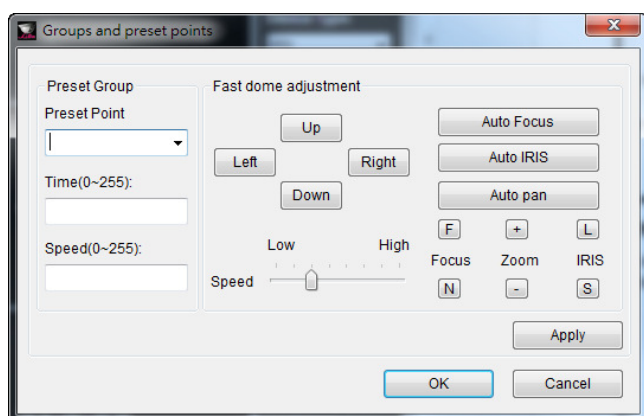
PTZ Control Panel

In Navigator, you are able to control the movements of PTZ cameras. Select the channel of a PTZ camera (e.g., IP Fast Dome) and click **PTZ Setting**  to control the movements freely using a PC keyboard and/or the PTZ control panel

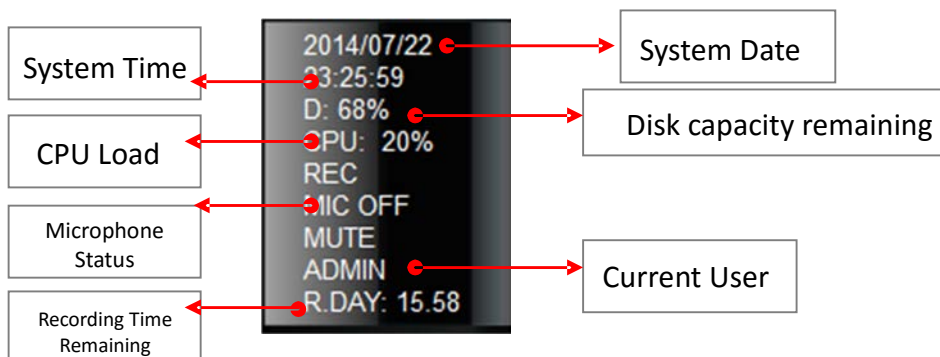
Preset Point Settings

To set up preset points, please invoke Presets dialog box. Follow the following steps:

- 1) Select preset point dropdown list.
- 2) Type the time field.
- 3) Type the speed field.
- 4) Click up, down, left, or right to move the IP Fast Dome to specific position.
- 5) Click Apply button to set the position.

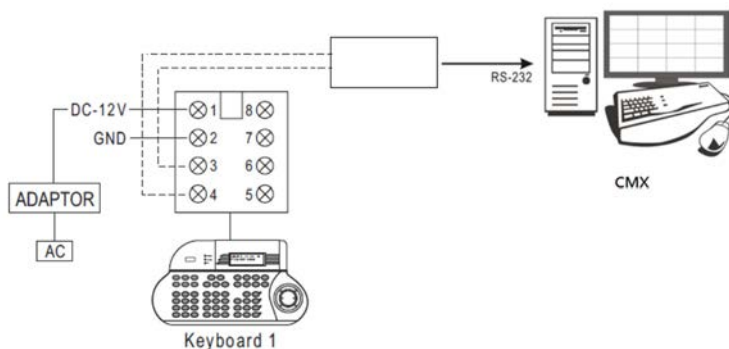


Navigator Status Panel



Control PTZ via PIH-931D Keyboard

Many Navigator functions can be activated with PIH-931D keyboards. Connect a PIH-931D keyboard to a Navigator host through an RS-232<->RS-485 convertor.



First, enter the DVR/NVR control mode by pressing SHIFT and DVR.



To use Navigator features, simultaneously press Navigator ID, DVR, and ENT.



To select a group, press and hold the monitor ID and MON before pressing the group ID and PRESET.



Split View

To switch split views, launch Navigator and press the following buttons:

	16-channel		8-channel	Navigator ID + DVR + ENT	36-channel
	9-channel		4-channel		

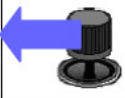
To enter the 36-channel view, simultaneously press the Navigator ID, DVR, and ENT. The operation is the same as operating a Navigator host.

Control a Camera

For control a camera, simultaneously press the camera number and CAM buttons.

Example: Control camera #8



	Zoom in		Zoom out
	Tilt up		Tilt down
	Pan left		Pan right
	Zoom in		Zoom out
	Focus near		Focus far
	IRIS small		IRIS large
	Auto Pan		

IP Camera ePTZ or ROI Feature

Several models of IP cameras provide ePTZ or ROI features. With the help of Navigator, you can use a keyboard controller to access ePTZ or ROI feature.

Switch between Navigator and Virtual Matrix Monitors

See Control PTZ via PIH-931D Keyboard to use Navigator features.

Now you can select a monitor for Navigator.



Press button 1 with MON to control #5 Navigator monitor.

Keyboard Playback

See Control PTZ via PIH-931D Keyboard to use Navigator features.

To access multi-channel playback, click the **Step Forward** button  to enter the playback mode.

To access single-channel playback, click the **Play** button .

In **Playback Timer Setup**, use the joystick to enter date and time. Press ENT button to search through videos. Press ESC to exit and press ESC again to exit the playback dialog box. The following introduces how to control playback with a PIH-931D keyboard.

Pause  : Stop playback.

Play  : Start or resume playback.

Forward  : Accelerates playback video.

Rewind  : Play the video backwards.

