

Operating Instructions

Network Video Recorder, H.264

4 IP-Channel, PNR-5104

8 IP-Channel, PNR-5108

16 IP-Channel, PNR-5116





WARNING
RISK OF ELECTRIC SHOCK
DO NOT OPEN



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

COMPLIANCE NOTICE OF FCC:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. We are not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

The software included in this product contains some Open Sources. You may obtain the complete corresponding source code from us. See the Open Source Guide on the software CD (OpenSourceGuide\OpenSourceGuide.pdf) or as a printed document included along with the User's Manual.

Important Safeguards

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Keep Instructions

The safety and operating instructions should be kept for future reference.

3. Cleaning

Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments

Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

5. Water and/or Moisture

Do not use this equipment near water or in contact with water.

6. Accessories

Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.



This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

7. Ventilation

Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the equipment and to protect it from overheating. These openings must not be blocked or covered. Do not block these openings or allow them to be blocked by placing the equipment on a bed, sofa, rug, or bookcase. Ensure that there is adequate ventilation and that the manufacturer's instructions have been adhered to.

8. Power Sources

This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

9. Power Cords

Operator or installer must remove power and other connections before handling the equipment.

10. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

11. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

12. Objects and Liquids

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

13. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

14. Damage requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- A. When the power-supply cord or the plug has been damaged.
- B. If liquid is spilled, or objects have fallen into the equipment.
- C. If the equipment has been exposed to rain or water.
- D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
- E. If the equipment has been dropped, or the cabinet damaged.
- F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

15. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

16. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

17. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

18. Telnet Communication Cable

Caution: To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

19. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by manufacturer. Discard used batteries according to the manufacturer's instruction.

WEEE (Waste Electrical & Electronic Equipment)

Correct Disposal of This Product

(Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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Chapter 1 — Introduction

This manual describes installation and operation of Network Video Recorder (NVR), which is designed to be used with network cameras, network video transmitters and DVRs.

1.1 Features

This network video recorder provides monitoring of video from network video transmitters, network cameras and DVRs, recording of monitoring video (DVR excluded) and playback of video recorded in the NVR system or DVR.

- Remote monitoring of live images
- Remote monitoring of live images in a WAN environment through a streaming service by up to two users (the number of channels that can be streamed equals the number of channels that can be recorded)
- Management and monitoring of multiple NVR systems (max. 256) using Federation Service
- Up to 10 simultaneous connections to the NVR system
- Remote software upgrades and system setup (supported only for devices which provide the functions)
- Display of system log information (supported only for devices which use the iNEX protocol)
- Map monitoring of live images
- Centralized system operation and management and event handling
- Management of multiple NVR systems (max. 256) using Federation Service
- Decompression algorithm for H.264, MPEG-4 and M-JPEG
- Enhanced security using the SSL function
- Two-way audio communication
- Enhanced security by setting up different authorities for each user group
- Intuitive GUI
- The following are supported only for network cameras and network video transmitters:
 - Recording of video and playback of the recorded video
 - Instant Recording of monitored images
 - Audio recording
 - Stable recording using proprietary video database file system
- The following are supported only for DVRs:
 - Playback of video recorded in DVRs
 - Remote control of panic recording
- Number of devices that can be registered and channels that can be recorded and streamed:
 - Registration: Maximum of 128 devices (16 for DVRs)
 - Recording (not supported for DVRs): Maximum of 4 (4-channel model) /8 (8-channel model) /16 (16-channel model) channels
 - Streaming (not supported for DVRs): The number of channels that can be streamed equals the number of channels that can be recorded.

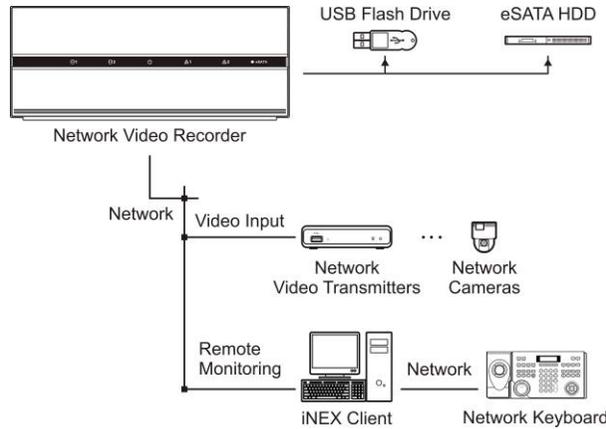
NOTES:

- If the device is a four-channel network video transmitter which uses the iNEX protocol, all four cameras are counted even if some of the four cameras are disabled, and four channels per network video transmitter are deducted from the number of channels available for recording and streaming.
- The iNEX Federation software is provided to allow you to build better surveillance systems. Refer to Chapter 18 — Federation Service (p. 131) for details.
- This manual covers the 4-, 8- and 16-channel network video recorders. For simplicity, the illustrations and descriptions in this manual refer to the 16-channel model.

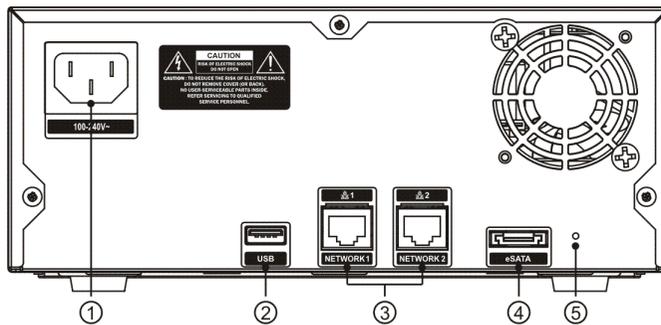
NOTES:

- This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org>).
- The software included in this product contains some Open Sources. You may obtain the complete corresponding source code from us. See the Open Source Guide on the software CD (*OpenSourceGuide* *OpenSourceGuide.pdf*) or as a printed document included along with the User's Manual.

1.2 System Diagram



1.3 Rear Panel



- ① **Power In:** Connect a power cord.
- ② **USB Port:** Connect a USB flash drive to upgrade the software. Disconnect power from the NVR and connect a USB flash drive containing the upgrade package file (.rui and autorun.txt) to the NVR. The autorun.txt file should contain only the upgrade file name and its extension (.rui) (ex. Install=160-1601.rui). Connect power to the NVR, and the software will be upgraded automatically. When upgrading is complete, a beep sounds. You can upgrade the software remotely by running the INIT program or iNEX program. Refer to 3.1 Connecting (p. 11) for details about remote software upgrade using the iNEX program. Refer to the INIT User's Manual for details about remote software upgrade using the INIT program.
- ③ **Network (RJ-45):** Connect a Cat5/Cat5e cable with an RJ-45 jack. Refer to 3.1 Connecting (p. 11) for details about network setting.
- ④ **eSATA:** Connect the external eSATA hard disk drive cable to connect external storage devices.

- ⑤ **Factory Reset Switch:** Use to return all settings except device related settings to the original factory settings. See below for details.

NOTES:

- Do NOT connect or disconnect eSATA devices while the NVR power is on. The NVR must be powered down to connect or disconnect eSATA devices. Power up eSATA devices so they are ready for operation before powering up the NVR. Power down eSATA devices after powering down the NVR and then disconnect eSATA devices.
- If the eSATA device is shut down while the NVR is operating, the NVR system might not operate normally.

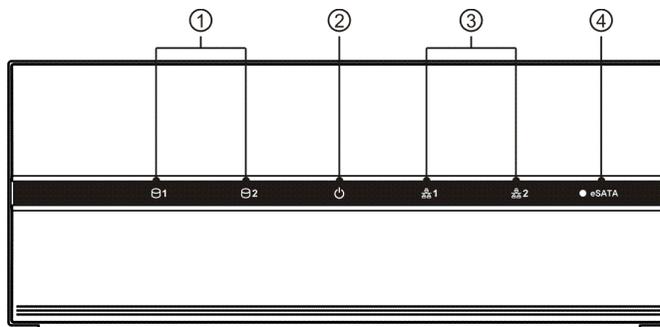
Factory Reset

This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

CAUTION: When performing a Factory Reset, you will lose any settings except device related settings you have saved.

Cut off the power from the NVR. → Poke a straightened paperclip into the factory reset switch hole. → Turn on the power while holding the reset switch → Release the switch after the system turns on and a beep sounds. → The NVR resets to factory defaults and restarts after completing the factory reset.

1.4 Front Panel



- ① **HDD LED:** A green LED flickers when the system accesses to the hard disk drive. A red LED is lit when any error occurs in the hard disk drive. If the system does not boot up normally due to a hard disk drive error, red LEDs are lit and a beep sounds.
- ② **Power LED:** Is lit when the unit is turned on.
- ③ **Network LED:** Is lit when the NVR is connected to a network via Ethernet.
- ④ **eSATA LED:** Flickers when the system accesses to the eSATA hard disk drive.

1.5 Tuning On/Off the System

Connecting the power cord to the NVR turns on the unit.

Chapter 2 — Installation

You can connect the NVR system remotely only via network connection. This requires installing the following programs in your PC.

- **INIT Program:** Allows you to set up network information of the NVR system for remote connection.
- **iNEX Program:** Allows you to set up the NVR system, to monitor video of the NVR system and to play back video recorded in the NVR system.

Package Contents

- Installation CD (iNEX/INIT Software, Network Video Recorder/INIT User's Manual)
- Quick Reference Guide

2.1 INIT Program

The INIT program does not require installation procedures, and double clicking the executable file runs the INIT program. Refer to the INIT User's Manual for details about the INIT program.

NOTE: The INIT program provides the following functions only:

- Lookup, Setup – IP Address Setup, Management – Upgrade.
1. Check that the NVR system is operating.
 2. Insert the installation CD and run the INIT program by double clicking the **INIT.exe** file in the INIT folder.
 3. Select the NVR system to connect.
 4. Click the **Setup** icon  in the Main screen, select **IP Address Setup** and enter the login information (The default user ID is **admin** and default password is **12345678**).
 5. Enter the network information when the IP Address Setup screen appears. You can check the network information including the administration port number of the NVR system by selecting the NVR system, clicking the right mouse button and selecting **Properties** on the Main screen.

2.2 iNEX Program

System Requirements

Recommended Requirements

- Operating System: Microsoft® Windows® XP x86 (32 Bit)/Vista (Home Basic, Business, Ultimate, Enterprise), Microsoft® Windows® 7 (Home Premium, Professional, Ultimate)
- CPU: Intel Core II Quad 8200 2.33 GHz or faster
- RAM: 2GB or more

- VGA: ATI Radeon™ HD 3650 or NVIDIA GeForce 8400GS (ATI recommended) (1024x768, 24bpp or higher)
- Hard Disk Drive: 350 MB or more free space
- LAN: Gigabit Ethernet or faster

Minimum System Requirements

- Operating System: Microsoft® Windows® XP Home SP 3
- CPU: Intel Pentium IV 3.0 GHz or faster
- RAM: 1.5 GB or more
- VGA: ATI Radeon™ HD 2400 or NVIDIA GeForce FX5500 (ATI recommended) (1024x768, 24bpp or higher)
- Hard Disk Drive: 350 MB or more free space
- LAN: 10/100 Mbps Ethernet or faster

Installation

NOTES:

- The Client program should be installed on a PC for monitoring, recording and playback of video. If necessary, install the federation service for management and monitoring of multiple NVR systems. Refer to Chapter 18 — Federation Service (p. 123) for details about the federation service.
- In the Windows Start menu, go to *Control Panel*. Double click the *Power Options* to open the Management Properties dialog box. Under the *Power Schemes* tab, set both *Turn off monitor* and *Turn off hard disks* to *Never*.

CAUTION: If an older version of iNEX software is installed on your computer, a screen appears asking you to upgrade the software. In this case, you are required to upgrade the software according to the instructions in the screen.

1. Insert the software CD in the PC.
2. Run the ClientSetup.exe file of the software CD.

NOTE: The *User Account Control* window might appear when using the Microsoft® Windows® Vista or later operating system. Click *Allow* and install the software following the instructions.

3. Select the language in which to run the program and then click OK.



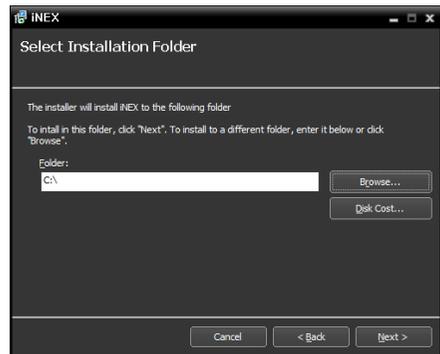
NOTES:

- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the iNEX program's language after the software has been installed, select *Language Selector* in the *iNEX* → *Utility* folder of the *Start* menu before running the *iNEX* program.

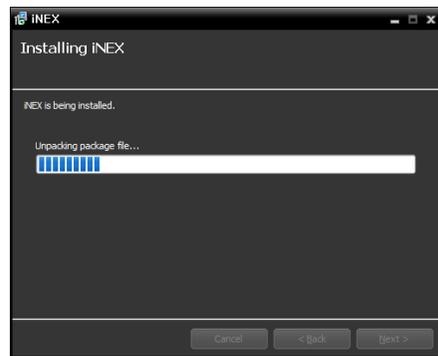
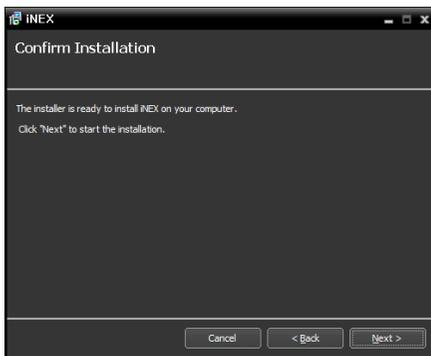
4. When the following screen appears, click Next.



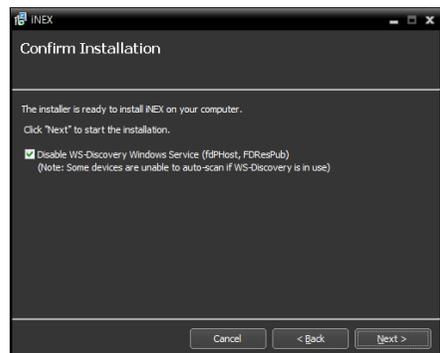
5. Designate the folder path to install the Client program. Clicking the Disk Cost... button shows the available and required disk space for each hard disk drive for the installation. Then click Next.



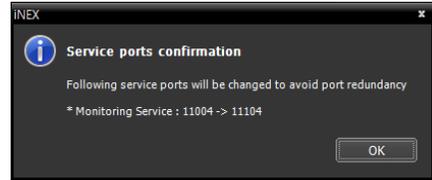
6. When the following screens appear, click Next.



NOTE: The following screen appears when using Microsoft® Windows® Vista or later operating systems. It is recommended that you check the *Disable WS-Discovery Windows Service (fdPHost, FDResPub)* box. If you do not check the box, the iNEX program cannot auto-scan devices using ONVIF™ protocol when scanning devices for device registration.

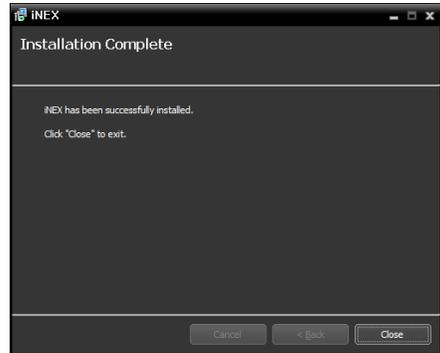


NOTE: The following screen appears when the port number of the service being installed is already in use, and the screen displays the port number that will be changed. The changed port number will be applied when the service starts operating after installation.



NOTE: .NET Framework and the Visual C++ Runtime Libraries are installed automatically, and it may take some time. This installation step will be skipped if the programs are already installed on your computer.

7. When the following screen appears, click the Close button to complete the installation.



Uninstall

1. Stop running the services and Client program first.

NOTE: The iNEX software might not be uninstalled correctly if you uninstall it while the services or Client program is running.

CAUTION: The iNEX software should be uninstalled following the procedures below. If you delete the installation folder manually, the iNEX software cannot be uninstalled or reinstalled.

2. Go to the Start Menu, and click iNEX. Click Uninstall iNEX.

NOTE: You can uninstall the software by using the software CD. Insert the software CD in the PC and run the *ClientSetup.exe* file. Select *Remove* and click *Next*.



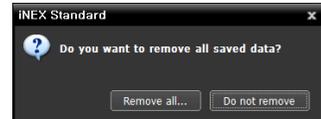
3. Click Yes when the following screen appears.



4. Click the **Remove All** or **Do not remove** button when the following screen appears. Clicking the **Remove All** button deletes all saved data including recorded video and previous settings in the system. Clicking the **Do not remove** button uninstalls the software without deleting any saved data in the system and keeps all saved data in the system.

NOTE: The deleted data cannot be restored once the data is deleted.

5. Click the **OK** button to complete the uninstall process.



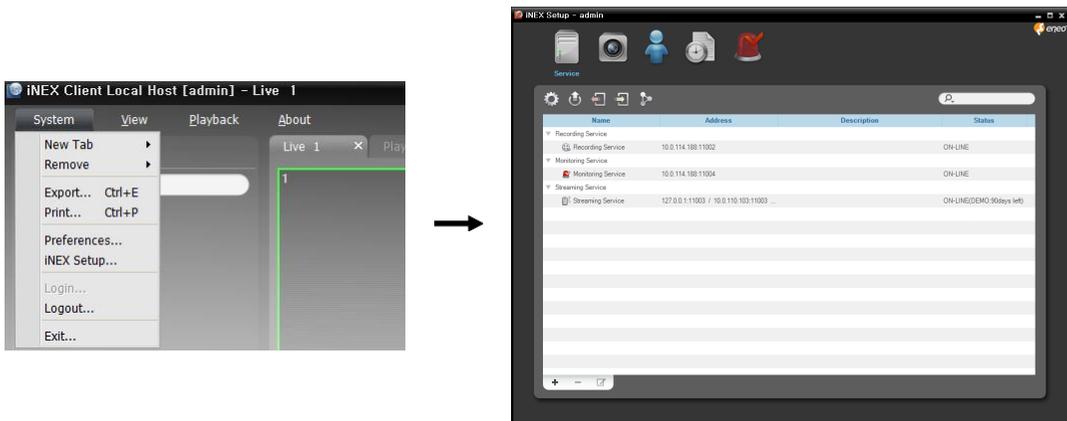
Chapter 3 — Getting Started

NOTE: In this manual, the “server or server system” refers to a PC on which a iNEX service is running, the “client system” refers to a PC on which the Client program is running and the “network video device” refers to a network video transmitter or network camera.

3.1 Connecting

When it is complete to set up network information of the NVR system using the INIT program and to install the iNEX program, connect to the NVR system remotely as follows:

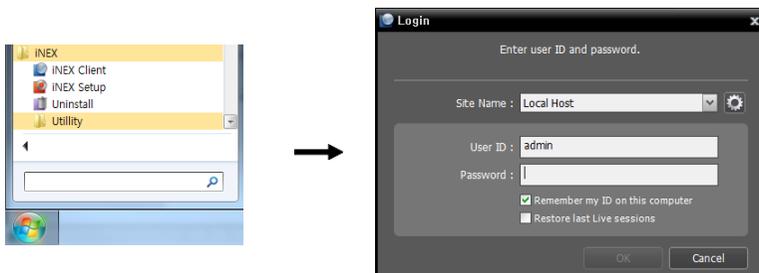
Log in the NVR system in the iNEX Client system → Click iNEX Setup in the System Menu and run the iNEX Setup program. Refer to following explanation for details about logging in the NVR system.



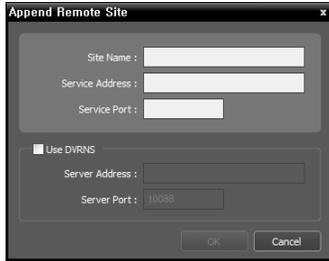
- (System Setup): Clicking the button allows you to set up the system. Refer to System Setup (p. 12) for details.
- (Upgrade): Clicking the button and selecting a upgrade file upgrades the software of NVR system. You can also upgrade the software by using the INIT program (Run the INIT program → Click the Management menu → Select Upgrade). This is supported for the users belonging to the default user group (Administrators).

Log In

Go to the Start Menu in the Client system → Click iNEX → Run the iNEX Client program and enter login information.



Site Name: Select the NVR system to connect to from the list. If you connect to the NVR system for the first time, click the  button at the right, select **Add** or **Modify** and enter network information of the NVR system to connect

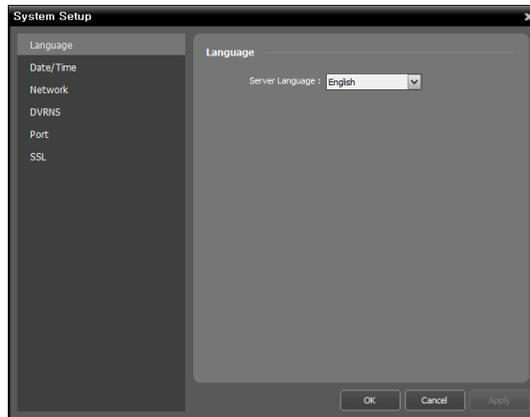


- **Site Name, Service Address, Service Port:** Designate the name of the NVR system and enter the IP address and port number of the NVR system (default: 11001). If the NVR system uses the DVRNS function, check **Use DVRNS** and enter the IP address (domain name) and port number of the DVRNS server that the NVR system is registered. It allows you to enter the name instead of the IP address of the NVR system when entering Service Address. The name you enter should be the same as the name registered on the DVRNS server. Refer to **System Setup, DVRNS** (p. 14) for details about the DVRNS function.

- **User ID, Password:** Enter your user ID and password. The default user ID is **admin** and default password is **12345678**. You can change the user ID and password in the User menu. Refer to **Chapter 13 — User Management** (p. 105) for details.
- **Remember my ID on this computer:** Check the box if you want to save your ID for logging on.
- **Restore last Live sessions:** Check the box if you want to restore the previous live monitoring sessions in the current Live panels of the Client program (supported only for the Client program).

System Setup

Click the  (System Setup) button to display the system setup screen.



Language



Select the language in which to run the NVR system. It is not necessary to match it to the iNEX program's language. It is recommended to match it to the language of text such as camera titles of devices to be registered on the NVR system. Otherwise, text may not be displayed properly on the iNEX program.

Date/Time

Date/Time

Date : 2011-06-27

Hour : 3:21:02

Time Zone : Asia/Seoul (GMT + 09:00)

Use Daylight-Saving Time

Time Sync

Automatic

NTP Server : time2.kriss.re.kr

Interval : 3 Hour(s)

Run as Server

- **Date, Time, Time Zone:** Displays the date, time and time zone of the NVR system.
- **Time Sync**
 - **Automatic Sync:** Automatically synchronizes the time with a time server. Enter the IP address or the domain name of the time server and set the time interval for synchronization.
 - **Run as Server:** Check the box to run the NVR system as a time server.

Network

Network Configuration

interface 1

Type : Manual

IP Address : 10.0.114.183

Subnet Mask : 255.255.0.0

Gateway : 10.0.0.11

From DHCP : No

DNS Server : 10.0.0.23

A list of network cards installed in the NVR system is displayed. Selecting a network card displays the network information of the selected network card and clicking the **Setup** button allows you to change the network settings. Ask your network provider for details about the network connection type and connection information for the NVR system or the IP address of the DNS server.

- **IP Address Type:** Select the type of NVR system's network configuration.
 - **Set Manually:** Select when the system is using a static IP address for network connection, and set up LAN parameters manually.
- **DHCP:** Select when the system is networked via DHCP (Dynamic Host Configuration Protocol). Click the **Apply** button, and network information is automatically assigned to the device. If the NVR system is configured for a DHCP network, it is best to use the DVRNS function because the NVR system's IP address might change frequently. See DVRNS below for details about the DVRNS function.
- **DNS Server:** Enter the IP address of the DNS server. If you set up the DNS server, the domain name of the server can be used instead of the IP address during the DVRNS or time server setup. Ask your Internet service provider for the IP Address of the DNS Server. When the NVR system is networked via DHCP, selecting **From DHCP** automatically assigns the IP address of the DNS server. The assigned IP address is displayed the next time it is connected.

DVRNS

DVRNS Setup

Server Address : 10.0.114.141

Server Port : 10088 (10000~12000)

Use DVRNS

Use NAT

Name :

- **Server Address, Server Port:** Enter the IP address (domain name) and port number of the DVRNS server to register the NVR system.
- **Use DVRNS:** Allows you to enter the name instead of the IP address of the NVR system by using the DVRNS function when connecting to the NVR system.

- **Use NAT:** Check the box when the NVR system uses a NAT (Network Address Translation) device for network connection.
- **Name:** Enter the NVR system name to be registered on the DVRNS server. Check whether or not the name is available by clicking the **Check** button.

NOTES:

- The DVRNS (DVR Name Service) function allows the NVR system to use dynamic IP addresses for remote connection. When using this function, you can access the NVR system remotely by using the NVR system name instead of its IP address. For the DVRNS function to work properly, the NVR system should be registered on the DVRNS server.
- When LAN settings are changed, set up the DVRNS settings after saving your LAN changes by clicking the **OK** button.
- You will need to get the IP address or domain name of the DVRNS server from your network administrator. You can use the domain name instead of IP address if you set up the DNS server during the IP Address setup.
- When using a NAT (Network Address Translation) device, refer to the NAT manufacturer's instructions for the proper network settings.
- The NVR system name you entered in the *Name* field should be checked by clicking the *Check* button, otherwise the DVRNS changes will not be saved. When entering no name or a name already registered on the DVRNS server, an error message displays.

Port

Port

Admin Port : 11001

Recording Port : 11002

Monitoring Port : 11004

It allows you to change the port numbers of the administration, recording and monitoring services that are running in the NVR system.

SSL

SSL Setup

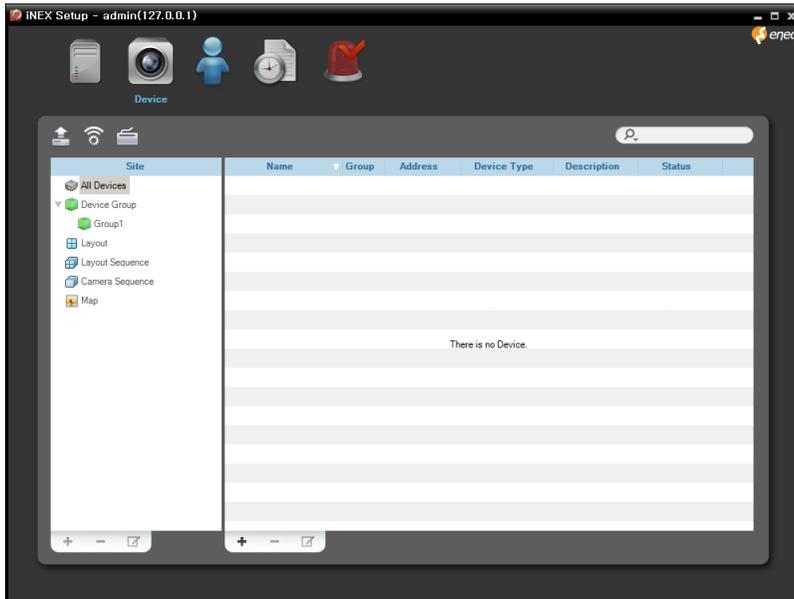
Use SSL : Not Use

- **Use SSL:** Allows you to enhance the security of data transferred between services of the iNEX program by using the SSL (Secure Sockets Layer) protocol. Using the SSL function might cause congestion in the NVR system depending on the security level. Log in the iNEX program again after you change the setting. When the setting is changed, all services that are currently connected to the administration service reconnect, and the iNEX Setup and iNEX Client programs are logged out.

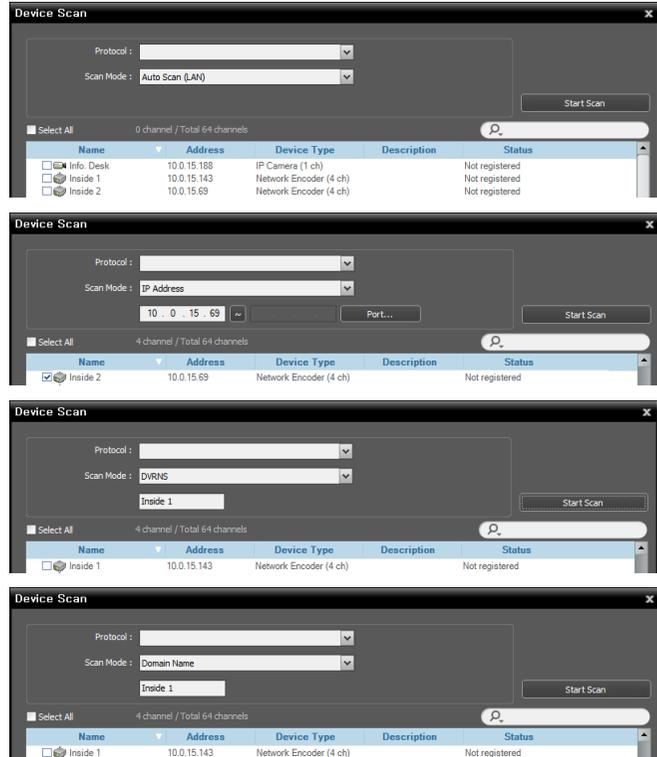
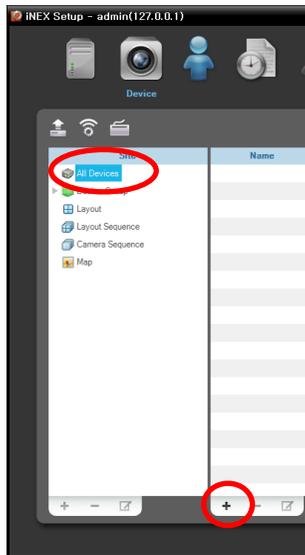
3.2 Registering Devices

You must register devices on the NVR system and add the devices to a device group in order to perform any operation.

Run the Setup program. Refer to 3.1 Connecting (p. 11) for details about running the Setup program.



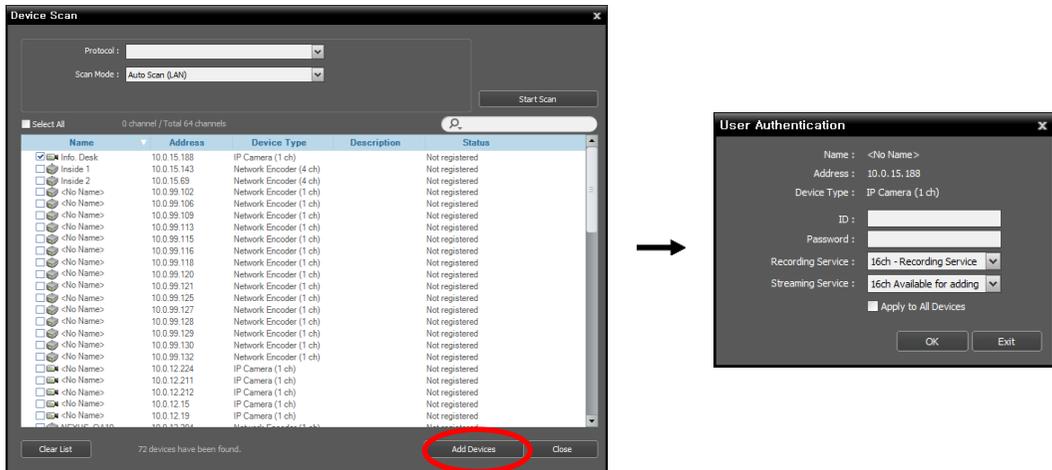
1. Select the Device menu.
2. Click All Devices in the Site panel, and then the **+** button at the bottom of the Site List panel. The Device Scan window appears.



- **Protocol:** Select the protocol or manufacturer of the device to scan. Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol), and some other functions may not be supported depending on the settings of the device.
- **Scan Mode:** Select the scan mode. Clicking the **Start Scan** button displays the results in the list. If the IP address range of the device is different from that of the NVR system, the iNEX program considers the IP address invalid. In this case, you must change the device's IP address to register the device.
 - **Auto Scan (LAN):** Lists devices in a LAN environment (supported only for the network video devices). If the device uses the ONVIF™ Conformance protocol, this function is supported only when you have checked the **Disable WS-Discovery Windows Service (fdPHost, FDResPub)** box during the software installation in Microsoft® Windows® Vista or later operating systems. Also, if the device uses the ONVIF™ Conformance protocol, it is recommended that the device not be networked via DHCP (Dynamic Host Configuration Protocol). If the device is networked via DHCP, connection to the device may not be made properly depending on changes in the external network environment.
 - **IP Address:** Allows you to enter the IP address of a device. You can search more than one device at a time by entering a range of IP addresses. It is recommended that the device not be networked via DHCP (Dynamic Host Configuration Protocol). If the device is networked via DHCP, connection to the device may not be made properly depending on changes in the external network environment.
 - **DVRNS:** Allows you to enter the device name registered on a DVRNS server if the device uses the DVR Name Service (DVRNS) function. Ensure the DVRNS server information on which the device is registered is correct (**Service menu** → (System Setup) button). If the DVRNS server information is not correct, the device will not be found.
 - **Domain Name:** Allows you to enter the device's domain name registered on a DNS server if the device uses the Domain Name Service.
- : Select the devices to register by checking the box beside each device name in the list. Selecting the **Select All** box selects all devices in the list.

NOTES:

- Depending on the model, the device may not be supported even though the iNEX program supports the device's protocol. Ask your dealer or distributor about supported models.
 - If the device uses the ONVIF™ Conformance protocol, you can select either the manufacturer (or iNEX protocol) or the ONVIF™ Conformance protocol. However, it is possible that one or both of them are not supported depending on the device model. Ask your dealer or distributor for details. Refer to the device User's Manual about enabling the ONVIF™ Conformance protocol in the device, as procedures may differ for each model.
3. Click the Add Devices button at the bottom.

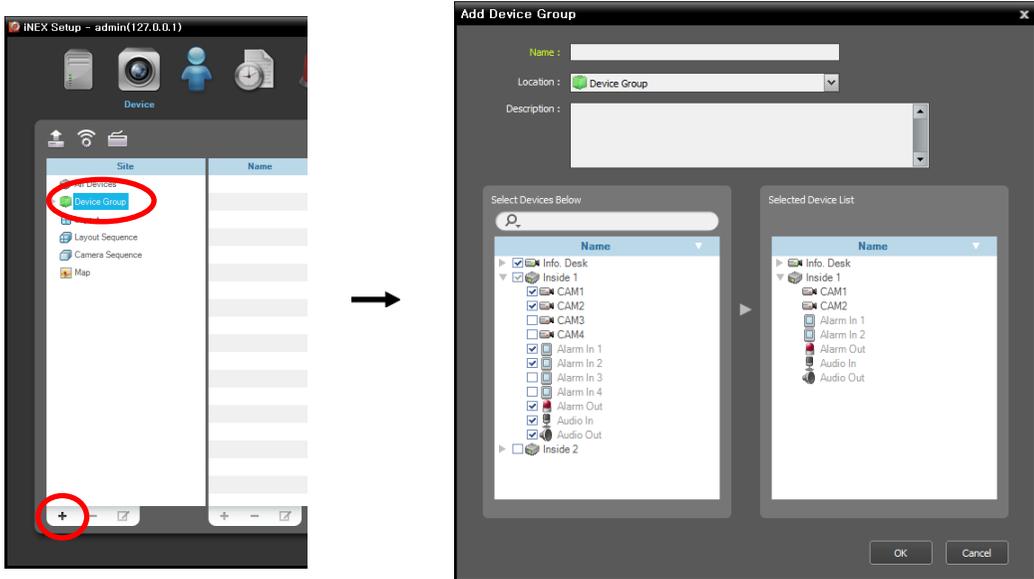


- Name, Address, Device Type:** Displays the name, IP address and type of the selected device. The name will be updated automatically depending on the settings of the device.
- ID, Password:** Enter the user ID and password which you set in the device in order to connect to that device remotely. The connection to the device is allowed only to the users under the Administrator group of the device, and recording is allowed only to the admin user under the Administrator group of the device.
- Recording Service:** Select a recording service (supported only for the network video devices). The device is registered on the recording service and the NVR system performs recording according to a recording schedule. The channel number of the recording service indicates the maximum number of cameras that can be registered, and the name indicates the name of a recording service, which was set during the Service menu setup. When selecting the Do not record option, the iNEX program treats the device during the Schedule setup as though it was not registered and does not perform any of the scheduled activities associated with the device. If you delete the device from the recording service after some recording has been done, you cannot search or play back the previously recorded video though you register the device again. You can check the list of devices registered on the recording service on a Device Setup tab while setting up the recording service in the Service menu. Refer to Chapter 14 — Storage Management (p. 107) for details.
- Streaming Service:** Select whether or not to use the streaming service for monitoring video from the device. Streaming service allows remote monitoring of live images in a WAN environment (up to two users). The number of channels that can be streamed equals the number of channels that can be recorded. Refer to Chapter 11 — Streaming (p. 87) for details.
- Apply to All Devices:** Select to apply the same user ID and password to all selected devices if you selected more than one device and the selected devices have the same user ID and password.

NOTES:

- If the device is a DVR, it might be necessary to enter the DVR port numbers depending on the specifications and version of the DVR.
- When registering a four-channel network video transmitter which uses the iNEX protocol, all four cameras are automatically registered even if some of the four cameras are disabled.

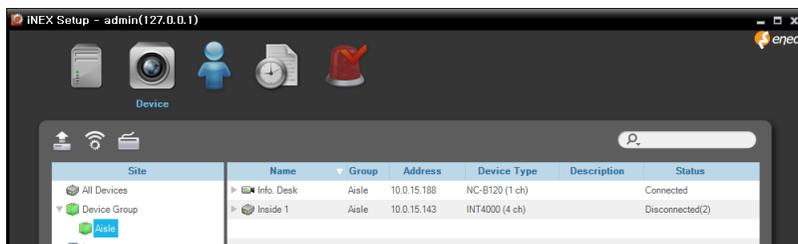
4. Click Device Group in the Site panel, and then the **+** button at the bottom of the Site panel. The Add Device Group window appears.



- **Name:** Enter the device group name.
- **Location:** Select an upper group to which the device group will belong.
- **Select Devices Below, Selected Device List:** Check the box beside cameras in the left panel, and the selected cameras are added to the right panel.

Clicking the OK button completes the device group registration.

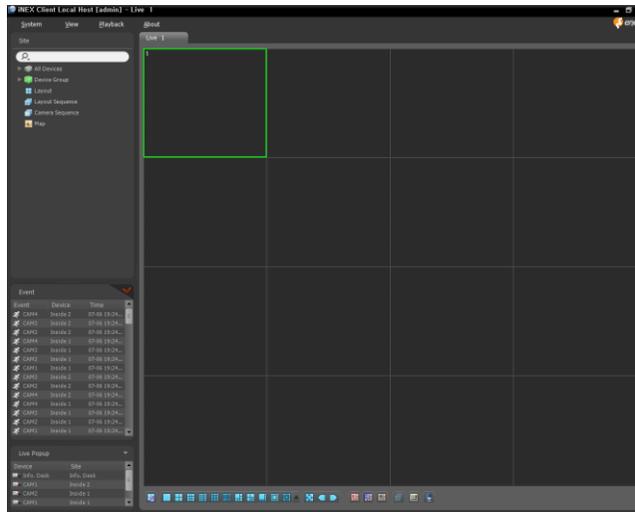
5. Check that the device was added to the device group correctly. Click Device Group in the Site panel and then the arrow button (▶) beside Device Group. Clicking the registered group displays the list of devices added to the device group and connection status in the Site List panel. If the connection was not made properly, the network disconnection log is displayed (only for devices registered on the recording service). Refer to Appendix – Network Disconnection Log (p. 143) for details about the network disconnection log.



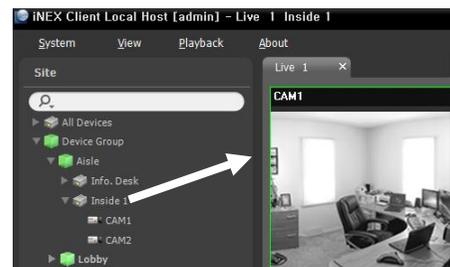
Selecting the registered device group, and then the button at the bottom of the Site List panel displays the Edit Device Group window and allows you to edit the selected device group. Refer to Chapter 12 — Device Management (p. 89) for details.

3.3 Live Video Monitoring

Go to the Start Menu → Click iNEX → Run the iNEX Client program and enter login information.



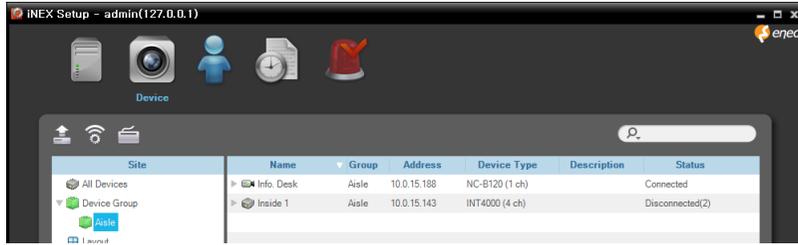
1. Check that the devices were added to a device group in the Site list.
2. Click the Live tab on the tab panel → Select a site to connect to from the Site list, and drag and drop it on the Live screen. Live video from the selected site is displayed on the screen. Refer to Chapter 5 — Live Video Monitoring (p. 45) for details.



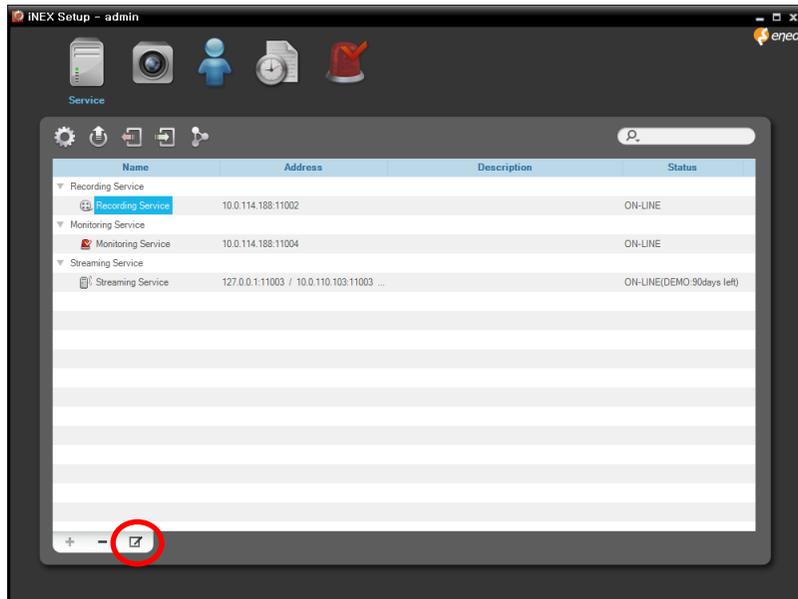
3.4 Recording

Run the Setup program. Refer to 3.1 Connecting (p. 11) for details about running the Setup program.

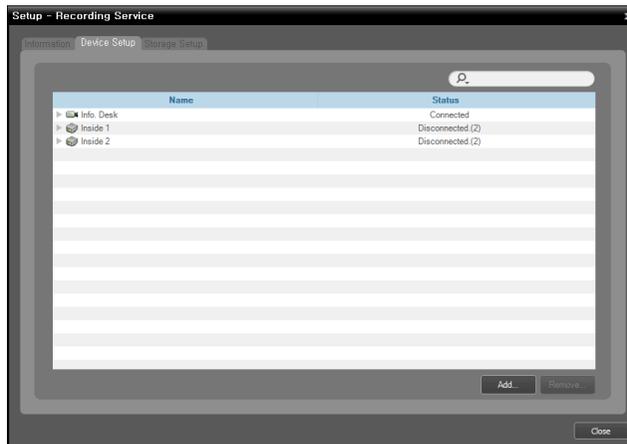
Check that the devices were added to a device group in the Device menu.



Allocating Cameras



1. Select a recording service and click the button at the bottom. The Setup – Recording Service window appears. Select the Device Setup tab.

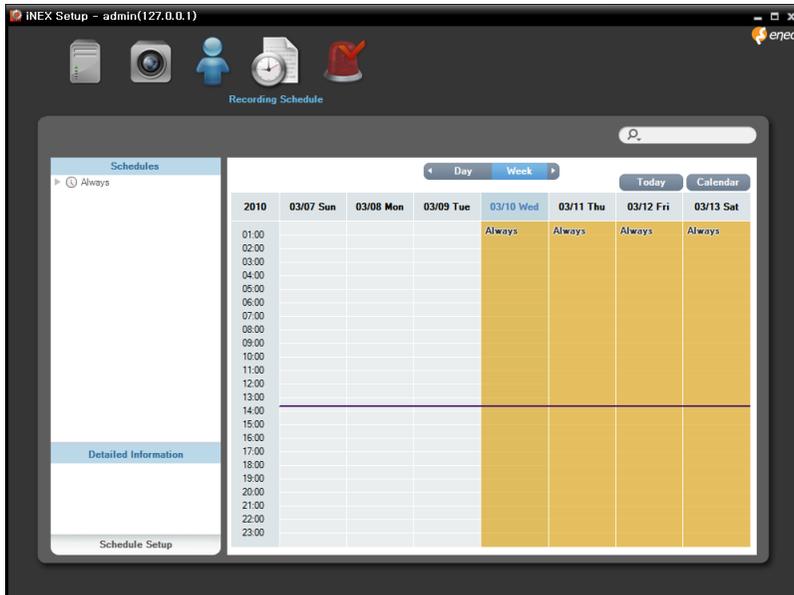


The list of cameras registered on the current recording service is displayed. Clicking the Add button at the bottom allows you to register additional cameras on the current recording service.

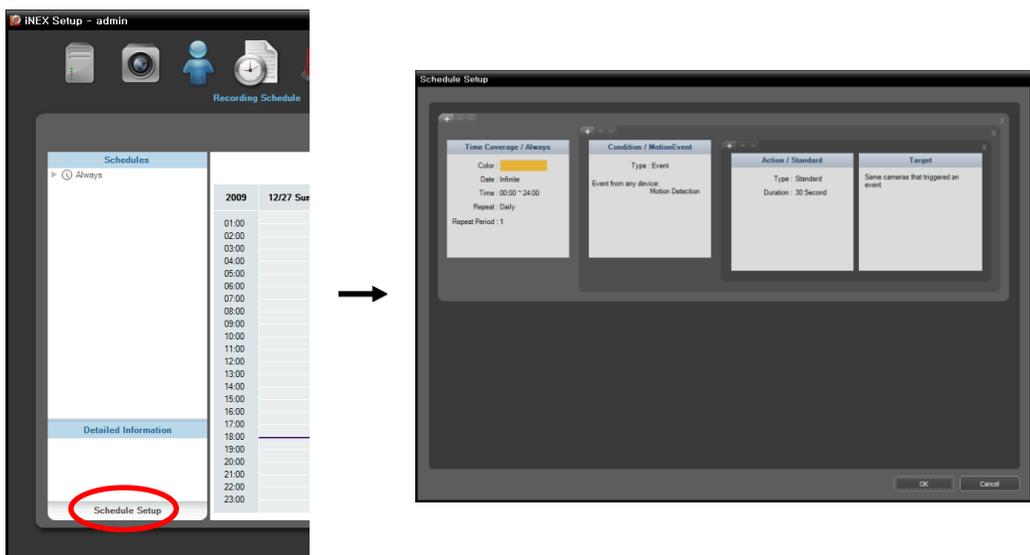
NOTE: If you remove a device for which some recording has been done and register the device again, the NVR system considers the device as a new device. In this case, you can search or play back video recorded before the device was removed as follows: go to the *Play* panel → click the  (Additional Menu) button → select *Removed Devices*.

Setting up Recording Schedule

Select the Recording Schedule menu and set up the recording schedule following the procedures below. Refer to 6.1 Setting up Recording Schedule (p. 59) for details.



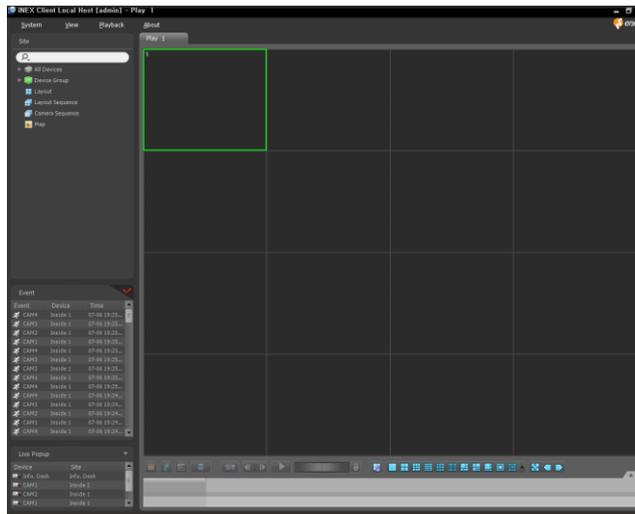
1. Click the Schedule Setup button at the bottom. The Schedule Setup window appears, and schedule windows are displayed with the current settings for each Preset.



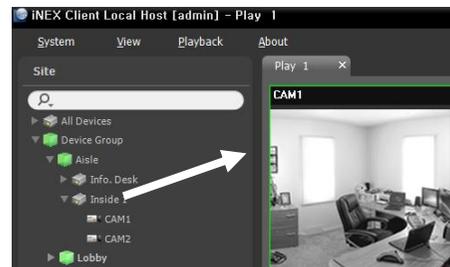
2. Double click anywhere in the empty space of each schedule window, and the Preset setup window appears.
3. Select a desired Preset from the Preset list, or click the **+** button to add a new Preset. Selecting a Preset from the list and clicking the **-** or **☑** button deletes the selected Preset or allows you to edit the selected Preset settings. Clicking the OK button applies the settings.

3.5 Playing Recorded Video

Go to the Start Menu → Click iNEX → Run the iNEX Client program and enter login information.



1. Check that the devices were added to a device group in the Site list.
2. Click the Play or DVR Search tab on the tab panel → Select a site to connect to from the Site list, and then drag and drop it on the Play or DVR Search screen. Recorded video from the selected site is displayed on the screen. You can search and play back recorded video by using the panel toolbar and timetable at the bottom of the Play or DVR Search panel. Refer to Chapter 7 — Recorded Video Playback & Exportation (p. 69) for details.



Chapter 4 — System Overview

The iNEX software consists of the following programs:

- **Service Manager:** Controls the operation of services or displays system log. Refer to 4.1 Service Manager (p. 23) for details.
- **Setup:** Allows you to add service, devices and users, or set up recording schedules, event management schedules and storage. Refer to 4.2 Setup (p. 28) for details.
- **Client:** Allows you to monitor video from registered cameras, play back recorded video from storage, export recorded video and check the system log and devices' status. Refer to 4.3 Client (p. 33) for details.

NOTE: The following programs are provided apart from the iNEX program running (Go to the *Start* Menu → Click *iNEX* and then *Utility*).

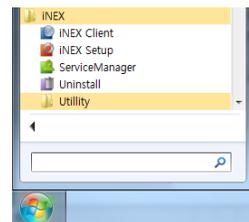
- **ProblemReporter** or **SecretKey:** You will use them following the directions of your dealer or distributor when your dealer or distributor requests.
- **LanguageSelector:** Use it to change the iNEX program's language.

4.1 Service Manager

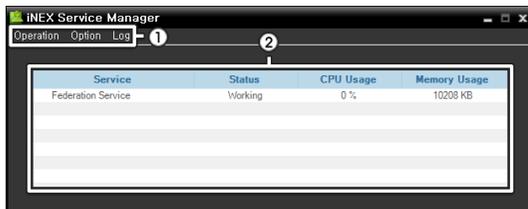
NOTES:

- A “service” in the iNEX program is a process that runs in the background and performs a specified operation. When the federation service is installed, the service runs in the federation server, and administration, monitoring, streaming and recording services run in the NVR system. The services run automatically when the server or NVR system turns on.
- The Service Manager program is supported in the federation server only.

Go to the *Start* Menu in the streaming or federation server → Click *iNEX* → Run the **Service Manager** program.



Federation Server

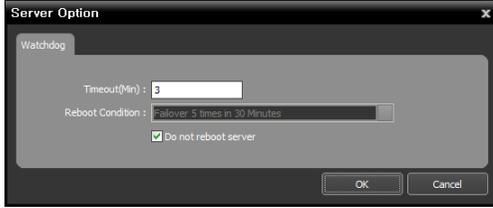


- ① **Menu:** Allows you to control the operation of the services or display the system log.
- ② **Status Display:** Displays the status of services.

Menu

- **Operation:** Starts or stops services. When the services are stopped, you cannot run the services and Client program, and the system does not record. If you have changed any settings of the Service Manager program, stop and restart services to apply the changes.

- Option
 - Server Option: Sets up the information for connection to the NVR system from the current server. Also, you can change the watchdog setting.

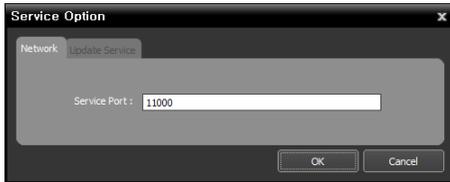


Watchdog Tab

- Timeout (Min.): Set up the waiting time to restart services when services fail to operate. The service checks the system status. When the services fail to operate during the designated waiting time, the system restarts services automatically.
- Reboot Condition: Set up the reboot condition when services fail to operate. Checking the Do Not Reboot Server option allows the system to restart services without rebooting.

NOTE: “Watchdog” in the iNEX program is a function that periodically checks the operation of the current server and restarts services automatically when services fail to operate during the predefined time.

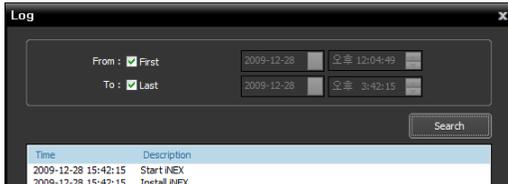
- Service Option: Selecting a service from the service list and Service Option allows you to set up the information for connection to the selected service.



- Service Port: Enter the port number for connection to the service.

NOTE: The *Update Service* tab function of the federation service is not supported.

- Log: Selecting Show Log allows you to check and search the system log.



Setting up the time range of the log and clicking the Search button displays the log information. Selecting First displays from the oldest log entries regardless of date. Selecting Last displays to the newest log entries regardless of date.

Status Display

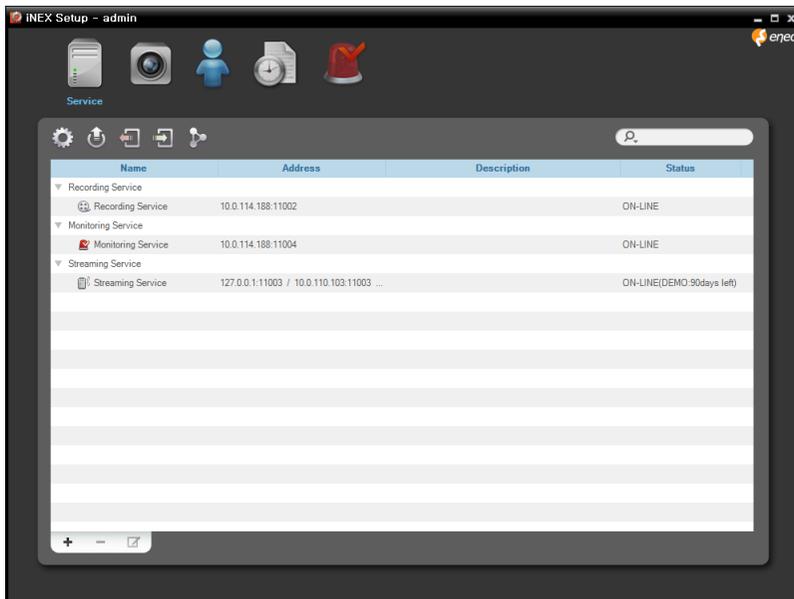
- Service: Displays the list of services supported by the current server.
 - Federation Service: Supports management and monitoring of multiple NVR systems.
- Status: Displays the working status of each service.
 - Working: Indicates the service is working properly.
 - Stopped: Indicates the service was stopped by a user.
 - Failed: Indicates the service failed to run because of an unknown problem. The system restarts the services or reboots the system based on the Watchdog settings. Refer to Menu (p. 23) for details about Watchdog settings.
- CPU Usage: Displays the CPU usage of each service.
- Memory Usage: Displays the memory usage of each service.

Service Database Backup/Restore

 (Service Database Backup) button allows you to save the setting values related to services as an .iexp file.  (Service Database Restore) button allows you to apply the saved setting values to the current NVR system.

NOTE: This function is supported only when all services registered on the NVR system are currently connected to the NVR system via network connections.

Run the iNEX Setup program.

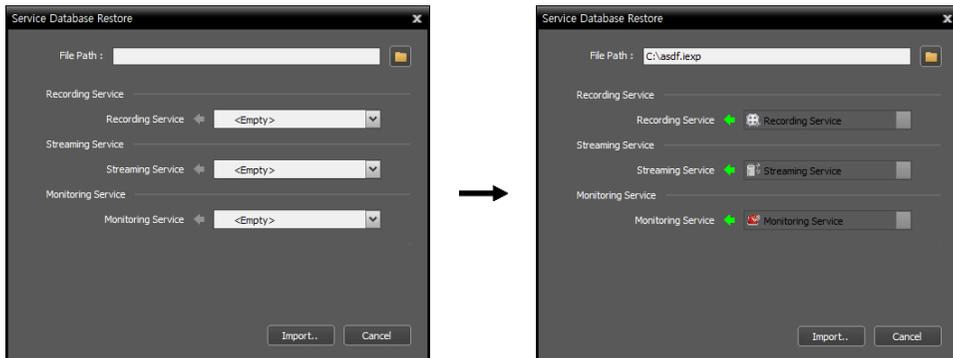


Service Database Backup

Click the  (Service Database Backup) button → Enter the name of the setup file to save the current setting values → When saving is complete, the list of Services is displayed.

Service Database Restore

Click the  (Service Database Restore) button.



Click the  button at the top right corner and select a setup file to apply → Services of the current NVR system are displayed to the left of the  icon. Services that are saved in the setup file are displayed to the right of the  icon. Select the service to apply from the drop-down menu to the right of the  icon. If there is only one service for a service type to the left of the  icon or the services in the setup file are the services that were backed up from the current NVR system, the services in the setup file will be applied automatically → Click the Import button at the bottom → The iNEX Setup program restarts after applying is complete.

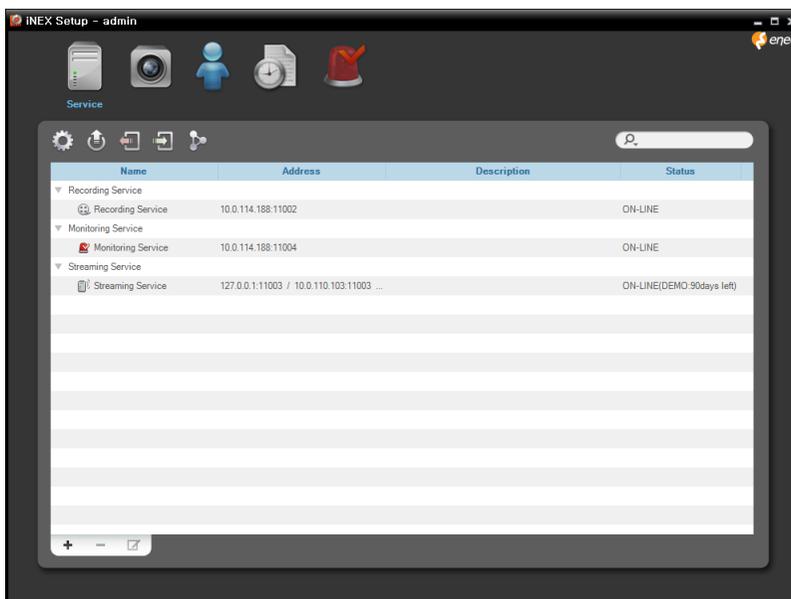
NOTE: This is not supported in the following cases:

- When the software version of the services to the right of the  icon is later than that of the services to the left of the  icon.
- When the type of the services to the left and right of the  icon differs.

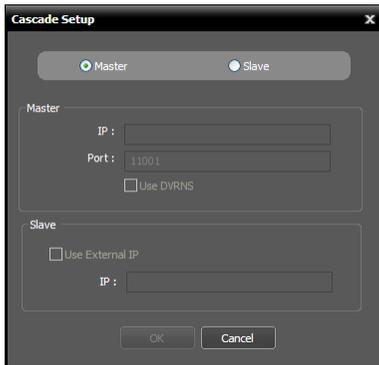
Cascade

If you use more than one NVR system, you can run the NVR systems as a master or slave systems. It allows you to watch video from all devices registered on the master and slave NVR systems and search all video recorded in the master and slave NVR systems in the master NVR system.

Run the iNEX Setup program → Click the  (Cascade) button.



Master NVR System

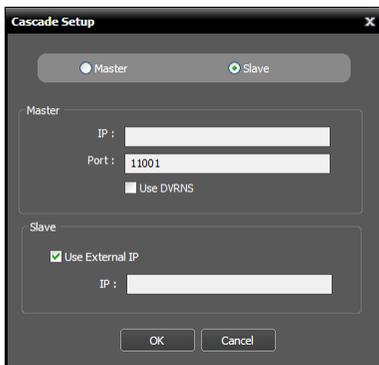


- **Master, Slave: Select Master.** It allows you to watch or search video of this NVR system and slave NVR systems (maximum 7) registered on this NVR system. The NVR system runs as a master NVR system by default and this setting will be used when the NVR system has been run as a slave NVR system and you want to change it back to a master NVR system.

1. Click the OK button in the bottom.
2. Enter the ID and password of the master NVR system.
3. The recording and streaming services of this NVR system, which have been registered on the master NVR system, are restored to this NVR system. When the recording and streaming services are restored, devices which are not registered on the recording service are deleted and device related settings such as device groups and usage of the streaming service for monitoring video from a device, etc. are all reset and you have to check all the settings and set up again.

Slave NVR System

NOTE: When you change back the NVR system which has been run as a slave NVR system to a master NVR system, devices which are not registered on the recording service are deleted and device related settings such as device groups and usage of the streaming service for monitoring video from a device, etc. are all reset and you have to check all settings and set up again. If necessary, write down the current device related settings and save it in a separate place before setting the slave NVR system.



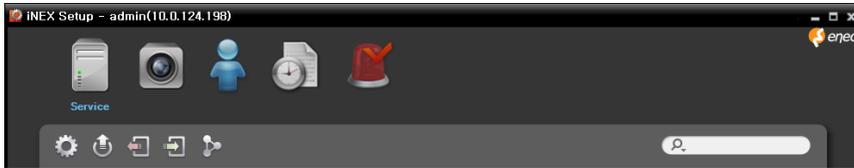
- **Master, Slave: Select Slave.** This NVR system is registered on the master NVR system and it allows you to watch or search video of this NVR system in the master NVR system.
 - **Master:** Enter the IP address and port number of the master NVR system. If the master NVR system uses the DVRNS function, selecting **Use DVRNS** allows you to enter the master NVR system's name registered on the DVRNS server instead of the IP address. You can check the name in the master NVR system's DVRNS setting (connect to the master NVR system → click the  (System Setup) button in the Service menu of the iNEX Setup program → click DVRNS).

- **Slave:** If this NVR system uses the DVRNS function, no settings are required. If this NVR system does not use the DVRNS function, enter the external IP address of this NVR system. If the external IP address is not correct, you may not watch or search video. If you want, you can change the DVRNS settings of this NVR system (click the  (System Setup) button in the Service menu → click DVRNS).

1. Click the OK button in the bottom.
2. Enter the ID and password of the master NVR system.
3. The recording and streaming services of this NVR system are registered on the master NVR system. The devices registered on the recording service are registered together.
4. This NVR system reboots.

4.2 Setup

Run the Setup program. Refer to 3.1 Connecting (p. 11) for details about running the Setup program.



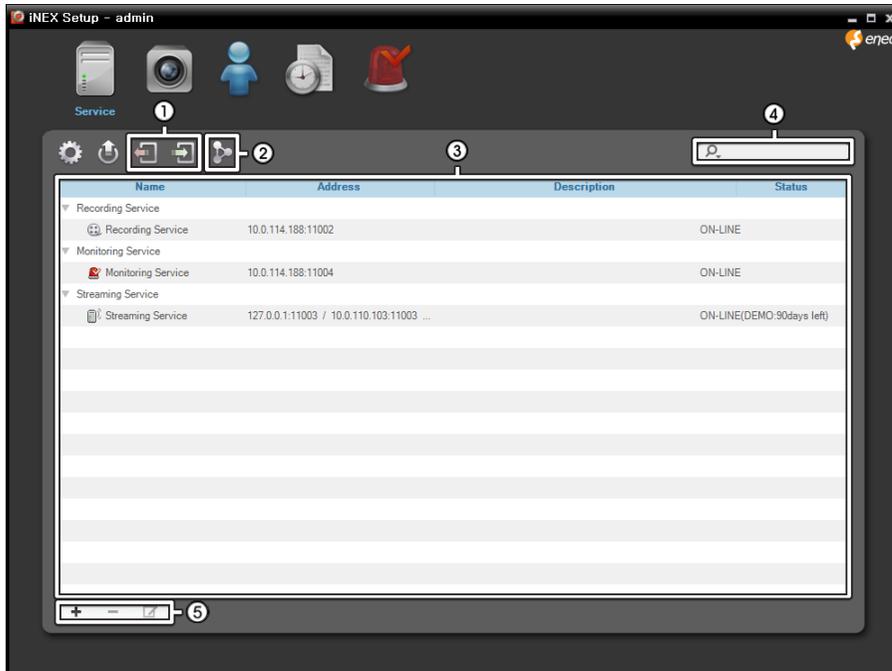
- **Service:** Allows you to register and manage services and storage. Refer to **Service** (p. 28) for details.
- **Device:** Allows you to register and manage sites. Refer to **Device** (p. 29) for details.
- **User:** Allows you to register and manage users or user groups. Refer to **User** (p. 31) for details.
- **Recording Schedule:** Allows you to set up recording schedules. Refer to **Recording Schedule** (p. 32) for details.
- **Event Management:** Allows you to set up event management schedules. Refer to **Event Management** (p. 32) for details.
- **System Setup:** Clicking the button allows you to set up the system. Refer to 3.1 Connecting, **System Setup** (p. 12) for details.
- **Upgrade:** Clicking the button and selecting a upgrade file upgrades the software of NVR system. Refer to 3.1 Connecting, **System Setup** (p. 12) for details.

NOTE: An alert message is displayed at the bottom of the iNEX Setup screen in the following cases:

- No storage is allocated to a recording service.
- Storage for recording is full.

Service

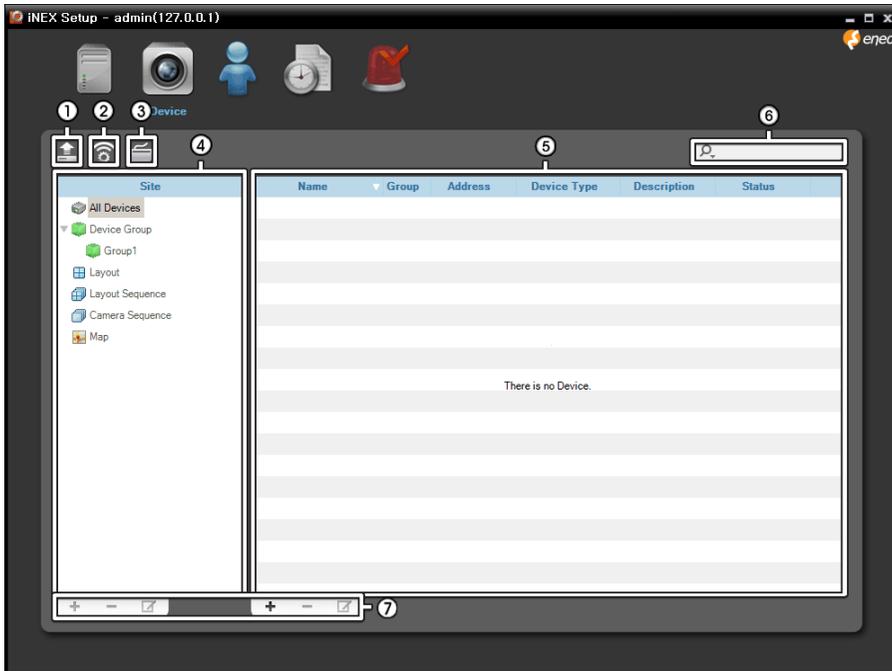
The Service menu allows you to register and manage services and storage.



- ① (Service Database Backup), (Service Database Restore): Allows you to save the setting values related to services as an .iexp file. It also, allows you to apply the saved setting values to the current NVR system. Refer to 4.1 Service Manager, Service Database Backup/Restore (p. 25) for details.
- ② (Cascade): If you use more than one NVR system, you can run the NVR systems as a master or slave systems. It allows you to watch video from all devices registered on the master and slave NVR systems and search all video recorded in the master and slave NVR systems in the master NVR system. Refer to 4.1 Service Manager, Cascade (p. 26) for details.
- ③ Service List: Displays list of services supported in the iNEX program. Clicking the arrow button () beside each service displays the list and information about services registered in the iNEX program.
 - Address: Displays the IP address and port number.
 - Status: Displays the connection status.
- ④ (Incremental Search): Allows you to search for a service registered in the NVR system. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- ⑤ (Add), (Remove), (Edit): Allow you to add, remove and edit a service and storage. Refer to Chapter 14 — Storage Management (p.107) for details about adding storage for a recording.

Device

The Device menu allows you to register and manage sites.



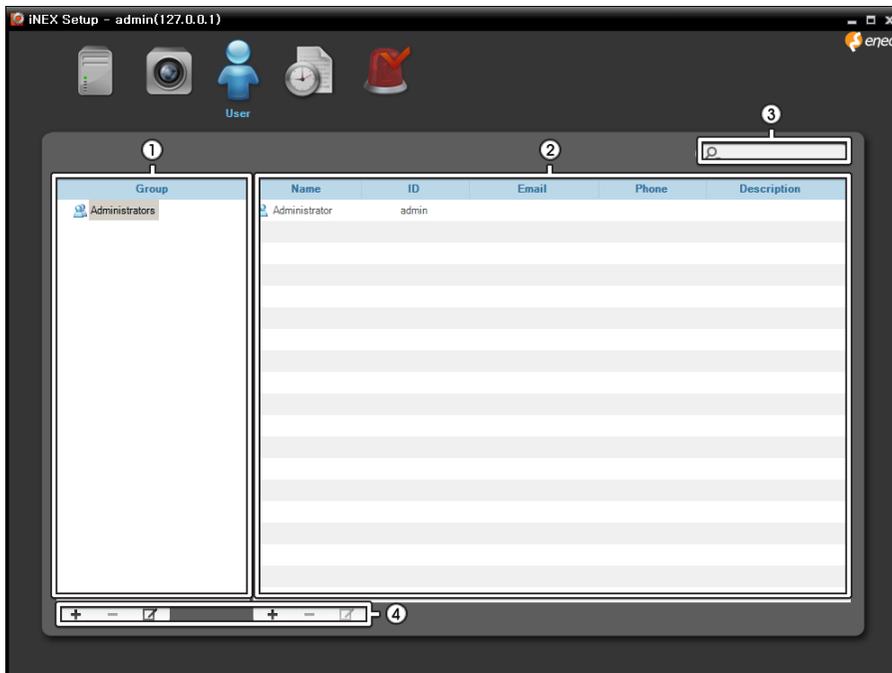
- ① (Multiple Firmware Upgrade): Allows you to upgrade software for several devices at the same time. Refer to 12.2 Managing Devices, Upgrading Device's Software (p. 96) for details.
- ② (Multiple Remote Setup): Allows you to change settings of several devices at the same time using a setup file. Refer to 12.2 Managing Devices, Changing Device's Setting Remotely (p. 96) for details.
- ③ (Network Keyboard Setup): Allows you to add, remove and edit a network keyboard. You can control the Client program with a network keyboard. Refer to Chapter 17 — Controlling With a Network Keyboard (p. 125) for details.
- ④ **Site Panel**: Displays site group lists supported by the iNEX program.
- ⑤ **Site List Panel**: Displays the list and information about sites registered in each group. If the connection was not working properly, the network disconnection log is displayed (only for devices registered on the recording service). Refer to Appendix – Network Disconnection Log (p. 143) for details about the network disconnection log. Clicking the arrow button () beside each device name displays the status of video in, alarm in/out and audio in/out supported by the device (**Record**: During Time-Lapse recording or Event-Based recording, **Panic**: During Instant recording, **Idle**: Ready to record).
- ⑥ (Incremental Search): Allows you to search for a device or site registered in each group. Selecting a group in the **Site** panel and entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found within the selected group. As you enter more text, the results narrow.

- ⑦ **+** (Add), **-** (Remove), **✎** (Edit): Allow you to add, remove and edit a device or a site. You can also delete sites from the group or to edit registration information by using the menu that is displayed when selecting a site and clicking the right mouse button. If you select a device, you can connect to it and change its settings or upgrade its software remotely. If you delete a device from All Devices and register the device again, the NVR system considers the device as a new device (network video devices only). Refer to Chapter 12 — Device Management (p. 85) for details about registering a device or device group, or Chapter 5 — Live Video Monitoring (p. 45) for details about registering a layout or sequence.

NOTE: In this manual, a “site” refers to a device group, layout or sequence registered on the NVR system.

User

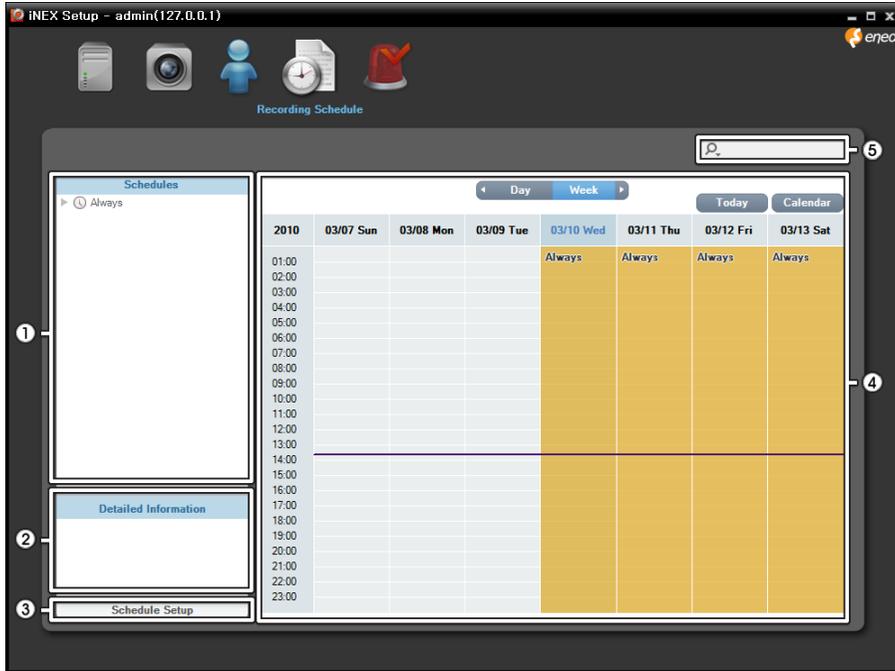
The User menu allows you to register and manage users or user groups.



- ① **Group Panel:** Displays a user group list. The Administrators group has authority to perform all functions, and the authority settings cannot be edited.
- ② **User List Panel:** Displays the list and information about users registered in each group.
- ③ (Incremental Search): Allows you to search for a user registered in each group. Selecting a group in the Group Panel and entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found within the selected group. As you enter more text, the results narrow.
- ④ **+** (Add), **-** (Remove), **✎** (Edit): Allow you to add, remove and edit a user group or user.

Recording Schedule

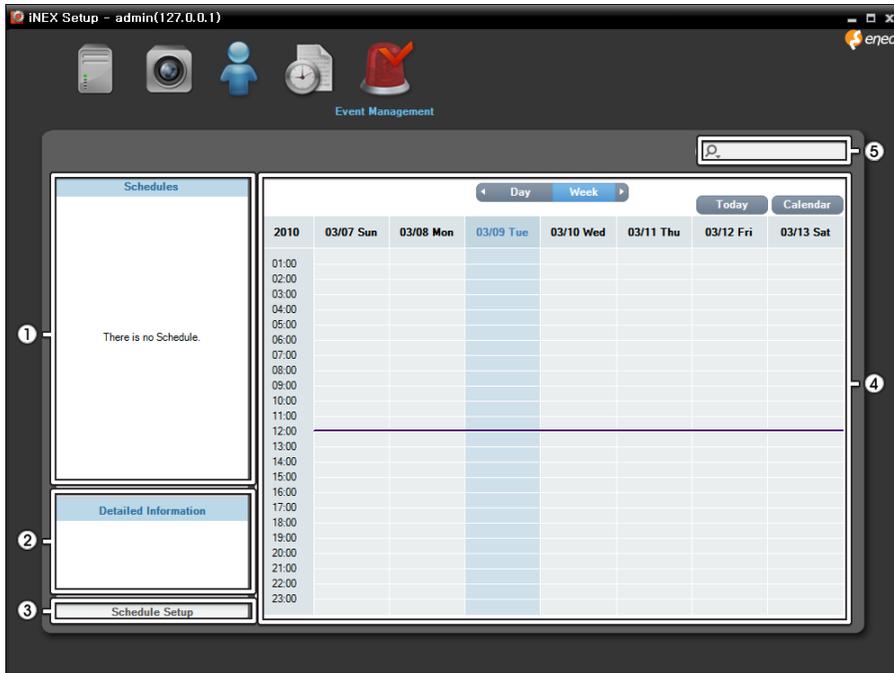
The Recording Schedule menu allows you to set up the schedule for recording.



- ① **Schedule Panel:** Displays a registered schedule list. The iNEX program performs recording based on the schedule.
- ② **Detailed Information Panel:** Displays setting values of the selected recording schedule.
- ③ **Schedule Setup:** Allows you to register recording schedules for Time-Lapse Recording or Event-Based Recording or to set up recording settings for Instant Recording. Refer to 6.1 Setting up Recording Schedule (p. 59) for details.
- ④ **Schedule Table:** Displays the current recording schedule by day or week. Clicking the **Today** button displays the today's recording table. Clicking the **Calendar** button displays a calendar.
- ⑤ **Search Bar (Incremental Search):** Allows you to search for a registered schedule. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found within the registered schedule. As you enter more text, the results narrow.

Event Management

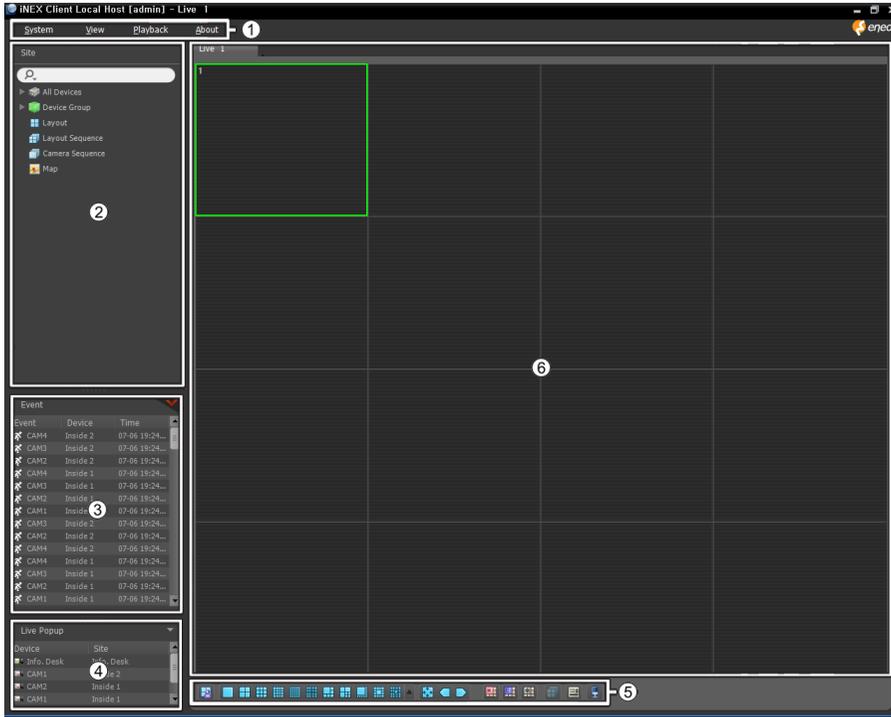
The Event Management menu allows you to set up event management schedules.



- ① **Schedule Panel:** Displays a registered schedule list. The iNEX program manages events based on the schedule.
- ② **Detailed Information Panel:** Displays setting values of the selected event management schedule.
- ③ **Schedule Setup:** Allows you to register event management schedules. Refer to 15.1 Setting up Event Management Schedule (p. 111) for details.
- ④ **Schedule Table:** Displays the current event management schedule by day or week. Clicking the **Today** button displays the today's event management table. Clicking the **Calendar** button displays a calendar.
- ⑤ **Search Bar (Incremental Search):** Allows you to search for a registered schedule. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found within the registered schedule. As you enter more text, the results narrow.

4.3 Client

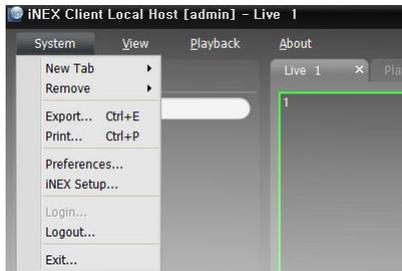
Go to the Start Menu → Click iNEX → Run the iNEX Client program and enter login information. Refer to 3.1 Connecting, Log In (p. 11) for details about the login.



- ① Menu: Allows you to control the Client program. Refer to Menu (p. 35) for details.
- ② Site List: Allows you to connect to the registered site by using the mouse drag and drop. Refer to Site List (p. 36) for details.
- ③ Instant Event List: Displays live and callback events from registered devices. Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol). Refer to Chapter 8 — Event Handling (p. 79) for details. Clicking the  button displays the Event Manager panel. Refer to 15.1 Setting up Event Management Schedule (p. 111) for details.
- ④ Live Popup List: Displays the list of live popup screens currently displayed on the monitor. Refer to 15.2 Managing Events, Live Popup (p. 118) for details about the live popup screen.
- ⑤ Panel Toolbar/Timetable: Displays the toolbar or timetable depending on the panel. Refer to Chapter 5 — Live Video Monitoring (p. 45) or Chapter 7 — Recorded Video Playback & Exportation (p. 69) for details.
- ⑥ Panel: Allows you to select which panel to use. Refer to Panel (p. 36) for details.

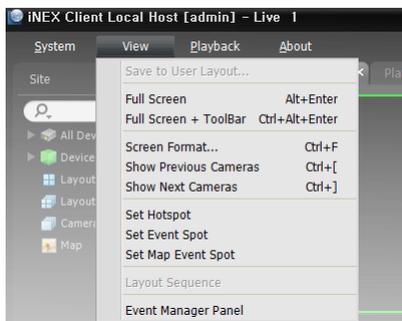
Menu

System



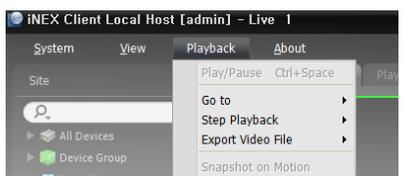
- **New Tab:** Adds panels. A maximum of 12 panels are supported for Live, Play, Backup Search, DVR Search and Map panels altogether (no more than 2 of Map panels and no more than 4 of each for the other panels). One of each is supported for Event, Event History, Report, Health and Status panels.
- **Remove:** Removes selected devices or cameras or all cameras from Live or Play screen.
- **Export, Print:** Exports or prints images or lists displayed on the panel on the selected tab (not supported for all panels).
- **Preference:** Displays the Preference window allowing you to change the basic settings of the Client program. Refer to Menu – Preference Settings (p. 37) for details.
- **iNEX Setup:** Runs the Setup program.
- **Login, Logout, Exit:** Logs in, logs out or exits the Client program.

View



- **Save to User Layout:** Saves the current screen format.
- **Full Screen:** Displays the selected Live or Play panel in full-screen format.
- **Full Screen+ToolBar:** Displays the selected Live or Play panel in full-screen format with a panel toolbar.
- **Screen Format:** Allows you to change the screen format.
- **Show Previous Cameras, Show Next Cameras:** Moves to the previous or next camera group.
- **Set Hotspot:** Sets up a selected camera screen as a hotspot screen. Refer to 5.1 Monitoring Video, Hotspot Setup (p. 46) for details.
- **Set Event Spot:** Sets up a selected camera screen as an event spot screen. Refer to 5.1 Monitoring Video, Event Spot Setup (p. 46) for details.
- **Set Map Event Spot:** Sets up a selected camera screen as a map event spot screen. Refer to 5.1 Monitoring Video, Map Event Spot Setup (p. 47) for details.
- **Layout Sequence:** Starts or stops the layout sequence. Refer to 5.1 Monitoring Video, Layout Sequence Monitoring (p. 49) for details.
- **Event Manager Panel:** Displays an event manager panel. Refer to Chapter 15 — Event Management (p. 111) for details.

Playback



- **Play/Pause:** Plays or pauses playback of recorded video.
- **Go To:** Selects a specific point of video to be played. Refer to 7.1 Playing back Recorded Video, Panel Toolbar (p. 70) for details.
- **Step Playback:** Moves the video forward or backward in the frame or time unit.

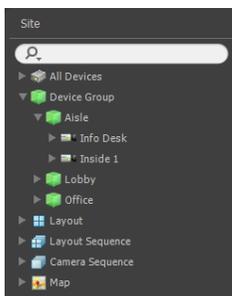
- **Export Video File:** Exports recorded video as a self-player file (.exe) or an AVI file (.avi).
- **Snapshot on Motion:** Displays snapshot of images recorded during the event-based recording (event and pre-event) in the Play panel. Refer to 7.1 Playing back Recorded Video, Snapshot on Motion Event (p. 73) for details.

About



- **Check for Updates:** Displays available software upgrades.
- **About:** Displays the software version and copyright information.

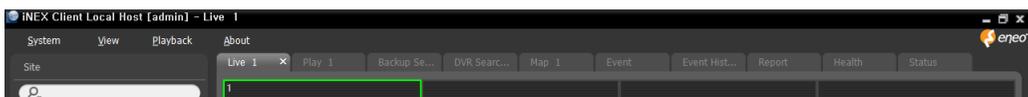
Site List



Displays the list of registered sites.

- **Q (Incremental Search):** Allows you to search for a registered device or site. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- **All Devices:** Displays the list of devices registered on the NVR system. Clicking a device in the list, and dragging and dropping it in the desired location on the screen allows you to monitor video from the cameras connected to the device or to play back recorded video from the cameras. This is supported only for the users in the Administrator group.
- **Device Group:** Displays the list of registered device groups. Clicking a device in the list, and dragging and dropping it in the desired location on the screen allows you to monitor video from the cameras connected to the device or to play back recorded video from the cameras. Refer to 5.1 Monitoring Video (p. 45) or 7.1 Playing back Recorded Video (p. 69) for details.
- **Layout:** Displays the list of registered layouts. Clicking a layout in the list, and dragging and dropping it on the screen starts layout monitoring or playback. Refer to 5.1 Monitoring Video (p. 45) or 7.1 Playing back Recorded Video (p. 69) for details.
- **Layout Sequence:** Displays the list of registered layout sequences. Clicking a layout sequence in the list, and dragging and dropping it on the screen starts layout sequence monitoring. Refer to 5.1 Monitoring Video, Layout Sequence Monitoring (p. 49) for details.
- **Camera Sequence:** Displays the list of registered camera sequences. Clicking a camera sequence in the list, and dragging and dropping it in the desired location on the screen starts camera sequence monitoring. Refer to 5.1 Monitoring Video, Camera Sequence Monitoring (p. 51) for details.
- **Map:** Displays the list of registered maps. Clicking a map in the list, and dragging and dropping it in the desired location on the screen starts map monitoring. Refer to 5.2 Map Monitoring (p. 52) for details.

Panel

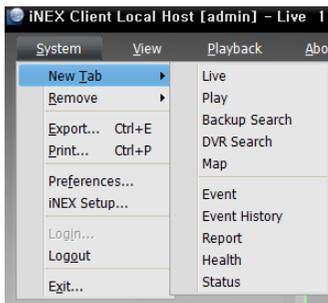


- **Live:** Displays live images. Refer to 5.1 Monitoring Video (p. 45) for details.
- **Play:** Allows you to play back the video recorded in the NVR system (supported only for the network video devices). Refer to Chapter 7 — Recorded Video Playback & Exportation (p. 69) for details.