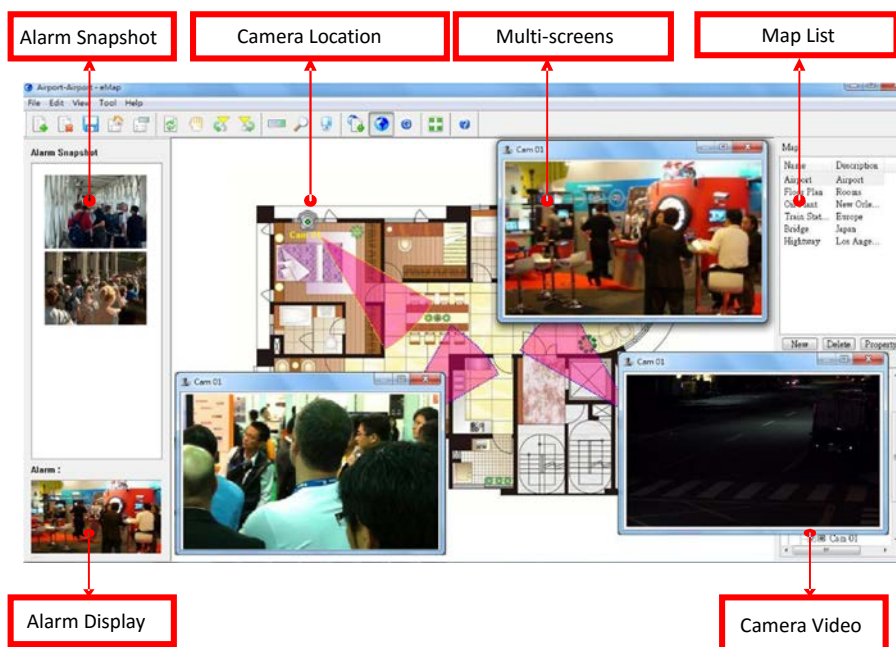
Stop  : Stop the playback and return to the playback menu.

Select various split display modes on live and playback monitoring.

eMap Manager

eMap is an application that can manage devices such as IP camera, IP Fast Dome, and DVRs/NVR on any maps. With eMap, user can easily locate a particular device on a map. Launch eMap Manager in **Navigator** → **eMap Manager**.

Access eMap



Find Devices

To find a device within eMap Manager, go to View→Find or click the Find Device icon , and a list of found devices appears at the bottom right corner of the screen. Choose any of the found devices.

PTZ Control Panel

To control PTZ device, double-click a PTZ device, and enjoy PTZ features on the PTZ control panel.

Toolbar

The buttons from left to right are described as follows:



Find device: Switch to the Find Device panel



PTZ control: Switch to the PTZ control panel.





Refresh: Refresh the map and device information.



eMap edit mode: Add or modify devices on the map.



Device list: Display the device list.



eMap alarm switching mode: Switch to the map where an alarm is detected.



eMap control mode: for PTZ control and live monitoring mode

eMap Alarm Options

Continuous snapshots:

The number of continuous snapshots is taken for each alarm.

Alarm snapshot interval (sec):

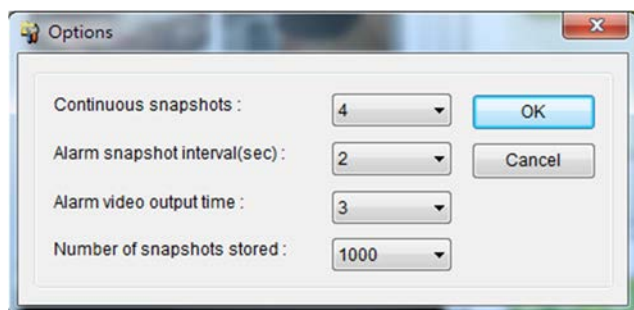
The time interval between photos to be taken.

Alarm video output time:

Triggering interval between alarm detections.

Number of snapshots stored:

The buffer size for storing JPEG snapshots.

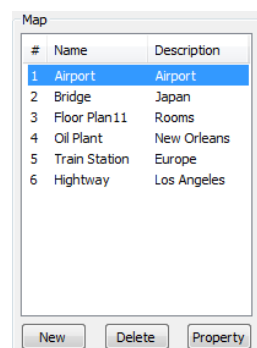
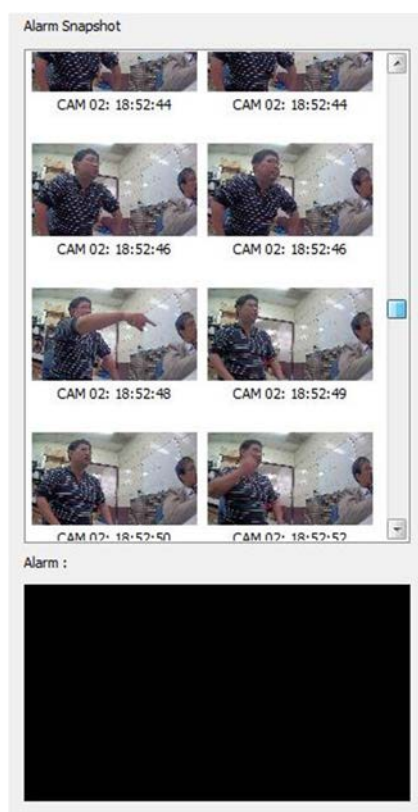


Add a Map

To add a new map, go to **File→Add Map**. Or you can press the **New** button at the top-right corner. Select the JPEG map file representing the installation site and enter map name and location information.

To delete a map, select the map in the Map List, and go to **File→Delete Map** or click **Delete** at the top-right corner.

Click **Property** to change the name and location of a map.



Add a Device to the Map

To add a device to a map, switch to the eMap edit mode before you drag-and-drop a device from Device List to its associated map. You will see a check next to the name of the added device.

Delete a Device from the Map

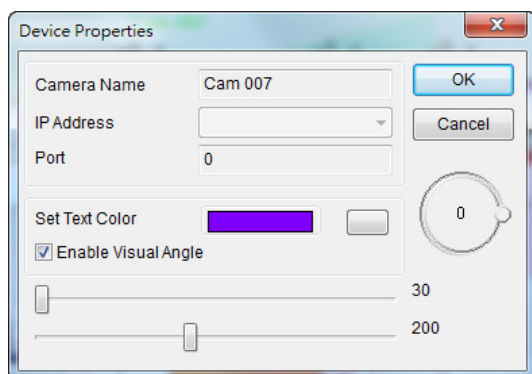
To delete a device from the map:

- 1) Select and right-click the device.
- 2) Select **Delete Device**.

Or, uncheck the device in the device list.

Modify a Device

To modify a device, go to **Edit→Device Property** or right-click a device and choose **Device Property**. In the popup dialog box, you are allowed to make changes to several configurations, including display color and camera coverage.

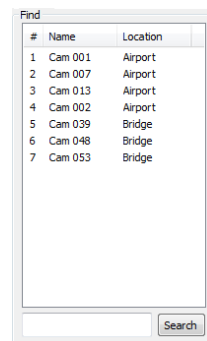


The circular shape on the right of the **Device Properties** window allows you to control the direction and angle of a camera. Click and rotate the camera view control clockwise/counter-clockwise to change the camera angle and move the two scroll bars at the bottom to adjust camera coverage.