- **Backup Search:** Not supported.
- **DVR Search:** Allows you to play back the video recorded in DVRs or SD (SDHC) memory cards inserted to network cameras using the iNEX protocol. Refer to **Chapter 7 — Recorded Video Playback & Exportation** (p. 69) for details.
- **Map:** Displays maps. Refer to **5.2 Map Monitoring** (p. 52) for details.
- **Event:** Displays the list of events recorded during Event recording. Double clicking an event in the event list, or selecting an event in the event list and then clicking the right mouse button allows you to play back event-recorded video and event-associated video in the play screen. Refer to **Chapter 7 — Recorded Video Playback & Exportation** (p. 69) for details.
- **Event History:** Displays log entries of events displayed on the Event Manager panel. Refer to **Chapter 15 — Event Management** (p. 111) for details.
- **Report:** Displays log entries of the iNEX program. Refer to **Chapter 10 — Log Search** (p. 85) for details.
- **Health:** Displays the results of self-diagnostics for the devices in a device group (supported only for network video devices). Refer to **9.1 Health Monitoring** (p. 83) for details.
- **Status:** Displays the status of a desired device in real-time (supported only for devices which use the iNEX protocol). Refer to **9.2 Status Monitoring** (p. 84) for details.

NOTE: You can change the panel name by clicking the right mouse button on each panel tab.

Adding/Deleting Panel



Go to the System menu → Click **New Tab** → Select a panel to add.

Clicking the  button beside each tab deletes the panel.

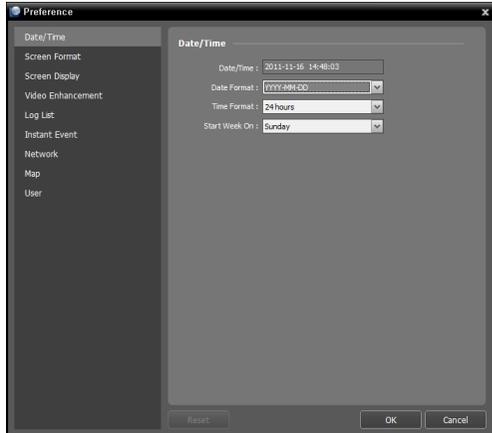
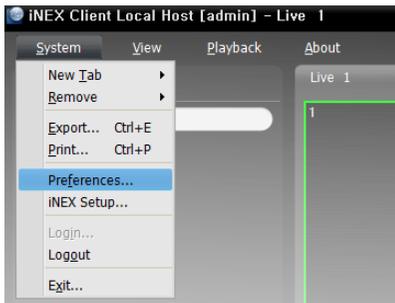
Floating/Docking Panel

Clicking a panel tab causes it to fly out and dragging it floats the panel on the screen. Clicking the tab of a floating panel, and dragging and dropping it to its original position docks the panel. You can change the order of panel tabs by dragging and dropping with the mouse.

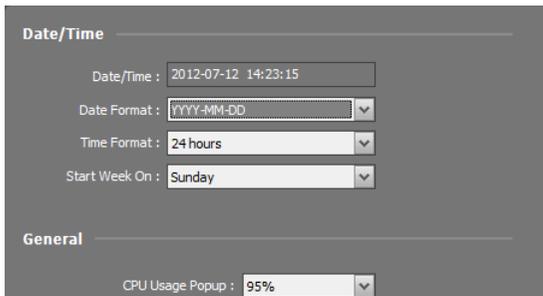
- **Maximizing a floating panel:** Clicking the window maximize/restore button in the upper-right corner of the floating panel maximizes or restores the window. Only one of each panel type can be maximized.
- **Displaying/hiding a site list in the floating panel:** Clicking the right mouse button in the camera screen of the panel and selecting the **Remote Site Panel** from the screen menu displays or hides a site list in the floating panel. This is not supported for every panel.

Menu – Preference Settings

You can set the basic settings of the Client program to meet your preferences. Go to the System Menu → Click Preference, and the Preference window appears.

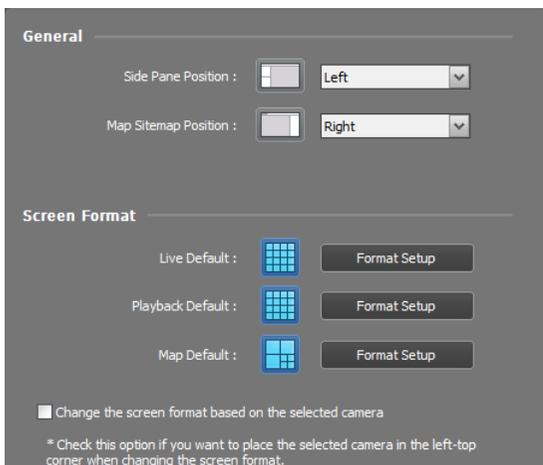


System



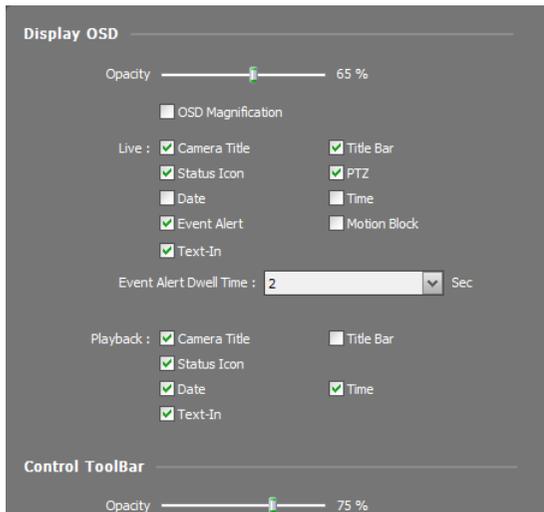
- **Date/Time:** Displays the current date and time.
- **Date Format, Time Format:** Set up the system date/time format.
- **Start Week On:** Set up the day of the week to start.
- **CPU Usage Popup:** An alert message will be popped up when the CPU usage of the Client system exceeds the percentage.

Screen Format



- **Side Pane Position, Map Sitemap Position:** Set up the position of side panels and the position of the root map list in the Map panel.
- **Live Default, Playback Default, Map Default:** The default screen formats for the Live, Play and Map screens are displayed. Clicking the **Format Setup** button allows you to change the default screen format.
- **Change the screen format based on the selected camera:** Displays video from a camera selected from the current screen format in the first camera screen of the new screen format when you change screen formats.

Screen Display



- Display OSD: Sets up the OSD display setting and information to be displayed on a camera screen. The Opacity slide bar allows you to adjust the opacity of OSD (On Screen Display), OSD Magnification changes the OSD size depending on the screen size. See below about OSD information.
 - Camera Title: Displays the camera name set in the iNEX program.
 - Title Bar: Separates the title display area from an image display area at the top.
 - Status Icon: Displays status OSD. (Red): During Time-Lapse or Event-Based recording, (Orange): During Instant recording, (P): In the PTZ mode, (P): In the camera sequence mode, (+): In the zoom mode, (Speaker): In the two-way audio communication mode)
- PTZ: Displays direction control buttons which is displayed on the camera screen when controlling a PTZ camera.
- Date, Time: Displays the date and time of the NVR system.
- Event Alert: Highlights the camera title bar in red when an event occurs in the device. The alert will release after the event dwell time (sec.) from the time an event is detected or when you select the camera screen if you set up the Event Alert Dwell Time setting to Manual Off.
- Motion Block: Displays the area where motion is detected with red blocks when a motion detection event occurs in the device (supported only for network video transmitters which use the iNEX protocol).
- Text-In: Displays the text-in information on the screen when a text-in event occurs in the device (1x1 screen format only). This feature is supported only for devices which use the iNEX protocol.
- Control ToolBar: Adjusts the opacity of the control toolbar on the camera screen.



Camera Title,
Status Icon, Date/Time



Event Alert

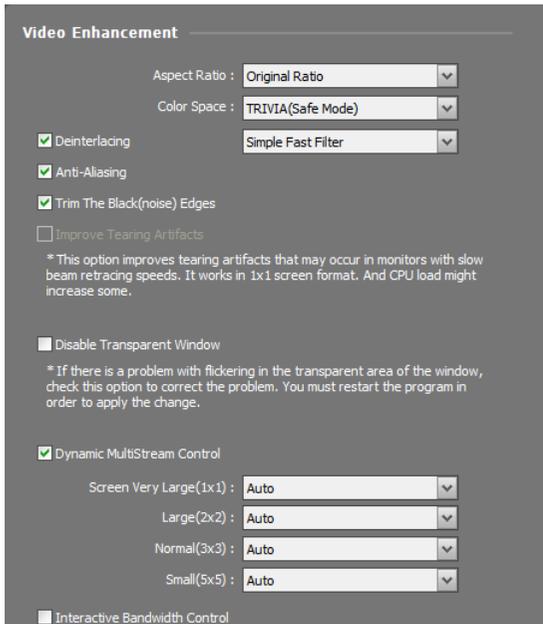


Motion Block



Control Toolbar

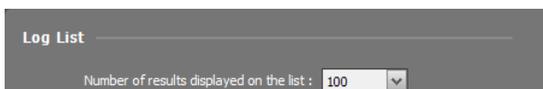
Video Enhancement



- **Aspect Ratio:** Select the proper image aspect ratio.
 - **Original Ratio:** Fits images within the screen size while maintaining their original ratio.
 - **Fit to Screen:** Fits images to the screen size regardless of the aspect ratio.
 - **Fit to Screen (Aspect Ratio):** Fits images to the screen size keeping the aspect ratio. This might cause top and bottom or left and right side of images to be cropped depending on the screen size. This aspect ratio is not supported and **Original Ratio** is applied for camera screens that the following functions are activated: **Image Zoom, Hotspot, Event Spot, Draw Motion Block.**
 - **Actual Size (x1):** Displays images in their original size.
- **Color Space:** Select the color space standard to display video on the screen. The color quality or display performance of video might be affected depending on the color space standard selected.

- **Deinterlacing:** Enhances image display quality of interlaced video on the screen by eliminating horizontal scan lines or noise in areas with motion. Select the desired deinterlace filter.
- **Anti-Aliasing:** Enhances image display quality of video on the screen by eliminating stair-stepping (aliasing) effects in the enlarged image.
- **Trim The Black (noise) Edges:** Trims the black line (noise) displayed at the edge of the image.
- **Improve Tearing Artifacts:** Improves tearing artifact caused when the monitor's scanning line retracing speed is slow (1x1 screen format only). This might increase the CPU load.
- **Disable Transparent Window:** Disables using a transparent window style and opacifies windows including the control toolbar to correct the problem of transparent areas of the window flickering. The change will be applied the next time the program is run.
- **Dynamic Multistream Control:** Allows you to use a different stream depending on the screen format (supported only for devices in which more than one stream is used). Selecting **Auto** allows the iNEX program automatically to choose the proper stream based on the screen format.
- **Interactive Bandwidth Control:** Controls the network bandwidth by automatically adjusting the resolution and the frame rate of the device depending on a screen format (1x1 screen format: the maximum resolution and frame rate supported by the device, Multi-screen format: the resolution and frame rate decreased to an appropriate level for each screen format). This function enhances the network bandwidth efficiency and decreases a drop in performance of the Client system which might be caused by the network congestion. For this function to work, the device must be also set up to use the function. This function works only for monitoring video.

Log List



Set up the number of log entries to be displayed at once (in the case of **Device Log**, maximum 100 logs at once regardless of the setting).

Instant Event

Instant Event

Time Range : 60 Minutes

* The Instant Event list shows recent events within the selected time range. (The Instant Event List will retain 100 items or less.)

Column : Event Device
 Time

Callback Port : 8201 (8000~12000)

Event Sound

<input checked="" type="checkbox"/> Motion Detection	EventSound.wav	...	▶
<input checked="" type="checkbox"/> Object Detection	EventSound.wav	...	▶
<input checked="" type="checkbox"/> Video Loss	EventSound.wav	...	▶
<input checked="" type="checkbox"/> Video Blind	EventSound.wav	...	▶

Event Spot

Event monitoring dwell : 20 Sec

Minimum monitoring dwell : 2 Sec

- **Time Range:** Set up the length of time for an event notification to be displayed in the Instant Event List after notification of the event detection (If the event list has 100 or fewer items, the event list will remain on the Instant Event List even if the length of time has expired).
- **Column:** Select the information to be displayed in Instant Event List.
- **Callback Port:** Set up the port number to receive a callback message from the device. This setting will be used only when the monitoring service does not run. The NVR system uses the callback port of the monitoring service, which is set in the Service Manager program when the monitoring service runs. The port number you enter should match the port number set on the device for remote callback.
- **Event Sound:** Set up to sound by playing back an audio file when an event is detected. Select a desired event and set up an audio file (.wav) by clicking the ... button. Clicking the ▶ button allows you to test the sound by playing back the selected audio file.
- **Event Spot:** Set up the duration for images to be displayed on an event spot screen when an event is detected. When another event is detected while the current event is displayed on the event spot screen, the current event is displayed during the minimum monitoring dwell time and then another event is displayed.

Network

General

Use buffering for live Mega-pixel images

* Use buffering to smoothly play live Mega-pixel images. Depending on your network environment, buffering delays may occur, and real-time video cannot be guaranteed. Dual-core CPU or higher systems can use buffering. Up to 4 camera panes can be supported on a screen. (for example, screen formats 1x1 or 2x2)

RTP

RTP Incoming Port Range : 7000 ~ 7999

Don't display broken frames : Live Playback

Buffering Frame Count : 3

Network Keyboard

Use Network Keyboard

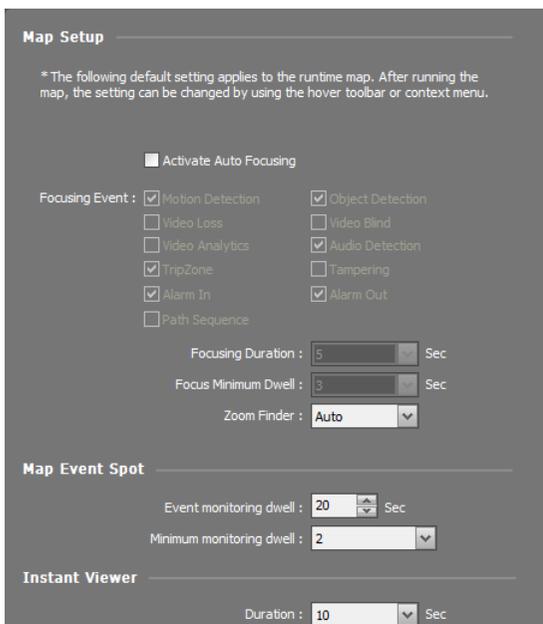
Control Port : 8010

Use large mouse cursor

- **Use buffering for live Mega-pixel images:** Displays images on the screen more smoothly by using buffering when monitoring mega-pixel video images (supported only for devices which use the iNEX protocol). Buffering may be delayed or real-time monitoring may decrease depending on the network environment. This function is supported only in a dual-core CPU or higher systems for up to four cameras in each Live panel.
- **RTP Incoming Port Range:** Set up the port range if a device which transmits images using the RTP protocol is registered. Port range settings must be changed if the network firewall or local network allows only specific UDP/RTP port numbers. The port numbers should not conflict with the RTP port numbers of the NVR system or port numbers of other streaming programs. If an RTP port number conflicts with others, monitoring may not be available.

- **Don't display broken frames:** It is possible that frames will be broken or lost when using the RTP protocol depending on the network environment. Select whether or not to display the broken frames in Live or Play panels.
- **Buffering Frame Count:** Set up the number of buffering frames to use for the RTP protocol. The higher the number is, the less the video stutter. The lower the number is, the higher the real-time monitoring.
- **Use Network Keyboard:** Allows you to control the Client program by using a network keyboard. Set up the port number that the Client program will use when it is controlled by a network keyboard. Selecting **Use large mouse cursor** enlarges the mouse cursor size.

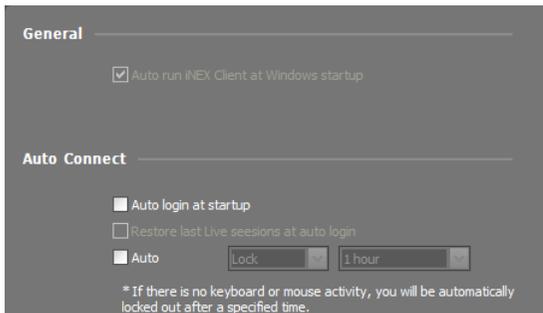
Map



- **Activate Auto Focusing:** Enlarges the area where the event-detected device is placed when an event is detected.
 - **Focusing Event:** Select a desired event for auto focusing.
 - **Focusing Duration:** Set up the duration for auto focusing to last.
 - **Focusing Minimum Dwell:** Set up the duration for auto focus to last for the first detected event when events are detected in more than one device consecutively. Auto focusing moves to the later detected event after the preset time expires.
- **Zoom Finder:** Displays or hides the PIP screen. The rectangle in the PIP screen indicates the enlarged area. When set to **Auto**, the PIP screen is displayed only while a canvas is enlarged.
- **Map Event Spot:** Video from the event-detected camera is displayed on the map event spot screen when an event is detected.

- **Event monitoring dwell:** Set up the duration for video to be displayed on the map event spot screen.
- **Minimum monitoring dwell:** Set up the event monitoring dwell time for the current event when other events are detected while event-detected video is displayed. Video from other events is displayed after the preset time is expired.
- **Instant Viewer:** Set up the duration for the instant view to be displayed. Instant Viewer is displayed when clicking a camera on a map.

User



The screenshot shows the iNEX Client settings window. It is divided into two sections: 'General' and 'Auto Connect'. In the 'General' section, there is a checked checkbox for 'Auto run iNEX Client at Windows startup'. In the 'Auto Connect' section, there are three options: 'Auto login at startup' (unchecked), 'Restore last Live sessions at auto login' (unchecked), and 'Auto' (checked). The 'Auto' option has a dropdown menu set to 'Lock' and a time dropdown set to '1 hour'. A note at the bottom states: '* If there is no keyboard or mouse activity, you will be automatically locked out after a specified time.'

- **Auto run iNEX Client at Windows startup:** The Client program automatically runs when logging onto Windows.
- **Auto login at startup:** The Client program automatically logs in with the login information from the previous connection when it starts. Checking the **Restore last Live sessions at auto login** box restores the previous live monitoring sessions in the current Live panels.
- **Auto:** The Client program automatically logs out or the Client system is locked out depending on the setting when there are no mouse or keyboard inputs for the specified time.

Chapter 5 — Live Video Monitoring

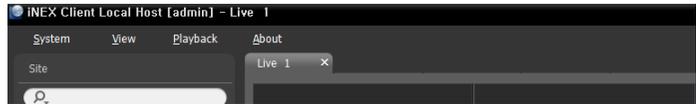
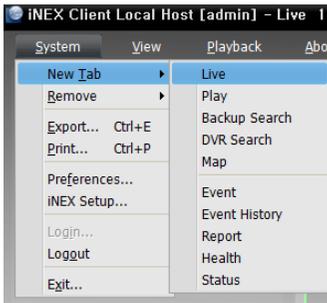
You can monitor live video of each group. The NVR system displays video from devices based on the settings in the device on the Live screen.

First, check the following and run the Client program.

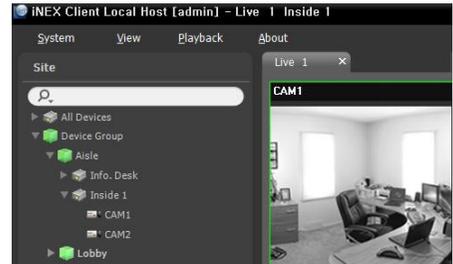
- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 89) for details.

5.1 Monitoring Video

Live video monitoring is supported in the Live panel (maximum 4). If the Live tab is not on the tab panel, go to the System menu, click New Tab, and then Live.



Click the Live tab on the tab panel → Select a camera, device or device group from the Site list, and drag and drop it on the Live screen. Live video from each camera is displayed on the screen. You can move a camera screen to the desired location on the Live screen without disconnecting the current connection while monitoring video. Select a camera screen and drag and drop it on the desired location.



NOTE: The Client system performance might seriously deteriorate when simultaneously monitoring or playing back video with 1280x720 or higher resolution on more than one camera screen.

Panel Toolbar

The panel toolbar at the bottom allows you to control the Live panel.



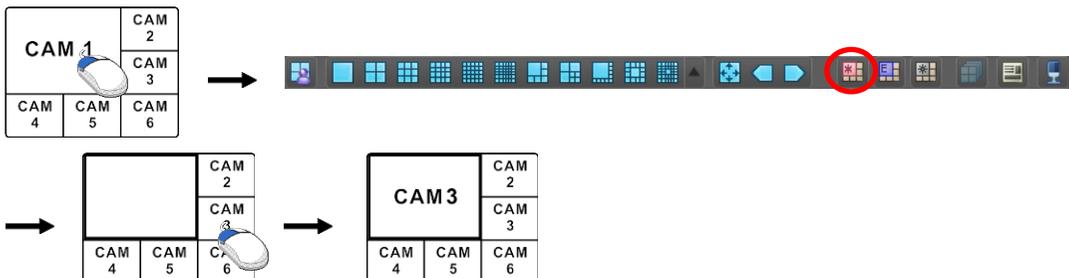
- (Save to User Layout): Saves the current screen format.
- (Screen Format): Changes the screen format. Clicking the button displays more available screen formats. Clicking the or button moves to the previous or next camera groups.

-  (Layout Sequence): Starts or stops layout sequence. Refer to 5.1 Monitoring Video, Layout Sequence Monitoring (p. 49) for details.
-  (Hotspot): Sets up a selected camera screen as a hotspot screen. Refer to Hotspot Setup (p. 46) for details.
-  (Event Spot): Sets up a selected camera screen as an event spot screen. Refer to Event Spot Setup (p. 46) for details.
-  (Map Event Spot): Sets up a selected camera screen as a map event spot screen. Refer to Map Event Spot Setup (p. 47) for details.
-  (Export/Print Image): Allows you to export or print the images currently displayed on the screen.
-  (Audio Broadcast): Broadcasts audio to each device in the current Live tab.

Hotspot Setup

NOTE: The “hotspot” in the iNEX program is a predefined camera screen in which video from any camera among those currently displayed can be monitored with emphasis. The hotspot screen is surrounded by a red outline.

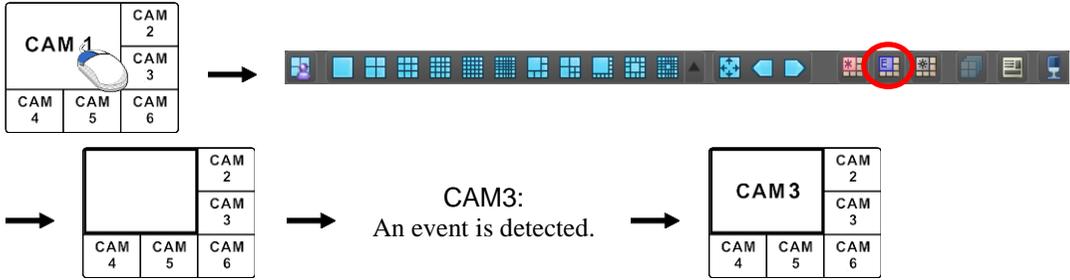
1. Select a camera screen to set up as a hotspot screen on the current monitoring screen.
2. Click the  (Hotspot) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released. The hotspot screen is surrounded by a red outline.
3. Select any camera on the screen. Video from the selected camera is displayed on the hotspot screen, and you can control the camera.



Event Spot Setup

NOTE: The “event spot” in the iNEX program is a predefined camera screen in which video from a camera which an event is detected among cameras currently displayed can be monitored with emphasis. The event spot screen is surrounded by a blue outline.

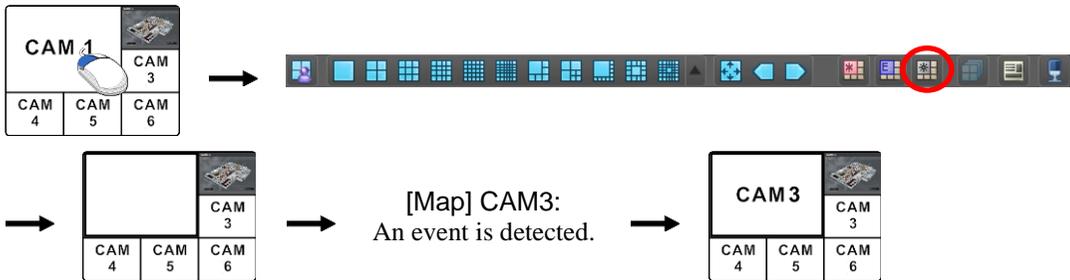
1. Select a camera screen to set up as an event spot screen on the current monitoring screen.
2. Click the  (Event Spot) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released. The event spot screen is surrounded by a blue outline.
3. When an event is detected, video from the event-detected is displayed on the event spot screen.



Map Event Spot Setup

NOTE: The “map event spot” in the iNEX program is a predefined camera screen in which video from a camera which an event is detected among cameras on a map can be monitored with emphasis. The map event spot screen is surrounded by a gray outline.

1. Select a camera screen to set up as a map event spot screen on the current monitoring screen.
2. Click the  (Map Event Spot) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released. The map event spot screen is surrounded by a gray outline.
3. When an event is detected, video from the event-detected is displayed on the map event spot screen.

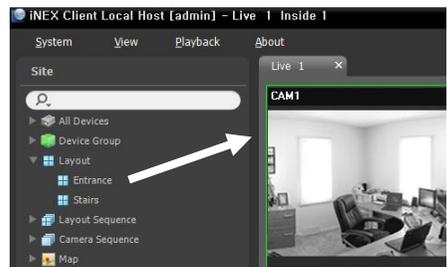


Layout Monitoring

You can monitor video from multiple cameras in a predefined layout. A layout should be registered on the NVR system for layout monitoring. Refer to the following explanation for details about layout registration.

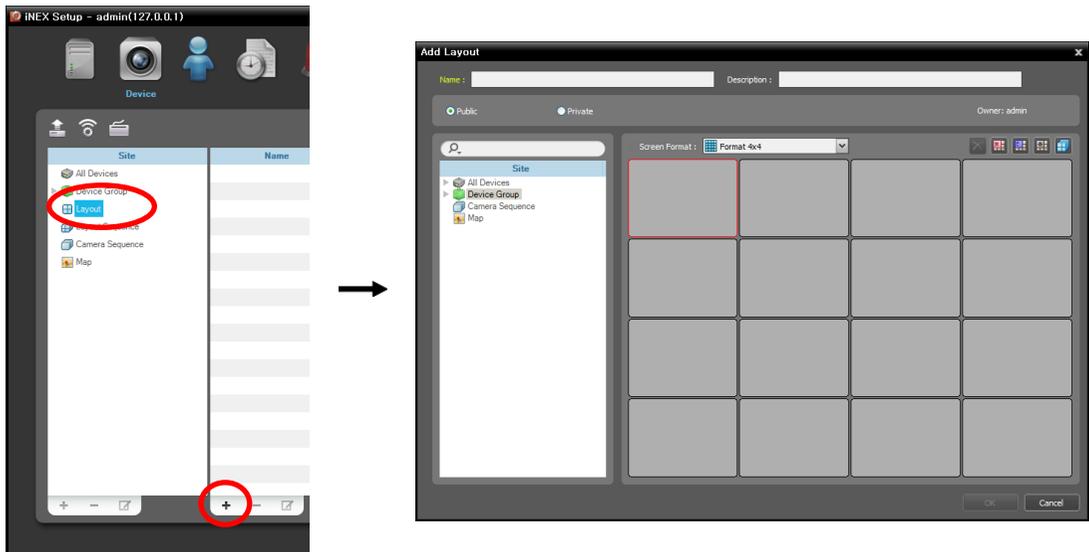
NOTE: A “layout” in this manual refers to a screen organization created by arranging specific cameras in a specific screen format.

Select a desired layout from the Layout list, and drag and drop it on the Live screen. Video from cameras added to the Layout is displayed in the predefined screen format on the screen.



Registering Layouts

1. Go to the System menu, and click iNEX Setup, and select the Device menu.
2. Click Layout in the Site panel, and then the **+** button at the bottom of the Site List panel on the right. The Add Layout window appears.



- **Name:** Enter the layout name.
- **Site:** Displays a list of registered devices, cameras or camera sequences. You can search for a registered device or camera sequence by entering text beside the  icon. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- **Public/Private:** Displays the layout to all users (**Public**) or to a current user only (**Private**). The admin user can see all layouts.
- **Owner:** Displays the user ID of the person who created the layout.
- **Screen Format:** Select a screen format for the layout to be registered. Select a device, a camera or camera sequence to assign to the layout in the **Site** panel, and drag and drop it in the desired camera screen of the layout screen.
-  (**Remove**): Selecting a camera screen in the layout screen and clicking this button deletes the camera assigned to the camera screen from the layout screen.
-  (**Hotspot**): Selecting a camera screen in the layout screen and clicking this button sets up the camera screen as a hotspot screen.
-  (**Event Spot**): Selecting a camera screen in the layout screen and clicking the button sets up the camera screen as an event spot screen.
-  (**Map Event Spot**): Selecting a camera screen in the layout screen and clicking the button sets up the camera screen as a map event spot screen.
-  (**Camera Sequence**): Selecting a camera screen in the layout screen and clicking this button allows you to create a camera sequence and assigns the created camera sequence to the camera screen.

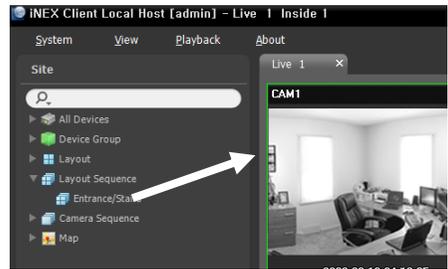
Clicking the OK button completes registration of the layout.

Layout Sequence Monitoring

You can monitor video from multiple cameras sequentially in more than one predefined layout. A layout sequence should be registered on the NVR system for layout sequence monitoring. Refer to the following for details about layout sequence registration.

NOTE: A “layout” in this manual refers to a screen organization created by arranging specific cameras in a specific screen format.

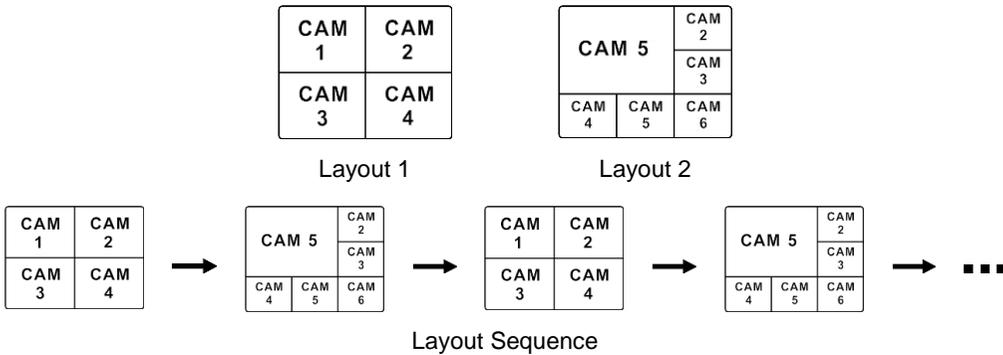
1. Select a desired layout sequence from the Layout Sequence list, and drag and drop it on the Live screen. Video from cameras added to the layout sequence is displayed in the screen format for each layout sequentially.



2. Clicking the  (Layout Sequence) button of the toolbar at the bottom of the panel stops or starts the layout sequence.

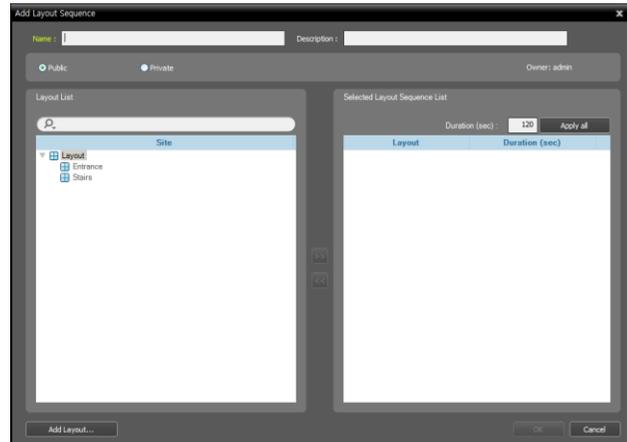
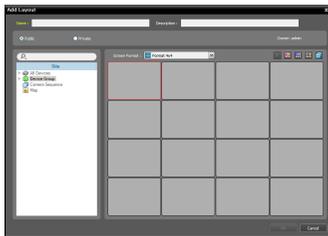
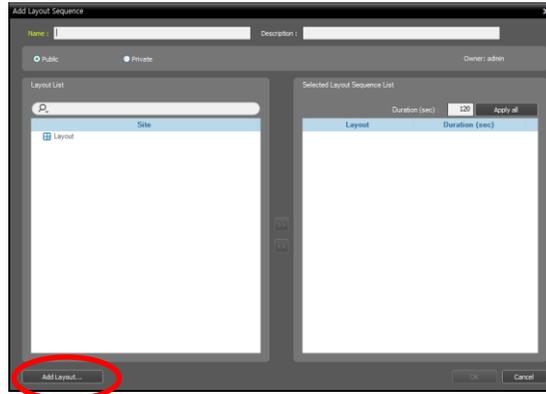
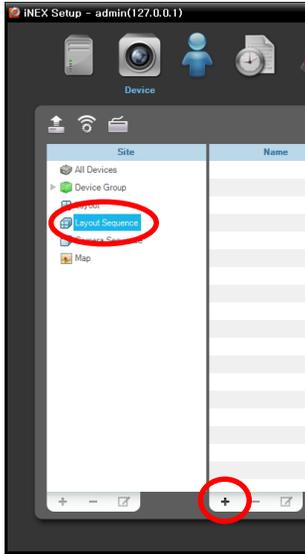


Example



Registering Layout Sequences

1. Go to the System menu, and click INEX Setup, and select the Device menu.
2. Click Layout Sequence in the Site panel, and then the **+** button at the bottom of the Site List panel on the right. The Add Layout Sequence window appears.
3. If no layout to be sequenced is registered, click the Add Layout button. The Add Layout window appears. Register layouts to sequence referring to Layout Monitoring (p. 47). At least two layouts must be registered for sequencing.



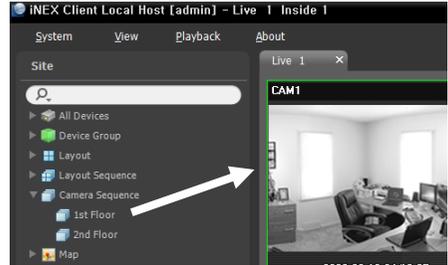
- **Name:** Enter the layout sequence name.
- **Public/Private:** Displays the layout sequence to all users (**Public**) or to a current user only (**Private**). The admin user can see all layout sequences.
- **Owner:** Displays the user ID of the person who created the layout sequence.
- **Layout List:** Displays a list of registered layouts. You can search for a registered layout by entering text beside the  icon. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- **Selected Layout Sequence List:** Displays the list of layouts registered for the layout sequence. **Duration (sec)** displays the duration for each layout to be displayed on the screen. Clicking the **Apply all** button applies the duration setting to all layouts in the list.

Select a layout from **Layout List**, click the  button, and the selected layout is added to **Selected Layout Sequence List**. Clicking the **OK** button completes registration of the layout sequence.

Camera Sequence Monitoring

You can monitor video from multiple cameras in the same camera screen sequentially. A camera sequence should be registered on the NVR system for camera sequence monitoring. Refer to the following for details about camera sequence registration.

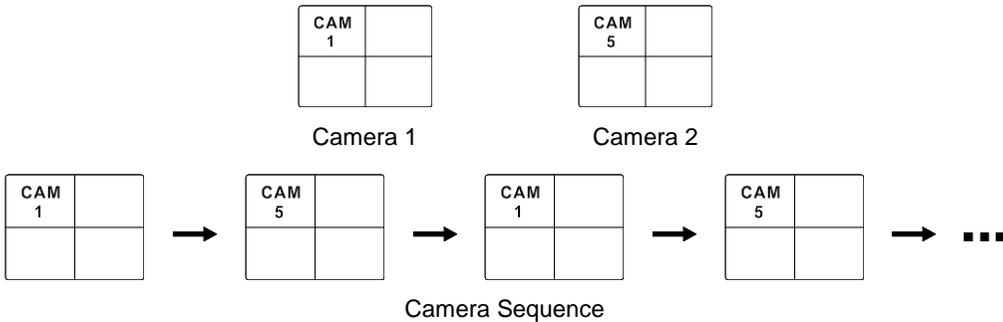
1. Select a desired camera sequence from the **Camera Sequence** list, and drag and drop it on the Live screen. Video from cameras added to the camera sequence is displayed on the screen sequentially.



2. Clicking the  (Camera Sequence) button on the camera screen control toolbar stops or starts the camera sequence.

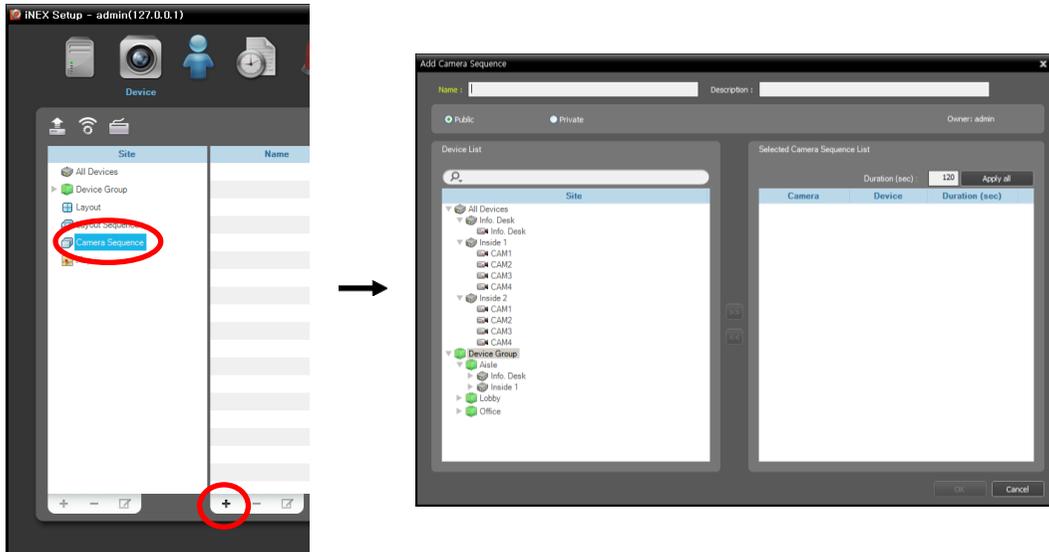


Example



Registering Camera Sequences

1. Go to the System menu, and click iNEX Setup, and select the Device menu.
2. Click Camera Sequence in the Site panel, and then the **+** button at the bottom of the Site List panel on the right. The Add Camera Sequence window appears.



- **Name:** Enter the camera sequence name.
- **Public/Private:** Displays the camera sequence to all users (**Public**) or to a current user only (**Private**). The admin user can see all camera sequences.
- **Owner:** Displays the user ID of the person who created the camera sequence.
- **Device List:** Displays a list of registered devices. You can search for a registered device by entering text beside the  icon. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- **Selected Camera Sequence List:** Displays the list of cameras registered for the camera sequence. Duration (sec) displays the duration for video from each camera to be displayed on the screen. Clicking the Apply all button applies the duration setting to all cameras in the list.

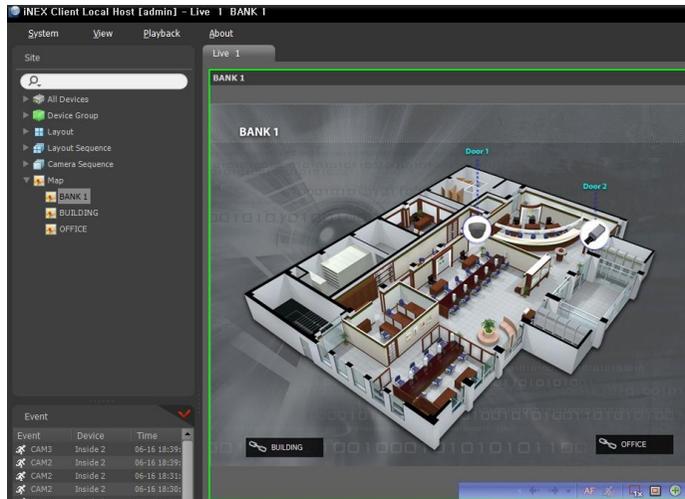
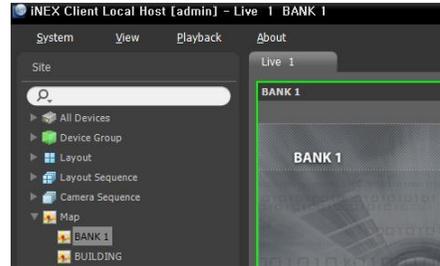
Select a camera from Device List, click the  button, and the selected camera is added to Selected Camera Sequence List. Clicking the OK button completes registration of the camera sequence.

5.2 Map Monitoring

You can monitor video from cameras, event detection and input/output device status on a map for devices registered on the NVR system. A map should be registered on the NVR system for map monitoring. Refer to Chapter 16 — Map Editor (p. 121) for details about map registration.

Map monitoring is supported in the Live panel (maximum 4) and Map panel. If the Live or Map tab is not on the tab panel, go to the System menu, click New Tab, and then Live or Map.

Select a desired map from the **Map** list, and drag and drop it on the **Live** screen. The selected map is displayed on the screen. You can move a map to the desired location on the **Live** screen without disconnecting the current connection while monitoring video. Selecting an input/output device on the map, and dragging and dropping it on the **Live** screen, **Play** panel or **Device Status** panel allows you to monitor or play back video or to monitor device status.



Hovering the mouse cursor over the input/output device on the map displays the event detection and status of the input/output device. When the input/output device detects any event or is not working properly, the following icons appear sequentially to the maximum of 4 at a time (some event icons may not be supported, depending on the specifications and version of the device):

- | | | | |
|-------------|------------|------------------|---------------------------|
| Unplugged | Event-Off | Irregular | Motion |
| Video Blind | Video Loss | Object Detection | Video Analytics Detection |
| Trip-Zone | Tampering | Audio Detection | Alarm-In |
| Alarm-Out | | | |

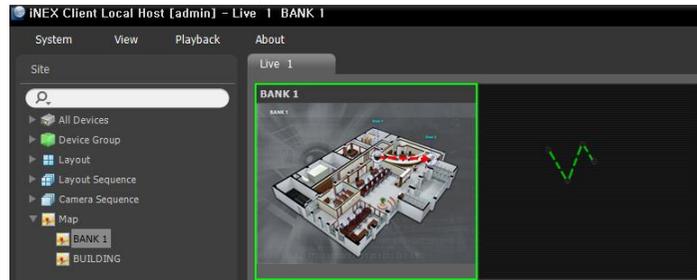
Event detection is displayed according to the event detection settings, and Irregular is based on the system check settings on the device that the input/output device is connected.

Event detection and status are displayed in unique colors if you have set up status color during the map setup. When more than one event or status is detected at the same time, the color reflecting each event detection or status is displayed sequentially.

Path Sequence

You can monitor video from multiple cameras sequentially on a map in the same camera screen during map monitoring. A path sequence should be set up for path sequence monitoring. Refer to 16.2 Setting up Map, Path Sequence (p. 124) for details about the path sequence setup.

Select a desired path of the path sequence from the map, and drag and drop it on the Live screen. Video from the cameras associated to the path sequence is displayed sequentially during the preset duration period.



5.3 Controlling Cameras

A control toolbar and a screen menu are provided for controlling camera.

Control Toolbar

When selecting a camera screen and hovering the mouse cursor over the camera screen, the control toolbar is displayed over that camera screen. The control toolbar allows you to control the selected camera. Hovering the mouse cursor over a button displays a tooltip for the button.

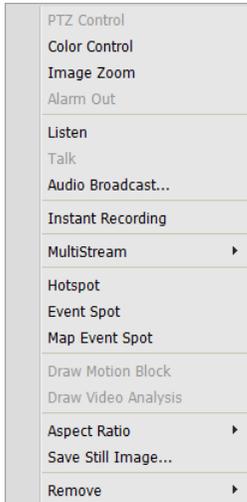


- (PTZ Control): Allows you to control PTZ for a camera that supports PTZ control. Refer to PTZ Control (p. 55) for details.
- (Color Control): Adjusts the brightness, contrast, saturation and hue of the current video. Clicking the button cancels the adjustment and reloads the original image.
- (Image Zoom): Zooms in on the image. Refer to PTZ Control (p. 55) for details.
- (Camera Sequence): Starts or stops camera sequence. Refer to 5.1 Monitoring Video, Camera Sequence Monitoring (p. 51) for details.
- (Listen/Talk): Receives audio from the device or sends audio to the device.
- (Instant Recording): Starts or stops the Instant recording (supported only for devices registered on the recording service). During Instant recording, the Instant Recording OSD is displayed in the upper-right corner of the camera screen and Time-Lapse recording or Event-Based recording stops. Recording might be delayed depending on system congestion, and the recording OSD might be displayed later or for longer than the scheduled time. Refer to 6.1 Setting up Recording Schedule, Setting up Instant Recording (p. 67) for details.

NOTE: The instant recording is a function that allows you to manually record video which is currently being monitored. You can record desired video with higher performance if the codec, resolution, frame rate and quality have been set up at higher values for instant recording.

Live Screen Menu

The screen menu is displayed when selecting a camera screen and clicking the right mouse button. The screen menu allows you to control the selected camera.



- **PTZ Control, Color Control, Image Zoom, Listen, Talk, Instant Recording:** These function the same as clicking the individual buttons on the control toolbar. Refer to **Control Toolbar** (p. 54) for details.
- **Audio Broadcast:** Broadcasts audio to each device in the current Live tab.
- **Alarm Out:** Activates or deactivates alarm out.
- **MultiStream:** Allows you to choose the desired stream if the device is in the multistream mode for live monitoring (supported only for devices which use the iNEX protocol).
- **Hotspot:** Sets up a selected camera screen as a hotspot screen. Refer to **Hotspot Setup** (p. 46) for details.
- **Event Spot:** Sets up a selected camera screen as an event spot screen. Refer to **Event Spot Setup** (p. 46) for details.
- **Map Event Spot:** Sets up a selected camera screen as a map event spot screen. Refer to **Map Event Spot Setup** (p. 47) for details.
- **Draw Motion Block:** Displays the area where motion is detected with red blocks when a motion detection event occurs for the selected camera (supported only for connection of network video transmitters which use the iNEX protocol).
- **Aspect Ratio:** Select the proper image aspect ratio.
 - **Fit to Screen:** Displays images by fitting them to the screen size regardless of the aspect ratio.
 - **Fit to Screen (Aspect Ratio):** Displays images by fitting them to the screen size keeping the aspect ratio. This might cause top and bottom or left and right side of images to be cropped depending on the screen size. This aspect ratio is not supported and **Original Ratio** is applied for camera screens that the following functions are activated: Image Zoom, Hotspot, Event Spot, Draw Motion Block.
 - **Original Ratio:** Displays images by fitting them within the screen size while maintaining their original ratio.
 - **Half Size (x0.5) to Quadruple Size (x4):** Selecting the desired image size displays images in the selected size. Options are enabled if the selected camera screen can display images in that size.
- **Save Still Image:** Saves the current image on the screen as an image file at its original size.
- **Remove:** Disconnects the current connection.

PTZ Control

Clicking the  (PTZ Control) button on the control toolbar displays the PTZ control toolbar and allows you to control PTZ. Depending on the PTZ camera specifications, some features may not work.

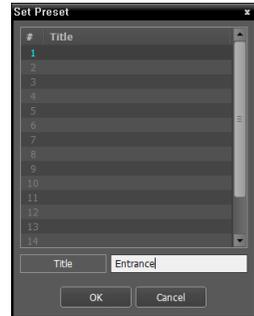


-  (Direction Control): Displays or hides the  (Direction Control Panel). You can control the direction of the PTZ camera by clicking the arrow buttons on the direction control panel or by clicking and dragging the mouse on the camera screen.
-  (Zoom In/Out): Zooms the camera lens in or out.
-  (Focus Far/Near): Focuses on near or far objects.
-  (Iris Open/Close): Opens or closes the iris of the camera lens.
-  (Set/View Preset): See **PTZ Preset Control** (p. 53) for an explanation of this function.
-  (Advanced Menu): Displays the **Advanced Menu** window and allows you to use more features that the PTZ camera supports. Refer to the PTZ camera manufacturer's manual for details about additional features.
-  (Close): Exits the PTZ mode and returns to the control toolbar.

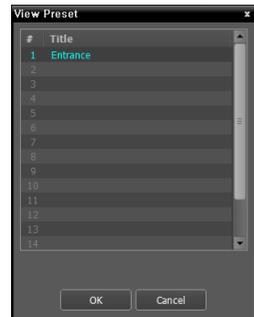
PTZ Preset Control

You can save camera directions as a Presets so that you can move the camera directly to a saved direction.

1. Move the PTZ camera to the desired position.
2. Click the  (Set Preset) button on the PTZ control toolbar, and the Set Preset window appears. Enter a name for the Preset and click the OK button. The current position is saved as the Preset name.



3. Click the  (View Preset) button on the PTZ control toolbar, and the View Preset window appears. Select the desired Preset, and the PTZ camera moves to the position of the selected Preset.



Zoom Control

Clicking the  (Image Zoom) button on the control toolbar allows you to zoom in on the current video.

NOTE: "PIP" is an abbreviation of *Picture in Picture* and describes a smaller screen within a screen.



Dragging the mouse on the camera screen moves the zoomed-in area.

-  (Slide Bar): Adjusts the enlargement ratio. You can adjust the enlargement ratio also by using the mouse scroll wheel.
-  (Actual Size Zoom): Enters the actual size zoom mode. In the actual size zoom mode, the image is displayed in its original size regardless of the camera screen size or image's aspect ratio.
-  (Zoom Finder): Displays or hides the PIP screen. The rectangle in the PIP screen indicates the zoomed-in area.

5.4 Controlling Maps

A control toolbar and a screen menu are provided for controlling a map.

Control Toolbar

When selecting a map and hovering the mouse cursor over the map, the control toolbar is displayed over that map. The control toolbar allows you to control the selected map. Hovering the mouse cursor over a button displays a tooltip for the button.



- (Previous Map, Next Map): Moves to the previous or next connected map of the maps that have been connected to the current map screen. Maps can be connected by using map link or by selecting a map from the map list and dragging and dropping it on the current map screen.
- (Auto Focusing): Enlarges the area where the event-detected device is placed when any event is detected. When events are detected in more than one device at the same time, the canvas is enlarged as much as possible while still displaying all event-detected devices. When events are detected in more than one device consecutively, the focusing moves to the later detected event after the preset time expires. Refer to 4.3 Client, Menu – Preference Settings, Map (p. 42) for details about the auto focusing setting.
- (Focusing Event): Allows you to select a desired event for auto focusing.
- (Actual Size (x1)): Displays a map in its original size regardless of the map screen size or canvas's aspect ratio.
- (Zoom Finder): Displays or hides the PIP screen. The rectangle in the PIP screen indicates the enlarged area. When set to Auto, the PIP screen is displayed only while a canvas is enlarged.
- (Zoom In): Allows you to adjust the enlargement ratio of the canvas.

Example

- When Zoom Finder is set to Off;

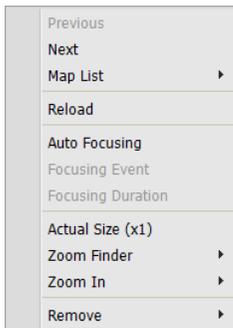


- When Zoom Finder is set to Auto or On;



Map Screen Menu

The screen menu is displayed when selecting a map screen and clicking the right mouse button. The screen menu allows you to control the selected map.



- Previous, Next, Auto Focusing, Actual Size (x1), Zoom Finder, Zoom In: These function the same as clicking the individual buttons on the control toolbar. Refer to **Control Toolbar** (p. 57) for details.
- List: Displays the list of the previous or next connected maps. Selecting a map from the list moves to the selected map.
- Reload: Reloads the connection of the current map.
- Focusing Event, Focusing Duration: Allows you to set up auto focusing events and duration. Refer to **4.3 Client, Menu – Preference Settings** (p. 37) for details.
- Remove: Disconnects the current connection.

Chapter 6 — Recording

You can record video from cameras connected to devices registered in the NVR system and iNEX program provides three types of recording: Time-Lapse Recording, Event-Based Recording (Event and Pre-Event) and Instant Recording. During Time-Lapse recording or Event-Based recording, the system performs recording based on the settings of schedule Presets during the scheduled time. Instant recording can be manually started or stopped while monitoring video.

When more than one recording mode is set up for the same period, the iNEX program records video with the recording settings of the highest priority recording mode. The priority order of recording modes is as follows: Pre-Event recording (lowest) → Time-Lapse recording or Event recording → Instant recording (highest). In the same recording mode or between the Time-Lapse recording and Event recording mode, the schedule higher up the list in the **Schedule Setup** window has priority over the other schedules. You can change a schedule's priority by changing its position in the schedule list.

First, check the following and run the Setup program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to **Chapter 12 — Device Management** (p. 89) for details.

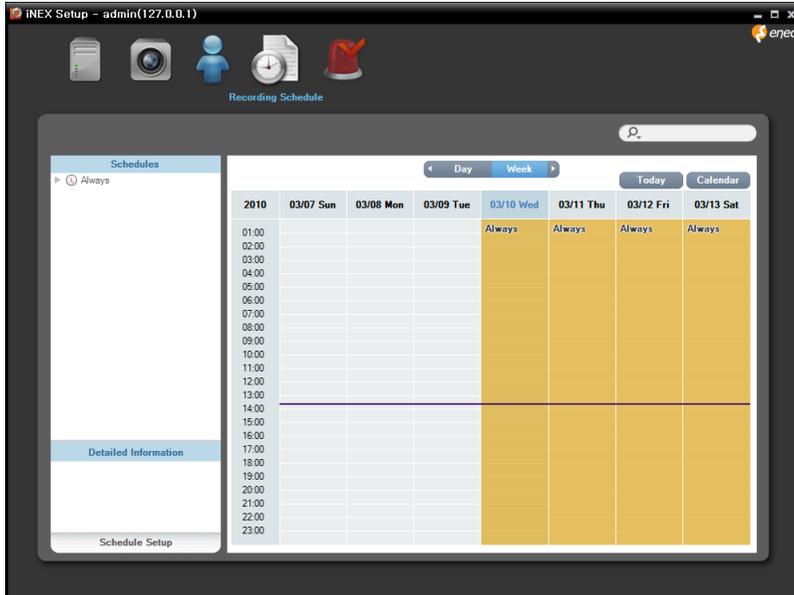
NOTE: Recording is not supported for DVRs.

6.1 Setting up Recording Schedule

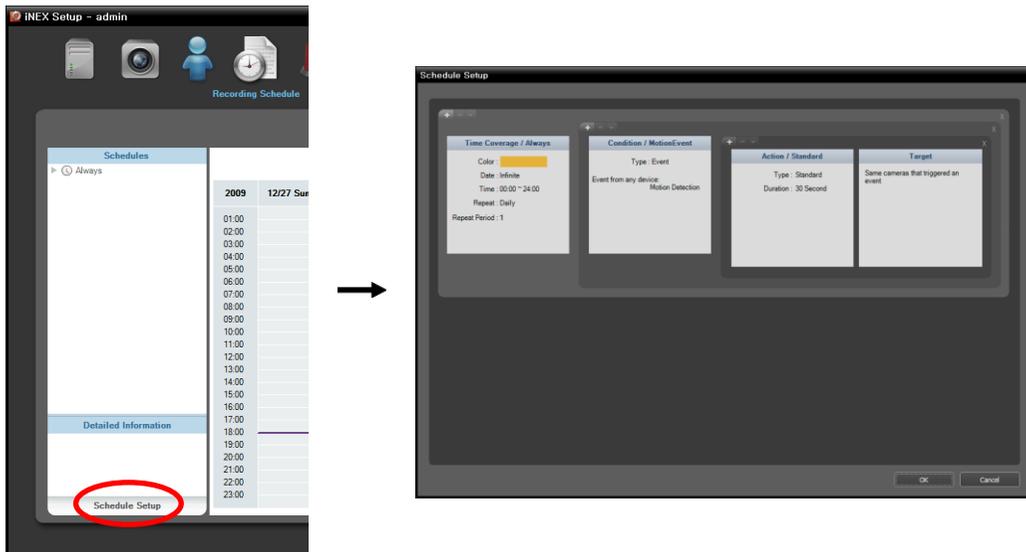
Go to the **Start Menu** → Click **iNEX** → Run the **iNEX Setup** program → Select the **Recording Schedule** menu, and set up the recording schedule following the procedures below.

NOTES:

- The recording function is supported only for the device registered as the *admin* user.
- If the same device is registered on another NVR system, only the first NVR system that is connected to the device records video. Once a NVR system connects to the device, other NVR systems will not record video from the device unless the connection of the first NVR system is released.
- The iNEX program performs recording with the settings of codec, resolution, frame rate and quality set in the device if the device uses protocols other than iNEX or ONVIF™ Conformance.
- If the device uses the ONVIF™ Conformance protocol, the iNEX program performs recording with the settings of the profile designated in the iNEX program among preset profiles. You can designate which profile to use for recording when editing the device settings. Refer to **12.2 Managing Devices, Editing Device Information** (p. 93) and **12.3 Remote Setup of ONVIF™ Conformance Protocol Devices, Profiles** (p. 102) for details.
- When the recording speed and resolution set in the iNEX program are higher than the *Frame Rate* and *Max. Resolution* set on the device, the NVR system will record video at the *Frame Rate* and *Max. Resolution* set on the device (four-channel network video transmitters only which use the iNEX protocol).
- If network connection is temporarily lost between the device and the NVR system because of network problems or NVR system reboot, the device saves video temporarily while the network is down (supported only for devices which use the iNEX protocol). When network connection is re-established, the device transmits the saved video to the NVR system at a time. In this case, video recording during the period might be made with different settings from those in the recording schedule.
- Recording speed might be decreased depending on the network conditions or system performance.
- Recording might be delayed because of system congestion, and the recording OSD might be displayed later or for longer than the scheduled time.



Click the Schedule Setup button at the bottom. The Schedule Setup window appears, and schedule windows are displayed with the current settings for each Preset.



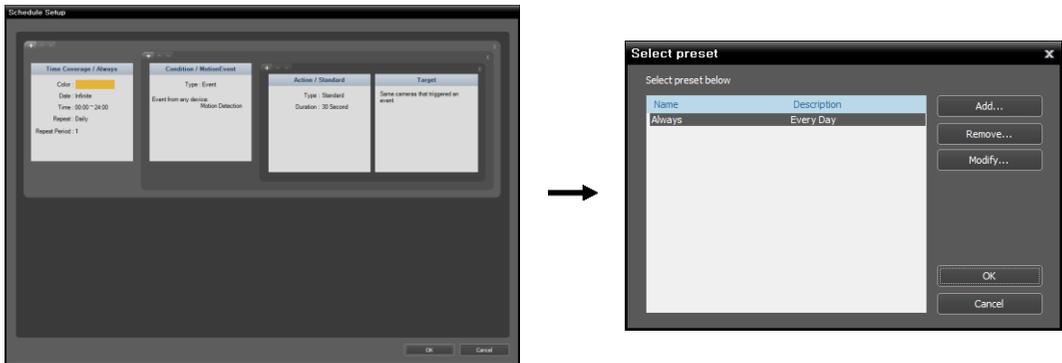
- **Time Coverage:** Sets up the schedule time. You can set up more than one time range. The higher the schedule position is in the Schedule Setup window, the higher its priority is.
- **Condition:** Sets up the recording type. You can set up more than one recording type for the same recording period. The higher the schedule position is in the Schedule Setup window, the higher its priority is. Some of recording types may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).
- **Action:** Sets up the stream to use for recording (network cameras only) or the recording settings (network video transmitters only). You can set up more than one recording setting for the same recording type. This function is supported only for devices which use the iNEX protocol.
- **Target:** Sets up the cameras to be recorded.

NOTE: In the schedule setup, “Preset” indicates a single setting in which the setting values of *Time Coverage*, *Condition* or *Action* are saved.

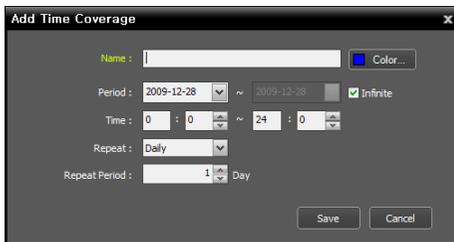
Setting up Time-Lapse Recording

During Time-Lapse recording, the NVR system performs recording continuously based on the schedule settings for the scheduled time (supported only for devices registered on the recording service).

1. Set up the schedule time by double clicking the *Time Coverage* schedule window, and then selecting a desired Preset.



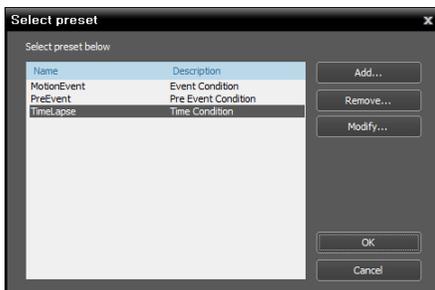
You can add a new Preset or edit a saved Preset by clicking the **Add** or **Modify** button. Refer to the following explanation for setting up a schedule.



- **Name:** Enter the Preset name.
- **Color:** Click the button and select a desired color. The scheduled time section will be highlighted with the selected color in the schedule table.
- **Period:** Set up the schedule time. Selecting the **Infinite** option causes continuous recording based on the **Condition**, **Action** and **Target** preset settings without limiting the period.

- **Time:** Set up the schedule time.
- **Repeat, Repeat Period:** Set up the recording interval and interval period. The NVR system will perform recording at the designated interval during the interval period.

2. Set the recording mode to the Time-Lapse Recording mode by double clicking the *Condition* schedule window and selecting a desired Preset of time condition.

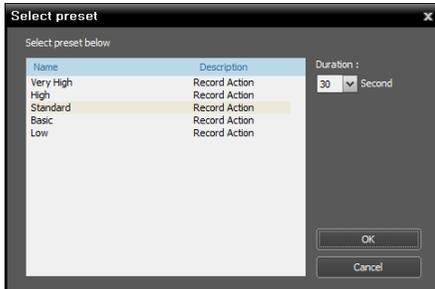


You can add a new Preset or edit a saved Preset by clicking the **Add** or **Modify** button. Clicking the **Add** or **Modify** button displays the following setup screen.



Enter the Preset name and select Time Condition from the Condition Type list.

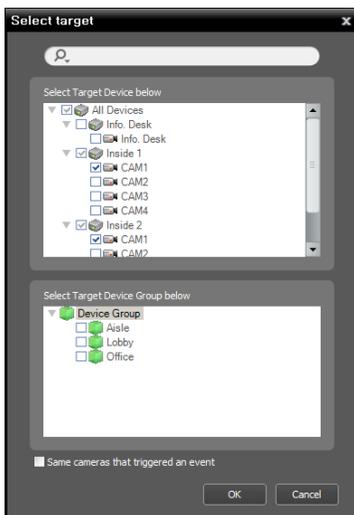
3. Double click the Action schedule window and select the desired Preset (supported only for devices which use the iNEX protocol).



A stream to use for recording (network cameras only) or a codec, resolution, frame rate and quality setting values (network video transmitters only) are allocated to each Preset. The stream or setting values allocated to each Preset is different depending on the device. Refer to 12.2 Managing Devices, Editing Device Information (p. 93) for details.

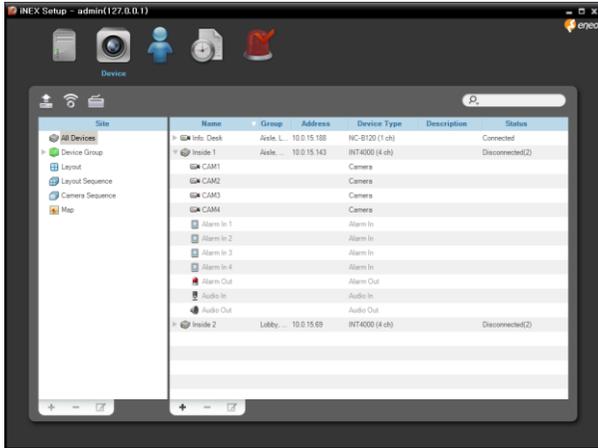
- Duration: This is not supported for time-lapse recording.

4. Select the cameras to be recorded after double clicking the Target schedule window.



Select cameras from the device list to record video or select device groups from the device group list. The Same cameras that triggered an event option is not supported during Time-Lapse recording.

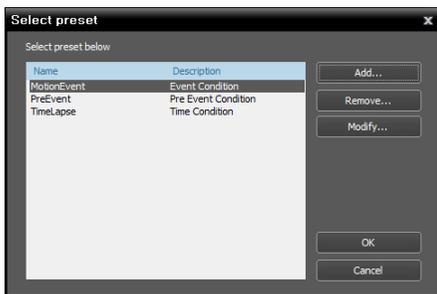
5. You can check the recording status in the Device menu. Click All Devices in the Site panel and all registered devices are displayed in the Site List panel. Click the arrow button (▼) beside the device name, and check the status (Record: During Time-Lapse recording or Event-Based recording, Panic: During Instant recording, Idle: Ready to record). The Time-Lapse Recording or Event-Based Recording OSD (●) is displayed in the upper right corner of the camera screen of the Live screen in the Client program.



Setting up Event-Based Recording

During Event or Pre-Event recording, the NVR system records video based on the event detection for the scheduled time (supported only for devices registered on the recording service). Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).

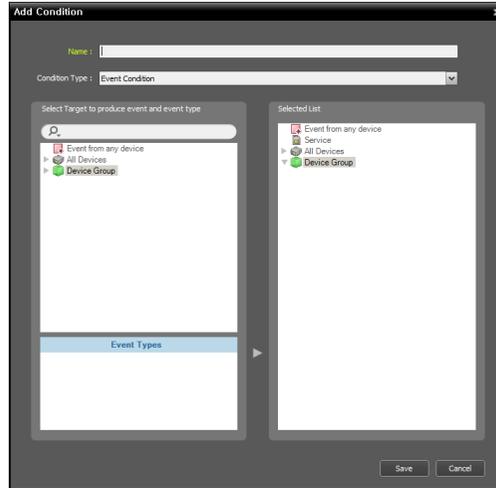
1. Set the schedule time by double clicking the **Time Coverage** schedule window, and then selecting a desired Preset. The way to set up the schedule time for Event or Pre-Event recording is identical to the way to set up for Time-Lapse recording. Refer to **Setting up Time-Lapse Recording** (p. 61) for details.
2. Set up the recording mode to Event Recording or Pre-Event Recording by double clicking the **Condition** schedule window. Then select a desired Preset of event or pre-event condition.



You can add a new Preset or edit a saved Preset by clicking the **Add** or **Modify** button. Clicking the **Add** or **Modify** button displays the following setup screen.

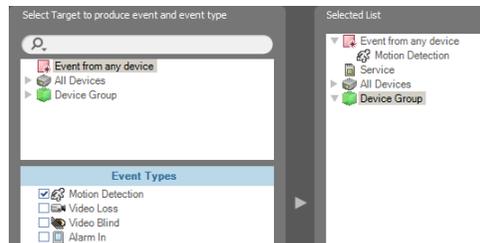
Event Recording Condition

The NVR system records when predefined events are detected. This function may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).



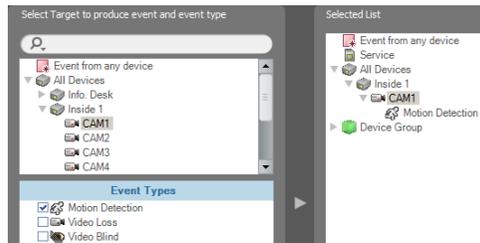
- Name: Enter the Preset name.
- Condition Type: Select Event Condition.
- Select Target to produce event and event type: Select event types that trigger video recording.
- Event from any device: Select to record video when user-defined types of events are detected.

Click Event from any device, and the list of event types is displayed in Event Types below → Select the desired event types, and the selected event types are added to the list under Event from any device on the right.



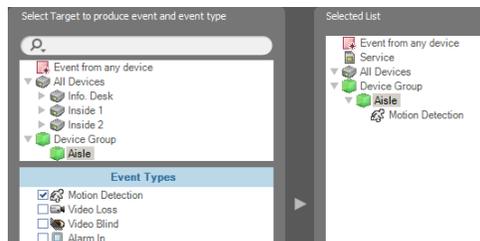
- All Devices: Select to record video when user-defined types of events are detected from the selected device or camera.

Click All Devices, and the list of registered devices and cameras is displayed → Under All Devices, click a device or camera to trigger event recording, and the list of event types supported by the device or camera is displayed in Event Types below → Select the desired event types, and the selected event types are added along with the selected device or camera to the list under All Devices on the right.



- Device Group: Select to record video when the user-defined types of events are detected in the selected device group.

Click Device Group, and the list of registered device groups is displayed → Under Device Group, click a device group to trigger event recording, and the list of event types is displayed in Event Types below → Select the desired event types, and the selected event types are added along with the selected device group to the list under Device Group on the right.



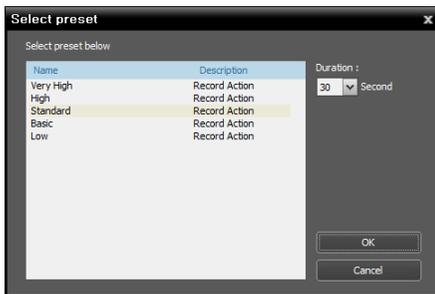
Pre-Event Recording Condition

The NVR system records video prior to event detection when predefined events are detected (supported only for devices which use the iNEX protocol).



Enter the Preset name and select Pre Event Condition from the Condition Type list.

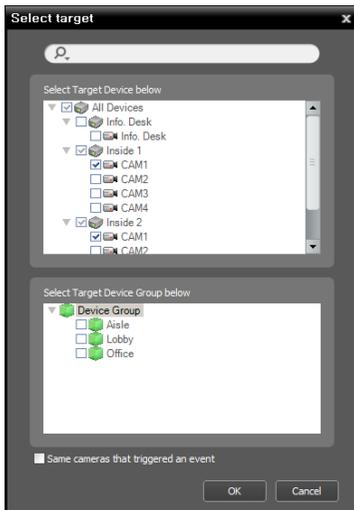
3. Double click the Action schedule window, and then select a desired Preset (supported only for devices which use the iNEX protocol).



A stream to use for recording (network cameras only) or a codec, resolution, frame rate and quality settings (network video transmitters only) are allocated to each Preset. The stream or settings allocated to each Preset is different depending on the device. Refer to 12.2 Managing Devices, Editing Device Information (p. 93) for details.

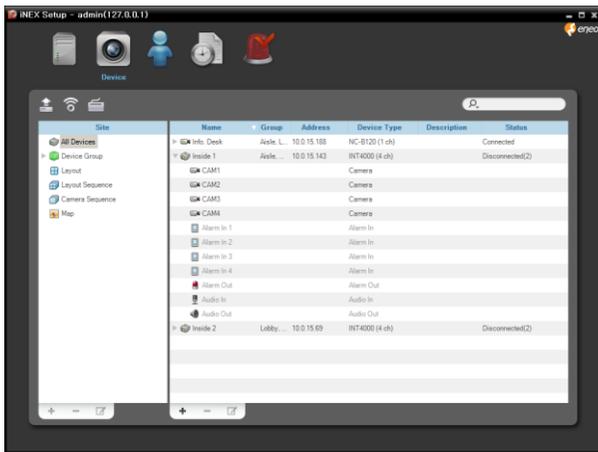
- **Duration:** Set up the duration (maximum of 60 seconds) of recording when a predefined event is detected. For Event recording, the system records video for the duration from the time an event is detected. For Pre-Event recording, the system records video for the duration prior to event detection.

4. Select the cameras to record after double clicking the Target schedule window.



Select cameras from the device list or device groups from the device group list from which to record video whenever any predefined event is detected. Selecting the Same cameras that triggered an event option records video only from the camera where the predefined event is detected (not supported for alarm-in events and audio detection events). The Same cameras that triggered an event option is not supported for Pre-Event recording.

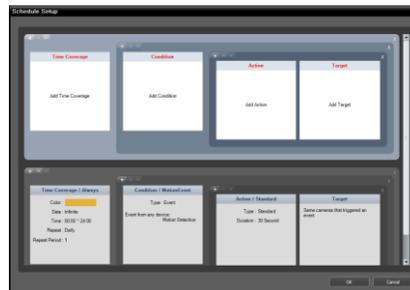
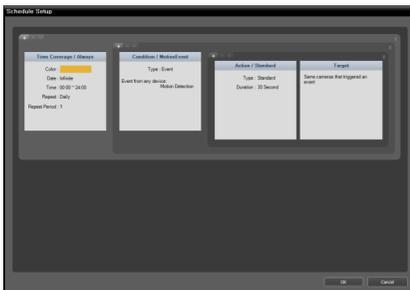
- You can check the recording status in the Device menu. Click All Devices in the Site panel and all registered devices are displayed in the Site List panel. Click the arrow button (▼) beside the device name, and check the status (Record: During Time-Lapse recording or Event-Based recording, Instant Recording: During Instant recording, Idle: Ready to record, Not Use: Camera disabled, Video Loss: On video loss). The Time-Lapse Recording or Event-Based Recording OSD (●) is displayed in the upper right corner of the camera screen of the Live screen in the Client program.



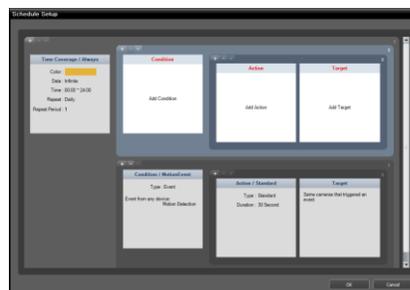
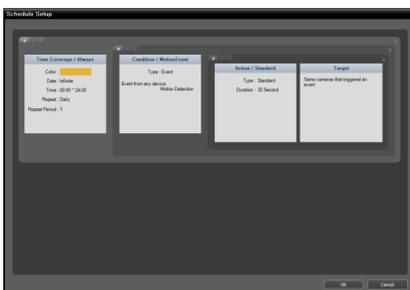
Managing Schedule

Adding a New Schedule

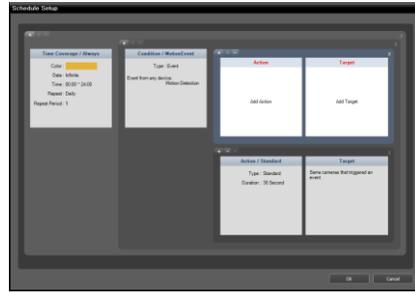
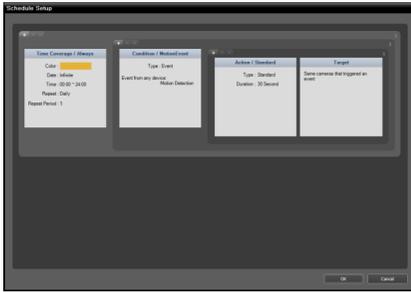
- Adding a new schedule with a different time range: Clicking the + button in the upper left corner of the Time Coverage schedule window allows you to add a new schedule with a different time range.



- Adding a new schedule with the same time range: Clicking the + button in the upper left corner of the Condition schedule window allows you to add a new schedule with the same time range.



- Adding a new schedule with the same time range and target: Clicking the **+** button in the upper left corner of the Action schedule window allows you to add a new schedule with the same time range and target.



Deleting a Schedule

Clicking the **X** button in the upper right corner of any schedule window deletes the schedule.

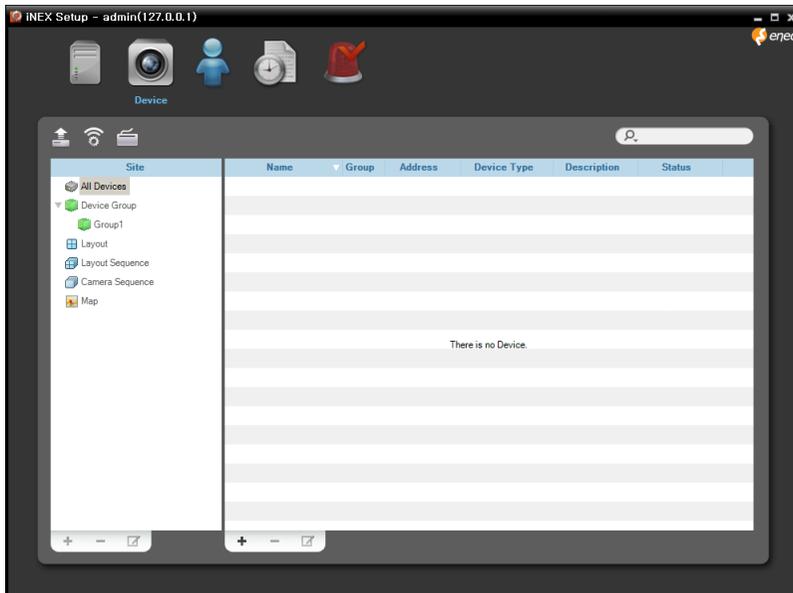
Changing Schedule Priority

Clicking the **▲** or **▼** button in the upper left corner of each schedule window changes the priority of the schedules. The higher the schedule position is in the **Schedule Setup** window, the higher its priority is. The Pre-Event Recording mode has no priority over the Time-Lapse Recording or Event Recording mode.

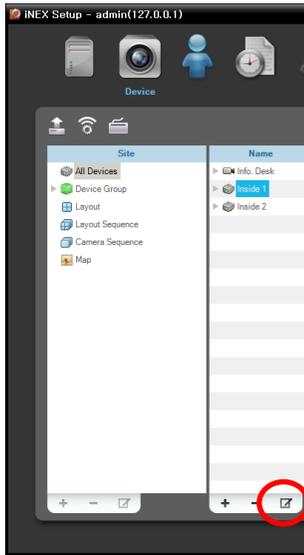
Setting up Instant Recording

Instant recording can be manually started or stopped while monitoring video (supported only for devices registered on the recording service).

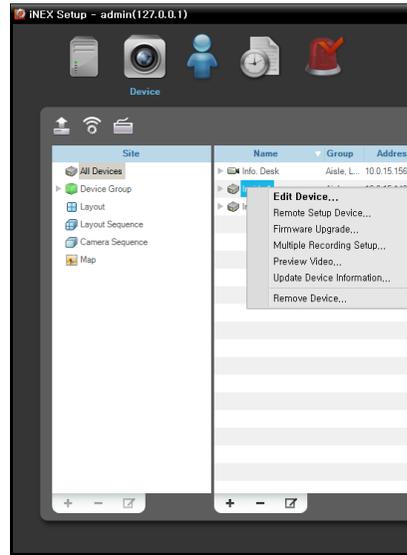
1. Select the **Device** menu.



- Click a device group in the **Site** panel and then click a device in the Site List panel. Clicking the  button at the bottom of the Site List panel, or clicking the right mouse button displays the device menu.



OR



- Select **Edit Device** from the device menu. Select the **Recording Schedule** tab.



- Instant Recording:** Select a Preset to use for instant recording. Refer to 12.2 Managing Devices, Editing Device Information (p. 93) for details about setting up the Preset.

- Run the Client program. Select a camera screen (on the Live screen) on which video to record is displayed and click the  (Instant Recording) button on the control toolbar. The Instant Recording OSD () is displayed at the top right corner of the camera screen, and the system starts recording with the Preset selected in the **Recording Schedule** tab above. Clicking the  (Instant Recording) button again stops recording. Recording might be delayed because of system congestion, and the recording OSD might be displayed later or for longer than the scheduled time.



Chapter 7 — Recorded Video Playback & Exportation

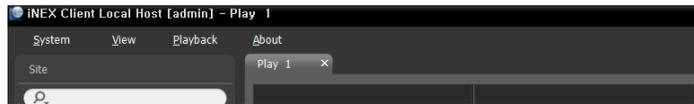
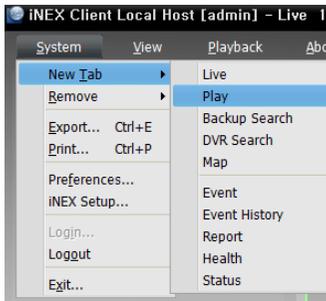
You can play back recorded video or export recorded video to USB devices.

First, check the following and run the Client program.

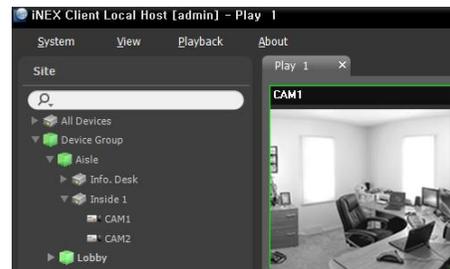
- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 89) for details.
- There should be recorded data in the storage. Refer to Chapter 14 — Storage Management (p. 107) for details.

7.1 Playing back Recorded Video

1. Search and playback of video recorded in the NVR system are supported in the Play panel (maximum 4) and search and playback of video recorded in DVRs or SD (SDHC) memory cards inserted to network cameras using the iNEX protocol are in the DVR Search panel (maximum 4). If the Play or DVR Search tab is not on the tab panel, go to the System menu, click New Tab and then Play or DVR Search.



2. Click the Play or DVR Search tab on the tab panel → Select a camera, device or device group from the Site list and drag and drop it on the Play or DVR Search screen. Recorded video from each camera is displayed on the screen. You can move a camera screen to the desired location on the Play or DVR Search screen without stopping the current playback while playing back video. Select a camera screen and drag and drop it on the desired location.



If a layout is registered on the NVR system, you can play video in the layout format by selecting a desired layout from the Layout list and dragging and dropping it on the Play screen. Refer to 5.1 Monitoring Video, Layout Monitoring, Registering Layouts (p. 48) for details about the registration of a layout.

NOTES:

- The Client system performance might seriously deteriorate when simultaneously monitoring or playing back video with 1280x720 or higher resolution on more than one camera screen.
- A “layout” in this manual refers to a screen organization created by arranging specific cameras in a specific screen format.

3. A panel toolbar, a timetable, a control toolbar and a screen menu are provided for playing back recorded video.

Panel Toolbar

The toolbar at the bottom of the panel allows you to search and play back recorded video.

Play Panel



DVR Search Panel



- (Event Search/Time-Lapse Search): Switches search mode between event search and time-lapse search. Refer to [Timetable/Event List](#) (p. 71) for details.
- (Search Filter): Sets search conditions for event search. Refer to the [DVR User's Manual](#) for details about the search condition.
- (Calendar): Searches video for a specific date. Selecting a date displays the recorded data for that date in the timetable. The dates containing recorded images are enabled in the calendar.
- (Move to): Searches video for a specific time.
 - Go To: Displays a time setup window. Entering a specific time moves to the image for that time.
 - Move First: Moves to the first recorded image in the data displayed in the timetable.
 - Move Last: Move to the last recorded image in the data displayed in the timetable.
- (Additional Menu): Displays a menu.
 - Export Image File, Print Image: Exports or prints the images currently displayed on the screen.
 - Removed Devices: Allows you to search for a removed device and play back video from that device if video was recorded in the NVR system before the device was removed (supported only for the Play panel).
 - Select Segment: Allows you to select a video segment when the DVR's time and date have been reset to a time that is earlier than previously recorded video and there is more than one video segment in the same time range due to time overlap (supported only for DVRs which provide the hour segments timetable).
 - Data Source: Selects the data source to be searched (supported only for the DVR Search panel).
 - Search on Local: Searches recorded data on primary storage installed in the DVR.
 - Search on Archive: Searches archived data on backup storage installed in the DVR.
 - Search on Other: Searches recorded or archived data on Storage used for another DVR then installed in the DVR. This may not be supported, depending on the specifications and version of the DVR.
- (Export Video File): Exports recorded video as a self-player file (.exe) or an AVI file (.avi). Refer to [7.2 Exporting Recorded Video](#) (p. 75) for details.
- (Snapshot on Motion Event – Play panel): Displays snapshot of images recorded during the event-based recording (event and pre-event) in the Play panel. Refer to [Snapshot on Motion Event](#) (p. 73) for details.
- (Step Playback): Moves the video forward or backward based on the setting displayed between the and buttons. Clicking the arrow between the and buttons allows you to change the interval the video moves.
- (Fast Backward/Fast Forward): Plays back recorded video fast backward or fast forward.
- (Stop/Play): Stops or plays recorded video on the screen.

-  (Jog Shuttle – Play panel): You can adjust the playback direction and speed by using the jog shuttle. The vertical line in the jog shuttle indicates the current playback direction and speed. Video is played backward when the vertical line is to the left of center and video is played back forward when the vertical line is to the right of center. The farther the position is from the center, the faster video is played back. Clicking the vertical line and dragging it to the desired position on the jog shuttle and holding it plays video at a constant speed. Releasing the mouse button causes the vertical line to return to the center position. Clicking the  (Play) button plays video at normal speed. Clicking the  (Shuttle Lock) button and dragging and dropping the vertical line to a desired position fixes the vertical line in that position.
-  x 1.0 (Jog Shuttle – DVR Search panel): You can adjust the playback speed by using the jog shuttle. The vertical line in the jog shuttle indicates the current playback speed.
-  (Save to User Layout): Saves the current screen format.
-  (Screen Format): Changes the screen format. Clicking the  button displays additional screen formats. Clicking the  or  button moves to the previous or next camera groups.

Timetable/Event List

- Time-Lapse Search Mode: When in the time-lapse search mode, the timetable is displayed at the bottom of the screen and it displays the recording information for each camera. Clicking the  button in the top right corner of the timetable displays the recording information for all cameras. Clicking the  button displays the recording information for the selected camera on the screen.



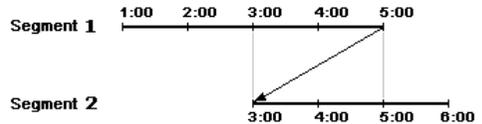
NOTE: The timetable will differ depending on the model of the device.

- ① **Current Playback Date/Time:** Indicates the video time for the current playback location on the timetable.
- ② **Recorded Period:** Displays the date and time period of the recorded data. Clicking anywhere in the empty space and dragging it to the left or right moves to the earlier or later date or time. Scrolling the mouse wheel while holding the Ctrl key on the keyboard zooms in and out the time section.
- ③ **Camera Title:** Displays the camera title.
- ④ **Recorded Data:** Displays the recorded data by time in one minute segments.
 - **Minute Segments Timetable (all devices except some DVR models)**
 - Red vertical line: Indicates the current playback location of video on the timetable. Clicking the mouse on the desired time displays the first image recorded within the time.
 - Yellow separation line: Separates segments when time overlap occurs. In this case, the recorded data in the time range located after the separation line is the latest. Clicking the  (Calendar) button in the Play panel allows you to move to a specific segment directly (Click the  (Calendar) button → Select a date → Select a segment → The first image recorded within the selected segment is displayed on the screen).
 - The color of the bar: Indicates different recording modes (Navy blue for Time-lapse, Pink for Event, Purple for Pre-event, Sky blue for Instant Recording and Orange for Irregular recording caused by temporary disconnection from the device).
 - **Hour Segments Timetable (some DVR models only)**
 - Yellow color bar: Indicates the current playback location of video on the timetable.

- Pink color bar/Gray color bar: Indicates the segment of video that is currently displayed/not displayed on the screen when time overlap occurs. Clicking the  (Additional Menu) button in the DVR Search panel allows you to change the segment to be displayed on the screen (Click the  (Additional Menu) button → Select the Select Segment menu → Select a desired segment → The first image recorded within the selected segment is displayed on the screen).

NOTE: The NVR system or DVR's time and date have been reset to a time that is earlier than previously recorded video, it is possible that there is more than one video segment in the same time range due to time overlap. In this case, you can play recorded video during the overlapping time individually by selecting a segment.

For example, when the NVR system or DVR has recorded video from one to five o'clock and the user changes the time backward from five to three o'clock and then continues recording until six o'clock, there will be two segments from three to five o'clock.



- Event Search Mode: When in the event search mode, the event list is displayed at the bottom of the screen (supported only for the DVR Search panel). Clicking an event from the list displays the event-detected image on the screen. Clicking the  button in the top right corner of the event list displays next results.