Find a Device

You can easily add DVR, DVR camera, or IP-based devices to different maps. However, finding a particular device for video playback can be difficult and time-consuming. eMap Manager provides easy access to any device you want to monitor.

Click Find Device , or go to **View→Find** in the menu bar. A list of all devices in all maps will be shown at the bottom-right corner of eMap Manager. Double-click a device in that list for eMap to automatically switch to the map and show the device as well as its live video.

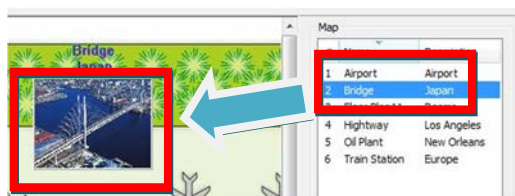


Alarm on eMap

If a motion or digital input alarm sent by Navigator is detected, the camera will start blinking on the associated map, and the live video will be displayed, too.

Quick Map Reference

In the eMap edit mode, drag any map from the list into the map view. This allows quick switching from one map to another by click on the map thumbnail.



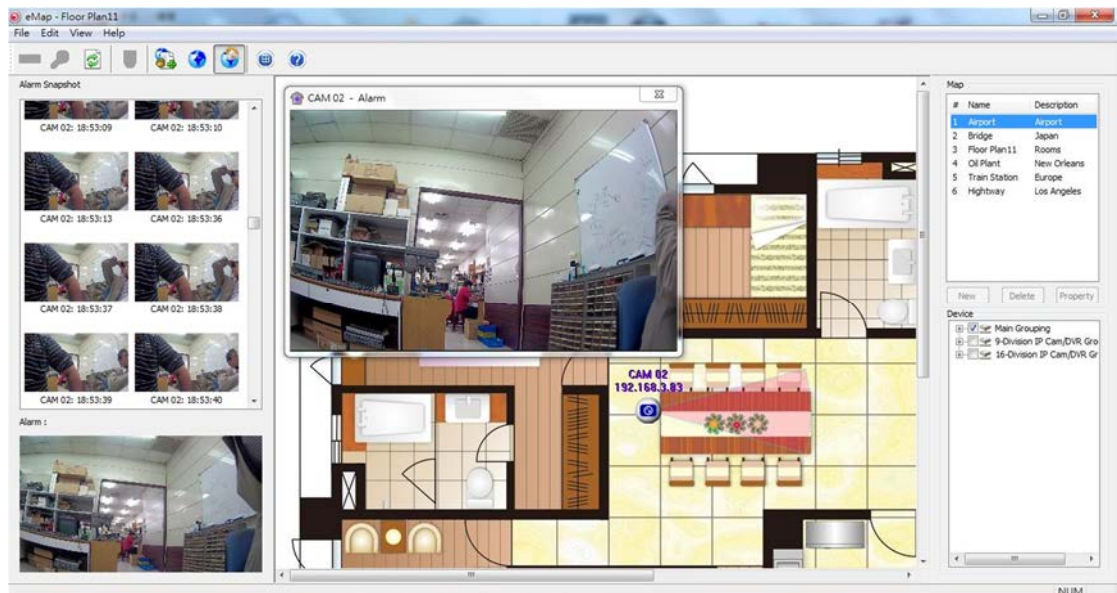
Alarm Control Mode & Switching Mode

In eMap Manager, it is possible to switch quickly and frequently between maps and videos. A user can

manually double-click on the camera icons for its live video. There are up to 4 windows that can be opened at same time. When switching from one map to another, the video window(s) will be closed, and previously opened video(s) will be played automatically in the map that just opens. The feature is very useful if you need to open the maps frequently.

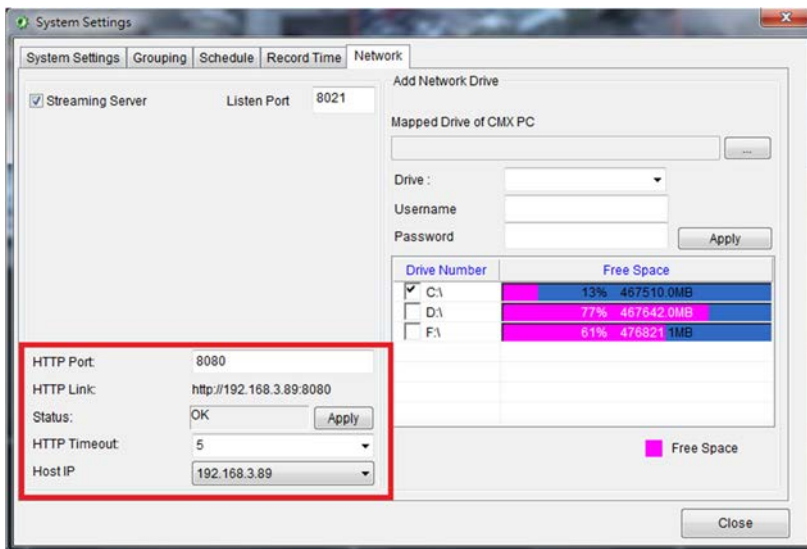


In the alarm switching mode, videos will appear on the associated map while an alarm is received. The videos will be shown in a pop-up window to attract your notice.

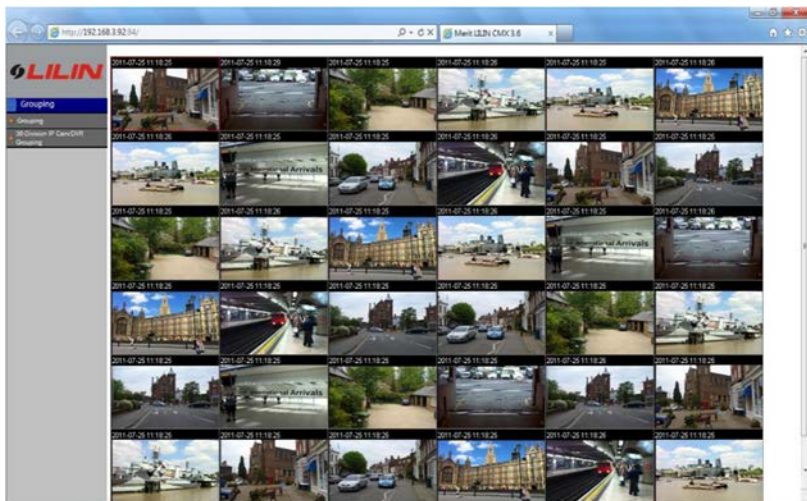


Web Server

Navigator can work as a web server to stream live video. To enable the service, go to **System Settings**→**Network** and enter the HTTP port you want to use.