Event	Device	Date/Time
 Motion Detection	CAM8 (inside 2)	2010-03-11 23:54:02
 Motion Detection	CAM5 (inside 2)	2010-03-11 23:54:02
 Motion Detection	CAM1 (inside 2)	2010-03-11 23:54:02
 Motion Detection	CAM3 (inside 2)	2010-03-11 23:54:02
 Motion Detection	CAM8 (inside 2)	2010-03-11 23:49:46

Control Toolbar

The control toolbar is displayed over a selected camera screen when hovering the mouse cursor over the camera screen. Hovering the mouse cursor over each button displays a tooltip for the button.



-  (Object/Motion Search): Allows you to search for changes or motion in recorded images in the NVR system. Refer to Object/Motion Search (p. 73) for details.
-  (Image Zoom): Zooms in on the image. Refer to Zoom Control (p. 74) for details.
-  (Color Control): Adjusts the brightness, contrast, saturation and hue of the current video. Clicking the  button cancels the adjustment and reloads the original image.
-  (Image Effect): Adjusts the image effect. Refer to Image Effect (p. 74) for details.
-  (Audio Play): Plays audio when playing back video that has recorded audio (1x1 screen format only).

Play Screen Menu

The screen menu is displayed when selecting a camera screen and clicking the right mouse button.

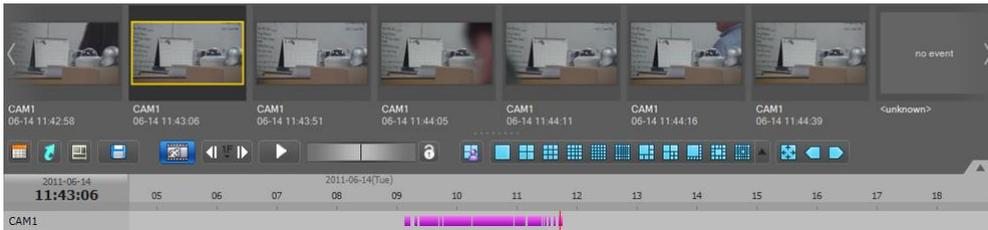
Image Zoom
Motion/Object Search
Image Processing ▶
Aspect Ratio ▶
Save Still Image...
Remove ▶

- Image Zoom: Functions as the same as clicking the button in the control toolbar. See Control Toolbar (p. 72) for details.
- Object/Motion Search: Allows you to search for changes or motion in the recorded images in the NVR system. Refer to Object/Motion Search (p. 73) for details.
- Image Processing: Enhances playback images. Refer to Control Toolbar (p. 72) for details.
- Aspect Ratio: Select the proper image aspect ratio.

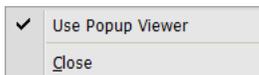
- Fit to Screen: Displays images by fitting them to the screen size regardless of the aspect ratio.
- Fit to Screen (Aspect Ratio): Displays images by fitting them to the screen size keeping the aspect ratio. This might cause top and bottom or left and right side of images to be cropped depending on the screen size. This aspect ratio is not supported and Original Ratio is applied for camera screens that the following function is activated: Image Zoom.
- Original Ratio: Displays images by fitting them within the screen size while maintaining their original ratio.
- Half Size (x0.5) to Quadruple Size (x4): Selecting the desired image size displays images in the selected size. Options are enabled when the selected camera screen can display images in that size.
- Save Still Image: Saves the current image on the screen as an image file at its original size.
- Remove: Disconnects the current connection.

Snapshot on Motion Event

Clicking the  (Snapshot on Motion Event) button on the panel toolbar displays snapshot of images recorded during the event-based recording (event and pre-event) in the Play panel.



The timetable displays the recording information of the selected snapshot. Clicking anywhere on the recorded data in the timetable displays a snapshot of the selected time. Hovering the mouse cursor over each snapshot displays a popup viewer screen above a snapshot.



- Use Popup Viewer: Enables display of the popup viewer screen.

Object/Motion Search

Clicking the  (Object/Motion Search) button on the control toolbar displays the object/motion search panel at the bottom and allows you to search for changes or motion in recorded images in the NVR system.



-  (Draw Search Zone): Allows you to define the area to search for changes or motion on the camera screen by dragging the mouse. The search zone is displayed with red blocks.
-  (Erase Search Zone): Allows you to erase the search zone set on the camera screen by dragging the mouse.
-  (Set Ref. Image): Sets the image currently displayed on the camera screen as a reference image for change detection (Object Search only).
-  (View Ref. Image): Displays or hides a PIP screen with the reference image (Object Search only).



- **Find Method:** Selects a search method.
 - **Motion Search:** Searches for images with changes in the Search Zone between two consecutive images (for example, when there was movement).
 - **Object Search:** Searches for images with changes which last for the Activation Time in the Search Zone when compared to the reference image (for example, when an object disappeared).
- **Sensitivity:** Sets the sensitivity of the change detection. The higher the number is, the more sensitive it is.
- **Num of diff. block:** Sets the minimum number of blocks that must be activated to be considered as a change (Motion Search only).
- **Diff. % to ref. image:** Sets the minimum proportion (%) of blocks that must be activated to be considered as a change (Object Search only).
- **Activation Time:** Sets the duration that the change must last to be considered as a change. If a change is detected but does not last as long as the Activation Time, the change is not considered as a change.

Zoom Control

Clicking the  (Zoom) button on the control toolbar allows you to zoom on the current video.

NOTE: “PIP” is an abbreviation of *Picture in Picture* and indicates the smaller screen within a screen.



Dragging the mouse on the camera screen moves the zoomed-in area

-  (Slide Bar): Adjusts the enlargement ratio. You can adjust the enlargement ratio also by using the mouse scroll wheel.
-  (Actual Size Zoom): Enters the actual size zoom mode. In the actual size zoom mode, the image is displayed in its original size regardless of the camera screen size or image's aspect ratio.
-  (Zoom Finder): Displays or hides the PIP screen. The rectangle in the PIP screen indicates the zoomed-in area.

Image Effect

Clicking the  (Image Effect) button on the control toolbar displays the image effect control toolbar and allows you to control image effect.



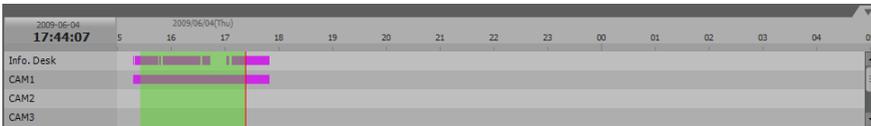
-  (Blur): Blurs the image to reduce noise.
-  (Sharpen): Sharpens an image.
-  (High-Boost): Increases the brightness and contrast of images.
-  (Histogram Equalization): Equalizes the image brightness to make it more natural.
-  (Edge Detection): Extracts the image edge.
-  (Revert): Cancels the adjustment and reloads the original image.

7.2 Exporting Recorded Video

You can export recorded video to USB devices. Click the  (Export Video File) button on the toolbar at the bottom of the panel, and the export menu is displayed.



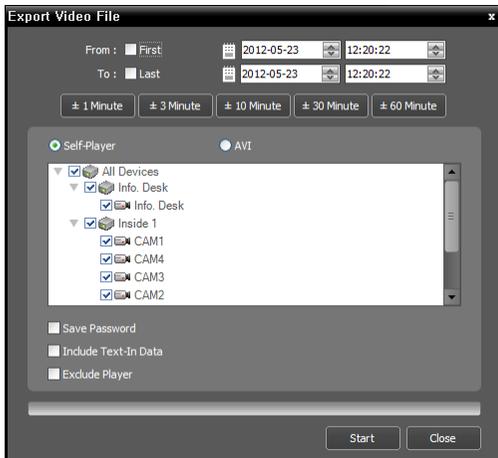
- **A-B Export Video File:** Sets up the section of video to be exported by using the timetable. Select **A-B Export Video File** from the export menu. Click the starting point in the timetable and drag to the ending point. The **Export Video File** window appears and allows you to export video of the selected period as a self-player file (.exe) or an AVI file (.avi). Refer to **Exporting as a Self-Player File** (p. 75) and **Exporting as an AVI File** (p. 77) for details.



- **Export Video File:** Sets up the section of video to be exported by entering the date and time manually. Select **Export Video File** from the export menu. The **Export Video File** window appears and allows you to export video for the period as a self-player file (.exe) or an AVI file (.avi). Refer to **Exporting as a Self-Player File** (p. 75) and **Exporting as an AVI File** (p. 77) for details.

Exporting as a Self-Player File

The recorded video is exported as a self-player file (.exe).



- **From, To:** Enter the date and time of video to export. Selecting **First** sets the date and time to the date and time of the first available recorded video. Selecting **Last** sets the date and time to the date and time of the last available recorded video. Clicking the **± 1 Minute**, **± 3 Minute**, **± 10 Minute**, **± 30 Minute** or **± 60 Minute** button increases or decreases the time by the selected amount from the time selected on the timetable.
- **Self-Player, AVI:** Select **Self-Player**.
- **Save Password:** Set up a password for playing back the exported video. You will be asked to enter the password to initiate the Player program.
- **Include Text-In Data:** Includes text-in data when saving video if the video was recorded with text-in data (supported only for the DVR Search panel).
- **Exclude Player:** Saves the recorded data without including the Self-Player program (supported only for the DVR Search panel). The file size will be smaller, and it will take less time to save, but you will need to run the Self-Player program (ClipPlayer.exe) which is provided in the iNEX installation folder (\Client\selfplayer) to play the saved file. This may not be supported, depending on the specifications

and version of the device.

Playing Self-Player File

You do not need to install any special software to play video exported as a self-player file because the self-player file contains a player program (Clip Player). Double clicking the target file starts the Player program, and video is displayed on the screen. Clicking the slide bar at the bottom of the Player program displays the playback image of the selected time on the screen. Clicking the  button exits the Player program.

NOTES:

- It is suggested that the computer used for the Player program has at least an 800MHz Pentium III (Intel Pentium Dual Core 2.2GHz recommended). If your CPU is slower than this, video clips recorded at maximum speed with very high image quality will be played back slowly. Also DirectX 9.0 or higher is required to install, and the VGA card with 16MB or higher video RAM is recommended for proper operation.
- Proper image display depends on the display settings of your PC. If you are experiencing display problems, click the right mouse button on the background screen and select *Properties* → *Settings* then set the *Color quality* to “32 bit”. Then select *Advanced* → *Troubleshoot*, and then set the *Hardware Acceleration* to “Full”. Please make sure that DirectX version 9.0 or higher has been installed if the display problem continues. To check the version of DirectX, click *Start* → *RUN* and type “dxdiag” then hit the enter key which will display DirectX Diagnostic Tool dialog box. Then move to the *Display* tab and make sure *DirectDraw Acceleration* is set to “Enabled”. Test DirectDraw by selecting the *DirectDraw Test* button when using the Microsoft® Windows® XP operating system. Please check the driver version of the video card and update it to the latest version available. If you still have display problems after changing all display settings as described above, try replacing the video card. Video cards with an ATI chipset are recommended.
- If you selected the *Exclude Player* option when saving recorded video, you must run the Self-Player program (ClipPlayer.exe) which is provided in the iNEX installation folder (\Client\selfplayer) to play the saved file.



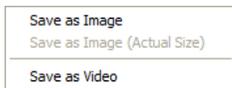
-  : Goes to the beginning of the video.  : Goes to the end of the video.
-  : Plays the video in fast reverse.  : Plays the video in fast forward.
-  : Goes backward one frame of the video.  : Goes forward one frame of the video.
-  : Plays the video at regular speed.

-  : Shows the previous camera group if there is recorded video in the previous camera group based on the current screen format.
-  : Cycles through the screen formats. It cycles through 2x2, 1+7, 3x3, 4x4, 4x5, 5x5 and 1+32.
-  : Shows the next camera group if there is recorded video in the next camera group based on the current screen format.
-  : Sets up the properties of the player program.



- **Print:** Prints the current image.
- **Frame Info.:** Displays Channel, Title, Time, Type, Size and Resolution information about the image.
- **Image Processing:** Controls brightness, blur and sharpness of playback images. (1x1 screen format only)
- **Play Speed Control:** Changes the playback speed (Play) or fast forward/backward playback speed (FF/RW).
- **Drawing Mode:** Selects the draw mode level. If you are not sure about the best draw mode level for your system, try each level until the image displays properly.
- **Screen Size:** Changes the screen size of the player program.
- **Aspect Ratio:** Changes the image aspect ratio displayed on each camera screen.
- **OSD Setup...:** Selects options to be displayed on the screen.
- **Enable Audio:** Plays audio while playing back recorded video that has recorded audio. (1x1 screen format only)
- **Anti-Aliasing Screen:** Enhances image display quality on the screen by smoothing stair-stepping (aliasing) effects in the enlarged image. If video plays slow because of your CPU's slow speed, releasing the Anti-Aliasing Screen option might improve playback speed.

-  : Saves the current images.

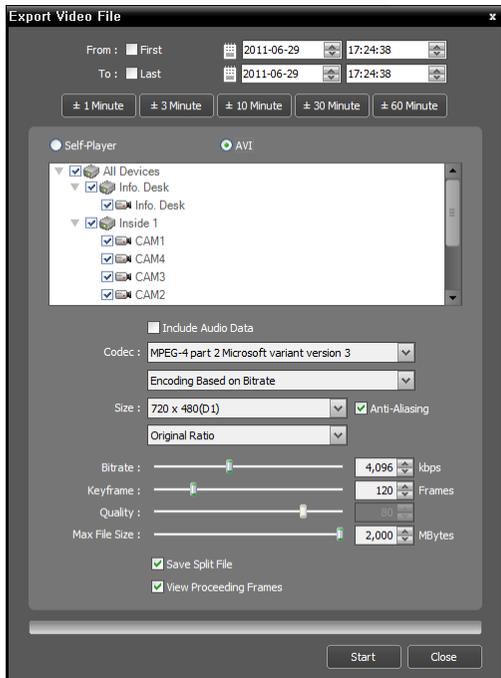


- **Save as Image:** Saves the current image as a bitmap or JPEG file.
- **Save as Image (Actual Size):** Saves the current image as a bitmap or JPEG file in its actual size. (1x1 screen format only)
- **Save as Video:** Saves video of desired time range as an AVI file.

-  : Selects the image size option to enlarge the image or display the image in its actual size (1x1 screen format only). You can move the enlarged image by clicking the left mouse button and dragging.
-  : Displays the image in the full screen.
-  : Is displayed at the bottom-right corner of the screen.  indicates that the clip file has not been tampered with, and  indicates that the system has detected tampering and playback stops.

Exporting as an AVI File

The recorded video is exported as an AVI file (.avi).



- From, To: Enter the date and time of video to export. Selecting **First** sets the date and time to the date and time of the first available recorded video. Selecting **Last** sets the date and time to the date and time of the last available recorded video. Clicking the **± 1 Minute**, **± 3 Minute**, **± 10 Minute**, **± 30 Minute** or **± 60 Minute** button increases or decreases the time by the selected amount from the time selected on the timetable.
- Self-Player, AVI: Select AVI.
- **Include Audio Data**: Includes audio data when saving video with recorded audio. This option is not available when more than one camera is selected. Audio might not be saved properly when the recording speed is set to less than 1 ips.
- **Codec, Bitrate, Quality**: Set up the desired values for compressing the file.
 - **Encoding Based on Bitrate**: Encodes video based on the bitrate. Selecting this option enables the **Bitrate** setting below.
 - **Encoding Based on Video Quality**: Encodes video based on the quality. Selecting this option enables the **Quality** setting below.

- **Size**: Set up the file size for compressing the file.
 - **Original Ratio**: Saves images with fitting within the screen size while maintaining their original ratio.
 - **Fit to Screen**: Saves images with fitting to the screen size regardless of the aspect ratio regardless of the aspect ratio.
 - **Fit to Screen (Aspect Ratio)**: Saves images with fitting to the screen size keeping the aspect ratio. This might cause top and bottom or left and right side of images to be cropped depending on the screen size. This aspect ratio is not supported and **Original Ratio** is applied for camera screens that the following function is activated: **Image Zoom**.
- **Anti-Aliasing**: Enhances image display quality for all cameras on the screen by eliminating stair-stepping (aliasing) effects in the enlarged image.
- **Keyframe**: Sets up the keyframe for compressing the file.
- **Max. File Size**: Sets up the maximum file size.
- **Save Split File**: Exports video by creating multiple files of the **Max. File Size** units set above when the data file reaches the maximum file size. If this option is not selected, it exports only as much as the maximum file size.
- **View Proceeding Frames**: Displays a popup window showing the video currently being exported.

Playing AVI File

Run the video player program and open the exported AVI file. If the codec selected during exporting video as an AVI file is not installed, you will need to install the codec manually.

Chapter 8 — Event Handling

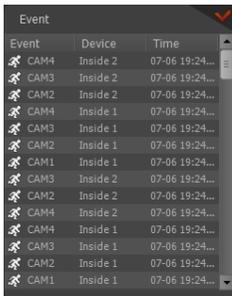
You can monitor video from a camera where an event is detected and play back event-recorded video. Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).

First, check the following and run the Client program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 95) for details.
- There should be recorded data in the storage. Refer to Chapter 6 — Recording (p. 59) for details.
- The event detection functions of the device should be enabled.

8.1 Handling a Monitoring Event

You can monitor live video from a camera where an event is detected or play back event-recorded video if video of the selected event has been recorded.



The event list displays live and callback events from the registered devices. The callback events are listed only when the remote callback function is set up in the device.

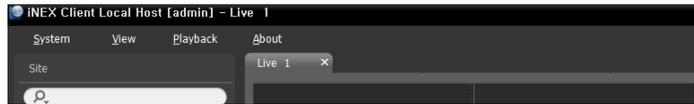
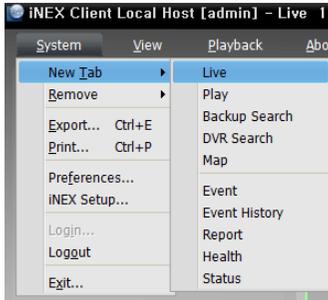
You can change the options of the event list display during Menu – Preference Settings. Refer to 4.3 Client, Menu – Preference Settings (p. 37) for details.

The description of event icons which are displayed in the event list is as follows (some event icons may not be supported, depending on the specifications and version of the device):

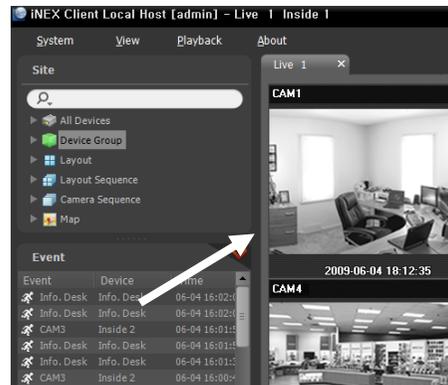
	Motion Detection		Video Blind		Video Loss
	Audio Detection		Trip-Zone		Tampering
	Alarm-In On/Off		Alarm-In Bad/Good		System Boot Up
	System Alive		System Restart		System Shut Down
	External Storage In/Out		Device Connected/Disconnected		

Monitoring Video

Monitoring video from a camera where an event is detected is supported in the Live panel (maximum 4). If a Live tab is not on the tab panel, go to the System menu, click New Tab and Live.

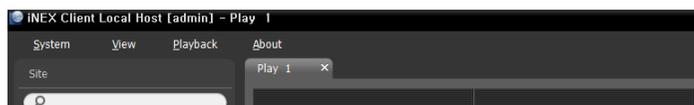
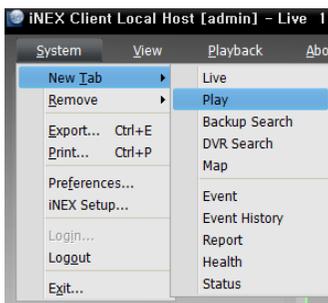


Click the Live tab in the tab panel → Select a desired event from the event list and drag and drop it on the Live screen. Live video from the camera where the selected event occurred is displayed on the screen.

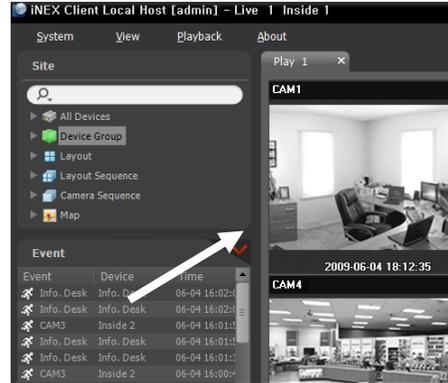


Playing Video

Playing event-recorded video is supported in the Play panel. If the Play tab is not on the tab panel, go to the System menu, click New Tab and Play.



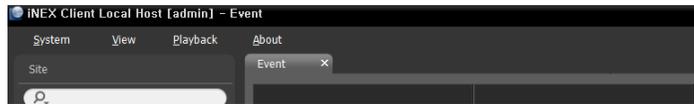
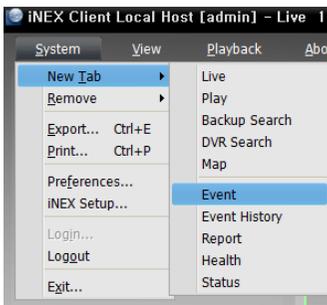
Click the Play tab on the tab panel → Select a desired event from the event list and drag and drop it on the Play screen. The event-recorded video is displayed on the screen.



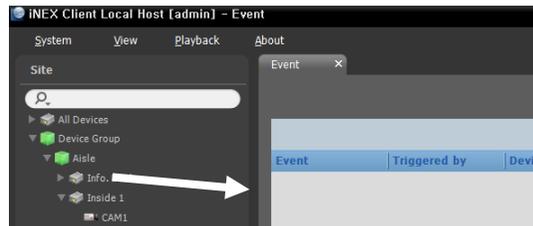
8.2 Handling Event Recorded Video

You can play back video which is recorded during Event recording.

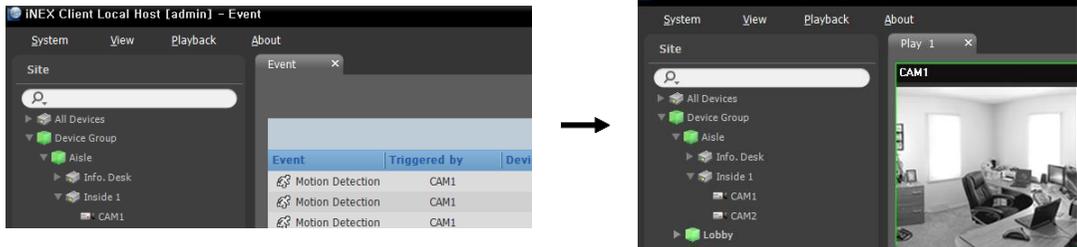
Playback of event-recorded video is supported in the Event panel. If the Event tab is not on the tab panel, go to the System menu, click New Tab and Event.



1. Click the Event tab on the tab panel → Select a device or camera to connect to from the Site list, and drag and drop it on the Event panel. The list of events recorded during Event recording is displayed in the Event panel. Clicking the right mouse button on a column header displays a menu and allows you to sort data as you want.

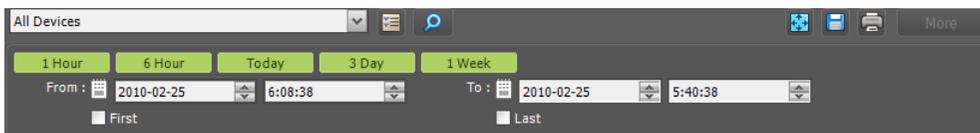


2. Double click the desired event in the Event panel. the Play panel is displayed and the event video is displayed on the Play screen. Clicking the right mouse button allows you to select a desired Play panel. If other cameras were associated with the Event Recording, recorded video from the associated cameras is displayed together on the screen.



Event Toolbar

The toolbar at the bottom of the panel allows you to search events recorded during Event recording.



- From, To: Set up the date and time of the event to search. Enter a specific date and time or select **First** or **Last**. Clicking the **1 Hour**, **6 Hour**, **Today**, **3 Day** or **1 Week** button adjusts the time interval between From and To. Selecting **First** or **Last** searches events from the first recorded or to the last recorded.
- (Condition): Selects an event type to search.
- (Search): Starts searching events based on search conditions.
- (Full Screen): Displays the Event panel in full-screen format.
- (Export): Exports the resulting event search list as a text file (.txt) or CSV file (.csv).
- (Print): Prints the resulting event search list.
- More: Displays more results.

Chapter 9 — System Health & Status Monitoring

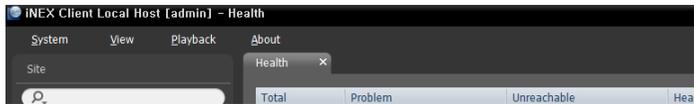
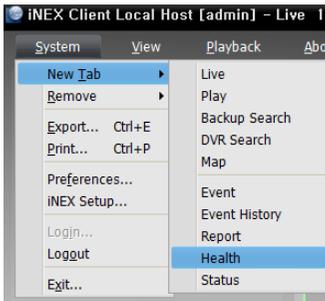
You can simultaneously check the system status and device status of registered devices.

First, check the following and run the Client program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 89) for details.

9.1 Health Monitoring

System health monitoring is supported in the Health panel (supported only for network video devices). If the Health tab is not on the tab panel, go to the System menu, click New Tab and Health.



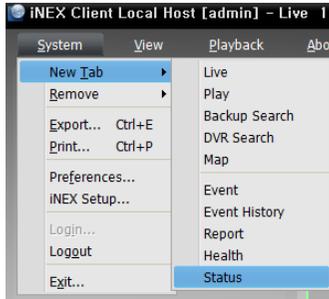
The Client program automatically displays the health monitoring results when the Health tab is added.



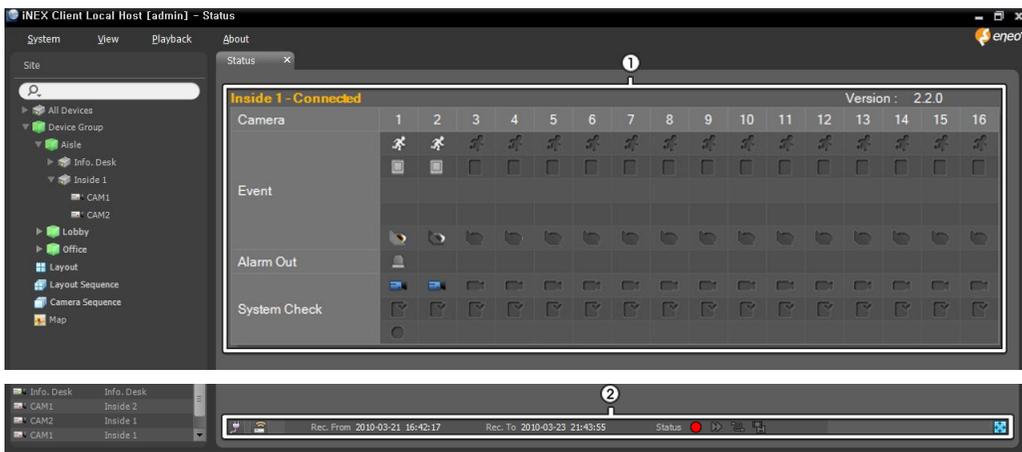
- ① **Summary List:** Displays the health monitoring status of devices for all device groups in summary.
 - **Total:** Displays the number of devices in all device groups.
 - **Problem:** Displays the number of devices where a problem is detected.
 - **Unreachable:** Displays the number of devices that are not connected.
 - **Healthy:** Displays the number of devices where no problem is detected.
- ② **Detailed List:** Displays the status of each device in detail.
 - **Status:** Displays the status (**Healthy:** No Problem detected; **Problem:** Video loss is detected or login failed because of the lack of available screens or because the software version is invalid; **Unreachable:** The device is not connected to the network).
 - **Device:** Displays the device name.
 - **Model:** Displays the device's model name.
 - **Cameras:** Displays the number of cameras supported by the device.
 - **Problem:** Displays details regarding the problem.

9.2 Status Monitoring

Device status monitoring is supported in the Status panel (only for devices which use the iNEX protocol). If the Status tab is not on the tab panel, go to the System menu, click New Tab and Status.



Select a device to connect to from the Site list, and drag and drop it on the Status panel. The status of the selected device is displayed.



① Status Display Window: Displays the status as icons.

- Camera: Displays the camera numbers.
- Version: Displays the system version information.
- Event: Displays the status of event detection. When an event is detected, the icon is displayed in corresponding color. Hovering the mouse cursor over an icon displays the event type in a tooltip.
- Alarm Out: Displays status of the alarm-out signals.
- System Check: Displays the function status of the device and recording.

② Function Buttons

- (Disconnect): Disconnects the current connection on the Status panel.
- (Panic Recording): Starts or stops panic recording remotely (supported only for DVRs with the panic recording function).
- Rec. From/To: Displays the recording period.
- Status: Displays the status of recording, playback, archiving, exporting of recorded video.
- (Full Screen): Displays the Status panel in full-screen format.

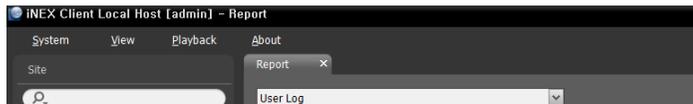
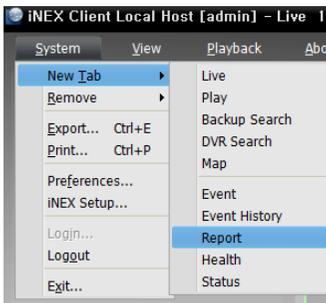
Chapter 10 — Log Search

You can search log entries for the iNEX program and the devices.

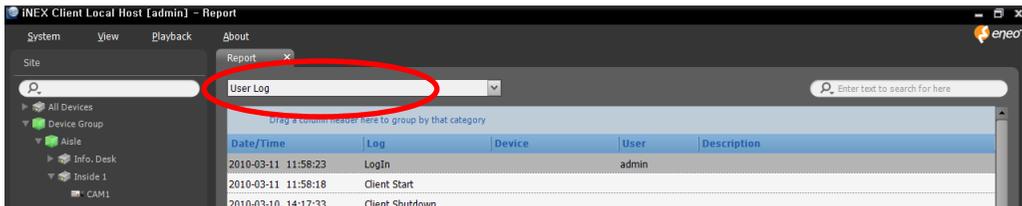
First, check the following and run the Client program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to [Chapter 12 — Device Management](#) (p. 89) for details.

Log search is supported in the Report panel. If the Report tab is not on the tab panel, go to the System menu, click New Tab and Report.



The various types of log entries are displayed. Clicking the right mouse button on a column header displays a menu and allows you to sort data as you want.



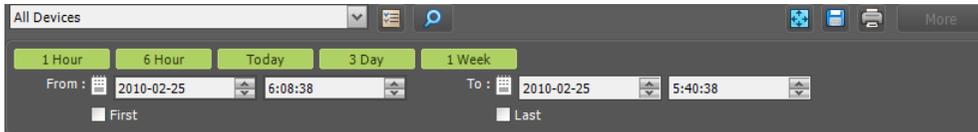
Select a log type to search from the drop-down list.

- **User Log:** Displays log entries from the Client program.
- **Health Log:** Displays log entries of the system health monitoring for the registered devices.
- **Admin Service Log:** Displays log entries from the administration service.
- **Recording Service Log:** Displays log entries for the recording service.
- **Streaming Service Log:** Displays log entries for each streaming service for all registered streaming services.
- **Monitoring Service Log:** Displays log entries for monitoring service.
- **Device System Log:** Displays system log entries from the devices.
- **Device Event Log:** Displays event log entries from the devices.

If the connection was not made properly, the network disconnection log is displayed (only for devices registered on the recording service). Refer to [Appendix – Network Disconnection Log](#) (p. 143) for details.

Report Toolbar

The toolbar at the bottom of the panel allows you to search for the desired log entries.



- **From, To:** Set up the date and time of the log entry to search. Enter a specific date and time or select **First** or **Last**. Clicking the **1 Hour**, **6 Hour**, **Today**, **3 Day** or **1 Week** button adjusts the time interval between **From** and **To**. Selecting **First** or **Last** searches log entries from the first or to the last.
-  (**Condition**): Selects a log type to search.
-  (**Search**): Starts searching log entries based on search conditions.
-  (**Full Screen**): Displays the Report panel in full-screen format.
-  (**Export**): Exports the searched log entries as a text file (.txt) or a CSV file (.csv). System and service log entries can also be exported as an encrypted HTML file (.html) which will ask you to enter a password to view the file.
-  (**Print**): Prints the searched log entries.
- **More:** Displays more results.

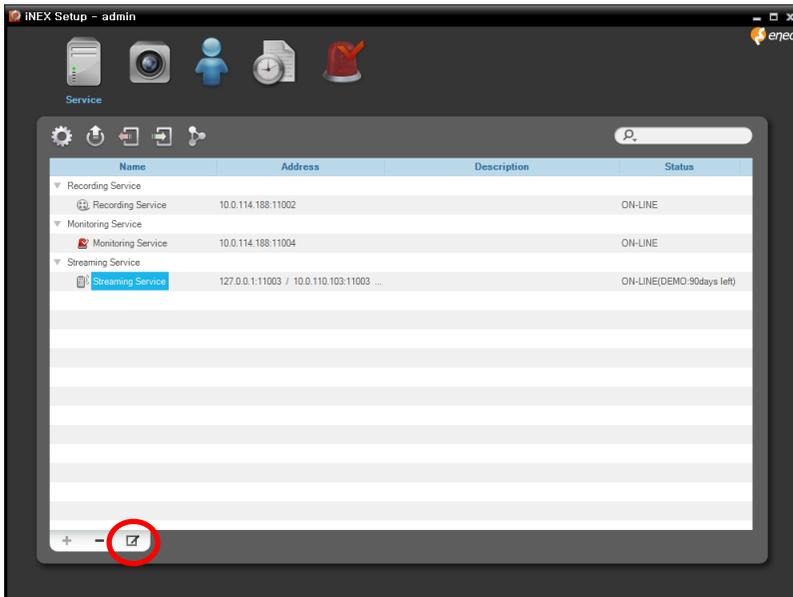
Chapter 11 — Streaming

Streaming service allows remote monitoring of live images in a WAN environment (up to two users) (the number of channels that can be streamed equals the number of channels that can be recorded).

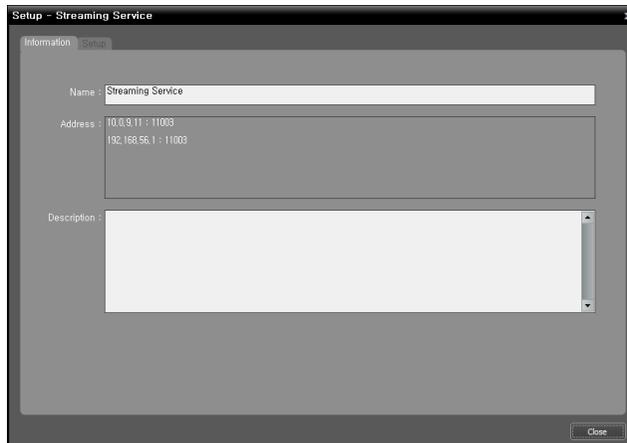
NOTE: Streaming is not supported for DVRs.

There is no difference in the way to monitor video whether or not the streaming service is running. Refer to Chapter 5 — Live Video Monitoring (p. 45) for details about monitoring.

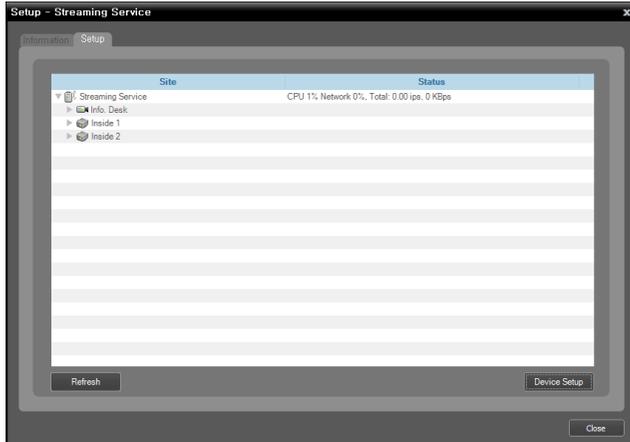
Select the Service menu.



1. Select a streaming service and click the  button at the bottom. The Setup – Streaming Service window appears. Select the Information tab.



2. Enter the streaming service's name and select the **Setup** tab.

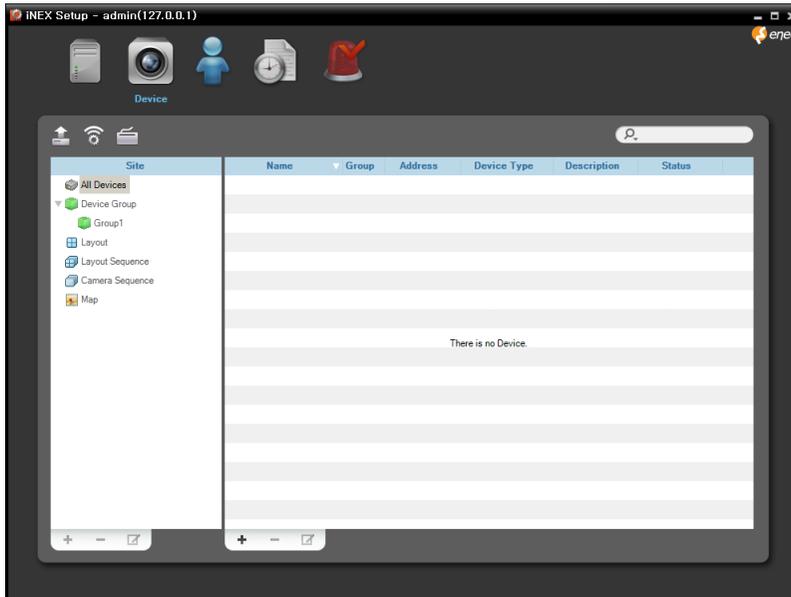


The list of cameras registered on the current streaming service is displayed. Clicking the **Device Setup** button at the bottom allows you to register additional cameras on the current streaming service or removes a camera from the current streaming service.

3. Video from the registered cameras on the current streaming service is streamed to the Client system.

Chapter 12 — Device Management

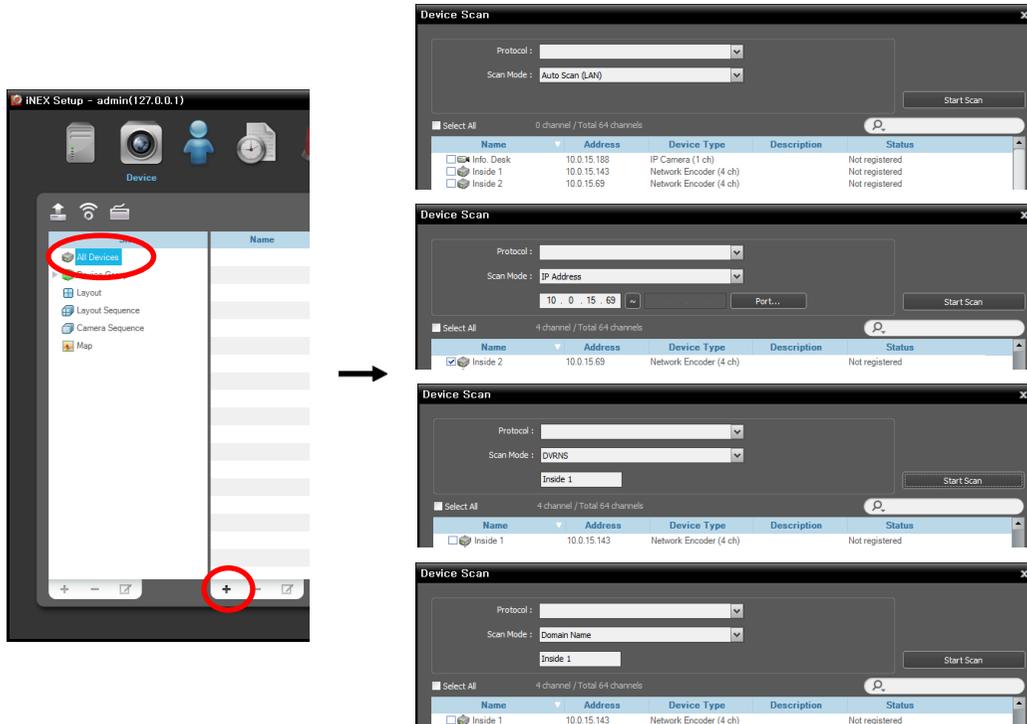
You can edit or delete the device from a list. You can also connect to a device to change its settings or upgrade its software remotely. Go to the **Start Menu** → Click **iNEX** → Run the **iNEX Setup** program and enter login information → Select the **Device** menu.



- **All Devices:** Displays devices registered in the NVR system. If you delete a device from **All Devices**, it will not be available to search and play back previously recorded data even if the device is registered again (network video devices only). Refer to 12.1 Registering Devices (p. 90) for details about registering devices.
- **Device Group:** Displays registered device groups. You can monitor or play back recorded video from the cameras in device groups. You must register devices in the NVR system and add the devices to a device group to perform any operation. Refer to 12.1 Registering Devices (p. 90) for details about registering device groups.
- **Layout:** Displays the registered layouts. You can monitor video from multiple cameras in a predefined layout. Refer to 5.1 Monitoring Video, Layout Monitoring (p. 47) for details.
- **Layout Sequence:** Displays the registered layout sequences. You can monitor video from multiple cameras sequentially in more than one predefined layout. Refer to 5.1 Monitoring Video, Layout Sequence Monitoring (p. 49) for details.
- **Camera Sequence:** Displays the registered camera sequences. You can monitor video from multiple cameras sequentially in the same camera screen. Refer to 5.1 Monitoring Video, Camera Sequence Monitoring (p. 51) for details.
- **Map:** Displays the registered maps. You can monitor video from cameras, event detection and input/output device's status on a map. Refer to 5.2 Map Monitoring (p. 52) for details.

12.1 Registering Devices

1. Click All Devices in the Site panel, and then the **+** button at the bottom of the Site List panel. The Device Scan window appears.



- **Protocol:** Select the protocol or manufacturer of the device to scan. Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol), and some other functions may not be supported depending on the settings of the device.
- **Scan Mode:** Select the scan mode. Clicking the **Start Scan** button displays the results in the list. If the IP address range of the device is different from that of the NVR system, the iNEX program considers the IP address invalid. In this case, you must change the device's IP address to register the device.
 - **Auto Scan (LAN):** Lists devices in a LAN environment (supported only for the network video devices). If the device uses the ONVIF™ Conformance protocol, this function is supported only when you have checked the **Disable WS-Discovery Windows Service (fdPHost, FDResPub)** box during the software installation in Microsoft® Windows® Vista or later operating systems. Also, if the device uses the ONVIF™ Conformance protocol, it is recommended that the device not be networked via DHCP (Dynamic Host Configuration Protocol). If the device is networked via DHCP, connection to the device may not be made properly depending on changes in the external network environment.
 - **IP Address:** Allows you to enter the IP address of a device. You can search more than one device at a time by entering a range of IP addresses. It is recommended that the device not be networked via DHCP (Dynamic Host Configuration Protocol). If the device is networked via DHCP, connection to the device may not be made properly depending on changes in the external network environment.
 - **DVRNS:** Allows you to enter the device name registered on a DVRNS server if the device uses the DVR Name Service (DVRNS) function. Ensure the DVRNS server information on which the device is registered is correct (**Service menu** →  (System Setup) button). If the DVRNS server information is not correct, the device will not be found.

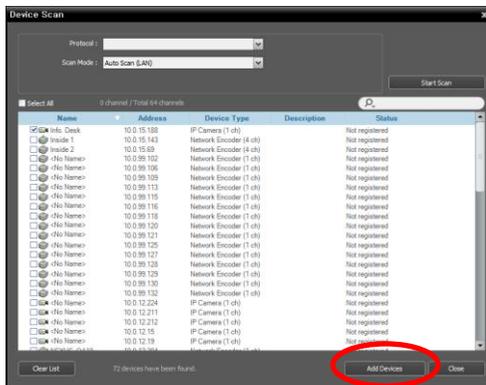
- **Domain Name:** Allows you to enter the device's domain name registered on a DNS server if the device uses the domain name service.

- ☑ : Select the devices to register by checking the box beside each device name in the list. Selecting the **Select All** box selects all devices in the list.

NOTES:

- Depending on the model, the device may not be supported even though the iNEX program supports the device's protocol. Ask your dealer or distributor about supported models.
- If the device uses the ONVIF™ Conformance protocol, you can select either the manufacturer (or iNEX protocol) or the ONVIF™ Conformance protocol. However, it is possible that one or both of them are not supported depending on the device model. Ask your dealer or distributor for details. Refer to the device User's Manual about enabling the ONVIF™ Conformance protocol in the device, as procedures may differ for each model.

2. Click the **Add Devices** button at the bottom.

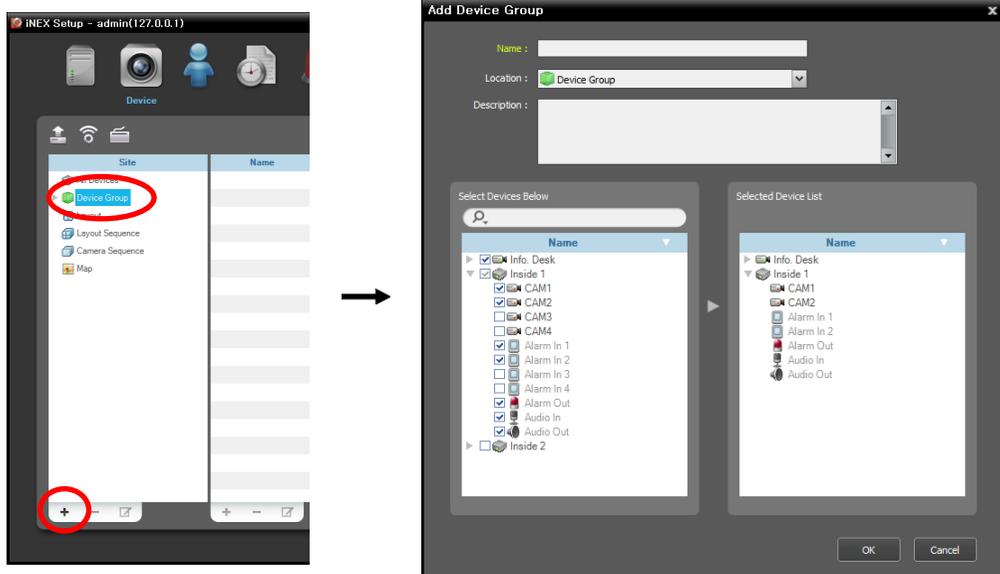


- Name, Address, Device Type:** Displays the name, IP address and type of the selected device. The name will be updated automatically depending on the settings of the device.
- ID, Password:** Enter the user ID and password which you set in the device in order to connect to that device remotely. The connection to the device is allowed only to the users under the Administrator group of the device, and recording is allowed only to the admin user under the Administrator group of the device.
- Recording Service:** Select a recording service (supported only for the network video devices). The device is registered on the recording service and the NVR system performs recording according to a recording schedule. The channel number of the recording service indicates the maximum number of cameras that can be registered, and the name indicates the name of a recording service, which was set during the Service menu setup. When selecting the Do not record option, the iNEX program treats the device during the Schedule setup as though it was not registered and does not perform any of the scheduled activities associated with the device. If you delete the device from the recording service after some recording has been done, you cannot search or play back the previously recorded video though you register the device again. You can check the list of devices registered on the recording service on a **Device Setup** tab while setting up the recording service in the Service menu. Refer to Chapter 14 — Storage Management (p. 107) for details.
- Streaming Service:** Select whether or not to use the streaming service for monitoring video from the device. Streaming service allows remote monitoring of live images in a WAN environment (up to two users). The number of channels that can be streamed equals the number of channels that can be recorded. Refer to Chapter 11 — Streaming (p. 87) for details.
- Apply to All Devices:** Select to apply the same user ID and password to all selected devices if you selected more than one device and the selected devices have the same user ID and password.

NOTES:

- If the device is a DVR, it might be necessary to enter the DVR port numbers depending on the specifications and version of the DVR.
- When registering a four-channel network video transmitter which uses the iNEX protocol, all four cameras are automatically registered even if some of the four cameras are disabled.

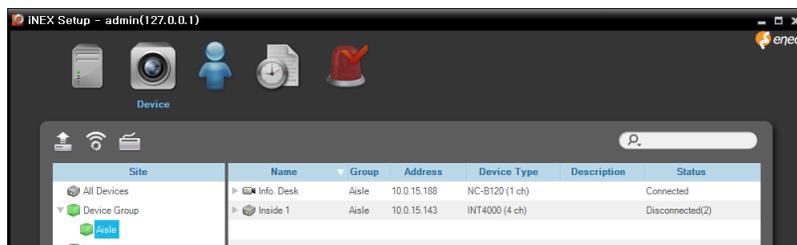
3. Click Device Group in the Site panel, and then the **+** button at the bottom of the Site panel. The Add Device Group window appears.



- **Name:** Enter the device group name.
- **Location:** Select an upper group to which the device group will belong.
- **Select Devices Below, Selected Device List:** Check the box beside cameras in the left panel, and the selected cameras are added to the right panel.

Clicking the OK button completes the device group registration.

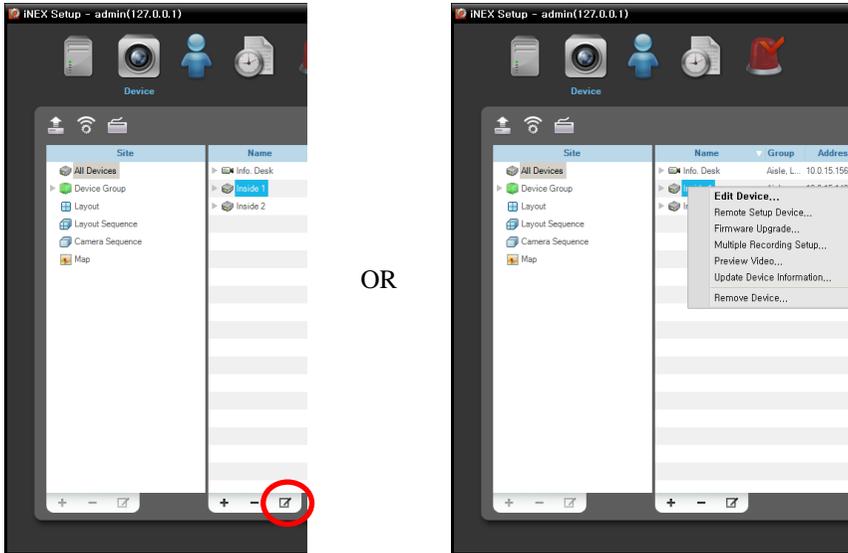
4. Check that the device was added to the device group correctly. Click Device Group in the Site panel and then the arrow button (▶) beside Device Group. Clicking the registered group displays the list of devices added to the device group and connection status in the Site List panel. If the connection was not made properly, the network disconnection log is displayed (only for devices registered on the recording service). Refer to Appendix – Network Disconnection Log (p. 143) for details about the network disconnection log.



Selecting the registered device group, and then the button at the bottom of the Site panel displays the Edit Device Group window and allows you to edit the selected device group.

12.2 Managing Devices

Click a device group in the **Site** panel and then click a device in the **Site List** panel. Clicking the  button at the bottom of the **Site List** panel, or clicking the right mouse button displays the device menu.

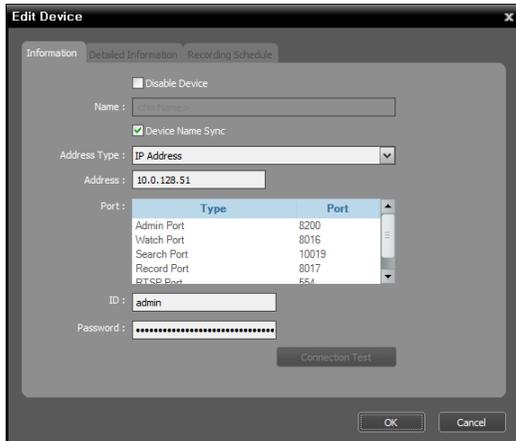


- **Edit Device:** Allows you to change information for connection to the device and each Preset of Recording Schedule – Action. Refer to **Editing Device Information** (p. 93) for details.
- **Remote Setup Device:** Allows you to change the device’s settings remotely. Refer to **Changing Device’s Setting Remotely** (p. 96) for details.
- **Firmware Upgrade:** Allows you to upgrade the device’s software remotely (supported only for devices which use the iNEX protocol). Refer to **Upgrading Device’s Software** (p. 96) for details.
- **Multiple Recording Setup:** Allows you to set up each Preset of Recording Schedule – Action with the same values for more than one device. This is supported only for the same type of devices (network cameras/network video transmitters).
- **Preview Video:** Allows you to preview the device’s video.
- **Update Device Information:** Allows you to update the registered device’s information. If the input/out devices connected to the registered device are not displayed in the list, it is recommended that you update the registered device’s information.

Editing Device Information

Select Edit Device from the device menu.

Information



It allows you to change information for connection to the device.

- **Name:** Edit the device name. You can use the same name for more than one device. By selecting the **Disable Device** option, the iNEX program no longer considers the device registered in the NVR system. Selecting **Device Name Sync** automatically updates the name based on the settings in the device (supported only for devices which use the iNEX protocol).
- **Address Type:** Select device's address type.
 - **Auto Scan (LAN):** Allows you to enter the device's mDNS number when you edit the device's address.
- **IP Address:** Allows you to enter the device's IP address when you edit the device's address.
- **DVRNS:** If the device uses the DVRNS (DVR Name Service) function, this allows you to enter the device name which is registered on the DVRNS server when you edit the device's address. The name should match the one set during the DVRNS setup in the device.
- **Domain Name:** If the device uses the domain name service, this allows you to enter the device's domain name registered on a DNS server when you edit the device's address.
- **Address:** Edit the device's address based on the selected address type above.
- **Port:** Edit the port numbers. The port numbers you enter should match the port numbers set in the device for remote connection (**Admin**), remote monitoring (**Watch**), recording (**Record**) and two-way audio communication (**Audio**).
- **ID, Password:** Edit the user ID and password for connection to the device.
- **Connection Test:** Click the button to test the connection to the device with the information entered above.
- **Stream Protocol:** Select the protocol for streaming (supported only for devices which use the ONVIF™ Conformance protocol).
- **Record Protocol:** Select the protocol for recording (supported only for devices which use the ONVIF™ Conformance protocol).
- **ONVIF™ Profiles:** Select a preset ONVIF™ profile (supported only for devices which use the ONVIF™ Conformance protocol). Refer to 12.3 Remote Setup of ONVIF™ Conformance Protocol Devices, Profiles (p. 102) for details.

Detailed Information



It displays the device's registration information.

- **Group, Service:** Displays the list of device groups and services that the device is registered on.
- **Device Type:** Displays the device type.

Record Preset



It is supported only for network video transmitters.

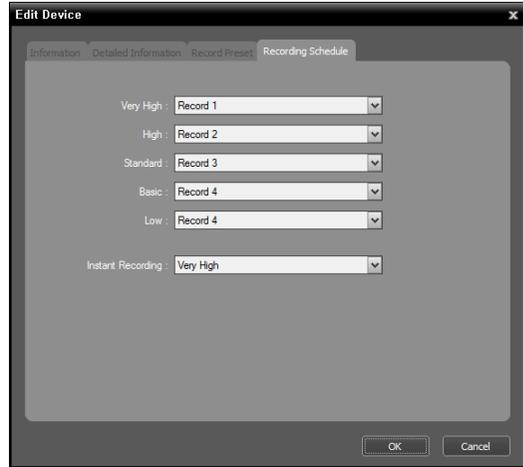
- **Codec, Resolution, Frame Rate, Quality:** Select the compression codec, resolution, frame rate and quality for recording. The frame rate cannot exceed 15 ips when video is recorded with the H.264 codec and 4CIF resolution.

Recording Schedule

It allows you to change each Preset of Recording Schedule – Action (supported only for devices which use the iNEX protocol).



Network Camera



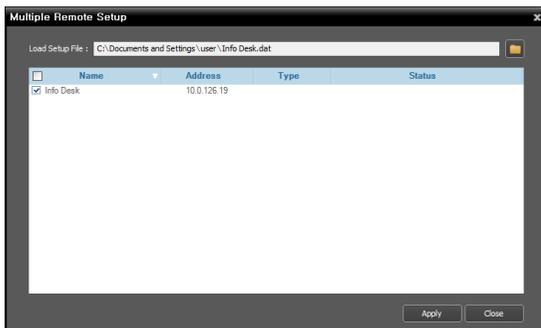
Network Video Transmitter

- Network Camera: Allocates a stream to use for recording to each Preset.
- Network Video Transmitter: Allocates values for recording to each Preset.
- Instant Recording: Select a Preset to use for instant recording.

Changing Device's Setting Remotely

Selecting Remote Setup Device from the device menu allows you to change the device's settings remotely. Changing the device's settings remotely might not be available for some settings. If the device supports more than one protocol, the settings for remote setup in the iNEX program might be different depending on the protocol in use. Refer to the device's User's Manual for details about the settings. Refer to 12.3 Remote Setup of ONVIF™ Conformance Protocol Devices (p. 98) in this manual for details about remote setup of a device which uses the ONVIF™ Conformance protocol.

You can change settings of several devices at the same time using a setup file. Clicking the  (Multiple Remote Setup) button above the Site panel displays the following screen.

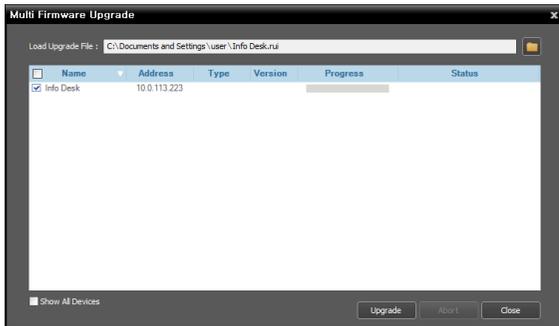


Click the  button at the top right corner and select a setup file. The list of available devices is displayed. This function might not be supported depending on the device model, and the devices that this function is not supported for will not be displayed in the list even if the setup file is available for the devices. Select devices and click the Apply button at the bottom to apply the change.

Upgrading Device's Software

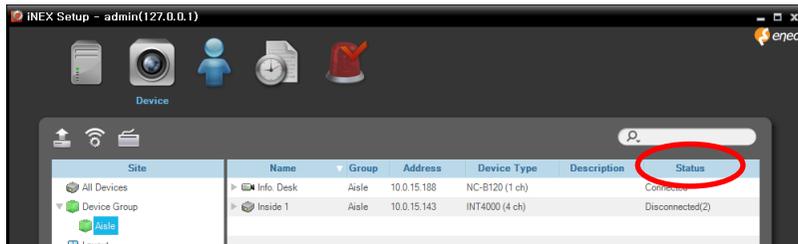
If you have an upgrade file, selecting **Firmware Upgrade** from the device menu allows you to upgrade the device's software remotely (supported only for devices which use the iNEX protocol).

You can upgrade software of several devices at the same time. Clicking the  (Multiple Firmware Upgrade) button above the Site panel displays the following screen (supported only for devices which use the iNEX protocol).



Click the  button at the top right corner and select an upgrade file. If the device is a PC-based DVR, check the PC Based DVR box and click the  button. The list of available devices is displayed. Selecting **Show all devices** displays all registered devices. Select devices and click the **Upgrade** button at the bottom to start upgrading.

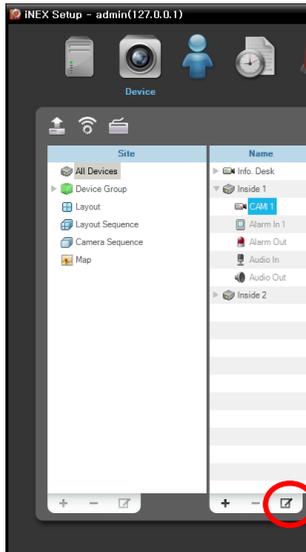
Checking Device Status



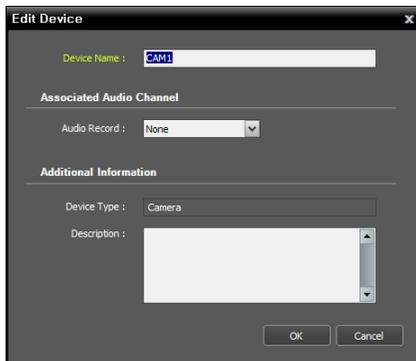
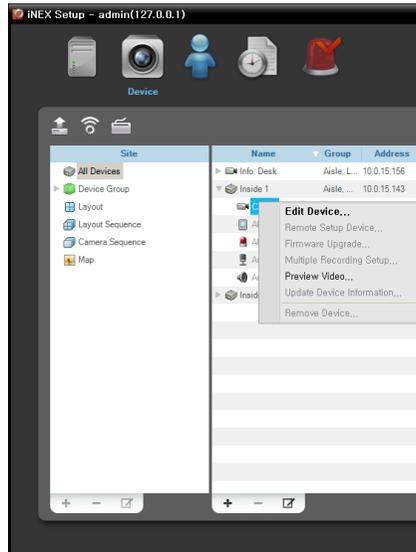
Click **All Devices** in the Site panel and then a device in the Site List panel. The device status is displayed in the Recording Status field (Connected: Recording is available, Disconnected: Recording is not available). Clicking the arrow button ( ) beside each device name displays the list of inputs and outputs supported by the device. You can check the input and output device's status (Record: During recording in the Time-Lapse Recording or Event-Based Recording mode, Panic: During recording in the Instant Recording mode, Idle: Ready to record).

Editing Input/Output Device Information

Click All Devices in the Site panel and then the arrow button (▶) beside each device name in the Site List panel. Click the input/output device in the list of video in, alarm in/out and audio in/out supported by the device. Clicking the  button at the bottom of the Site List panel, or clicking the right mouse button and selecting Edit Device from the menu displays the Edit Device window.



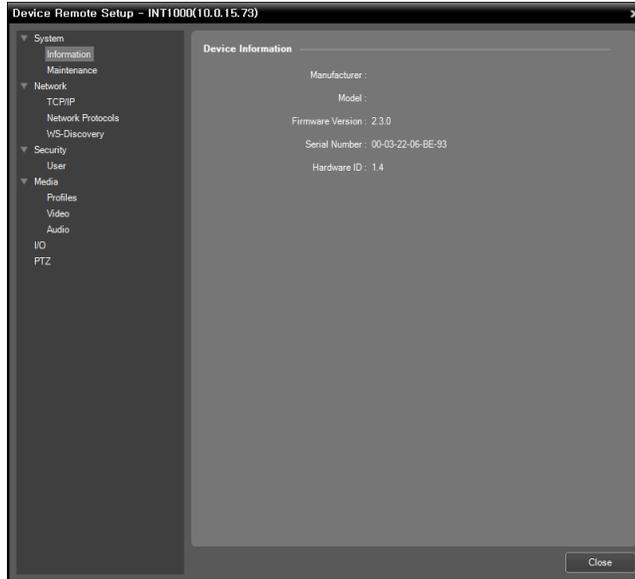
OR



- **Device Name:** Edit the name of the input/output device. You can use the same name for more than one input/output device. The name will be updated automatically when the name of the device to which the input/output device is connected is updated.
- **Associated Audio Channel:** Select the audio channel to associate with the camera for audio recording (supported only for a camera). The selected audio channel will be recorded when video from the camera is recorded.
- **Associated Device:** Select a camera channel to associate with the alarm-in or audio-in device for display on the event spot screen (supported only for an alarm in or audio-in device). Video from the selected camera channel will be displayed on the event spot screen when an alarm-in or audio-in event is detected.

12.3 Remote Setup of ONVIF™ Conformance Protocol Devices

If the device uses the ONVIF™ Conformance protocol, the iNEX program displays live video or records video with the settings set during the device remote setup in the iNEX program. Click a device group in the Site panel and then click a device in the Site List panel. Clicking the  button at the bottom of the Site List panel, or clicking the right mouse button displays the device menu. Selecting Remote Setup Device displays the following setup screen and allows you to change the device's settings. The setup menu and options may be different depending on the model of the device.



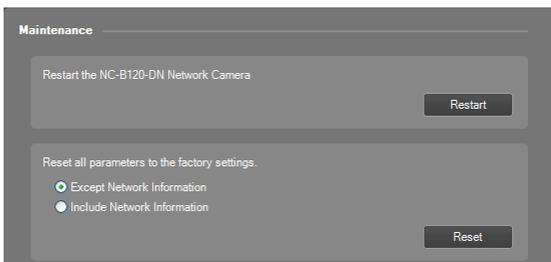
Clicking the Apply button after changing the settings applies the changes.

Information



Displays the device information.

Maintenance



- **Restart:** Clicking the button restarts the system. The iNEX remote setup is closed when the system restarts.
- **Reset:** Returns all the settings of the system to the original factory settings
 - **Except Network Information:** Returns all the settings except network settings to the original factory settings.
 - **Include Network Information:** Returns all the settings including network settings to the original factory settings. The iNEX remote setup is closed when the network settings are included.

TCP/IP

IP Address Configuration

Type:

IP Address:

Default Gateway:

DNS Configuration

Type:

Domain Name:

Primary DNS:

Secondary DNS:

- **IP Address Configuration:** Sets up the device's IP address. Select the type of device's network configuration.
 - **Set Manually:** Select when the device is using a static IP address for network connection, and set up LAN parameters manually.
 - **DHCP:** Select when the device is networked via DHCP (Dynamic Host Configuration Protocol). Click the Apply button, and network information is automatically assigned to the device.

- **DNS Configuration – Type:** Sets up the DNS server's network information.
 - **Set Manually:** Allows you to set up manually.
 - **DHCP:** Assigns the information automatically. Clicking the Apply button applies the change, and the changed information is displayed the next time it is connected. This will not be supported when the device's IP address is set to **Set Manually**.

DDNS

DDNS

Update Type:

Name:

TTL:

- **Update Type:** Updates the device's IP address information in the NVR system automatically when the device's IP address is changed.
 - **No Update:** Does not update the device's IP address information automatically.
 - **Device Update, DHCP Server Update:** Updates the IP address of the device or that is registered on the DHCP server.
- **Name:** Sets up the DNS name.
- **TTL (Time to Live):** Sets up the interval that the DHCP is to be updated.

Zero Configuration

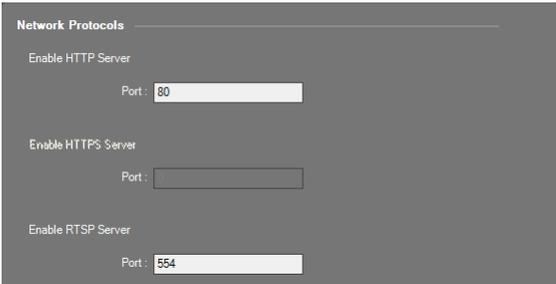
Zero Configuration

Enable Zero Configuration

IP Address:

- **Enable Zero Configuration:** Allocates an appropriate IP address proper for the current network condition automatically (supported only for devices that provide the function).

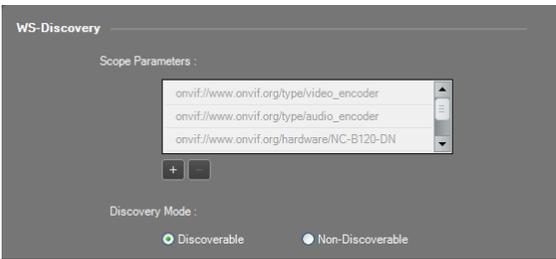
Network Protocols



- **Network Protocols:** Changes the port numbers of the network protocols that are used in the device (supported only for the protocols that are used in the device).

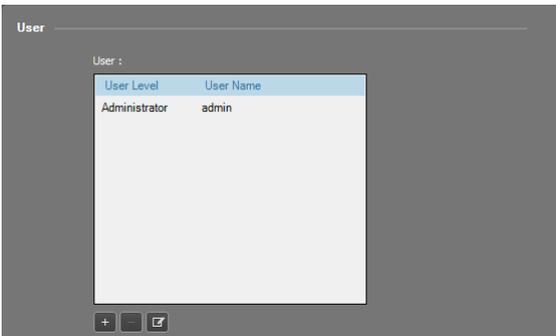
NOTE: When the HTTP server's port number is changed, the setup screen closes, and you should change the HTTP port number in the iNEX Setup program too. Refer to *12.2 Managing Devices, Editing Device Information* (p. 93) for details.

WS-Discovery



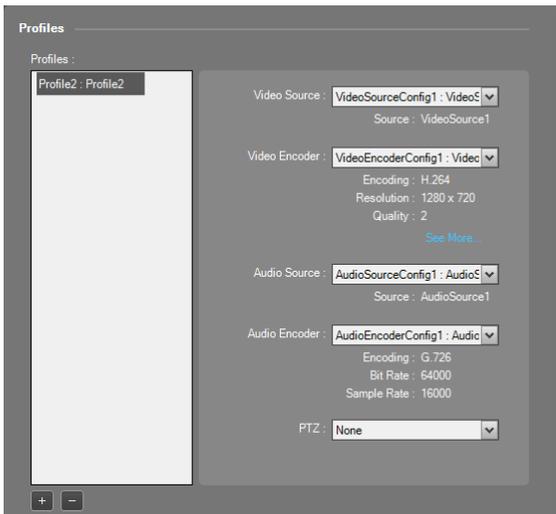
- **Scope Parameters:** Click the **+** button and add the scope parameters of WS-Discovery (Web Services Discovery) protocol if necessary.
- **Discovery Mode:** Sets whether or not to permit discovery of the device. When **Non-Discoverable** is selected, the Auto Scan function is not supported for the devices which use the ONVIF™ Conformance protocol during the device registration.

User



You can add or delete a user. Clicking **+** button allows you to add a user.

Profiles

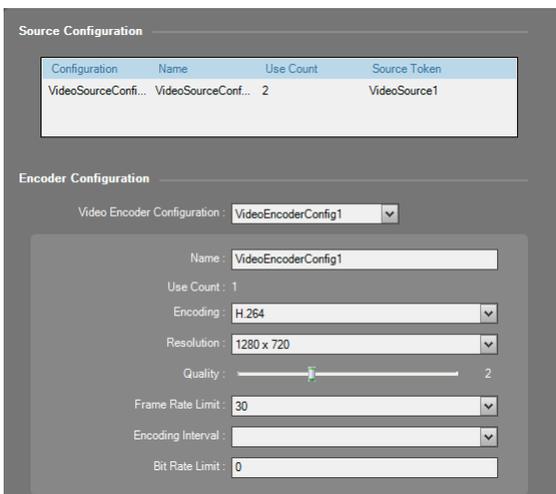


Set up the profiles using the following procedures.

Select a profile from the profile list. Clicking **+** button allows you to add a new profile. → Set up media. See the explanation below for details about setting media. → Click the Apply button at the bottom. → The settings are applied, and the NVR system displays live video or records video based on the settings of the selected profile.

- **Video Source:** Select the desired video source from the list of video sources supported in the device.
- **Video Encoder:** Select a video encoder configuration. Clicking the **See More** button allows you to check the details of the selected video encoder configuration. Refer to **Video** (p. 102) for details about the video encoder configuration.
- **Audio Source:** Select a desired audio source from the list of audio sources supported in the device. When **None** is selected, audio monitoring and recording for the device will not be supported.
- **Audio Encoder:** Select an audio encoder configuration. Clicking the **See More** button allows you to check the details of the selected audio encoder configuration. Refer to **Audio** (p. 103) for details about the audio encoder configuration.
- **PTZ:** Select a PTZ setting. When **None** is selected, PTZ control of the device will not be supported.

Video

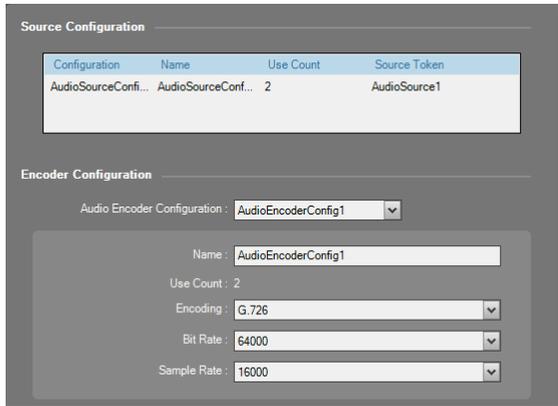


- **Source Configuration:** Displays the source configuration information (Configuration: video source, Name: source name, Use Count: the number of profiles that use the source, Source Token: the number of tokens).
- **Encoder Configuration:** Set up an encoder.
 - **Video Encoder Configuration:** Select a video encoder from the list of video encoders supported in the device.
 - **Name:** Assign a name to the selected video encoder.
 - **Use Count:** Displays the number of profiles that use the selected video encoder.
 - **Encoding, Resolution, Quality:** Select a video compression codec, video resolution and video quality. The frame rate cannot exceed 15 ips when recording video with the H.264 codec and 4CIF resolution if the device is a network video transmitter.

- **Frame Rate Limit:** Select a maximum frame rate.
- **Encoding Interval:** Select an encoding interval. The higher the value, the higher the bit rate and the worse the video quality.

- **Bit Rate Limit:** Enter the maximum bit rate. You can control the network bandwidth by limiting the bit rate depending on the network traffic.

Audio



- **Source Configuration:** Displays the source configuration information (Configuration: audio source, Name: source name, Use Count: the number of profiles that use the source, Source Token: the number of tokens).
- **Encoder Configuration:** Set up an encoder.
 - **Audio Encoder Configuration:** Select an audio encoder from the list of the audio encoders supported in the device.
 - **Name:** Assign a name to the selected audio encoder.
 - **Use Count:** Displays the number of profiles that use the selected audio encoder.
 - **Encoding:** Select an audio compression codec.
 - **Bit Rate:** Select a bit rate.
 - **Sample Rate:** Select the sampling rate. The higher the value is, the better the sound quality and the larger the data size.

I/O



- **Mode:** Set the relay mode for the input and output devices.
 - **Monostable:** After setting the idle state, the relay returns to its idle state once the delay time expires.
 - **Bistable:** After setting the idle state, the relay remains in this state.
- **Delay Time:** Set the delay time until the relay returns to its idle state in the Monostable mode.
- **Idle State:** Set the physical idle state of a relay output.
 - **Open:** Indicates that the relay is open when the relay state is set to Inactive and closed when the state is set to Active.
 - **Closed:** Indicates that the relay is closed when the relay state is set to Inactive and is open when the state is set to Active.
- **Action:** Controls the relay state.
 - **Active:** Clicking the button sets the relay state to Active.
 - **InActive:** Clicking the button sets the relay state to InActive.

PTZ

PTZ Node

Node	Name	Maximum Preset	Home Supported
PTZNode1	PTZNode1	16	Supported

PTZ Configuration

PTZ Configuration: PTZConfig1

Name: PTZConfig1

Use Count: 0

Node: PTZNode1

Absolute Pan/Tilt Position: None

Absolute Zoom Position: None

Relative Pan/Tilt Translation: TranslationGenericSpace

Relative Zoom Translation: TranslationGenericSpace

Continuous Pan/Tilt Velocity: VelocityGenericSpace

Continuous Zoom Velocity: VelocityGenericSpace

Pan/Tilt Speed: GenericSpeedSpace X: 1 Y: 1

Zoom Speed: ZoomGenericSpeedSpace X: 1

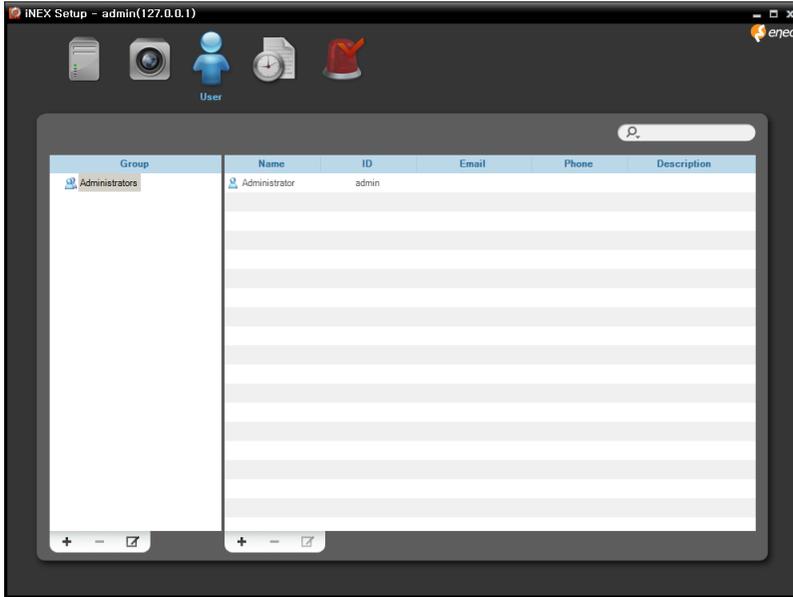
PTZ Timeout: 0 (h) 0 (m) 0 (s)

- **PTZ Node:** Displays the node information (Node: PTZ node, Name: source name, Maximum Preset: the maximum number of presets, Home Supported: availability of the home function).
- **PTZ Configuration:** Set up the PTZ.
 - **PTZ Configuration:** Select a PTZ from the list of the PTZs supported in the device.
 - **Name:** Assign a name to the selected PTZ.
 - **Use Count:** Displays the number of profiles that use the selected PTZ.
 - **Node:** Select a PTZ node. A PTZ node indicates mechanical PTZ drivers, uploaded PTZ driver or digital PTZ drivers.
 - **Absolute Pan/Tilt Position:** Select the movement setting to move to a certain position. If the position cannot be reached, the operation fails.
 - **Absolute Zoom Position:** Select the zoom setting to zoom in a certain position. If the position cannot be zoomed, the operation fails.

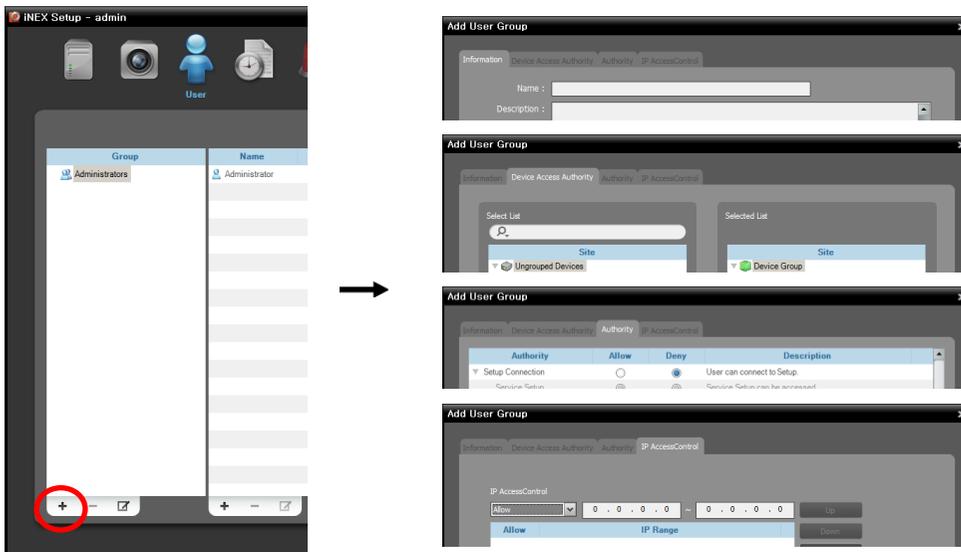
- **Relative Pan/Tilt Translation:** Select the movement setting to move in a certain direction based on the current position.
- **Relative Zoom Translation:** Select the zoom setting to zoom in in a certain direction based on the current position.
- **Continuous Pan/Tilt Velocity:** Select the movement setting to move continuously in a certain direction based on the current position with a defined speed.
- **Continuous Zoom Velocity:** Select the zoom setting to zoom in continuously in a certain direction based on the current position with a defined speed.
- **Pan/Tilt Speed:** Select the speed setting to move to a certain position or in a certain direction.
- **Zoom Speed:** Select the speed setting to zoom in a certain position or in a certain direction.
- **PTZ Timeout:** Set the duration of the PTZ operation. The operation will automatically stop after the timeout period.

Chapter 13 — User Management

You can assign every user different authority levels for each function of the iNEX program. The Administrators group has authority for all functions, and the authority settings are not editable. Run the Setup program. Refer to 3.1 Connecting (p. 11) for details about running the Setup program. → Select the User menu.



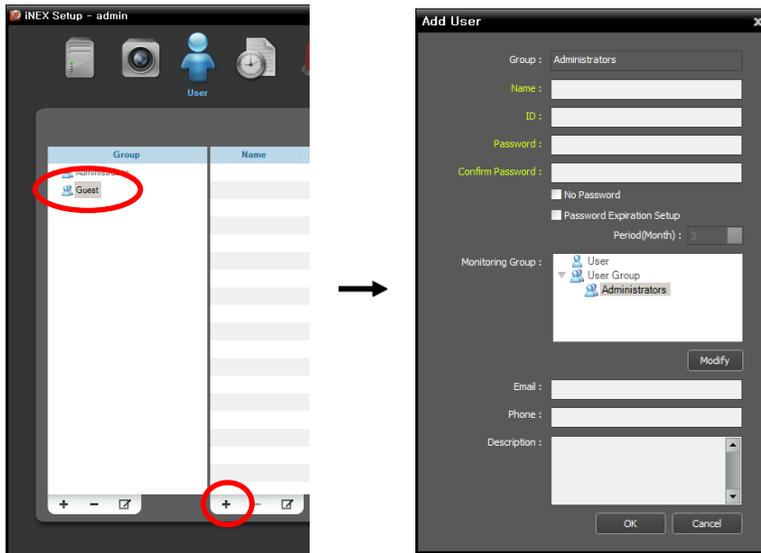
1. Click the **+** button at the bottom of the user group list. The Add User Group window appears.



- Information tab: Enter the user group name.
- Device Access Authority tab: Grant or limit authority for the access to each device.
- Authority tab: Grant or limit authority for each function.

- IP Access Control tab: Grants or limits access from users using the IP addresses within a certain range. Clicking the OK button completes registration of the user group.

2. Click the added user group in the Group list, and then the **+** button at the bottom of the user list. The Add User window appears.



- **Name:** Enter the user name.
- **ID, Password, Confirm:** Enter a unique user ID and password (8 to 16 characters without spaces) for access to the iNEX program.
- **No Password:** Allows you to log in without a password when running the iNEX program.
- **Password Expiration Setup:** Set the password expiration period. If the password has not been changed during the password expiration period, you will be informed of it when you log on.
- **Monitoring Group:** Displays the user who will be forwarded notification of events when events occur. Clicking the Modify button allows you to edit the users. Refer to 15.2 Managing Events, Event Acknowledgement (p. 119) for details about the event forwarding.
- **E-Mail:** Enter the email address of the user if you want to notify event detection to the user via E-mail. An email address must include the “@” character to be a valid address. Refer to Chapter 15 — Event Management (p. 111) for details about notifying event detection via E-mail.
- **Phone, Description:** Enter the telephone number and description of the user if you want. Only numbers and “-” are allowed when entering a telephone number.

Click the OK button at the bottom.

3. Clicking the registered user group or a user in the list, and then the button at the bottom allows you to edit the information.

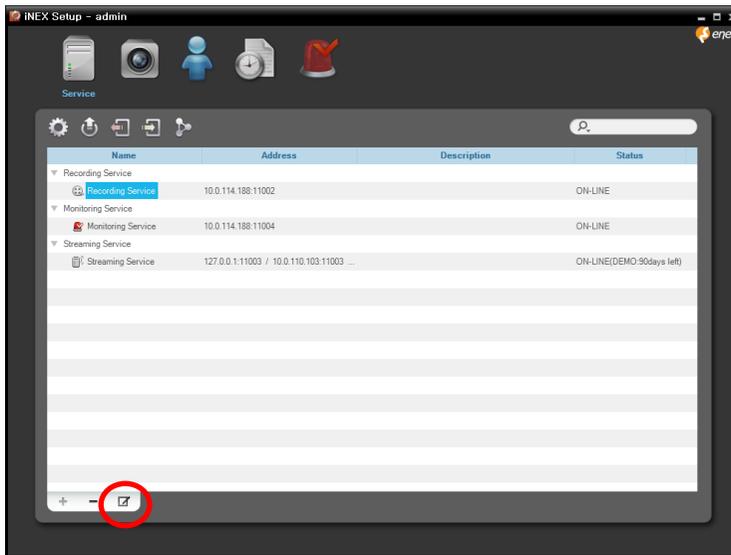
Chapter 14 — Storage Management

You can allocate and manage storage for recording. Go to the Start Menu → Click iNEX → Run the iNEX Setup program → Select the Service menu.

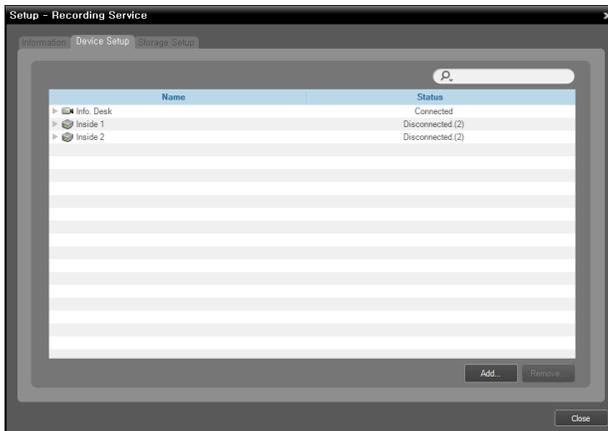
Allocating Storage

When additional hard disk drives are installed, it is required that you allocate storage to the hard disk drives.

NOTE: When removing a hard disk drive that contains recorded video from the NVR system and installing it in another NVR system, you cannot search or play back the video recorded on the original NVR system.



Select a recording service and click the  button at the bottom. The Setup – Recording Service window appears. Select the Device Setup tab.

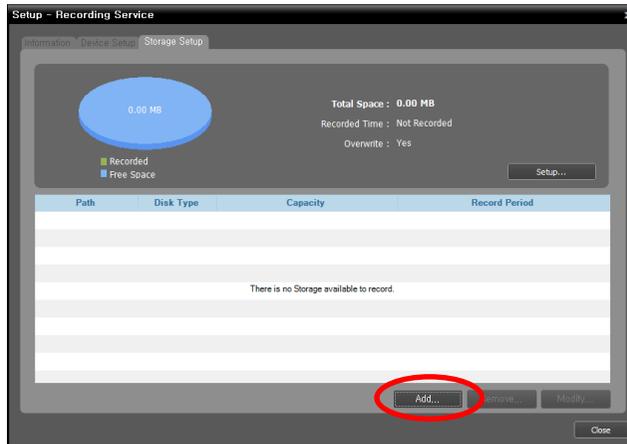


The list of cameras registered on the current recording service is displayed. Clicking the Add button at the bottom allows you to register other cameras on the current recording service. Selecting a device and clicking the Remove button deletes the device from the current recording service.

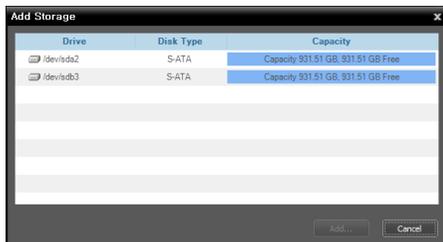
NOTES:

- If you remove a device for which some recording has been done and register the device again, the NVR system considers the device as a new device. In this case, you can search or play back video recorded before the device was removed as follows: go to the *Play* panel → click the  (Additional Menu) button → select *Removed Devices*.
- Recording is not supported for DVRs.

1. Select the Storage Setup tab and click the Add button at the bottom.

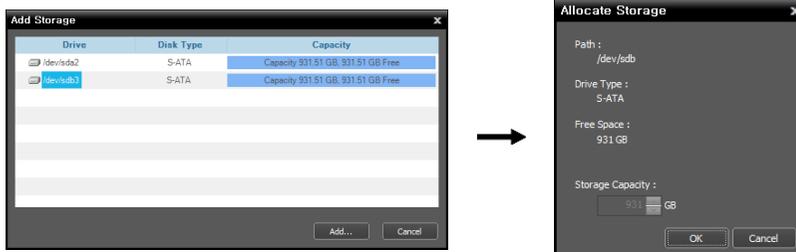


2. The Add Storage window appears, and a list of available hard disk drives is displayed with information about each drive.



- **Drive:** Displays the drive name.
- **Disk Type:** Displays the type of hard disk drive.
- **Capacity:** Displays the total storage capacity and available storage capacity.