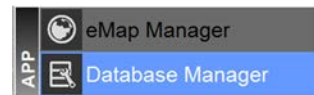
Then, you may either click the HTTP link or copy the link to the address bar of your Internet browser to view the video.



Note: HTTP streaming may require username and password.

Database Manager

Database Manager can generate user log report and event report. In addition, this built-in feature allows databases import, export, and repair

A screenshot of the 'Navigator Database Manager 64 Bits' window. It shows a table with 5 columns: '#', 'Date/Time', 'Event', 'IP Address', and 'Device'. The table contains 9 rows of data, all showing 'Video loss detected on' events from 'Cam 0' at various times on 2015/01/14. The window has a menu bar (File, View, Tool, Help) and a toolbar with various icons. A status bar at the bottom shows 'Page 1' and 'Today'.

User Log Report

Click User Log Report to show a complete user log. Press **File**→**Export Log** to export a CSV log file.

Event Report

Click Event Report to show a complete event report. Press **File**→**Export Log** to export a CSV log file.

Import Database

XML format databases can be imported into Database Manager. Click **Import DB** and choose the database you want to import.

Export Database

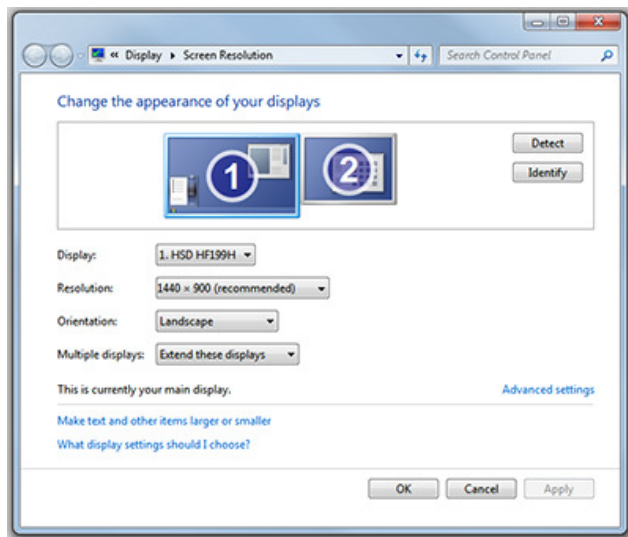
Database Manager supports database export to XML format files. Click **Import DB** and choose the database you want to import.

Multiple Monitors

Multiple monitors support is a native feature in Windows 7 or higher. This feature allows you to view different applications of Navigator on separate monitors.

One of the advantages of using multiple monitors is that you can control Navigator as well as its applications with just one set of input devices (e.g., mouse/keyboard).

Before connecting to an additional monitor, you must install a dual-display graphics card (optional). For settings of multiple displays, please refer to the user guide provided by Microsoft.

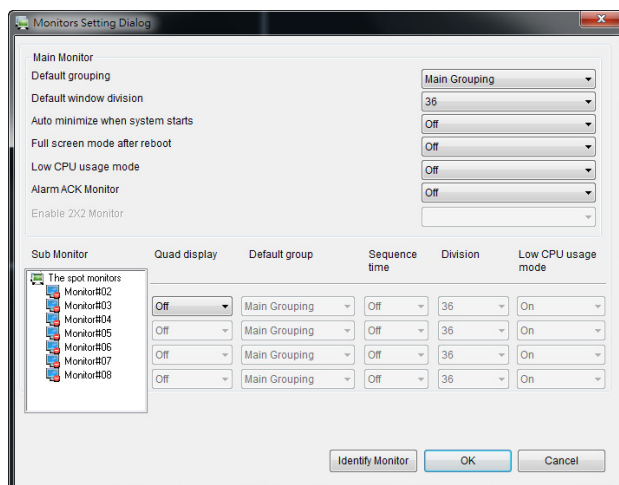


Multiple Monitors Virtual Matrix Output

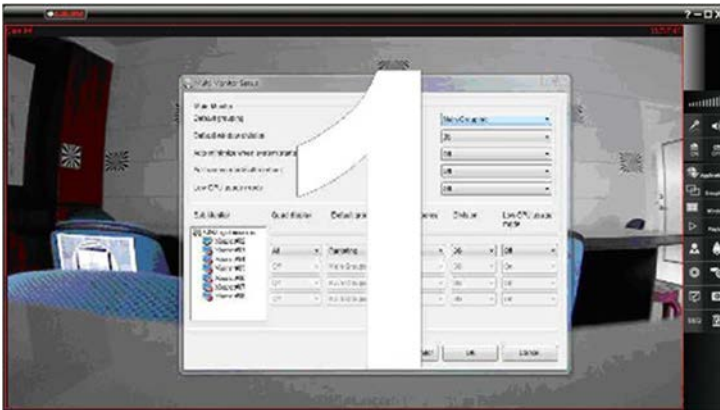
Navigator supports up to 6 monitors, one main monitor and 5 additional monitors. To connect up to 6 monitors, you may use ASUS 7970-DC2-3GD5 or other equivalent graphics cards.



After the graphics card is properly installed, click on **Monitor**  to show all the attached and detected monitors.



When all monitors are properly connected, click **Identify Monitor** to show display ID on each monitor:



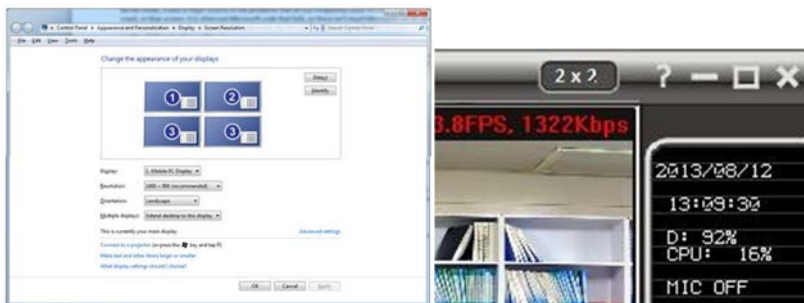
Functions related to multiple display output are described as followed:

- Quad display: Navigator can squeeze four 36-channel views into one large LCD screen.
- Default group: the group to be shown on the main monitor.
- Sequence time: sequential playback interval.
- Default window division: the default number of split views.
- Low CPU usage mode: enable I frame to reduce CPU load.