3. Select a hard disk drive to allocate storage and click the Add button at the bottom. The Allocate Storage window appears.



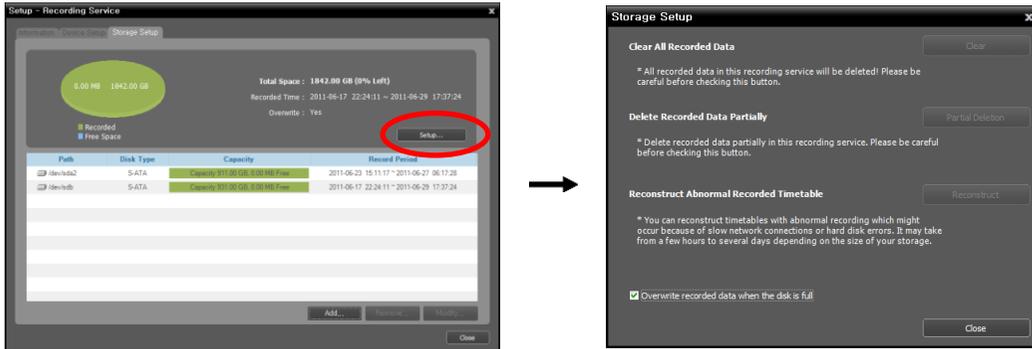
- **Path:** Displays the storage folder path.
- **Drive Type:** Displays the type of hard disk drive.
- **Free:** Displays the available storage capacity.

Managing Storage

You can manage storage of all hard disk drives used in the current NVR system or of a specific hard disk.

Storage of All Hard Disk Drives

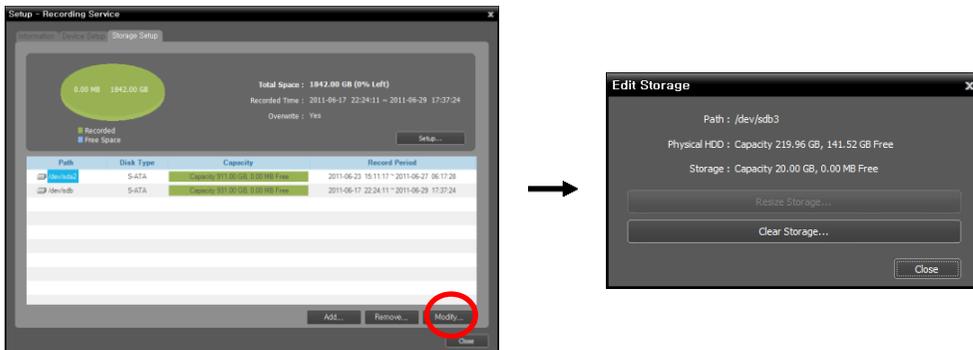
Click the Setup button. The Storage Setup window appears.



- **Clear All Recorded Data:** Deletes all recorded data on all hard disk drives used in the current NVR system.
- **Delete Recorded Data Partially:** Allows you to delete recorded data for a specific period for each device. Recording will stop while data is being deleted.
- **Reconstruct Abnormal Recorded Timetable:** When the network connection between the NVR system and the devices is too slow or a hard disk drive in the NVR system is damaged, the recorded data and the timetable information of the recorded data might not match and the timetable in the Client program might display incorrect information. In this situation, clicking the button reconstructs the timetable to display recorded data correctly on the timetable in the Client program.
- **Overwrite recorded data when the disk is full:** Checking the box records over the oldest video data once all available storage space has been used.

Storage of a Specific Hard Disk Drive

Click the storage to edit in the storage list, and then the Modify button at the bottom. The Edit Storage window appears.



- **Clear Storage:** Allows you to delete all data recorded in the selected storage.

NOTE: Search or playback of recorded data will be stopped when storage is cleared.

CAUTION: Clearing storage deletes all data recorded in the storage and the deleted data cannot be restored.

Chapter 15 — Event Management

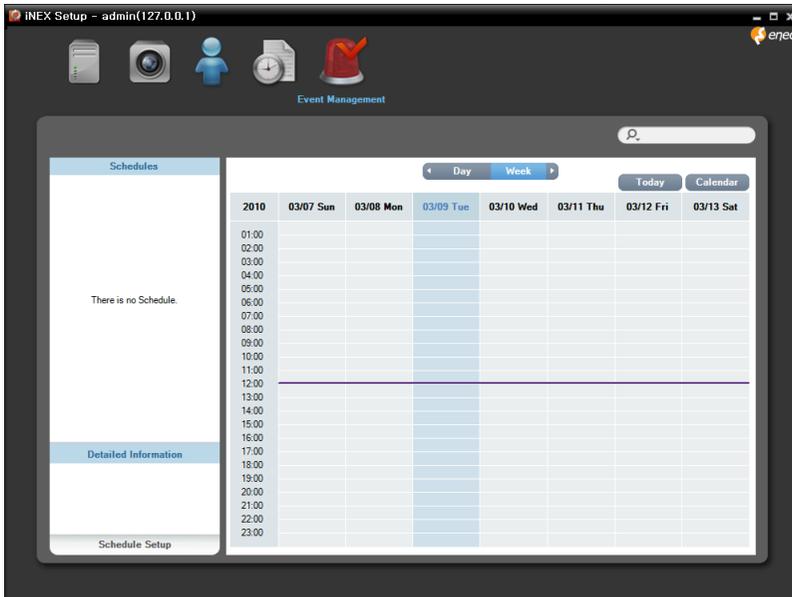
You can manage event detection notification to the Client system based on a preset event management schedule and monitor or play back the event-detected video on the Client system. Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).

15.1 Setting up Event Management Schedule

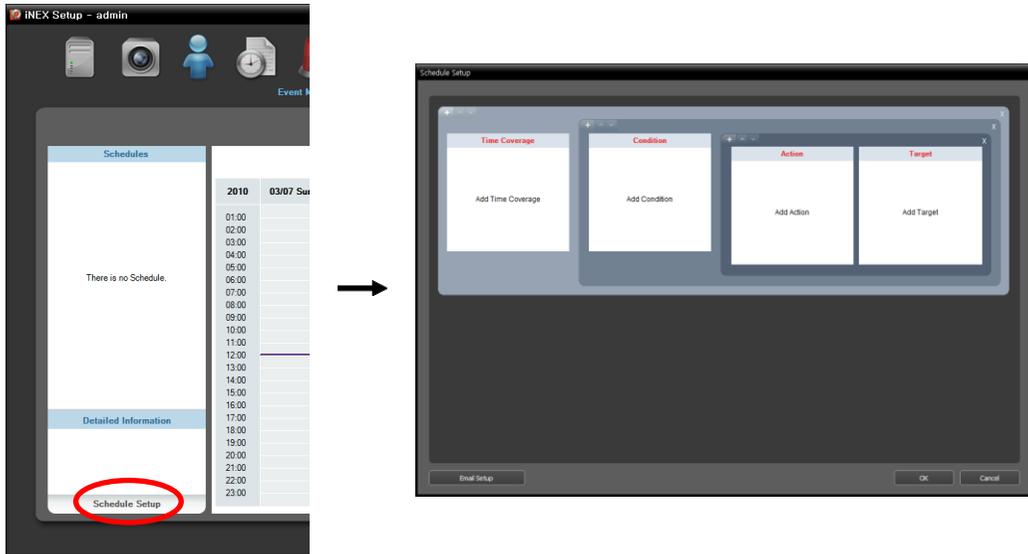
First, check the following and run the Setup program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 89) for details.

Go to the Start Menu → Click iNEX → Run the iNEX Setup program → Select the Event Management menu, and set up the event management schedule following the procedures below.



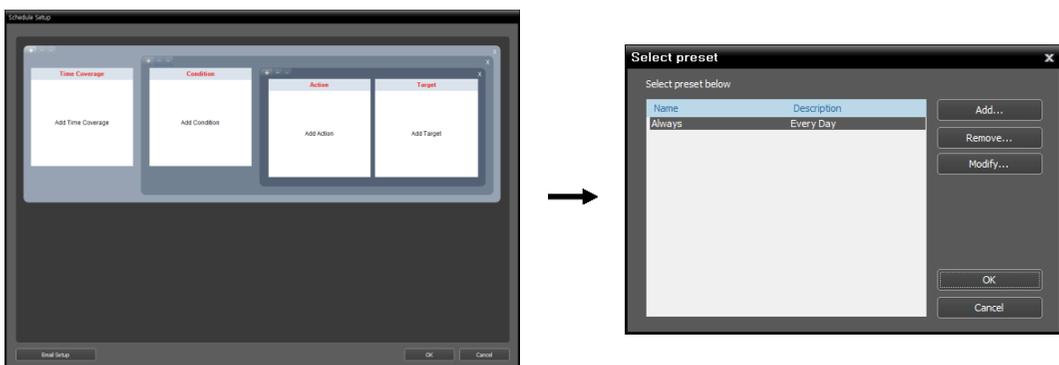
Click the Schedule Setup button at the bottom. The Schedule Setup window appears, and schedule windows are displayed with the current settings for each Preset.



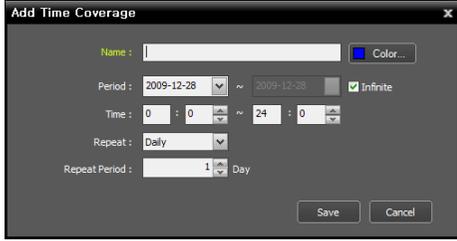
- **Time Coverage:** Sets up the schedule time. You can set up more than one time range.
- **Condition:** Sets up the event condition. You can set up more than one event condition for the same schedule time.
- **Action:** Sets up the event action. You can set up more than one event action for the same event condition.
- **Target:** Sets up the users to manage the events.
- **Email Setup:** Sets up the SMTP server information for sending email. This only works when the action type is set to Email Notification during the Action Preset setup.

NOTE: In the schedule setup, “Preset” indicates a single setting in which the setting values of *Time Coverage*, *Condition* or *Action* are saved.

1. Set up the schedule time by double clicking the Time Coverage schedule window, and then selecting a desired Preset.



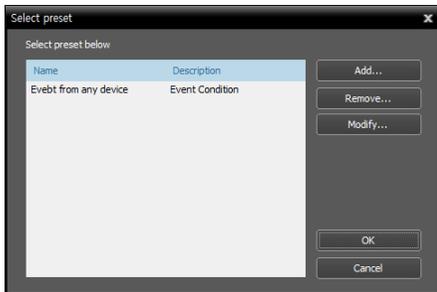
You can add a new Preset or edit a saved Preset by clicking the Add or Modify button. Refer to the following explanation for setting up a schedule.



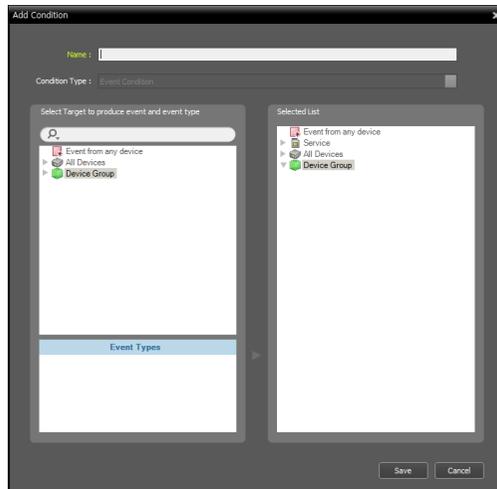
- **Name:** Enter the Preset name.
- **Color:** Click the button and select a desired color. The scheduled time section will be highlighted with the selected color in the schedule table.
- **Period:** Set up the period for the schedule time. Selecting the **Infinite** option causes continuous notification based on the **Condition, Action and Target** preset settings without limiting the period.

- **Time:** Set up the time for schedule time.
- **Repeat, Repeat Period:** Set up the interval and interval period. Events will be notified to the preset users at the designated interval during the interval period.

2. Set the event condition by double clicking the **Condition** schedule window and selecting a desired Preset of event condition.



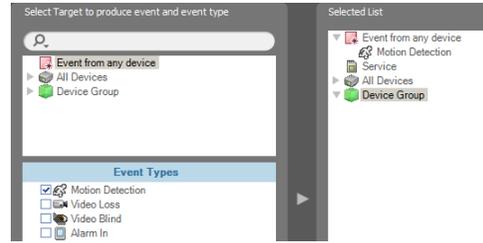
You can add a new Preset or edit a saved Preset by clicking the **Add** or **Modify** button. Clicking the **Add** or **Modify** button displays the following setup screen.



- **Name:** Enter the Preset name.
- **Select Target to produce event and event type:** Select event types that trigger event notification.

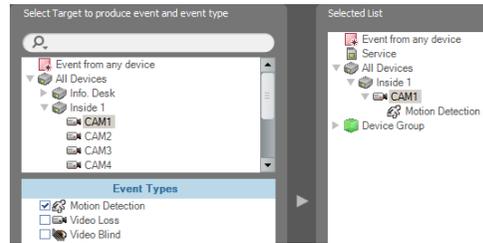
- **Event from any device:** Select to notify events when user-defined types of events are detected.

Click **Event from any device**, and the list of event types is displayed in **Event Types** below → Select the desired event types, and the selected event types are added to the list under **Event from any device** on the right.



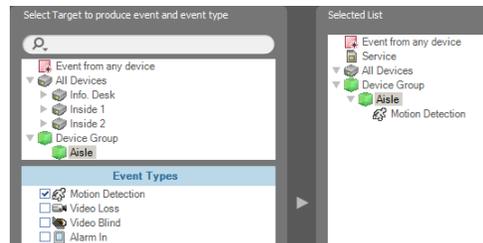
- **All Devices:** Select to notify events when user-defined types of events are detected from the selected device or camera.

Click **All Devices**, and the list of registered devices and cameras is displayed → Under **All Devices**, click a device or camera to trigger event notification, and the list of event types supported by the device or camera is displayed in **Event Types** below → Select the desired event types, and the selected event types are added along with the selected device or camera to the list under **All Devices** on the right.



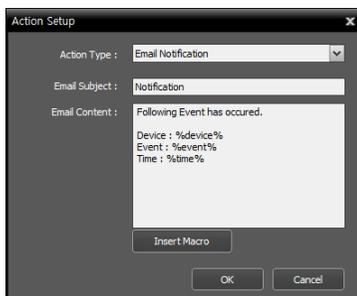
- **Device Group:** Select to notify events when the user-defined types of events are detected in the selected device group.

Click **Device Group**, and the list of registered device groups is displayed → Under **Device Group**, click a device group to trigger event notification, and the list of event types is displayed in **Event Types** below → Select the desired event types, and the selected event types are added along with the selected device group to the list under **Device Group** on the right.



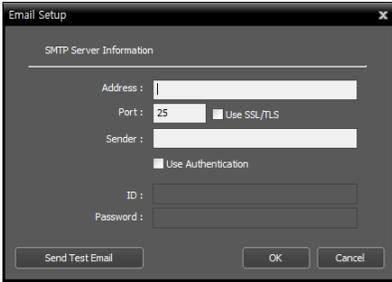
3. Set up the event action by double clicking the **Action** schedule window and selecting a desired action type.

- **Email Notification:** Select to send an email to Client users when an event is detected based on the event condition setting.



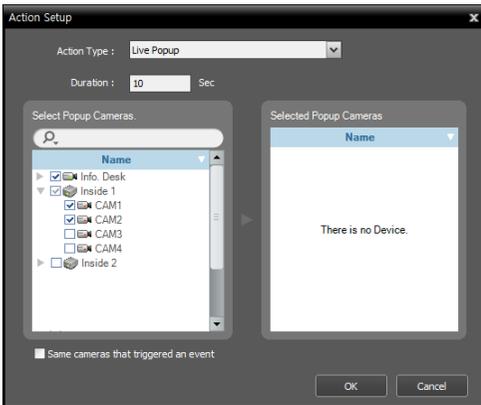
- **Email Subject:** Enter the email subject.
- **Email Content:** Enter the contents of the email. Clicking the **Insert Macro** button displays a list of available macros. Selecting a macro from the list applies the macro when sending an email.

For this to work properly, you should enter the **SMTP** server information for sending email and enter the email address of the user to be notified. Click the **Email Setup** button in the **Schedule Setup** window to enter the **SMTP** server information as follows. Refer to **Chapter 13 — User Management** (p. 105) for details about entering the email address of the user to be notified.



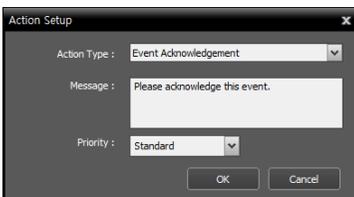
- **Address, Port:** Enter the email address and port number of the SMTP server. Select Use SSL/TLS if the SMTP server requires SSL (Secure Sockets Layer) authentication.
- **Sender:** Enter the sender's email address.
- **Use Authentication:** Select and enter the ID and password if the SMTP server requires user authentication.

- **Live Popup:** Select to pop up a live video (maximum 36) from the event-detected camera in the Client system when an event is detected based on the event condition setting. Refer to 15.2 Managing Events, Live Popup (p. 118).



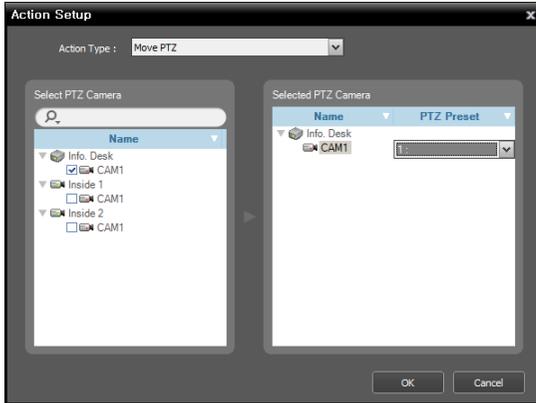
- **Duration:** Enter the duration for the display of popup video to last.
- **Select popup Cameras:** Select the cameras (maximum 4) from which video will pop up. Selecting the Same cameras that triggered an event option pops up video only from the camera where an event is detected (not supported for alarm-in events and audio detection events).

- **Event Acknowledgement:** Select to display an event log in the Client program when an event is detected based on the event condition setting. Refer to 15.2 Managing Events, Event Acknowledgement (p. 119).



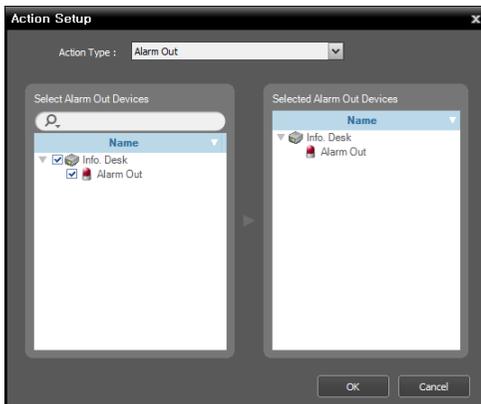
- **Message:** Enter the message to be displayed in the Client program.
- **Priority:** Select the priority of the event. The priority will be displayed in the event log.

- **Move PTZ:** Select to move the PTZ camera to a Preset position when an event is detected based on the event condition setting (supported only for devices which use the iNEX protocol).



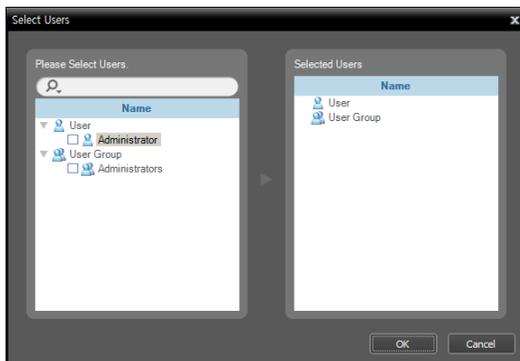
- Select PTZ Camera: Select cameras to move. This is supported for PTZ cameras only.
- Selected PTZ Camera: Displays the selected cameras and allows you to select a Preset position for the camera to move. Refer to 5.3 Controlling Cameras, PTZ Control, PTZ Preset Control (p. 56) about setting up Preset positions.

- Alarm Out: Select to activate alarm out when an event is detected based on the event condition setting (supported only for devices which use the iNEX protocol).



- Duration: Enter the duration for the alarm out to last.
- Select Alarm Out Devices: Select alarm out devices to activate.

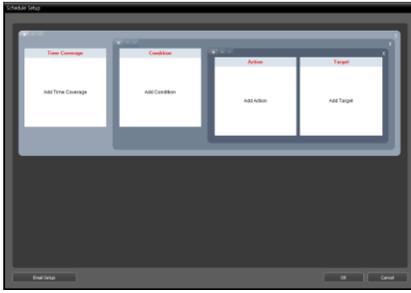
4. Select the users to be notified the events after double clicking the Target schedule window.



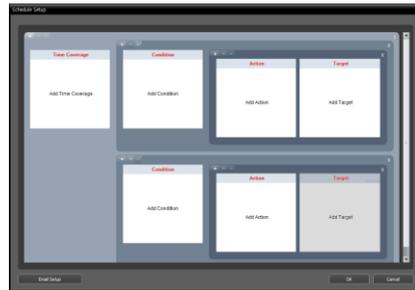
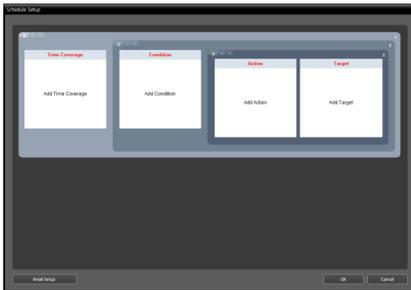
Managing Schedule

Adding a New Schedule

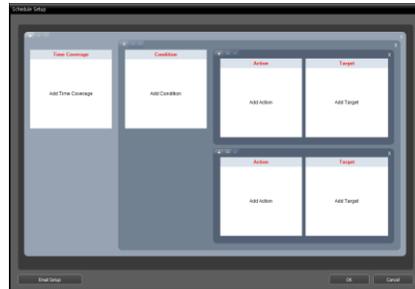
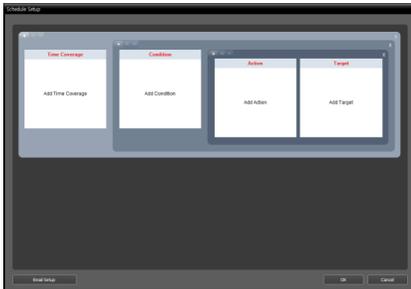
- Adding a new schedule with a different time range: Clicking the **+** button in the upper left corner of the Time Coverage schedule window allows you to add a new schedule with a different time coverage.



- Adding a new schedule with the same time range: Clicking the **+** button in the upper left corner of the Condition schedule window allows you to add a new schedule with the same time coverage.



- Adding a new schedule with the same time range and target: Clicking the **+** button in the upper left corner of the Action schedule window allows you to add a new schedule with the same time range and target.



Deleting a Schedule

Clicking the **X** button in the upper right corner of any schedule window deletes the schedule.

Changing Schedule Position

Clicking the **▲** or **▼** button in the upper left corner of each schedule window changes the position of the schedules. There is no priority between schedules and all schedules will be performed.

15.2 Managing Events

You can monitor or play back video of notified events based on the event management schedule.

First, check the following and run the Client program.

- The NVR system should be running.
- Devices should be added to a device group. Refer to Chapter 12 — Device Management (p. 89) for details.
- Event management schedules should be set up. Refer to 15.1 Setting up Event Management Schedule (p. 111) for details.

Live Popup

You can monitor live video from a camera with a detected event. Popup screens appear based on the event management schedule which is set on the **Action** schedule window – **Live Popup** action when events are detected. The Live Popup list displays the list of live popup screens currently displayed on the monitor.

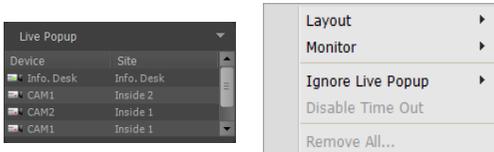
Popup Screen



When selecting a popup screen and hovering the mouse cursor over the popup screen, the control toolbar is displayed over that popup screen. The control toolbar allows you to control the camera. Hovering the mouse cursor over a button displays a tooltip for the button. Refer to 5.3 Controlling Cameras, Control Toolbar (p. 54) for details about the toolbar buttons.

When clicking the right mouse button on the popup screen, a popup screen menu is displayed. The screen menu allows you to change the popup screen settings or to control the camera. Items related to controlling a camera in the menu function the same way as those in the live screen menu. Refer to 5.3 Controlling Cameras, Live Screen Menu (p. 54) for details.

Live Popup List



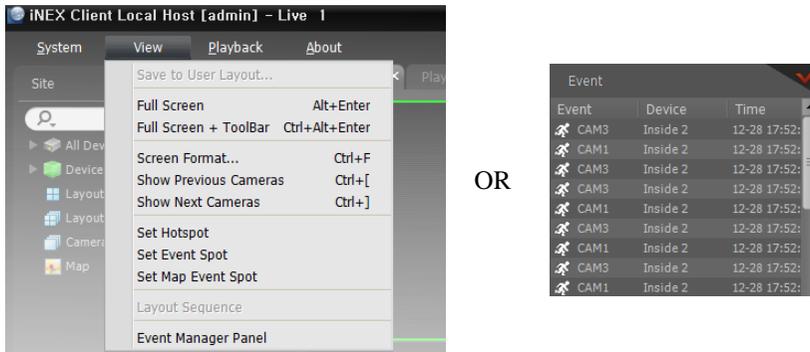
Clicking the arrow button in the upper right corner displays a live popup menu. The live popup menu allows you to change the popup screen settings.

- **Layout:** Select the display format of popup screens.
- **Monitor:** Select the monitor on which popup screens are displayed if you use dual monitors.
- **Ignore Live Popup:** Select a time span to disable the live popup function regardless of the event management schedule settings which is set on the **Action** schedule window – **Live Popup** action.
- **Disable Time Out:** Click if you want to close the popup screen manually regardless of the preset duration for the popup screen to be displayed.
- **Remove All:** Deletes the list.

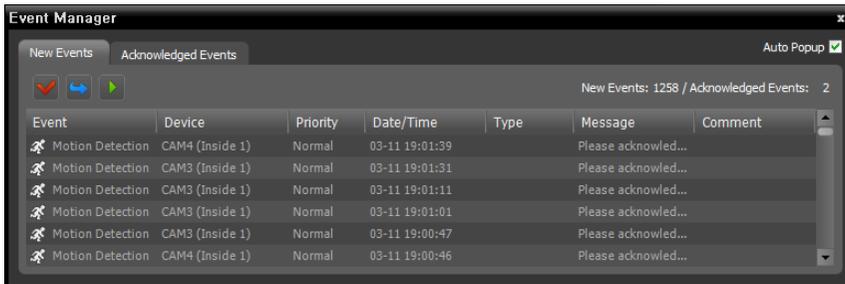
Event Acknowledgement

You can monitor live video from the event-detected camera when an event is detected or play back event-detected video if the selected event has been recorded. The Event Manager panel appears automatically when events are detected based on the event management schedule which is set on the Action schedule window – Event Acknowledge action, or you can display the Event Manager panel manually as follows:

Go to the View menu, click Event Manager Panel. Or, click the  button in the Instant Event List.



The Event Manager panel is displayed.



The list of events is displayed that notified to the Client system based on the preset event management schedule.

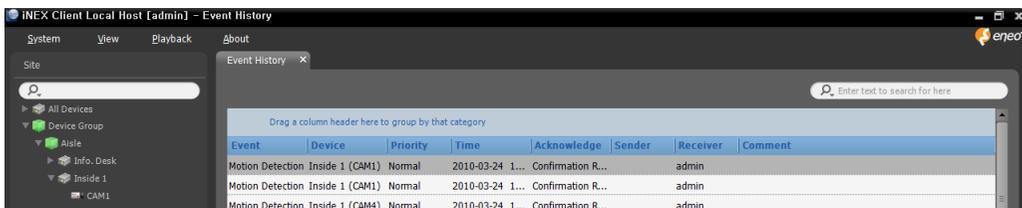
- Auto Popup : Pops up the Event Manager panel automatically when the Client system is notified of an event.
- New Events: Displays events that the Client system is notified of but not yet acknowledged.
 -  (Acknowledge Event): Acknowledges the selected event in the list, and the selected event is moved to the Acknowledged Events list.
 -  (Event Forwarding): Forwards the event to all users or the users defined in the Monitoring Group setting during the User setup. Only users currently connected to the Client system will be notified. Refer to Chapter 13 — User Management (p. 105) for details about the Monitoring Group setting.
 -  (Playback): Plays the event-detected video if the selected event has been recorded.
- Acknowledged Events: Displays events acknowledged by the client system.

Log Search

You can search log entries of events displayed in the Event Manager panel. Log search is supported in the Event History panel. If the Event History tab is not on the tab panel, go to the **System** menu, click **New Tab** and **Event History**.

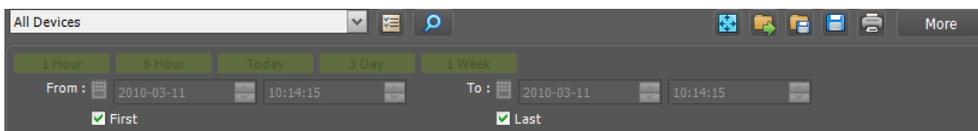


The log entries are displayed. Clicking the right mouse button on a column header displays a menu and allows you to sort data as you want.



Event History Toolbar

The toolbar at the bottom of the panel allows you to search for the desired log entries.



- **From, To:** Set up the date and time of the log entry to search. Enter the specific date and time or select **First** or **Last**. Clicking the **1 Hour**, **6 Hour**, **Today**, **3 Day** or **1 Week** button adjusts the time interval between **From** and **To**. Selecting **First** or **Last** searches log entries from the first one or to the last one.
- **(Condition):** Selects a log type to search.
- **(Search):** Starts searching log entries based on the search conditions.
- **(Full Screen):** Displays the Event History panel in full-screen format.
- **(Load Preset):** Applies the column sorting saved in the Client system.
- **(Save Preset):** Saves the current column sorting in the Client system.
- **(Export):** Exports the searched log entries as a text file (.txt) or a CSV file (.csv).
- **(Print):** Prints the searched log entries.
- **More:** Displays more results.

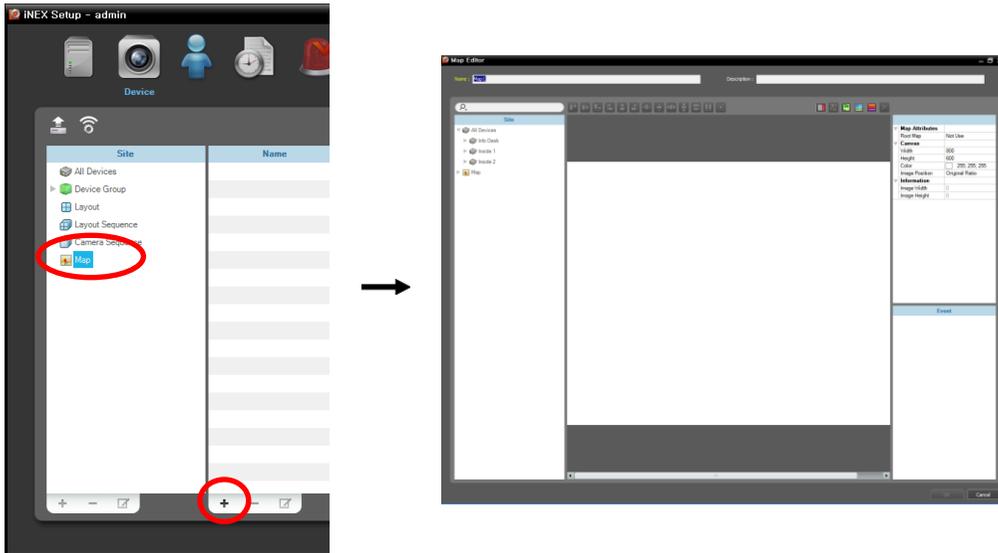
Chapter 16 — Map Editor

You can register a map to monitor video from cameras, event detection and input/output device's status of devices registered on the NVR system on a map on the Client system.

NOTE: This function is supported only for devices which use the iNEX protocol, but monitoring video from cameras supported also for devices which use the *Axis* or *ONVIF Conformance* protocol.

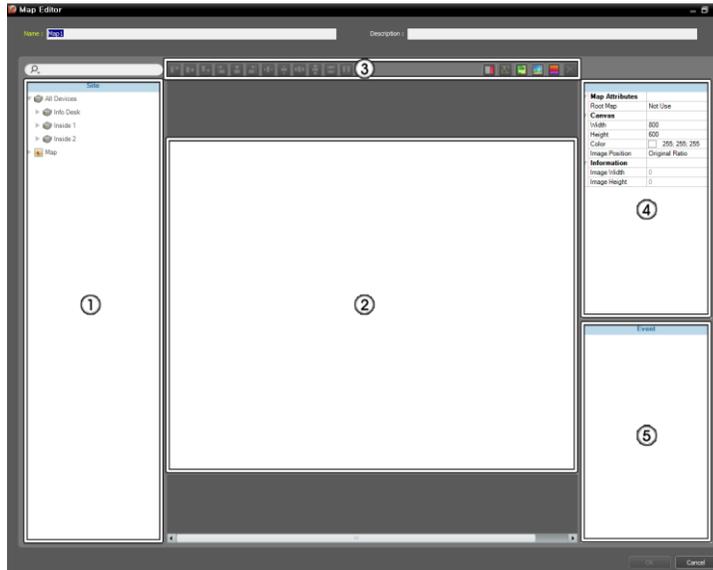
16.1 Registering Map

1. Go to the Start menu, and click iNEX Setup, and select the Device menu.
2. Click Map in the Site panel, and then the **+** button at the bottom of the Site List panel on the right. The Map Editor window appears.



3. Select an input/output device connected to a device or a sub-map in the Site panel and drag and drop it on the canvas.
4. Set up the map. Refer to 16.2 Setting up Map (p. 122) for details.
5. Entering a map name and clicking the OK button completes registration of the map.

16.2 Setting up Map



- ① **Site:** Displays a list of registered devices and map. You can search for a registered device and map by entering text beside the  icon. Entering text that you want to search for causes the search results to be displayed. Search results are displayed immediately as matching text is found. As you enter more text, the results narrow.
- ② **Canvas:** Allows you to create a map by inserting a background image and placing input/output device icons or map links from the Site list.
- ③ **Setup Buttons:** Sets up the map.
 -  (Align): Aligns the input/output device icons or map links on the canvas.
 -  (Text Box): Inserts a box which allows you to enter text.
 -  (Path Sequence): Sets up a path sequence. Refer to [Path Sequence](#) (p. 124) for details.
 -  (Synchronize Map Objects Name): Synchronizes the input/output device's name based on the settings in the device.
 -  (Background Image): Inserts a background image on a canvas.
 -  (Status Color): Sets up a unique color for each event detection or status of input/output devices.
 -  (Delete): Selecting an input/output device icon or a map link on the canvas and clicking this button deletes the icon or link from the canvas.
- ④ **Property:** Sets up the property of the map, canvas, input/output device icons or map links.
- ⑤ **Event Action:** Sets up the event action of the input/output device icons. When you monitor video on the map and events are detected, notification on the map is made based on the event action settings.

Icon Alignment

You can adjust the alignment on the canvas and size of one or more input/output device icons or map links at a time by selecting the icons or links and clicking the icon alignment button.



-  /  (Position): Aligns one or more icons to the center vertically or horizontally on the background image.

- (Position): Aligns two or more icons to the top or bottom, to the vertical or horizontal center, or to the left or right based on the last selected icon.
- (Distance): Equalizes the distance between each icon of three or more icons.
- (Size): Equalizes the width, height, or size of two or more icons (supported only for icons that are of the same type but of a different width-height ratio).

Property

You can set up properties of the canvas, or input/output device icons or map links on the canvas. Select the canvas, icons or map links, and then each field of the property. You can enter or select a value from the drop-down list.

Map Attributes	
Root Map	Not Use
Canvas	
Width	800
Height	600
Color	<input type="text" value="255; 255; 255"/>
Image Position	Original Ratio
Information	
Image Width	0
Image Height	0

General	
Name	Alarm In
Icon	Alarm In Sensor
Ratio	50
X Coordinate	416
Y Coordinate	75
Width	32
Height	32
Associated Camera	Select target
Halo effect	Not Use
Information	
Name	Alarm In
IP Address	10.0.15.47
Device Num	1

General	
Name	BANK 1
X Coordinate	139
Y Coordinate	401
Width	128
Height	32
Text Color	<input type="text" value="255; 255; 255"/>
Background Color	<input type="text" value="85; 110; 215"/>
Opacity	80
Align Text	Left
Information	
Name	BANK 1

- **Map Attributes:** Sets the properties of the map.
 - **Root Map:** Displays a list of devices registered on the map at the right of the Map panel during the map monitoring (supported only for the Map panel).
- **Canvas:** Sets the properties of the canvas and background image inserted on the canvas.
 - **Width, Height, Color:** Sets the width, height and color of the canvas.
 - **Image Position:** Sets the position of the background image.
 - **Information:** Displays the width and height of the background image.
- **Input/Output Device:** Sets the properties of the input/output device icon.
 - **Name:** Sets the name of the device icon.
 - **Icon, Ratio:** Sets the image and ratio of the device icon.
 - **X Coordinate/Y Coordinate, Width/Height:** Sets the position and size of the device icon. You can also sets the position and size by using the mouse drag and drop on the canvas.
 - **Associated Camera:** Associates the device with a camera (supported only for an alarm in or audio-in device). You can monitor video from the associated camera when an event is detected.
 - **Halo Effect:** Sets the color of the background of the icon. It allows you to more easily find the device icon on the map.
 - **Information:** Displays the information about the device.
- **Map Link:** Sets the properties of the map link.
 - **Name:** Sets the name of the map link. The name will be displayed on the map link.
 - **X Coordinate/Y Coordinate, Width/Height:** Sets the position and size of the map link. You can also sets the position and size by using the mouse drag and drop on the canvas.
 - **Text Color, Background Color:** Sets the text color and background color of the map link.
 - **Opacity:** Sets the opacity of the background color of the map link.
 - **Align Text:** Aligns the name text of the map link.
 - **Information:** Displays the map name.
- **Text Box:** Sets the properties of the text box.
 - **Text:** Sets the text. The text will be displayed on the map.

- Font, Font Size: Sets the font and font size.
- Text Color, Background Color: Sets the text color and background color of the text box.
- Align Text: Aligns the text.
- Bold, Italic, Underline, Strikethrough: Makes the text bold, italicizes the text, underlines the text, draws a line through the text.
- X Coordinate/Y Coordinate, Width/Height: Sets the position and size of the text box. You can also sets the position and size by using the mouse drag and drop on the canvas.

Path Sequence

It allows you to set up a path sequence and monitor video from multiple cameras sequentially in the same camera screen during map monitoring. A path sequence should be set up for each camera on the canvas for path sequence monitoring (Click the  (Path Sequence) button → Click each camera icon on the canvas in order of monitoring → Click the right mouse button to finish the setting).

General	
Name	Path Sequence 1
Color	 50; 100; 255
Opacity	70
Width	5
Shape	Ellipse
Background Color	 0; 0; 255
Opacity	63
Margin	4; 4; 4; 4
Reverse	
Associated Device	
▼ CAM1	Disconnect
Duration	10
▼ CAM2	
Duration	10

- Name: Sets the name of the path sequence.
- Color/Opacity/Width: Sets the color/opacity/width of the path displayed on the map.
- Shape: Sets the shape of the alert icon to distinguish a camera when displaying video from a camera set for the path sequence during map monitoring.
- Background Color/Opacity/Margin: Sets the color/opacity/margin of the alert icon when displaying video from a camera set for the path sequence during map monitoring.
- Reverse: Reverses the direction of the path sequence.
- Associated Device: Displays the list of cameras set for the path sequence. Video from cameras in the list is displayed on the screen sequentially for the Duration period. Clicking a camera in the list and the Disconnect button deletes the camera from the path sequence.

Event Action

You can set up event actions to be taken when events are detected by the input/output devices. Select the icon, and then each field of the property. You can enter or select a value from the drop-down list.

Event	
Action	
▼ Click	
Instant Viewer	Use
▼ Motion Detection	
Live Popup	Not Use
Event Spot	Use
▼ Object Detection	
Live Popup	Not Use
Event Spot	Use
▼ Video Loss	
Live Popup	Not Use
▼ Video Blind	
Live Popup	Not Use
Event Spot	Use

- Click: Sets the Instant Viewer window to be displayed when clicking the input/output device icon on the map. When clicking an alarm-in icon, clicking activates or deactivates alarm out.
- Motion Detection, Object Detection, Video Loss, Video Blind, Alarm In, etc.: Enables or disables event actions to be taken when each event is detected. The event actions will be disabled regardless of the settings below if you disabled the event actions of the input/output devices during the map monitoring (Disabling event actions: Place the mouse cursor over the input/output device on the map → Click the right mouse button → Select Ignore Event Action).
 - Live Popup: Pops up video from a camera (associated camera if the device is not a camera).
 - Event Spot: Displays video from a camera (associated camera if the device is not a camera) on the event spot screen.
 - Event Sound: Sounds by playing back a selected audio file (.wav).

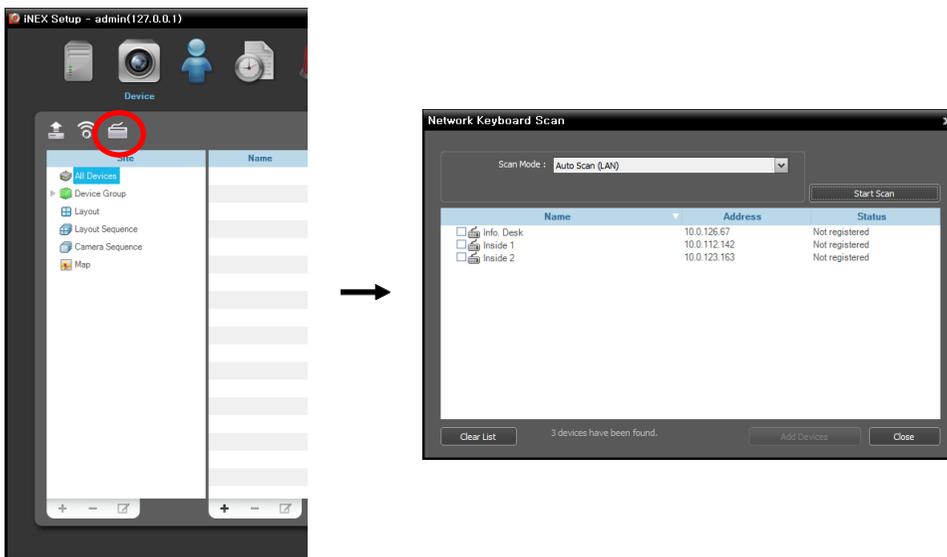
Chapter 17 — Controlling With a Network Keyboard

You can control the Client program by using a network keyboard.

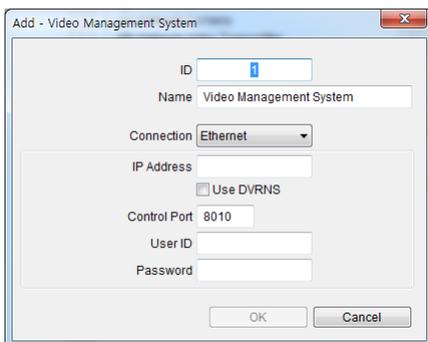
NOTE: This function is supported only for a specific model of a network keyboard.

17.1 Registering

1. Register the network keyboard on the administration service: Go to the Start Menu → Click iNEX → Run the iNEX Setup program and enter login information → Select the Device menu → Click  (Network Keyboard Setup) button, and the Network Keyboard Scan window appears. The way to register a network keyboard is identical to the way to register a device. Refer to 12.1 Registering Devices (p. 90) about registering a device.