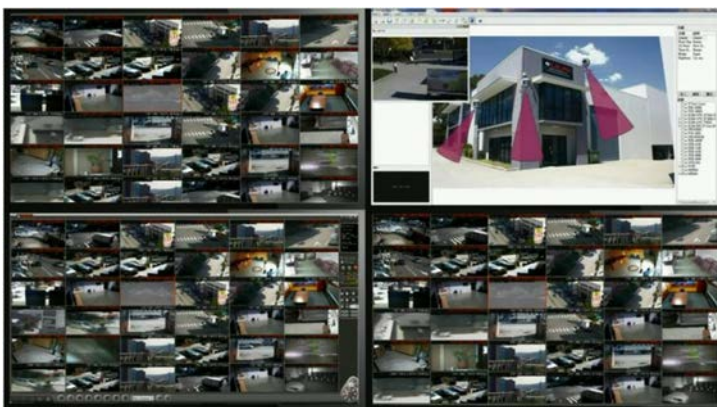
Navigator Software 2x2 Video Wall (Enterprise Only)

Four of the six monitors supported by Navigator can form a 2x2 video wall.

Go to **Control Panel**→**Display**→**Screen Resolution** to combine four 1920*1080 monitors to create a 3840*2160 resolution video wall.



After you finish with the settings, a **2x2** icon will appear at the top-right corner of Navigator, which supports three windows consisting of thirty-six split views and one eMap view.



Alarm Acknowledgement

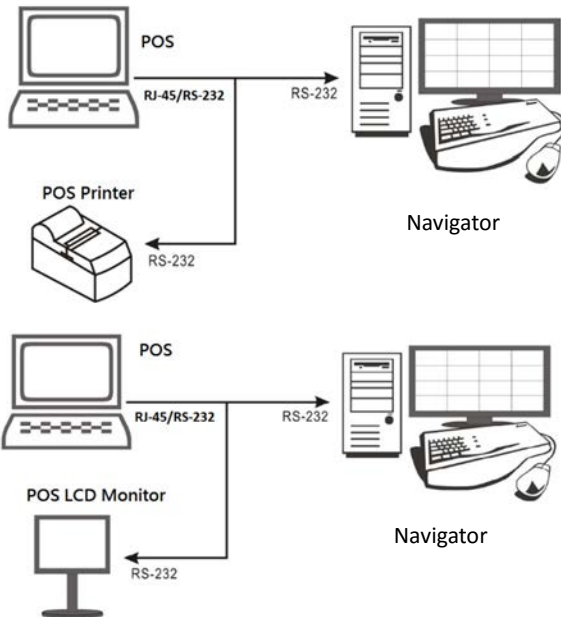
Alarm ACK can be activated for any monitor displaying alarm videos. Before you can manage the camera, you must first click **OK** to deactivate the alarm.

Retail and Distribution Business Solutions

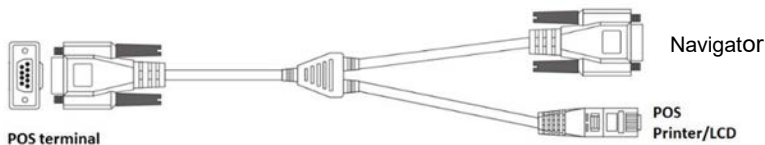
When connecting to a Point of Sale (POS) terminal ready, Navigator can retrieve POS transaction data, which will be displayed on live video and video playback. Navigator also provides smart transaction search for specific video clips.

Retail POS Application

Navigator listens to the ASCII output of a POS system via an RS-232/COM serial port. Check if your POS LCD or printer is compatible with ASCII or printer output for ASCII data of your POS system. Consult your POS provider for more details..



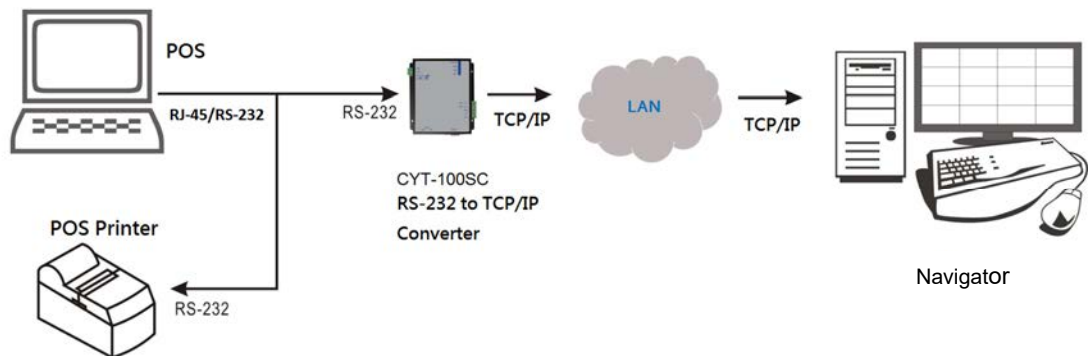
Please refer to the figure below to connect RS-232 RX/TX wires, a POS register/terminal, and Navigator host.



To connect more than one POS terminals, add more RS-232/COM ports into the Navigator host.

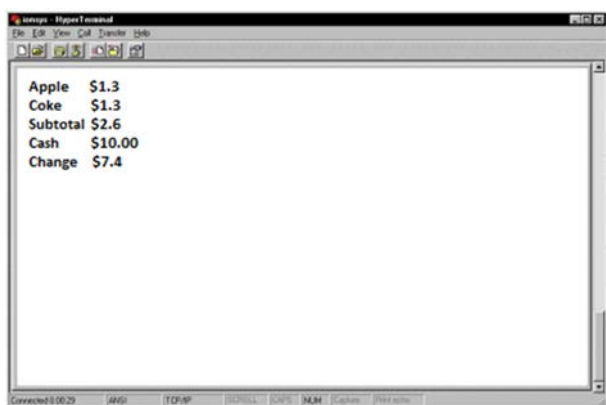
POS Connection via TCP/IP for Retail Business (Enterprise Only)

Navigator can connect to an RS-232 POS system through the network using a CYT-100SC RS-232 to TCP/IP converter. The driver disk enclosed in the box of CYT-100SC provides a RS-232 to TCP/IP conversion driver that allows you to establish a virtual COM port on a Windows-based PC. The virtual COM port can be adopted by Navigator to communicate with the POS system.



Test the Communication between a POS system and Navigator

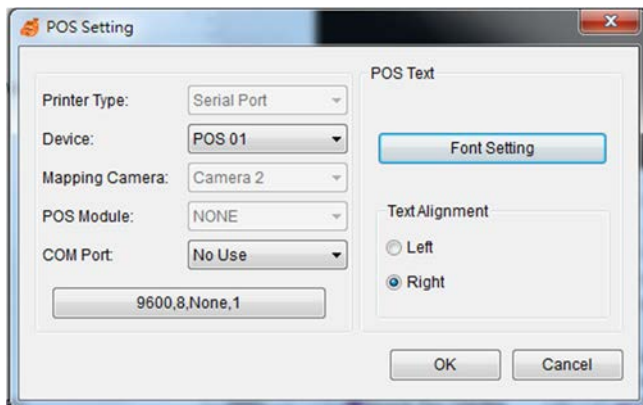
After the connection between the POS system and the Navigator host is established, use HyperTerminal or other alternative applications to test and verify whether the POS data can be captured by Navigator.



Link POS to a Camera Channel

To link a POS system to a camera channel, click **Properties**  and choose ePOS/OSD to open the **POS Setting** dialog box.

In **POS Setting**, please specify the following information to capture POS transactions.



Once the above information is set correctly, Navigator will capture and display POS transactions on live video.



Note: To demonstrate POS functions, press F3 to show simulated POS transactions.

POS Transaction Playback

Navigator supports video playback with associated onscreen transaction data. When you choose a POS transaction entry of any time, the video clip of that transaction will be played from that time.

Note: To demonstrate POS functions, press F3 to show POS transactions.

Search POS Transactions

To search a particular transaction entry such as amount of product, product name, subtotal, or total, you can enter search keywords in the **Condition** search box. Transactions containing the keyword will be displayed on the screen. You can click any of the search items to playback the videos.

Scanner Connection for Logistic Business

Barcode scanners are widely used in logistic business. When connected to a PC via a PS/2 connector, this device works as an input tool that reads numbers of 0–9 and sends the information to Navigator.

To use a barcode scanner in the transaction process, connect the scanner to the PS/2 port on your PC and choose **Barcode Scanner** in **POS Setting**. Information read by the scanner will be sent to this camera. Only one barcode scanner can be connected to one PC.

To search for data corresponding to the barcode scanner, refer to **POS Transaction Playback** and **Search POS Transactions** for more details.

Mobile Device Support

To satisfy your need for mobile surveillance, LILIN provides a mobile version of Navigator that supports iPhone and Android devices. You can download LILINViewer in App Store or Google Play for your iPhone, iPad, and other Android devices.



Navigator Software Streaming Client & Server

Navigator's built-in software server allows for video streaming to Navigator clients. Live streaming to clients may reduce CPU load of the IP camera.

Navigator Live Streaming



Navigator Streaming Server

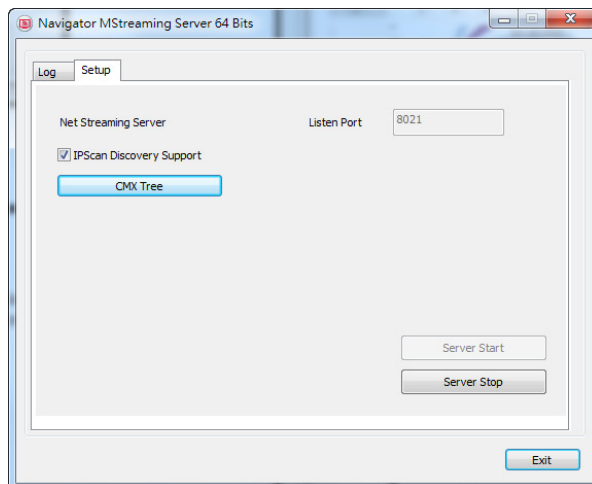
To enable the streaming function on Navigator, you may either check **Streaming Server** in the **Network** tab in **System Settings** and specify the port number therein, or go to **Start→All Programs→LILIN Navigator→Streaming Server**.

Note: Do not turn off **Streaming Server** if you want to perform live streaming.

Navigator Software Streaming Client

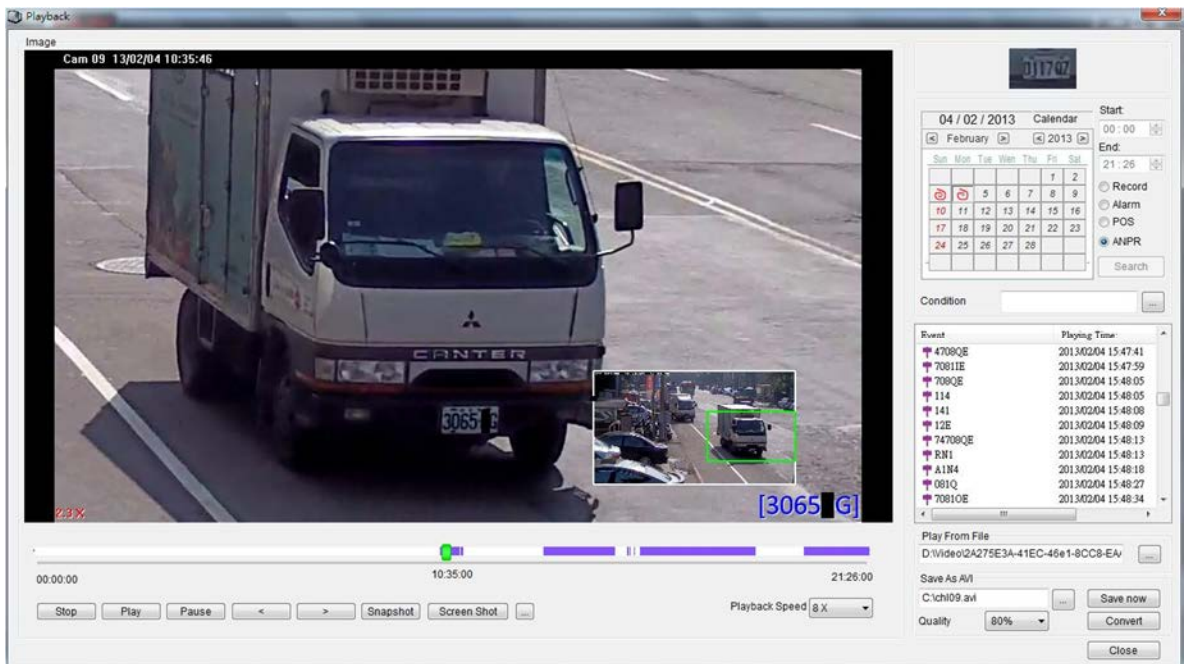
To connect to a Navigator live streaming server as client, click **Properties** and select **Navigator Live Streaming** from the drop-down list in **Device Type**. Then, enter the IP address and port number of the Navigator streaming server.