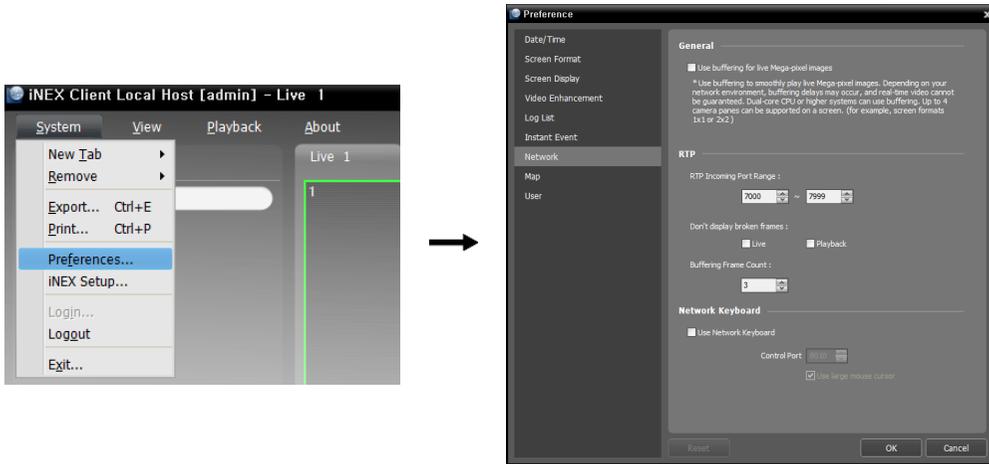


2. Register the Client system on the network keyboard. Refer to the network keyboard User's Manual for details.



- **ID (Client system ID):** The network keyboard assigns the ID automatically when the Client system is registered, and you can change the ID. The ID is used to distinguish the Client system from other Client systems when controlling it with a network keyboard, so each must have a unique ID.
- **Name:** Set up a Client system name for your reference.
- **IP Address:** Enter the Client system's IP address. Do not check Use DVRNS.
- **Control Port:** Enter the Control port number set in the Client System (Check the Control port number in the System menu → Preference → Network → Network Keyboard setting).

- User ID, Password: Enter the user ID and password for the connection to the Client system.
3. Enable a network keyboard in the Client system by checking the Use Network Keyboard option.



17.2 Connecting

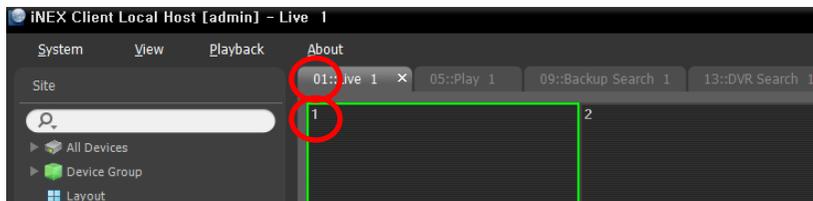
Network Keyboard LCD Display



1. Press the Client system ID on the network keyboard.



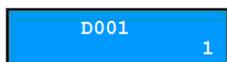
2. Press the **DEV** button. The network keyboard connects to the Client system. When the connection is succeeded, a unique ID is displayed on each camera screen and panel tab as follows.



3. Pressing the **SHIFT** and **DEV** button at the same time releases the connection.

17.3 Operating

Monitoring Video



1. Press the Live tab ID on the network keyboard.



2. Press the **DEV** button.

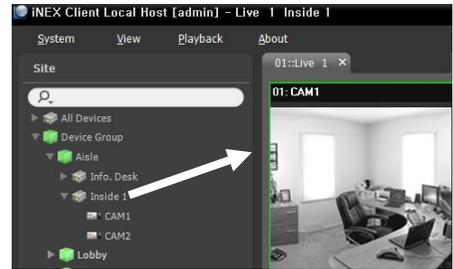


3. Press the camera screen ID.



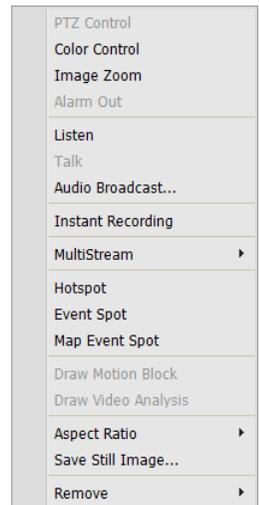
4. Press the **PANE** button.

5. Select a site to connect to from the **Site** list, and drag and drop it on the Live screen by using the mouse connected to the network keyboard. Live video from the selected site is displayed on the screen.



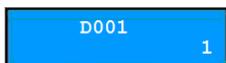
6. Press the **Menu** button. The live screen menu is displayed.

7. Moving to the desired item by using arrow buttons and pressing the enter button (**↵**) selects the item in the menu or releases the selection. If you want to exit the current item setting, press the **Menu** button and releases the selection.

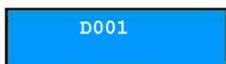


8. Refer to 17.4 Network Keyboard Buttons, Buttons for Client System Control (p. 129) for the explanations about other functions.

Playing Back Recorded Video



1. Press the Play or DVR Search tab ID on the network keyboard.



2. Press the **DEV** button.

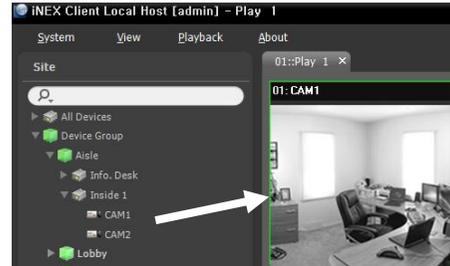


3. Press the camera screen ID.



4. Press the **PANE** button.

5. Select a site to connect to from the **Site** list, and then drag and drop it on the Play or DVR Search screen by using the mouse connected to the network keyboard. Recorded video from the selected site is displayed on the screen.



6. Press the  (Menu) button. The play screen menu is displayed.

7. Moving to the desired item by using arrow buttons and pressing the enter button () selects the item in the menu or releases the selection. If you want to exit the current item setting, press the  (Menu) button and releases the selection.



8. Refer to 17.4 Network Keyboard Buttons, Buttons for Client System Control (p. 129) for the explanations about other functions.

17.4 Network Keyboard Buttons

The following is an explanation of the network keyboard buttons used to control the Client system. Refer to the network keyboard User's Manual regarding buttons for PTZ control.

Buttons for Operation Commands

Button	Designation	Operation
	Number (1 to 9)	<ul style="list-style-type: none"> ID → MON, PANE, DEV: Selects a monitor, camera screen, panel tab or Client system to control.
	Number (0)	<ul style="list-style-type: none"> Does not function as a command button.
	Shift	<ul style="list-style-type: none"> SHIFT → Button : Performs the secondary function for buttons that support two functions.
	ESC	<ul style="list-style-type: none"> ESC : Cancels a command during its operation.

	Connection	• Client system ID → DEV : Connects to the Client system.
	Disconnection	• SHIFT & DEV : Releases the connection to the Client system.
	Panel Tab	• Tab ID → DEV : Selects the panel tab.
	Camera Screen	• Camera Screen ID → PANE : Selects the camera screen.
	Monitor	• Monitor ID → MON : Selects the monitor.
	-	• - : Releases the connection of the currently selected camera screen or device.
	Function (1 to 8)	<ul style="list-style-type: none"> • F1: Displays monitor ID when using more than one monitor. • F7 (SHIFT & F3) : Allows you to change the settings of the System menu → Preference. Pressing the button again cancels the operation. • F8 (SHIFT & F4) : Displays the Client program's software version. Pressing the button again cancels the operation.

Buttons for Client System Control

NOTE: Some functions may not be supported, depending on the connected device.

Button	Designation	Operation
	Instant Recording On	• Camera Screen ID → ! : Starts instant recording for the selected camera screen.
	Instant Recording Off	• Camera Screen ID → SHIFT & ! : Stops instant recording for the selected camera screen.
	Alarm Out On	<ul style="list-style-type: none"> • Camera Screen ID → 🔔 : Activates the alarm out 1 of the device connected to the selected camera screen. • 'Alarm-out device No.' → 🔔 : Activates the selected alarm out.
	Alarm Out Off	<ul style="list-style-type: none"> • Camera Screen ID → SHIFT & 🔔 : Deactivates alarm out 1 of the device connected to the selected camera screen. • 'Alarm-out device No.' → SHIFT & 🔔 : Deactivates the selected alarm out.
	Display	<ul style="list-style-type: none"> • 📄 : Allows you to change a screen format. Select a screen format by using arrow buttons and enter button (↵). • SHIFT & 📄 : Changes to the 1x1 screen format. Pressing the button again returns to the previous screen format.
	Group	• 📄 : Moves to the next camera group.
	Freeze	• ❄ : Freezes the current live images on the screen.
	Zoom	• SHIFT & ❄ : Zooms in the current live images on the screen. You can move the zoomed-in area by using arrow buttons and enter button (↵).
	Full Screen	• 'Panel tab ID' → 📄 : Displays the panel tab in full-screen format.

	<p>Search/Live</p>	<ul style="list-style-type: none"> •  : Displays the Play or DVR Search panel and allows you to search and play back recorded video of the device connected to the selected camera screen in the Live panel is connected. • SHIFT &  : Returns to the previous Live panel.
	<p>Fast Backward Play</p>	<ul style="list-style-type: none"> •  : Plays video backward at high speed in the playback mode.
	<p>Backward Step</p>	<ul style="list-style-type: none"> • SHIFT &  : Plays video backward image-by-image in the playback mode.
	<p>Play, Pause</p>	<ul style="list-style-type: none"> •  : Plays back video. Pressing the button while playing back video pauses the video.
	<p>Fast Forward Play</p>	<ul style="list-style-type: none"> •  : Plays video forward at high speed in the playback mode.
	<p>Forward Step</p>	<ul style="list-style-type: none"> • SHIFT &  : Plays video forward image-by-image in the playback mode.
	<p>Menu</p>	<ul style="list-style-type: none"> • Displays the screen menu of the selected camera screen.
	<p>Enter Button ()</p>	<ul style="list-style-type: none"> • Selects an item in the screen menu of the selected camera. • Toggles the zoom size when in the zoom mode.
	<p>Arrow Buttons</p>	<ul style="list-style-type: none"> • Navigates through items in the screen menu of the selected camera screen. • Moves the zoomed-in area when in the zoom mode.
	<p>Jog Dial</p>	<ul style="list-style-type: none"> • Functions only when in the playback mode. • Plays video forward or backward image-by-image by turning the jog dial clockwise or counterclockwise when playback video has been paused.
	<p>Shuttle Ring</p>	<ul style="list-style-type: none"> • Functions only when in the playback mode. • Plays video when in the playback mode. The shuttle ring is spring loaded and returns to the center position when released. Turning the ring clockwise or counterclockwise plays video forward or backward. The playback speed varies with the amount the ring is turned: fast forward and rewind. • Controls the playback speed in the DVR Search panel.

Chapter 18 — Federation Service

The federation service allows you to monitor live video from devices registered on the NVR system and to play back video recorded in the NVR systems that are registered on the federation service.

18.1 Installation

System Requirements

- Operating System: Microsoft® Windows® XP x86 (32 Bit)/Vista (Home Standard, Business, Ultimate, Enterprise), Microsoft® Windows® 7 (Home Premium, Professional, Ultimate), Microsoft® Windows® Server 2003/2008
- CPU: Intel Core II Quad 8200 2.33 GHz/Intel Xeon 3.0 GHz or faster
- RAM: 2GB or more
- VGA: ATI Radeon™ HD 2400 or NVIDIA GeForce FX5500 (ATI recommended) (1024x768, 24bpp or higher)
- Hard Disk Drive: 5 GB or more free space
- LAN: Gigabit Ethernet or faster

Installation

NOTE: In the Windows Start menu, go to *Control Panel*. Double click the *Power Options* to open the Management Properties dialog box. Under the *Power Schemes* tab, set both *Turn off monitor* and *Turn off hard disks* to *Never*.

CAUTION: If an older version of iNEX software is installed on your computer, a screen appears asking you to upgrade the software. In this case, you are required to upgrade the software according to the instructions in the screen.

1. Insert the software CD.
2. Run the *FederationSetup.exe* file of the software CD.

NOTE: The *User Account Control* window might appear when using the Microsoft® Windows® Vista or later operating system. Click *Allow* and install the software following the instructions.

3. Select the language in which to run the program and then click OK.



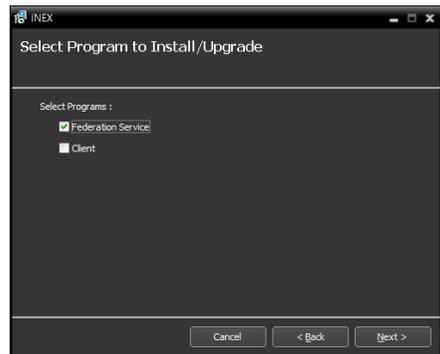
NOTES:

- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the iNEX program's language after the software has been installed, select *Language Selector* in the *iNEX* → *Utility* folder of the *Start* menu before running the *iNEX* program.

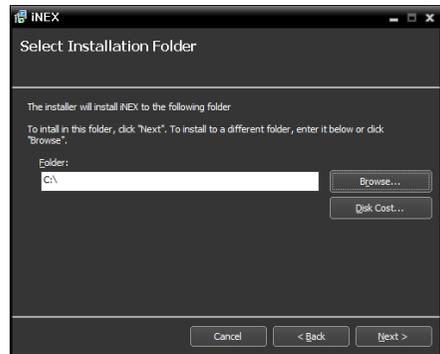
4. When the following screen appears, click Next.



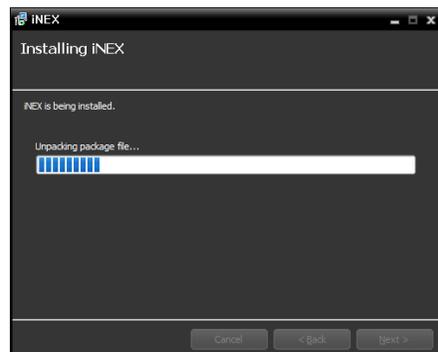
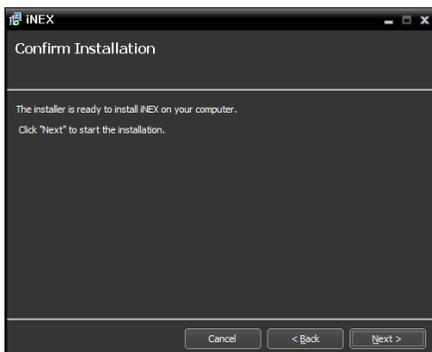
5. Select Federation Service, and click Next.



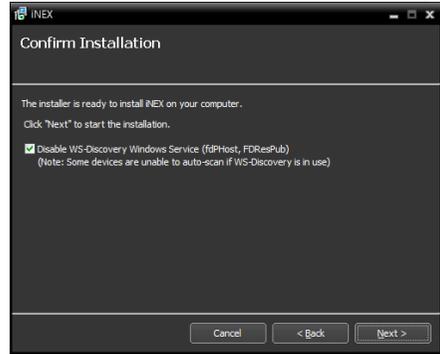
6. Designate the folder path to install the service. Clicking the Disk Cost... button shows the available and required disk space for each hard disk drive for the installation. Then click Next.



7. When the following screens appear, click Next.



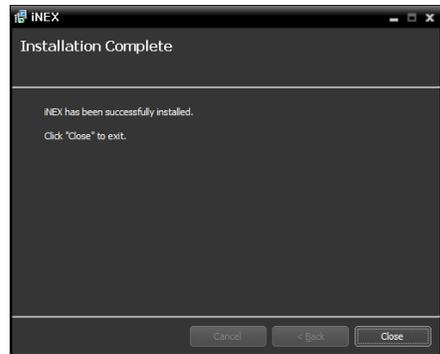
NOTE: The following screen appears when using Microsoft® Windows® Vista or later operating systems. It is recommended that you check the *Disable WS-Discovery Windows Service (fdPHost, FDResPub)* box. If you do not check the box, the iNEX program cannot auto-scan devices using ONVIF™ protocol when scanning devices for device registration.



NOTE: .NET Framework and the Visual C++ Runtime Libraries are installed automatically, and it may take some time. This installation step will be skipped if the programs are already installed on your computer.

8. When the following screen appears, click the Close button to complete the installation.

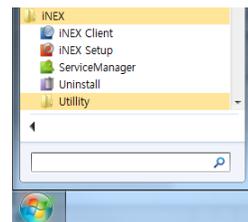
NOTE: After successfully installing the service, the service, Service Manager program (the  icon is displayed in the notification area of the task bar) and Setup program run automatically.



18.2 Getting Started

Running Service

When the federation service installed, the service runs automatically. You can also start or stop running the service manually. Go to the Start Menu in the federation server → Click iNEX → Run the Service Manager program.

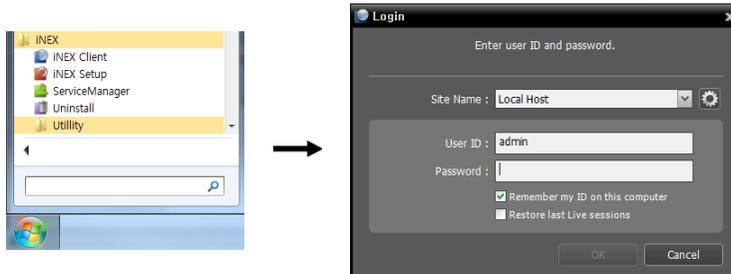


Check the status of the service. If the service is not listed as Working under Status, start the service manually. Refer to 4.1 Service Manager (p. 23) for details about the Service Manager program.

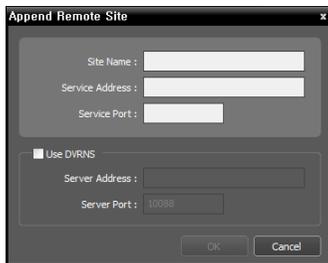
Log In

You are required to log in to the federation service when running the Setup and Client program.

Go to the Start Menu in the federation server or Client system → Click iNEX → Run the iNEX Setup or iNEX Client program and enter login information.



- **Site Name:** Select the federation service to connect to from the list. Select Local Host as the default setting if the federation service is running in the current system. You can add other federation services to the list or modify information about the federation service in the list by clicking the  button at the right.

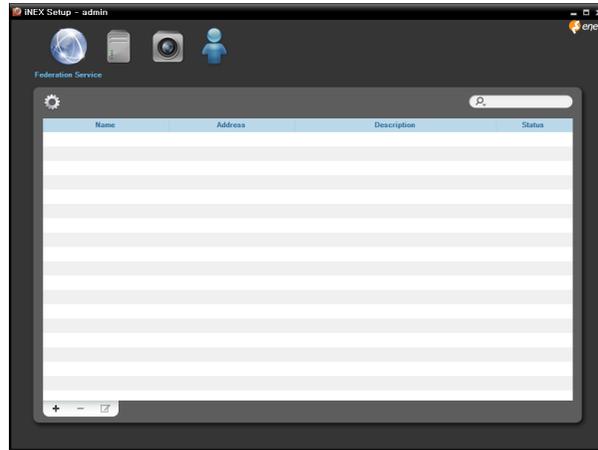


- **Site Name, Service Address, Service Port:** Designate the name of the federation service and enter the IP address and port number of the federation server (default: 11000).

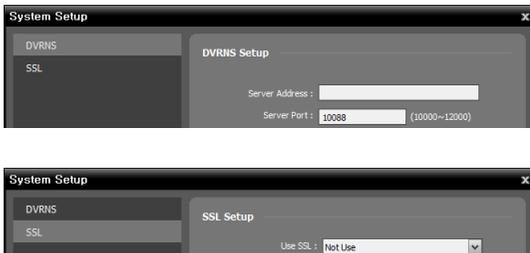
- **User ID, Password:** Enter your user ID and password. The default user ID is admin and default password is 12345678. You can change the user ID and password in the User menu. Refer to Chapter 13 — User Management (p. 105) for details.
- **Remember my ID on this computer:** Check the box if you want to save your ID for logging on.
- **Restore last Live sessions:** Check the box if you want to restore the previous live monitoring sessions in the Live panel of the Client program (supported only for the Client program).

System Setup

Run the Setup program and set up the federation server.



Click the  (System Setup) button to display the system setup screen.

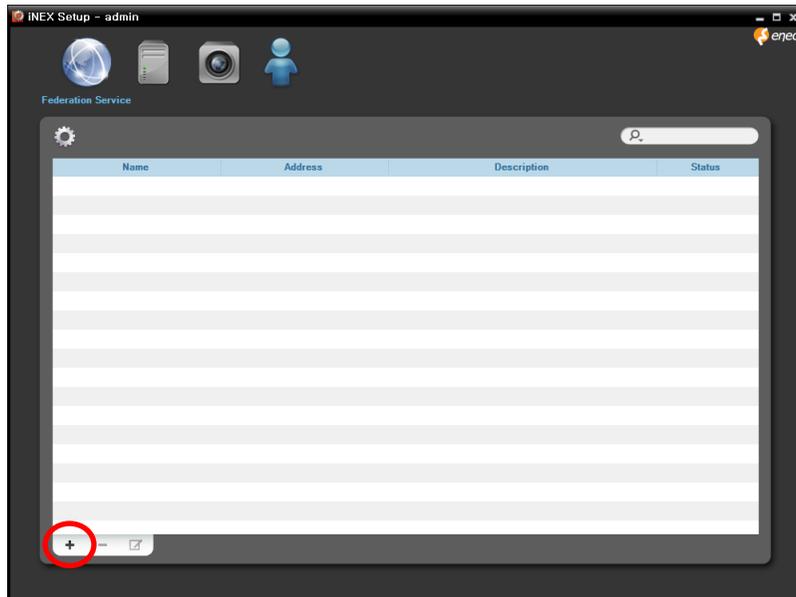


- **Server Address, Server Port:** Enter the IP address (domain name) and port number of the DVRNS server that the NVR system to register is registered.
- **Use SSL:** Allows you to enhance the security of data transferred between services of the iNEX program by using the SSL (Secure Sockets Layer) protocol. Using the SSL function might cause congestion in the federation server depending on the security level. Log in the iNEX program again after you change the setting. When the setting is changed, all services that are currently connected to the federation server reconnect, and the iNEX Setup and iNEX Client programs are logged out.

Registering Service

You must register NVR systems (administration services) on the federation service.

Run the iNEX Setup program and enter login information.



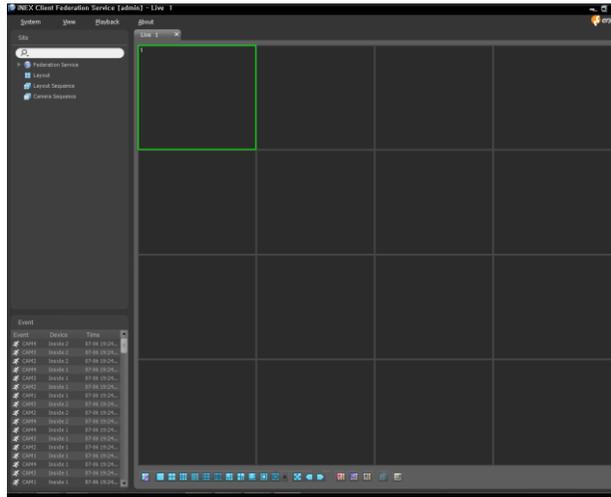
Click the **+** button at the bottom, and the Federation Service window appears. Enter the information for the NVR system (administration service) to register.

The 'Federation Service' dialog box is shown. It has a title bar with 'Federation Service' and a close button. Below the title bar, it says 'Registered Devices: 60 / Max Devices: 1024'. The form contains the following fields and controls:

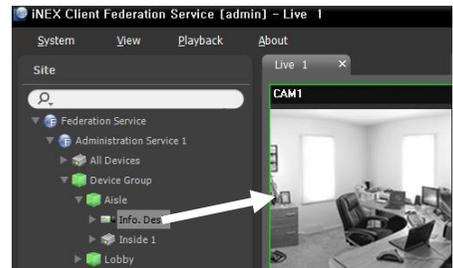
- Site Name:** A text input field.
- Service Address:** A text input field.
- Port:** A text input field with '11001' entered.
- Use DVRNS
- Use External IP
- Setup:** A button.
- ID:** A text input field.
- Password:** A text input field.
- Connection Test...:** A button.
- Description:** A text area.
- OK:** A button.
- Cancel:** A button.

- **Site Name:** Enter the name of the NVR system (administration service).
- **Service Address, Port:** Enter the IP address and port number of the NVR system.
 - **Use DVRNS:** If the NVR system uses the DVRNS function, selecting **Use DVRNS** allows you to enter the NVR system's name registered on the DVRNS server instead of the IP address. You can check the name in the NVR system's DVRNS setting (connect to the NVR system → click the  (System Setup) button in the **Service** menu of the iNEX Setup program → click **DVRNS**).
 - **Use External IP:** Click the **Setup** button and enter the external IP address and port number of the NVR system.
- **ID, Password:** Enter the ID and password for connection to the NVR system. Only the users in the **Administrators** group are allowed to connect to the NVR system from the federation service.
- **Connection Test:** Click the button to test the connection to the NVR system with the information entered above.

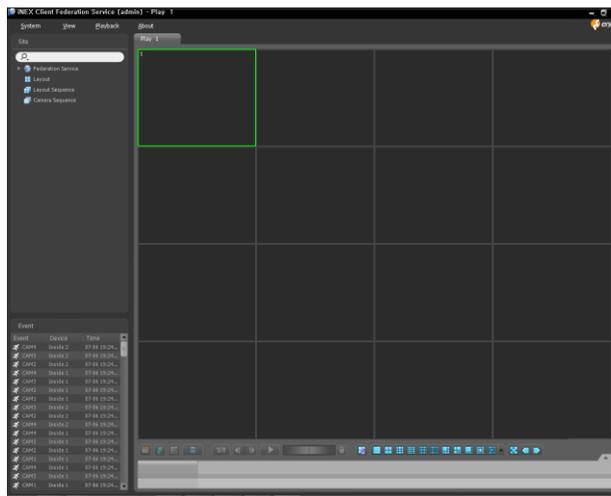
Live Video Monitoring



1. Check that the NVR systems (administration services) were added to Federation Service in the Site list.
2. Click the Live tab on the tab panel → Select a site to connect to from the Site list, and drag and drop it on the Live screen. Live video from the selected site is displayed on the screen. Monitoring video in the Client program of the federation server is identical to monitoring of the NVR system (administration service). Refer to Chapter 5 — Live Video Monitoring (p. 45) for details.

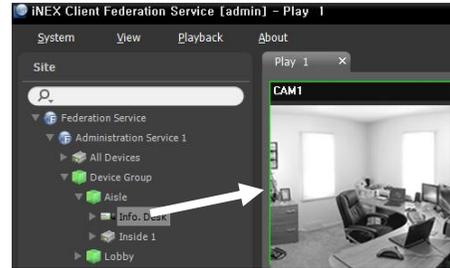


Playing Recorded Video



1. Check that the NVR systems (administration services) were added to a device group in the Site list.

- Click the Play or DVR Search tab on the tab panel → Select a site to connect to from the **Site** list, and then drag and drop it on the Play or DVR Search screen. Recorded video from the selected site is displayed on the screen. You can search and play back recorded video by using the panel toolbar and timetable at the bottom of the Play or DVR Search panel. Playing back video recorded in the Client program of the federation server is identical to playing back of the NVR system (administration service). Refer to **Chapter 7 — Recorded Video Playback & Exportation** (p. 69) for details.



18.3 System Overview

The iNEX Federation program consists of the Service Manager, Setup and Client programs. Setting up and operating each program of the iNEX Federation program is identical to that of the NVR system except for the following functions. The following functions are not supported by the iNEX Federation program.

- Client program: Live and callback event notification, map monitoring, instant recording, Event Manager panel, Event History tab, Health tab and Status tab
- Setup program: Device setup, Recording Schedule setup, Event Management schedule setup, Map Editor setup

Service Manager

Go to the Start Menu in the federation server → Click iNEX → Run the Service Manager program.



Setup

Run the iNEX Setup program and enter login information.

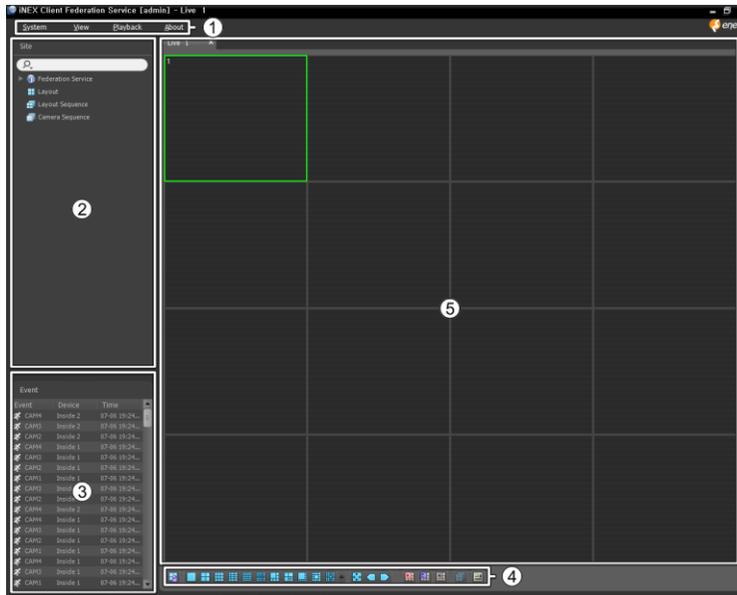


- Federation Service:** Allows you to register and manage NVR systems (administration services).
- Service:** Not supported.

- **Device:** Allows you to register and manage sites that consist of devices registered on the NVR systems (administration services).
- **User:** Allows you to register and manage users or user groups.
-  (System Setup): Sets up the federation server. Refer to **System Setup** (p. 134) for details.

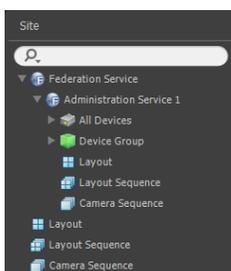
Client

Go to the Start Menu → Click iNEX → Run the iNEX Client program and enter login information.



- ① **Menu:** Allows you to control the Client program.
- ② **Site List:** Allows you to connect to the registered site by using the mouse drag and drop.
- ③ **Instant Event List:** Displays monitoring events from devices registered on the NVR systems (administration services). Event related functions may not be supported depending on the protocol that the device uses (supported for the iNEX protocol and some versions of the ONVIF™ Conformance and Axis protocol).
- ④ **Panel Toolbar/Timetable:** Displays the toolbar or timetable depending on the panel.
- ⑤ **Panel:** Allows you to select which panel to use.

Site List



Displays the list of registered sites that are registered on the administration or federation service.

- **Federation Service:** Displays the list of NVR systems (administration services) registered on the federation service. Clicking an NVR system (administration services) displays the list of sites registered on the NVR systems (administration services).
- **Layout:** Displays the list of registered layouts registered on the federation service. Clicking a layout in the list, and dragging and dropping it on the screen starts layout monitoring or playback.

- **Layout Sequence:** Displays the list of registered layout sequences registered on the federation service. Clicking a layout sequence in the list, and dragging and dropping it on the screen starts layout sequence monitoring.
- **Camera Sequence:** Displays the list of registered camera sequences registered on the federation service. Clicking a camera sequence in the list, and dragging and dropping it in the desired location on the screen starts camera sequence monitoring.

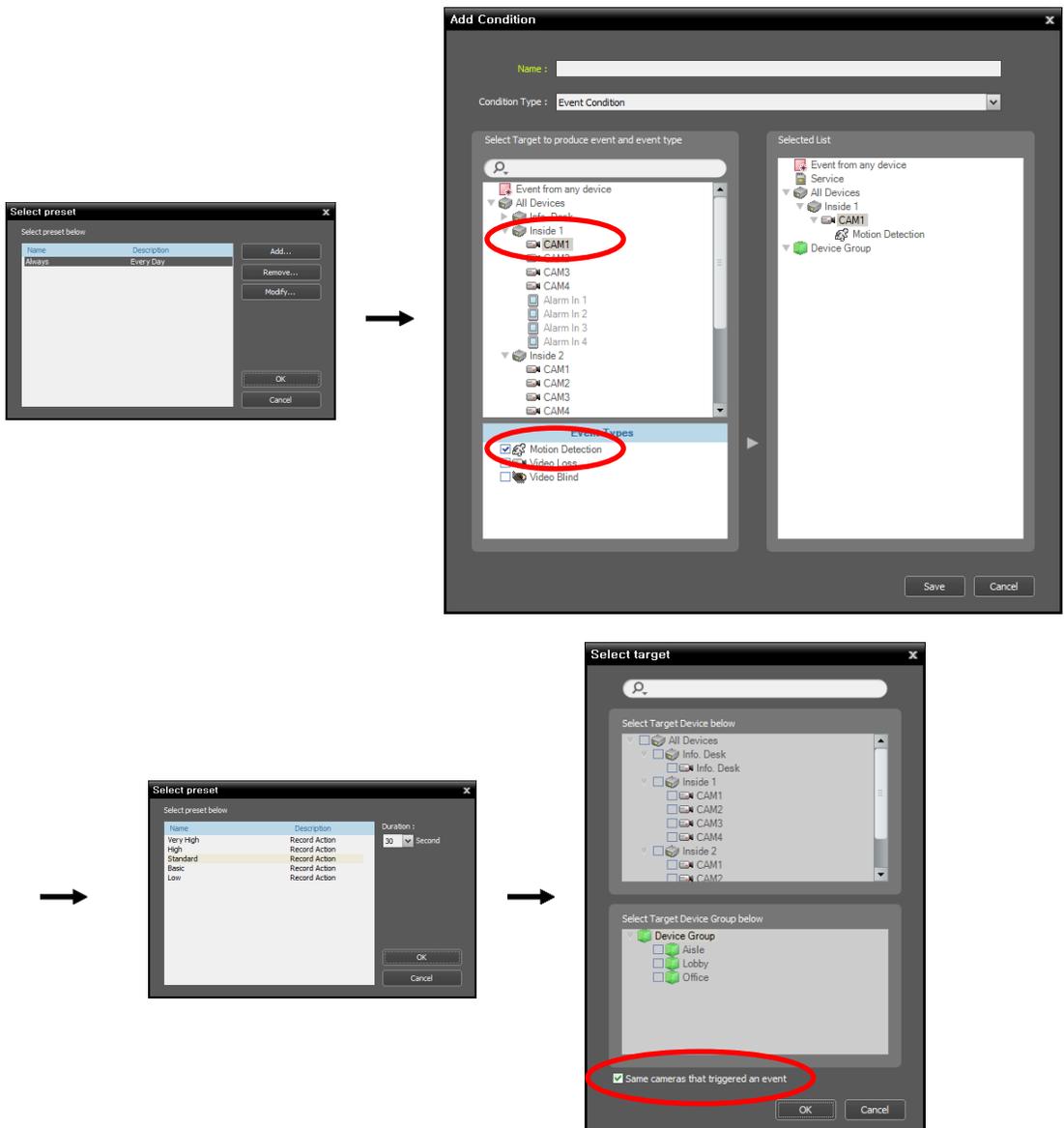
Appendix

Schedule Setup Examples of Event Recording Mode

NOTE: Event recording is supported only for network video devices which use the iNEX protocol.

Example 1

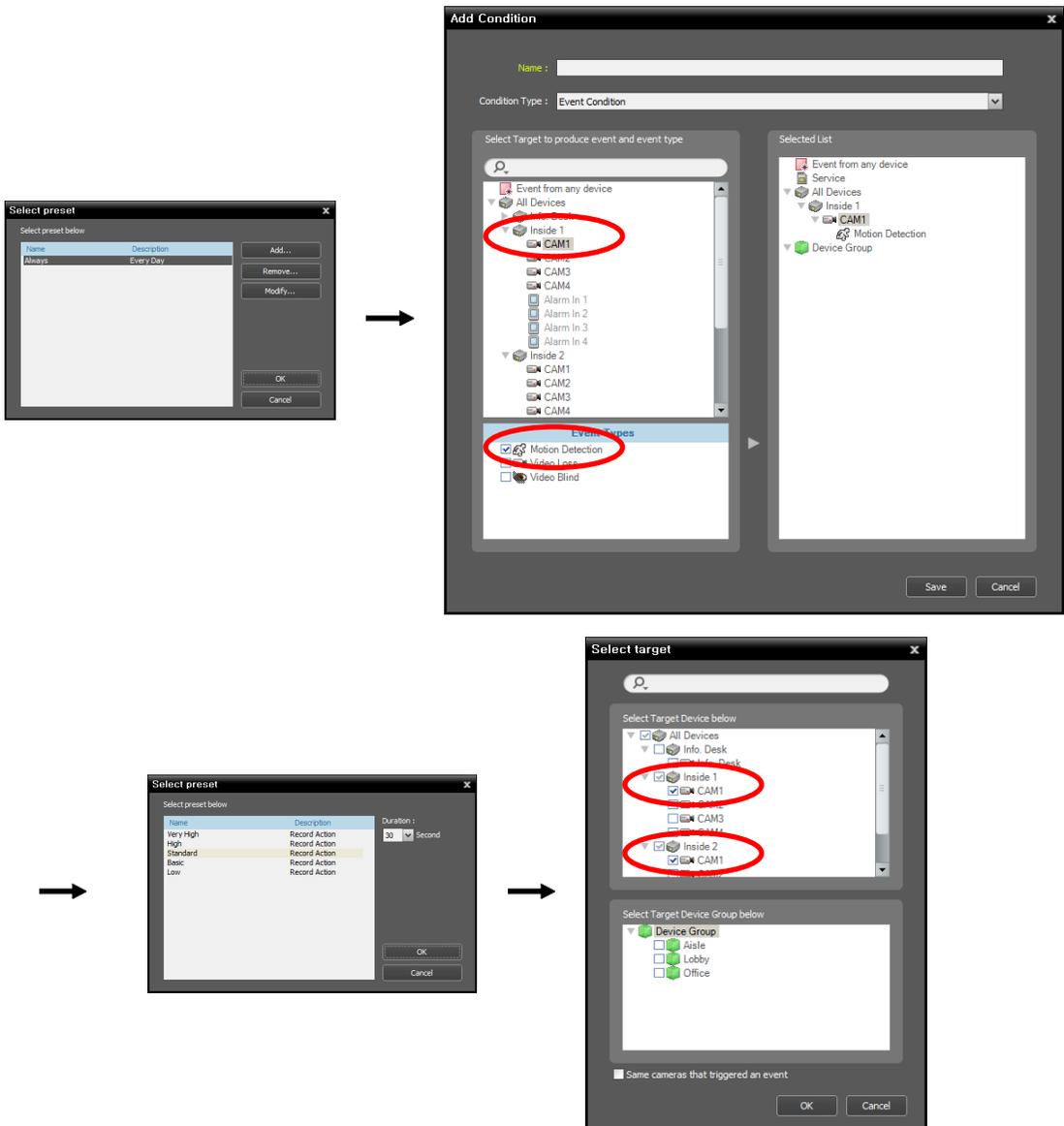
If motion detection events are detected at camera 1 on the Inside 1 device, and you want to record video from that camera, set up as follows:



- Time Coverage preset: Select the Always preset.
- Condition preset
 - Condition Type: Select Event Condition.
 - Select Target to produce event and event type: Select All Devices, Inside 1, and CAM1 in order.
 - Event Types: Select Motion Detection.
- Action preset: Select a desired Preset.
- Target preset: Select the Same cameras that triggered an event option.

Example II

If motion detection events are detected at camera 1 on the Inside 1 device, and you want to record video from that camera and camera 1 of the Inside 2 device, set up as follows:



- Time Coverage preset: Select the Always preset.
- Condition preset
 - Condition Type: Select Event Condition.
 - Select Target to produce event and event type: Select All Devices, Inside 1, and CAM1 in order.
 - Event Types: Select Motion Detection.
- Action preset: Select a desired Preset.
- Target preset: Release the Same cameras that triggered an event option → Select CAM1 of the Inside 1 device and CAM1 of the Inside 2 device from the All Devices list.

OSD Information

The OSD (On Screen Display) is displayed in each camera screen in the Live screen of the Client program.



- Camera Title: Indicates the camera name set in the iNEX program (upper left corner of the screen).
- (Listen or Talk): Indicates the Client system can receive audio from or sends audio to the device (upper right corner of the screen).
- (PTZ): Indicates PTZ control is enabled (upper right corner of the screen).
- (Camera Sequence): Indicates the cameras are being sequenced (upper right corner of the screen).
- (Red: Is displayed during recording in Time-Lapse Recording or Event-Based Recording mode), (Orange: Is displayed during recording in Instant Recording mode): Indicates video is being recorded in the NVR system (upper right corner of the screen).
- (Zoom In): Indicates video is zoomed in (upper right corner of the screen).
- Date, Time: Indicates the date or time of the NVR system (bottom of the screen).
- Event Alert: Indicates an event detected (highlights the camera title bar in red).
- Motion Block: Indicates a motion event detected in the boxed area (on image) (supported only for network video transmitters which use the iNEX protocol).

Network Disconnection Log

ID	Explanation	ID	Explanation
0	Unknown error.	15	Cannot reach the recording service.
1	Logout.	16	No route is found to the device.
2	All channels of the device are being used.	20	Connection cancelled.
3	Invalid product version.	26	The RTP port is being already used.
4	Invalid user ID or password.	27	SSL connection failed.
10	No device is running.	28	Network connection timeout.
11	Network is down.	29	Host connection timeout.
12	Cannot reach the device's network.	30	The device does not support RTP over TCP.
13	Connection timeout.		

Troubleshooting

Problem	Possible Solution
Login fails indicating no server running.	<ul style="list-style-type: none"> Click the  button in the login screen and check that information about the NVR system is set up correctly.
Monitoring is not available.	<ul style="list-style-type: none"> Check that devices have been added to a device group. Check that you have authority for monitoring.
The connection was released during monitoring and the Client system repeats reconnecting.	<ul style="list-style-type: none"> Check the device status and the network connections for the device and NVR system. Check that the streaming service is running. When the streaming service is not running, monitoring is still available but it is restricted for users in a WAN environment.
No live video.	<ul style="list-style-type: none"> Check the camera connections in the device. Video display might lag because of system or network congestion.
Two-way audio communication is not available.	<ul style="list-style-type: none"> Check the speaker and microphone connections in the device and the NVR system. Check the audio input and output settings of the device. Two-way audio communication is one-to-one communication. If the device is already in audio communication with another system, try again when the other audio communication is disconnected.
Recording is not available.	<ul style="list-style-type: none"> Check that hard disk drives have enough space and a recording schedule is set up. Check the device registration information. The recording function is supported only for a device registered as admin user. Check the recording status of the device. If the same device is registered on another NVR system, only the first NVR system that is connected to the device records video. Once a NVR system connects to the device, other NVR systems will not record video from the device unless connection of the first NVR system is released. To record video in the current NVR system, delete the device registration or disable the device in the NVR system on which the other NVR system is registered by editing the device information.
Recording OSD is not displayed.	<ul style="list-style-type: none"> The recording OSD might be displayed later or for longer than the scheduled time because of the recording delays caused by system congestion.
Cannot operate the iNEX program because of wrong ID and password.	<ul style="list-style-type: none"> Run the SecretKey program (Go to the Start Menu → Click iNEX and then Utility). When you provide the result to your dealer or distributor, you will receive a new user ID and password.
Cannot operate the iNEX program because of wrong port number.	<ul style="list-style-type: none"> Check that the current port number is used in other programs or filtered or blocked for security purposes and change the port number during the Service Manager program setup. The default port number of administration service is 11001, recording service is 11002, monitoring service is 11004, streaming service is 11003 and federation service is 11000.

Specification

VIDEO	
Video Input	Network video transmitter, network camera
Supported Resolution	352x240, 704x240, 704x480, 1280x720, 1920x1080
Video Codec	H.264, MPEG-4, M-JPEG
Record Speed (images per second)	4-ch Model: max. 120ips @ 1920x1080 8-ch Model: max. 240ips @ 1920x1080 16-ch Model: max. 320ips @ 1920x1080
CONNECTORS	
Ethernet Port ¹	RJ-45
eSATA Port	1
USB Port	1 USB connectors
STORAGE	
Primary Storage	SATA hard disk drive (Expandable up to 2)
Exporting Storage	eSATA hard disk drive
GENERAL	
Dimensions (W x H x D)	8.7" x 3.5" x 11.7" (220mm x 88mm x 297mm)
Unit Weight	7.9 lbs. (3.58 kg)
Shipping Weight	11.6 lbs. (5.27 kg)
Shipping Dimensions (W x H x D)	12.8" x 7.5" x 16.4" (325 mm x 190 mm x 416 mm)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90%
Power	AC 100-240V~, 50/60 Hz, 0.6-0.3A
Approvals	FCC, CE, CB, UL ⁱⁱ

ⁱThe network connector is not designed to be connected directly with cable or wire intended for outdoor use.

ⁱⁱ CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions. This equipment is indoor use and all the communication wiring are limited to inside of the building.

Specifications are subject to change without notice.

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