Due to bandwidth management, SD streaming and HD streaming can be selected. If the bandwidth is very low such as Internet, Low Bitrate mode can be selected.



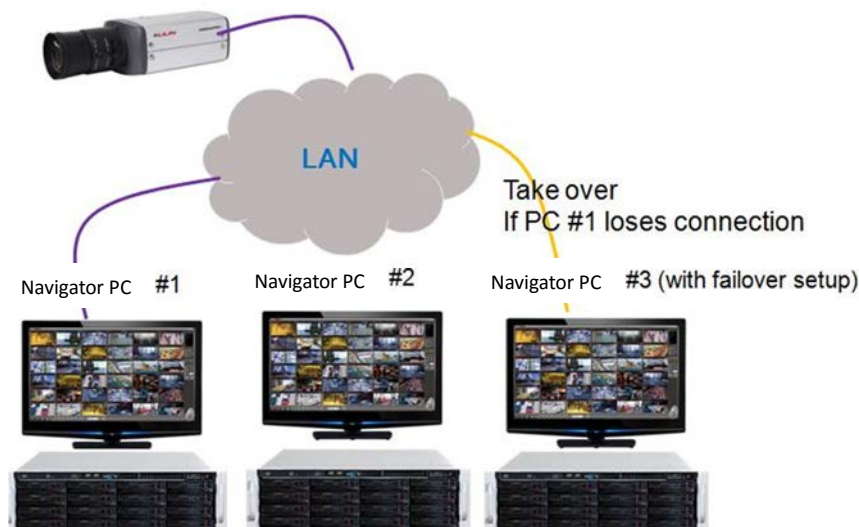
Automatic Number Plate Recognition (ANPR) (Enterprise Only)

Navigator is ANPR-ready with a USB dongle. Supported ANPR features include white list, black list, and exclusion list. For more details, refer to LILIN's ANPR manual.



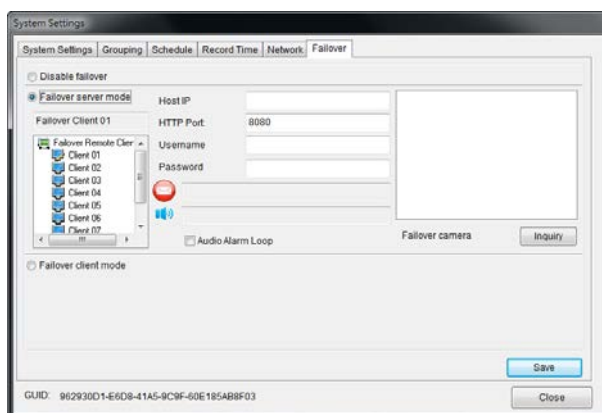
Failover (Enterprise Only)

Navigator is failover ready. If one or more cameras lose network connection or need to be switched off for maintenance, the camera with failover enabled can record videos for these cameras.



Enable Failover Monitoring Service

To enable failover on your workstation, please click **System Settings** and go to the **Failover** tab. Select **Failover server mode** if you want your workstation to operate as a failover server; select **Failover client mode** if you want your workstation to operate as a client. For failover server, choose one of the clients from the list, and specify the host IP address, port number, username, and password to enable the monitoring service. The default port for Navigator is 8080. To enable failure alarm, please select **Auto Alarm Loop**.



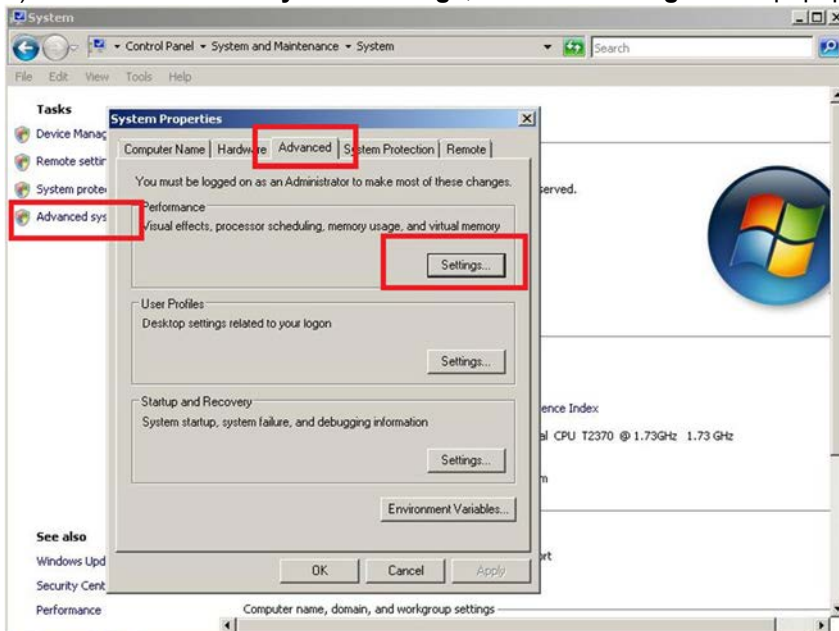
For failover client, enable **Failover** in **Properties** of the camera you want to use as the failover client.

Once all the server-end and client-ends are properly configured, click **Inquiry** to see all the monitored cameras on the failover server.

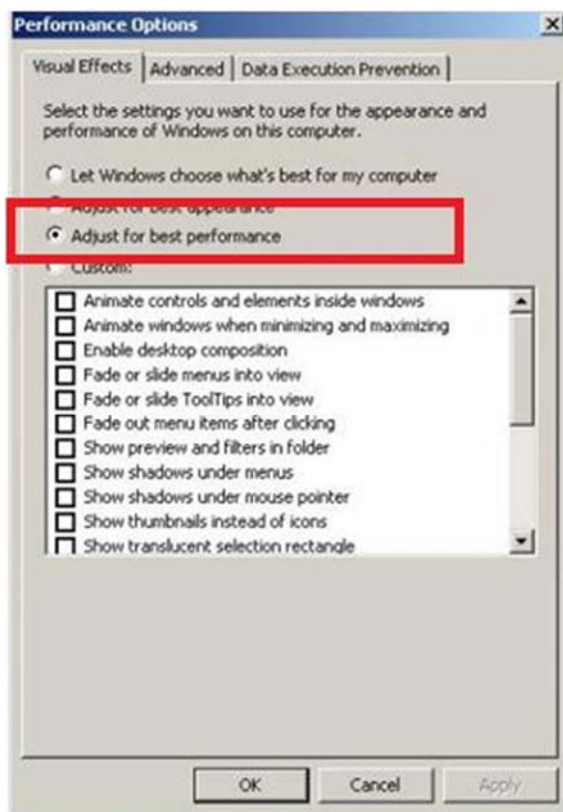
Troubleshooting

If you experience video flickering when using Navigator, you may follow the instruction to solve the problem.

- 1) For Windows 7, go to **Control Panel**→**System and Security**→**System**.
- 2) Click **Advanced system settings**, and click **Settings** in the popup window.



- 3) Choose **Adjust for best performance** and check if the flickering is solved.



APPENDIX

Minimum System Requirement

OS: Windows 7 or higher
CPU: Intel Core Duo processor 2.0GHz
RAM: 4 GB DRAM
HDD: Minimum 250 GB
Network: Gigabit network

Username and password

Default username and password for various devices are listed as in the table:

Device	Admin	Admin pass.	Oper	Oper pass.	Guest	Guest pass.
IP Cameras	admin	pass	None	None	guest	guest
DVR/NVR	admin	1111	None	None	guest	2222
Navigator	admin	EMPTY	operator	EMPTY	guest	EMPTY

Benchmark Environment:

Gigabit network card & Gigabit hub * 1

Hardware Accessories Support List

Graphics Card Supporting 6 Monitors:

ASUS 7970-DC2-3GD5 has been tested and verified for supporting 6 monitors.

USB to RS-232/RS-485 for LILIN PIH-931D Keyboard or RS-232 POS

Merit LILIN PMH-RS485/USB

RS-232 to TCP/IP for RS-232 Access Control, PIH-931D Keyboard, and RS-232 POS

CYT-100SC RS485/RS232 to TCP/IP Converter

Ethernet Digital Remote I/O

ioLogik E1210, E1211, E1212, E1214

Ethernet Cash Register

APG-480/APG-490

Video Decoder

LILIN VD022

Navigator Software Specification

	Navigator Lite	Navigator Enterprise & RAID
Application	32 bits	64 bits
Recording	Schedule / Motion detection / Manual recording	
Live	Up to 36 channel after registration	Up to 108 channels
Speed	Up to 400Mbps upload and download	
Resolution	Up to 5MP 12 FPS, 2MP at 30 FPS	Up to 4K 30FPS and 2MP at 120FPS
Schedule	7 day * 24 hrs time table, recording mode configurable	
Alarm recording	Face detection, audio detection, tampering, motion, DI alarm detection	
ONVIF	None	Licensing
NAS	None	Yes
RAID failure notification	None	LSI driver integrated
Playback	Time search, event search, date search, POS SmartSearch, and motion SmartSearch	
Speed	FR: 2x, 4x, 8x, 16X 32X / FF: 2x, 4x, 8x, 16X, 32X	
Compression	H.264 / MJPEG	
Search	Date, time, event, POS SmartSearch, motion SmartSearch, plate search (optional)	
Tagging	None	Video tagging for overwritten protection
Multiple channel playback	Up to 36 channels & grouping playback	
Remote playback	Remote multiple channel playback for SD card, NVR/DVR, and Navigator	
Video Input	LILIN IP camera, LILIN IP speed dome, LIIN DVR/NVR, Navigator Software live server	
Camera name	20 characters	
Channel editing	Mouse drag-n-drop	
Digital zoom	Yes, ePTZ supported for live and playback	
Low bandwidth mode	JPEG snapshot input and record	
Multiplexer	Sequence	
Split screen	4, 9, 16, 36	4, 9, 16, 25, 36
2 x 2 video wall	None	Yes
Video decoder	None	LILIN VD022 for video wall
Corridor mode		Yes
Alarm		
Alarm management	PC sound, redirect IP camera DO, eMail snapshots, redirect a PTZ preset recall	
Event	Various alarm log, video loss, stop recording, schedule, logon, operation log	
Digital output	Controllable via LILIN IP camera DO	Third party TCP/IP digital output supported.
Alarm scheduling	Up to one alarm table	Up to four alarm tables with AND logic
Accessories		
P/T/Z protocol	LILIN PTZ controllable via HTTP	ONVIF PTZ Supported
Audio	PCM/G.711, two-way	audio, audio recording
POS/barcode Scan/ATM	RS-232/PS/2	Third party TCP/IP RS-232 supported
Keyboard	PIH-931D keyboard controllable via RS-485 for PTZ, ePTZ, and ROI features	
Number plate recognition	None	Optional
eMap		
eMap live monitoring	One channel for IP camera/multi-channel for NVR/DVR	
PTZ control	Yes	
Alarm	Digital output controllable, snapshots, and alarm popup	
DB Manager		
Database	Database configuration database import & export, CVS file, report, and maintenance	
Event search filter	Yes	
Remote Access		
Remote NAV Live video	Multiple channels of HD, SD, and low bitrate modes supported	
Remote DVR/NVR video	Multiple channels of DVR/NVR supported	
Backup		
NAV/DVR/NVR	DVR remote backup, AVI conversion and JPEG snapshots	
Remote backup	Multiple channels remote backup supported	
Failure over	None	Up to 108 channels for 4 Navigators
Archiving	None	Yes

Management		
Access log	Complete access log in database manager	
User management	User authentication: three level: admin, operator, and guest, features configurable	
Recording calculator	Yes, dynamically calculating available recording days	
Navigator Client	Yes	
Network		
Web interface	Live web interface	
Mobile support	iPhone and Android	
Protocols	ARP / TCP/IP / RTSP / ONVIF / HTTP / SMTP / DNS / PPPoE	
IPScan	Supported, easy-to-setup for IP address	
Other		
DST	Daylight saving time by Windows OS	
Time sync	IP camera and NVR	
OS	Windows 7 or higher	
Language	English, Chinese, Spanish, French, Italian, Japanese, Russian, Portuguese, Simplified Chinese, Czech, Slovene, German, Turkey, and Hungarian	
CPU requirement	Minimum Intel Duo CPU 2.0 GHz or above	Intel E5 or I7
RAM requirement	4GB memory	8GB memory